Landscape, geology, soils and archaeology of Moorend Common, Buckinghamshire

Chiltern Archaeology

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Landscape, geology, soils and archaeology of Moorend Common, Buckinghamshire

Prepared by Dr Jill Eyers (Chiltern Archaeology)

With Moorend Common Conservation Committee

On behalf of Lane End Parish Council

Client: The Chilterns Conservation Board

Part of the Chilterns Commons Project

heritage lottery fund
LOTTERY FUNDED

The Chilterns
CONSERVATION BOARD

Contents

Front page: survey team on Moorend Common November 2012.

1. Introduction

National Grid Reference: SU 801 907 (north section) & SU802905 (south section)
County: Buckinghamshire
Local authority: Wycombe District Council.
Parish: Lane End
Area: c. 21.58 ha

Moorend Common is an area of woodland and meadow owned by Lane End Parish Council and managed by the Moorend Conservation Committee. It lies within the Chilterns Area of Outstanding Natural Beauty between the villages of Lane End and Frieth. Together with adjacent Moor Copse (*c.* 7.93 ha) it is a designated SSSI (Site of Special Scientific Interest) for biological interests, and it is a designated Local Geology Site (LGS) for important geological features. Last, but not least, it is also a registered common, one of the 187 commons within the Chilterns AONB (Figure 1.1 below and Figure 1.2 next page).

Moorend Common has an unusual combination of woodland, meadows with acid grassland, and marsh. The acidic soils are not typical of the Chilterns and arise due to a combination of geological and hydrogeological processes. Geology has controlled the use to which past inhabitants of the area could put the land. The result of the predominantly acidic clay soils was to provide a small industry for woodland and clay extraction linked to commons use. Any archaeological features on the site would be linked to these land uses and/or to land boundaries. This survey was designed to investigate these links.

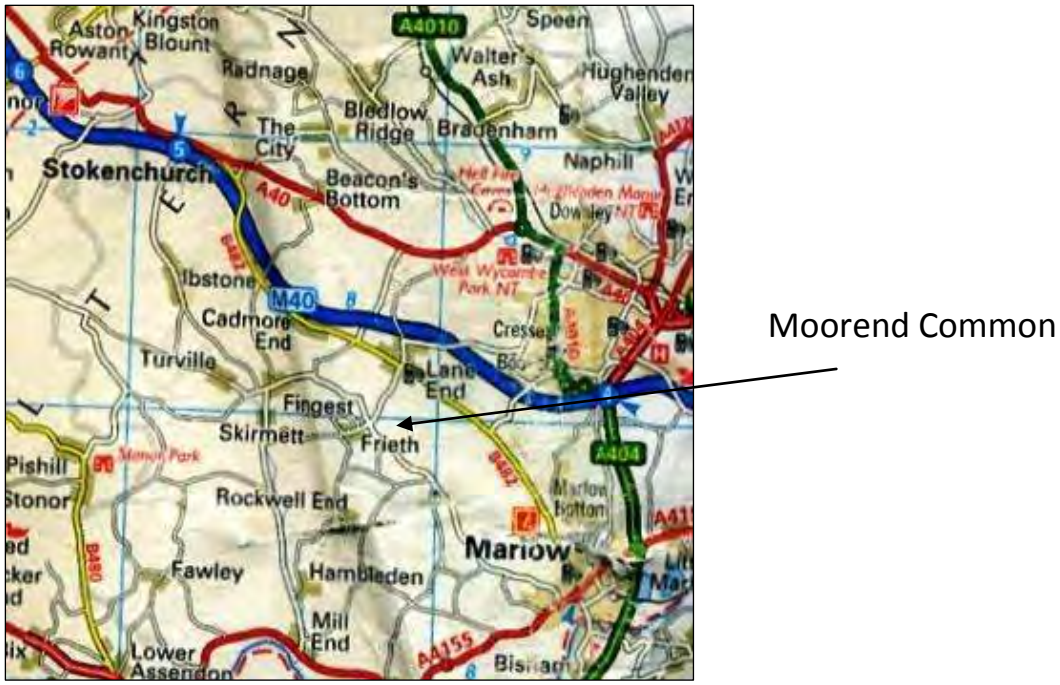


Figure 1.1 Location of Moorend Common, NW of Marlow and south of Lane End. See Figure 1.2 for detail of the common.

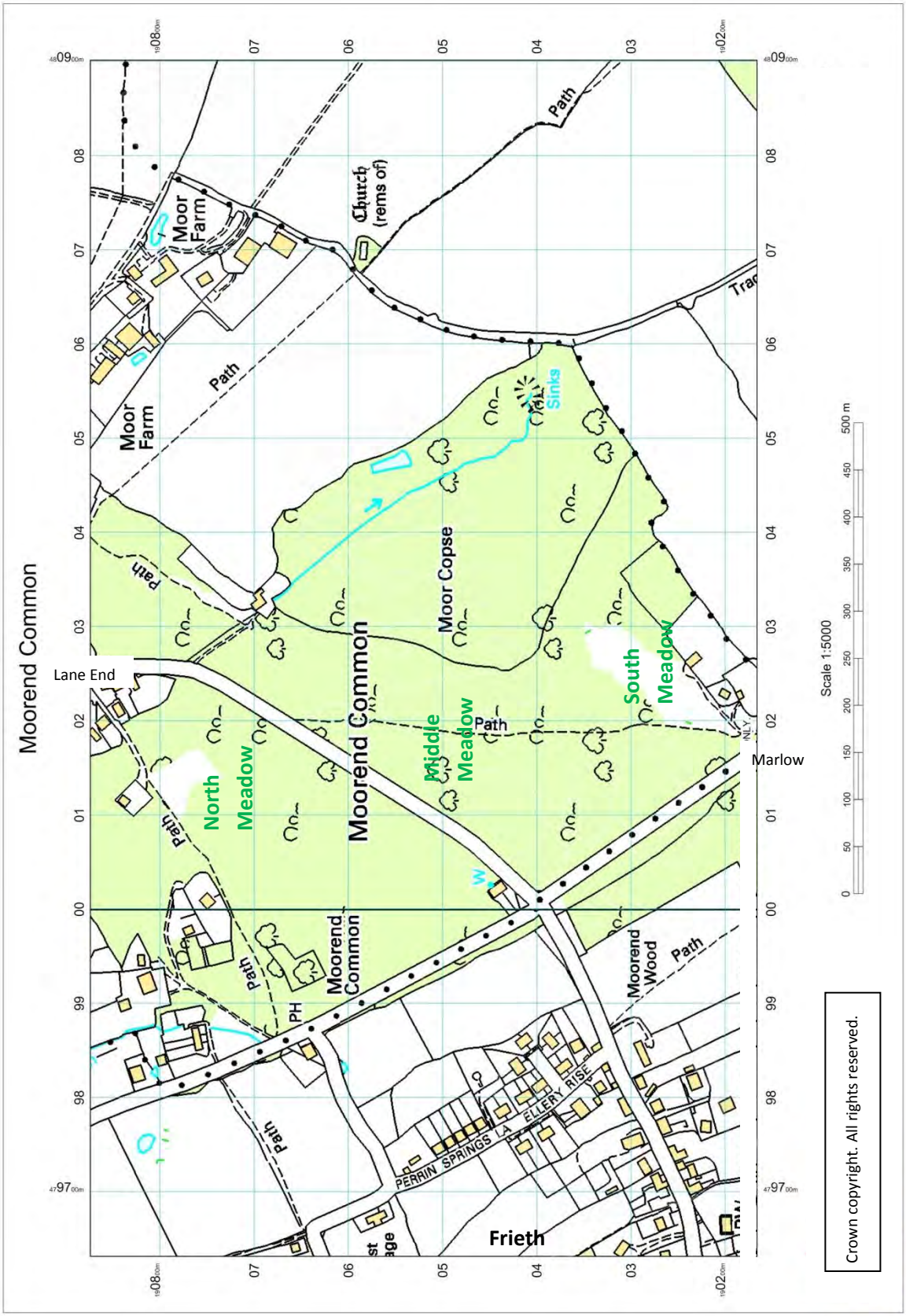


Figure 1.1 Moorend Common and location of the key areas.

2. Objectives

The survey formed part of the Lottery funded *Chilterns Commons Project* managed by the Chilterns Conservation Board. The work was part of a larger integrated project which included historical research and ecological studies alongside monitoring conservation practices to determine their effectiveness.

The remit of this survey was to:

- Investigate the natural landscape of Moorend Common
- Survey the geology and soils of the Common and adjacent areas where these relate or interact with activity on the Common.
- Survey the archaeology by non-intrusive methods (surveying and geophysics).
- Involve the local people in the survey to enhance knowledge and understanding of the links between geology, soils, landscape and nature.
- Provide information and a background to inform future management of Moorend Common.

3. Landscape of Moorend Common

The area is for the most part a fairly flat lying area of the Chilterns. North Meadow (Fig. 2.2) lies at 145 mOD in the north and west sides of the site, and it dips slightly west until the Frieth-Lane End road where it develops a very gradual slope eastwards to 143 mOD across the Lane End-Frieth Road. Moor Copse continues with a gradual decline in topography to 140 mOD, declining to 135 mOD just before the sinkhole (called the 'sinks' on Figure 1.2).

The area is rural with a few common edge houses and the main habitation being within the village of Frieth starting about 500 m from South Meadow. The marshy areas are controlled by geology and soil character, and not by topography, although the slight slope assists in drainage into this area. The area of marsh and grassland would rapidly revert to woodland without management.

There are four small streams which intermittently flow and drain Middle Meadow, South Meadow and two areas within Moor Copse, all converging into one flow into the sink hole (called 'Gubbins Hole' on documents held by Natural England and the Bucks Earth Heritage Group, the latter have designated it a Local Geology Site (LGS) and the name presumably refers to a previous owner). When flow is high this sink hole has standing water and seems to choke with debris for a short time. There are no ponds or permanent water on the Common. When there is no water flowing in the streams, then the nearest water available for grazing animals in the past would be within Moor Copse or three small ponds on or near North Meadow. The presence of the streams and waterlogged areas of ground, even though intermittently wet, has a large influence on the flora allowing marsh species, willow and associated fauna to flourish in those areas. The water appears to arise from the Reading Formation sands and hence is neutral to slightly acid, not calcareous as other Chiltern water sources.

4. Geology of Moorend Common

The character of the soils and wildlife at Moorend Common is different to that seen in a large part of the Chilterns. The character of the Chilterns is usually dominated by calcareous soils which are thin and nutrient poor as they lie directly over the chalk. Although Moorend Common has Upper Chalk at depth, this is possibly up to 10-20 m depth. Overlying the Upper Chalk are deposits of Reading Beds and London Clay (Figures 4.1 and 4.2) and it is these deposits that influence the soils and water retention on site.

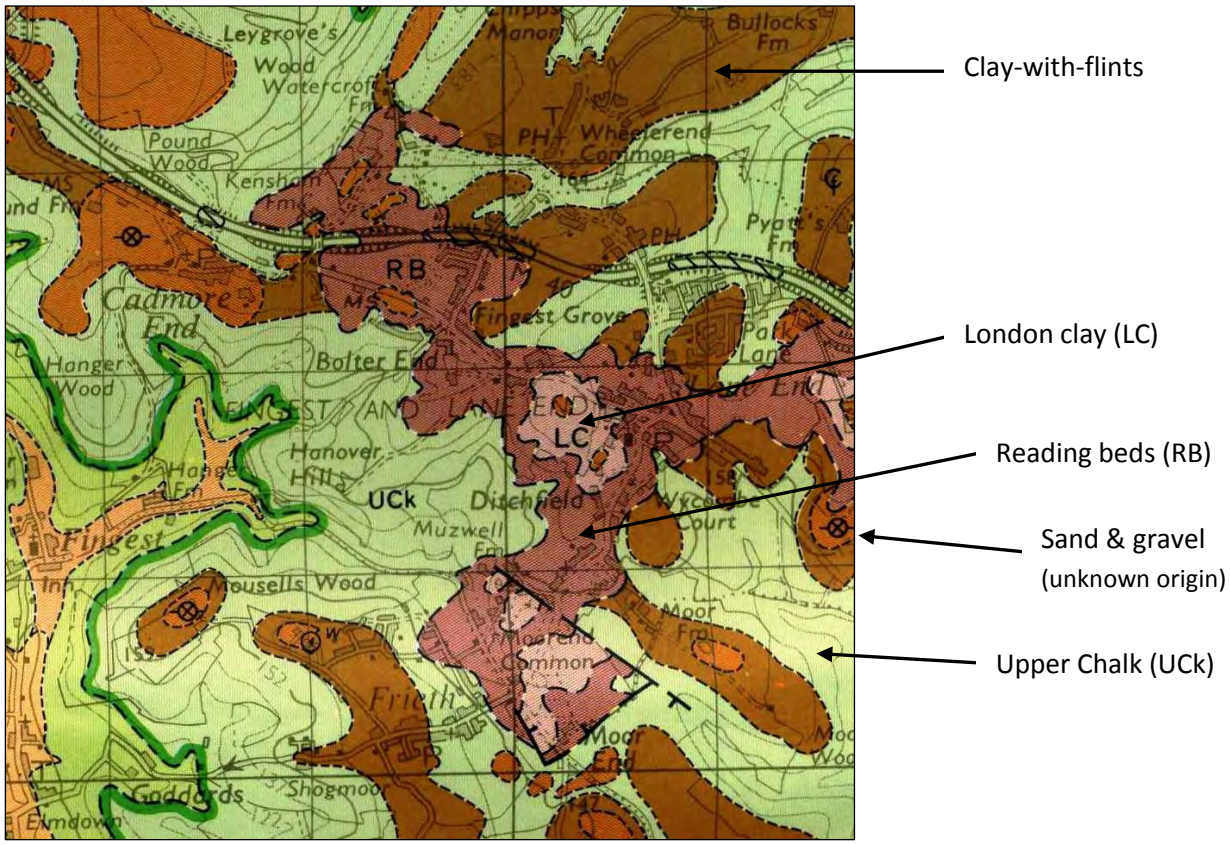


Figure 4.1 Geology of Moorend Common and surrounding area from Wheeler End Common in the north to just south of Frieth.

After BGS sheet 254; OS Crown copyright Licence No. 100051837

The area to the east and west of Moorend Common can be seen in Figure 4.1 above to be Upper Chalk (shown in pale green). Older beds of Chalk can be seen to the west in the Fingest area where the dry valley has cut down into the underlying strata – the dark green band is the Chalk Rock (the Victorians often called this 'Clunch' and it is often exploited as a building stone for some of the older buildings near its outcrop). The mid-green contained within the Chalk Rock band is Middle Chalk, and the ribbon of pale orange colour indicates where Coombe deposits and alluvium line the dry valley floor.

Laying outside the Common area and also directly on the Upper Chalk is the residual deposit known as Clay-with-flint (dark brown 'fingers' on the map). This provides a heavy clay soil on the hill tops. Also found on the highest contours of the hills, the Reading Formation clays and overlying sands occur in irregular shaped outcrops; the sands are variable in thickness

and not always present. The Reading Beds occur in a roughly Y-shaped zone from Cadmore End in the northwest through to Lane End in the northeast and then a band runs southwards to Moorend. Over the Reading Beds in 3 locations is the London Clay with patches in Lane End east, Ditchfield and Moorend Common. Finally there are patches of 'other' sands and gravels, but the origin of these has never been investigated, although it is possible they are an older river gravel of the Thames laid down during the Ice Age before its river valley was cut.

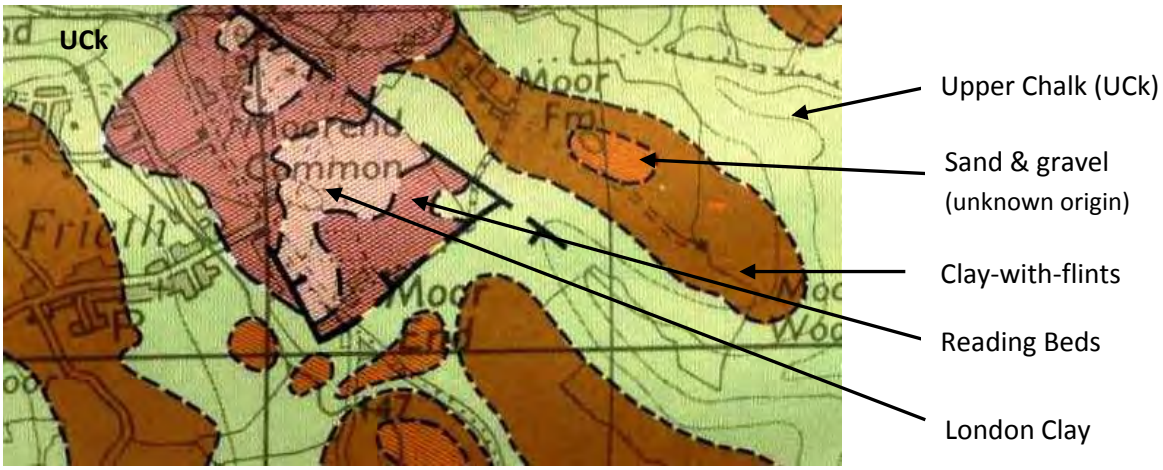


Figure 4.2 Close up of Moorend Common geology from Fig 4.1

The geology of the Common can be seen in closer detail in Figure 4.2. The entire area of Moorend is covered by the Reading Formation with London Clay overlying this in most of South and all Middle Meadow and a small part of North Meadow close to the road. A small segment in the far eastern side of Moor Copse can be seen to have Chalk at outcrop. It is not surprising that this is the location of a large sink hole (swallow hole) as it is also close to the location of an intersection of two fault lines. The fault lines are shown as a bold dashed line forming the shape of an unclosed triangle. There are tick lines inside the triangle indicating the downthrow side of the fault is to the inside on each of the three limbs. This has allowed the internal section of crust to drop down in centrally and this is known as a graben. The precise date of the faulting is not known, but as it cuts Reading Formation and London Clay (the youngest date being 55 million years) then it must be younger than 55 million. This is highly likely to be due to Alpine faulting as Africa collided with Europe. The result of the faulting is that a thicker segment of sediment is preserved within the graben and it is the reason London Clay has been preserved here and eroded elsewhere in the district.

Sink hole

There are four streams that intermittently flow downhill on south common, and they all join forces in the far eastern side of Moor Copse (Figure 4.3). Two run southwards, one from April Cottage and one from a man-made pond within Moor Copse. Two further streams flow intermittently from the western side of Moorend Common. The combined stream flows onto the Chalk outcrop shortly after the point that they all intersect in Moor Copse, and from here it descends into a sink hole. The sink hole has been created by water dissolving the Chalk at joint intersections (at SU 806 904). The joints may well have been widened in this area due to the adjacent faulting.

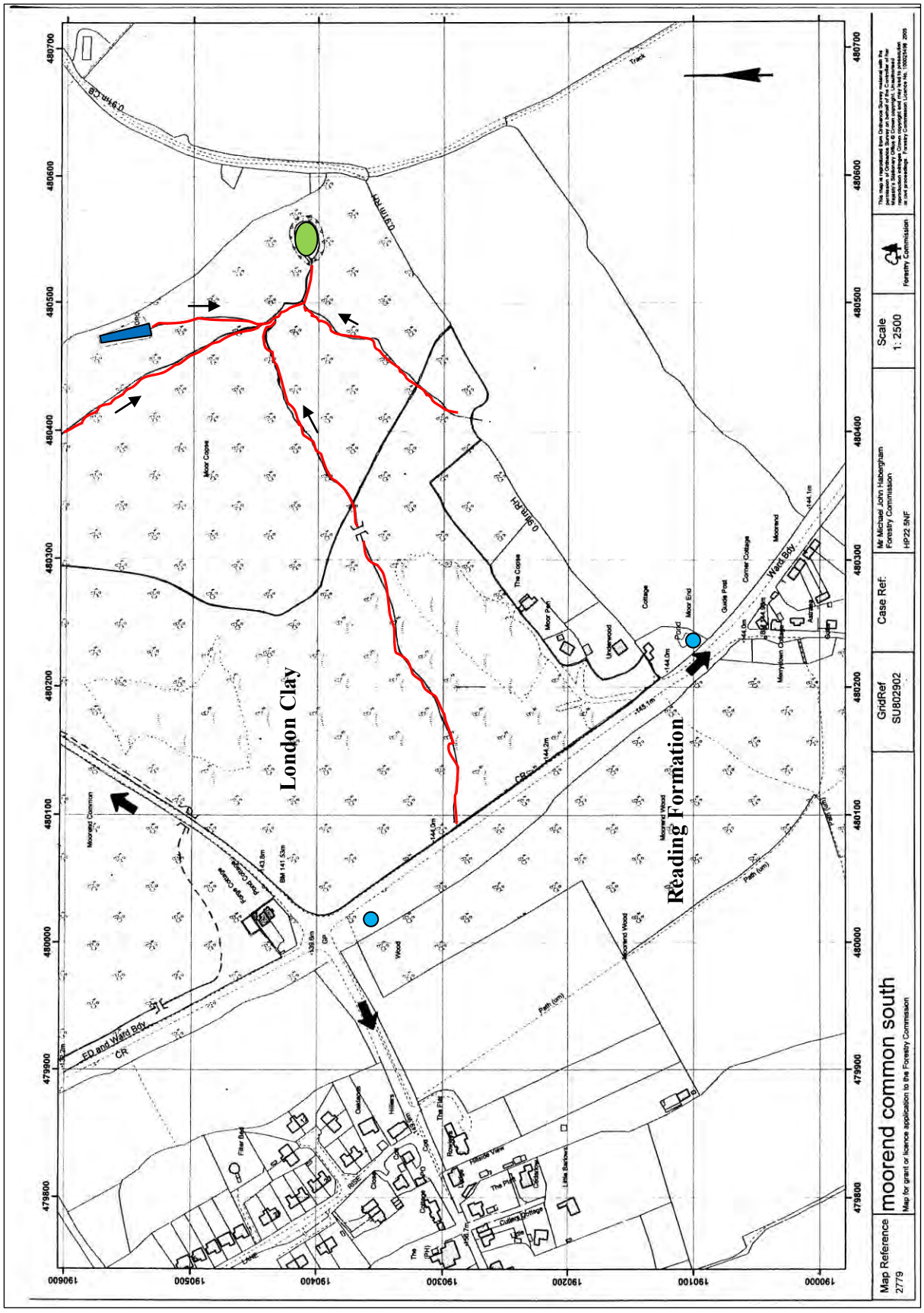


Figure 4.3 Site map of Moorend Common south. Stream; Sink hole; pond

Sink holes are characteristic features of Chalk landscape. They are formed by solution and never occur in isolation – they are more often in lines with tens of metres or more separation. Further small sink holes can be seen in the nearby landscape (e.g. in the grazed field to the north of the site close to the footpath leading from Moor Common.

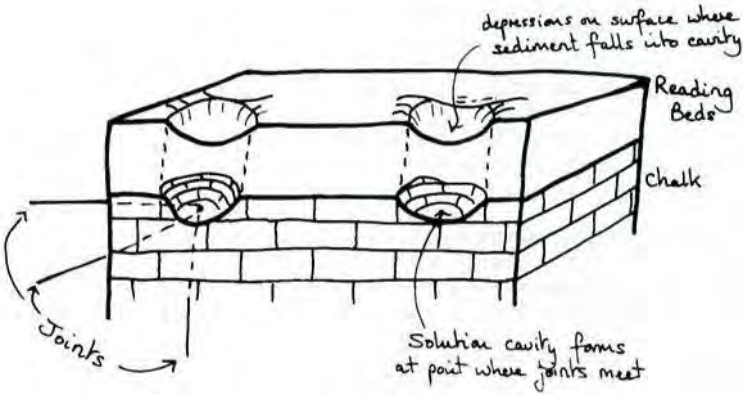


Figure 4.4 How sink holes form in Chalk – typically oval or roughly circular in shape, they form at the intersection of fractures (joints) in the host rock. Joints intersect at regular intervals and hence sinks are repeated in lines several times in the landscape.

The sink hole is a very large example of an active sink (sometimes called swallow holes or 'swilleys') and it is therefore very important for Buckinghamshire, and the reason it has been designated a Local Geology Site by the local conservation group the Bucks Earth Heritage Group. The dimensions are *c*. 50 x 40 metres and it is about 10 metres deep (Figure 4.5).

Figure 4.5 The sink hole is an irregularly shaped solution feature, common on Chalk.

5. Soils of Moorend Common

In general the area is covered by slowly permeable soils with seasonal waterlogging and moderate storage capacity over slowly permeable substrate. In some areas the clay substrate is particularly impermeable as there are two clay layers acting in unison (either London Clay and Reading Beds Clay or Reading Beds Clay and Clay-with-flint). Where the Clay-with-flint occurs in isolation the soils become waterlogged for shorter periods as the flint component acts to increase permeability and drainage. Due to the ecological diversity which is actively maintained the loamy component is variable within the soil horizons as, for instance, woodland contributes leaf litter and therefore more humus to the soil profile. The variability in soil character reinforces the plant variability, which in turn influences soil character – a reinforcing feedback mechanism which increases the overall biodiversity of the site.

For the most part the soil profile is Essendon (714d) and these are developed over the whole of the Common (Figure 5.1). These soils are slowly permeable and seasonally waterlogged with a coarse loamy layer over clay soils. To the south in Moor Wood are Batcombe soils (582a) which are similar to Essendon and can show loamy over clay soils or sometimes silty over clay (not investigated in this survey), but these usually produce a heavy soil which is also seasonally waterlogged. The soil is slightly more silty in character on the west side of South Meadow and so this probably indicates Reading Formation at outcrop, potentially with the sand layer present (although the soil is by no means sandy, so this is a minimal influence and likely to be a very thin or discontinuous layer).

Soil changes dramatically as the Chalk outcrop is encountered in Moor Copse (at the sink hole) and these soils are Newmarket 2 (343g) type which are shallow, well-drained calcareous soils over Chalk rubble.

The nutrient level for Essenden soils is low which means that it can be greatly altered by land management and will be particularly sensitive to the application of manure, lime or other fertilisers, with the acid grassland, heath and acid woodland areas being the most susceptible. However, the low nutrient level provides perfect conditions for a wide ranging biodiversity of specifically adapted, uncommon or even rare species for the this part of the Chilterns. Natural England have described Moorend Common as the most species rich common in the Chilterns.

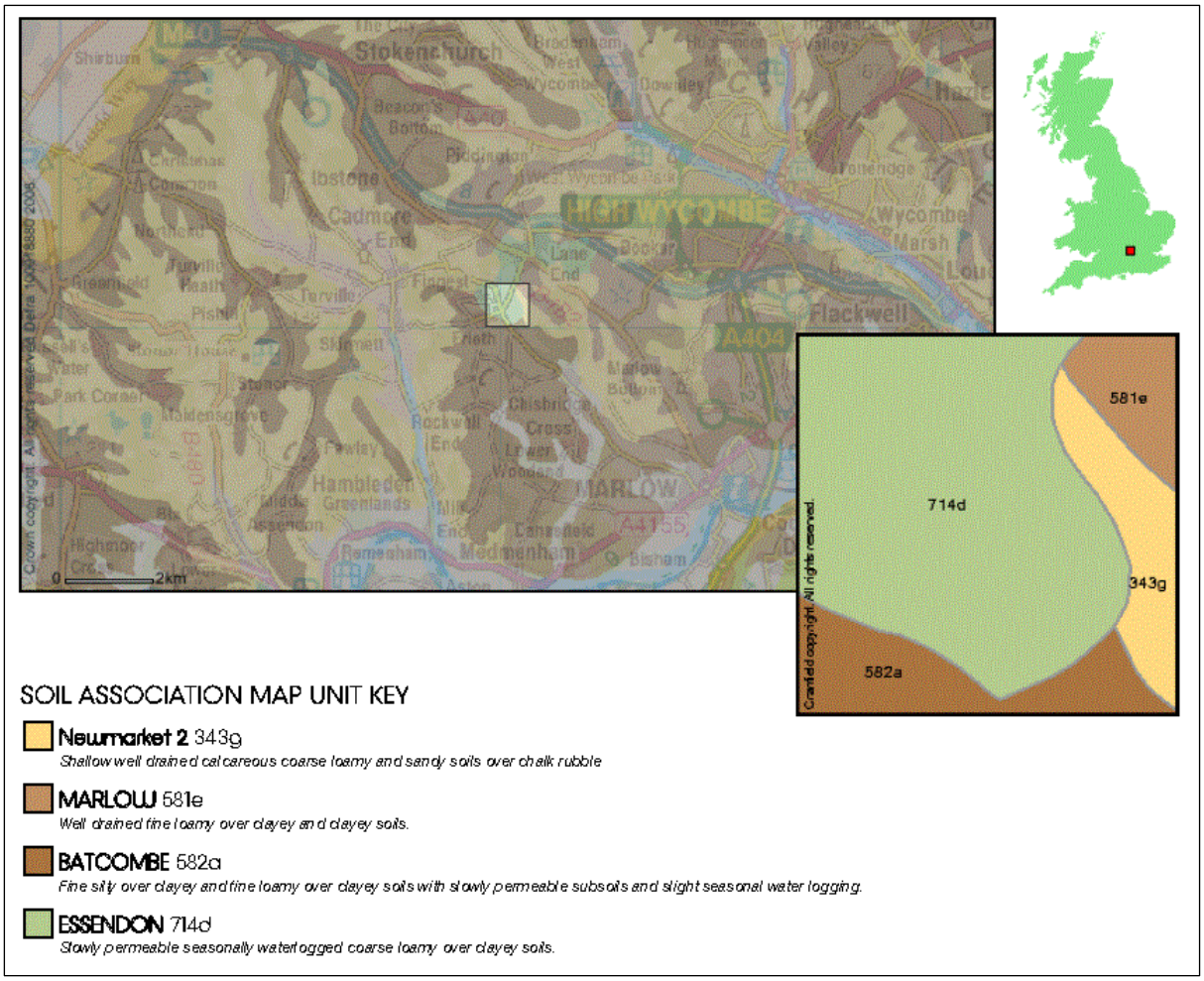


Figure 5.1 Soil association map of the region with inset for Moorend Common to Moor Copse and Moorend Wood.

Within the Essendon group there are several soil profiles, or soil associations, and these are listed below and shown in the sample soil profiles of Figure 5.2:

ESSENDON (Ez): light loamy over clayey drift with siliceous stones
OAK (Oq): medium loamy over clayey drift with siliceous stones
WICKHAM (Wh): medium loamy or medium silty drift over clayey material passing to clay or soft mudstone
BERKHAMSTED (BK) light loamy over clayey drift with siliceous stones
HORNBEAM (HV): medium loamy over clayey drift with siliceous stones

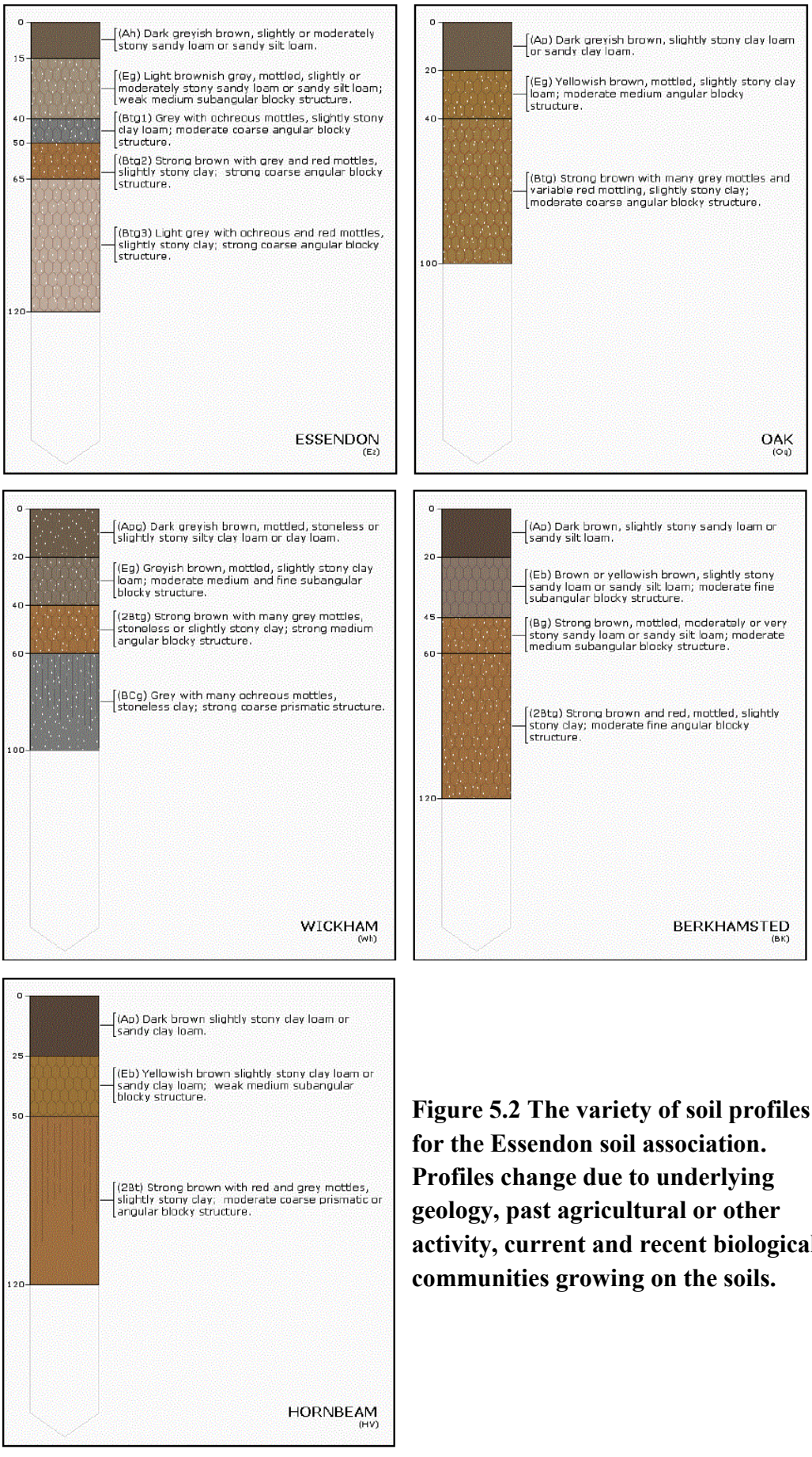


Figure 5.2 The variety of soil profiles for the Essendon soil association. Profiles change due to underlying geology, past agricultural or other activity, current and recent biological communities growing on the soils.

6. Archaeological background to Moorend Common

This section provides a brief overview of the archaeological background pertinent to the features that could be seen as earthworks on the common and potential features that may lay hidden beneath the surface. It necessarily involves some of the historical records as these provide information on where features may be seen today and events that may have altered them in the past. For more detail on the historical aspects of Moorend and Frieth see the bibliography for the address of the Frieth History website and other references.

There are no records of the earliest hunter-gatherer communities on the Common. This information would only be gained by chance finds of stone tools. However, supporting their presence in the area, nearby locations have produced many stone artefacts. For instance, Palaeolithic tools have been found on many parts of the nearby Chilterns and down the Hambleden Valley. Large numbers of Mesolithic (10,000 to 6,500 year old) stone tools were found at Marlow as well as small assemblages at Cadmore End – showing signs of winter and summer camps for these people. It is clear from the locations of these tools, and of the evidence of the first farmers of the Neolithic period (6500 to 4500 years ago) that habitation would be near water sources (rivers, streams or springs) and on arable soils. It is therefore highly unlikely that people from these eras show a permanent presence on the Common, but it may have provided food for hunting and gathering opportunities – as indeed it does today!

In the intervening eras from the Bronze Age through to the early Medieval period, only one find indicates a presence in these parts – an Iron Age coin called a Belgic stater – which was found by the road at the edge of North Common at SU799 906. It is tempting to infer that the road running past the Prince Albert pub today was already a track used in the Iron Age. This might form the basis for future research into the wider landscape around Moorend Common.

There are no references to Moorend or the immediate surrounding hamlets or villages in the Domesday record. However, place names are a useful start for determining any pre-Domesday Anglo-Saxon, Norse or ‘Celtic’ (Iron Age) presence. Place names may indicate how landscape, ownership and/or land use may have changed over the millennia. Moor is a problematic name to be certain with nationally, as it can be derived from both ‘mor’ or mere’. Nationally it is often impossible to separate this from mere meaning lake, but it is highly unlikely there was ever sufficient standing water on the Common to have been derived from mere. Hence, from the landscape evidence seen at Moorend Common (and Moor Common to the immediate north) it is derived from either mõr (Old English) or Mór (Norse), but both mean marsh or barren land (Gelling & Cole 2003; University of Nottingham 2013). Norse (Viking) would not be an impossible derivative for this example, as Norse names exist close-by – as Frieth, Fingest and Skirmett. The village name ’Frieth is derived from Norse *fyrhth(e)* and is a woodland term meaning ‘land overgrown with scrub on the edge of woodland or forest’ or ‘scruffy wood’. The term is common across England for similar environments and the spelling becomes corrupted to numerous forms. Skirmett means the ‘shire meeting place’ and Fingest ‘cleared of trees by burning’. It is a suggestion, but not proven, that any Norse

communities appearing in the heavily wooded Chilterns may have escaped the persecution in Oxford during the 10th century.

The next appearance in the archaeological record is a village called Ackhampstead which may well be located to the northeast of Middle Common (around SU 807 907; No. 9 on map Fig. 7.2). The name can be broken down into Old English derivatives of Ack = oak; ham = settlement; stead from *stede* = place (often enclosed). So the basic translation is the 'oak homestead'. There are still numerous oaks on the Common. The village was mentioned in 1242 in the registers of the Bishop of Lincoln, which describes the pre-Domesday existence of the village due to the donation of the land by Edward the Confessor and Eadditha his queen, giving the village to Abingdon Abbey in 1052. In the register of the history of the Abbey it is referred to as 'Hachamstede' and it explains they gave the land "in sorrow at the under-nourishment of the younger monks". In the register it is also linked by name to 'Chyssobock'. It is a suggestion that this might refer to another place – that of 'Chisbeach' on the 1770 map (Fig. 6.1) and Chisbridge Farm of today. Ackhampstead is discussed further in the discussion of archaeological features remaining visible in Section 7.

The tithes and rights belonging to 'Achampstead' were recorded in an inspeximus dated 20th November 1412 (Oxlade family history, 2013). In this document it states that this was a district having its own tithes and for which there was to be a chaplain at all times. Therefore the church must at least date to the 15th century, but it is suggested as 14th century in the Oxlade family history website, alongside a use for the acorn woods as pannage for pigs belonging to the monks.

There are no manorial or other estate maps in existence for the area of the common, but there are several historical maps commencing with Jefferys 1770 (Figure 6.1), followed by Bryant 1825 (Figure 6.2) then the Ordnance Survey series from 1883 (Figures 6.3 to 6.12).

In the past Moorend Common has been referred to as Moor End Common and also as Moors End Common. Note: it should not be confused with Moor Common which lies immediately to the north end of this Common and has always been distinct and separately managed, originally partly as Ackhampstead.

Jefferys 1770 map (Fig.6.1) calls it Moor End. He notes an area adjacent to the Common (east side) as 'Part of Oxon' and a chapel is clearly marked on the east side. The Lane End to Frieth road (spelling of 'Freeth' on the 1770 map) is an unmetalled track. The main N-S footpath across the common today is marked on this 1770 map as a wider track, and hence presumably also used for carts in addition to those on traversing on foot.

There are many local names recognisable on the 1770 map, albeit with different spellings. On Jefferys 1770 map the word 'OXON' refers to an old County boundary which was a detached part of Lewknor-up-hill and therefore part of Oxfordshire (See Fig. 7.8). Lewknor had also been granted to Abingdon Abbey and hence this may explain the reason Ackhampstead was

not separately included in the Domesday book – as it may have been included within the 17 hides for the Abbey in Lewknor (CAS record 1203, HER).

Figure 6.1 (a) Moorend Common and wider area, Jefferys 1770

Figure 6.1 (b) Close up of Moorend Common, Jeffreys 1770.

Bryant 1825 (below) shows a similar situation of an open Moorend Common with a heavily wooded Moor Copse and ‘Perry Spring’ at the location that Pond Cottage stands today. Interestingly Bryant shows the main track from Lane End to feed west of the present location and into ‘Little Freeth’ with ‘Great Freeth’ (the location of the present Frieth village) having several houses as a roadside community, but no direct road other than what appears to be a footpath to Lane End (Little Freeth thus appears to have more importance).
Ackhampstead and its church are very prominent (here the spelling is without the ‘p’).

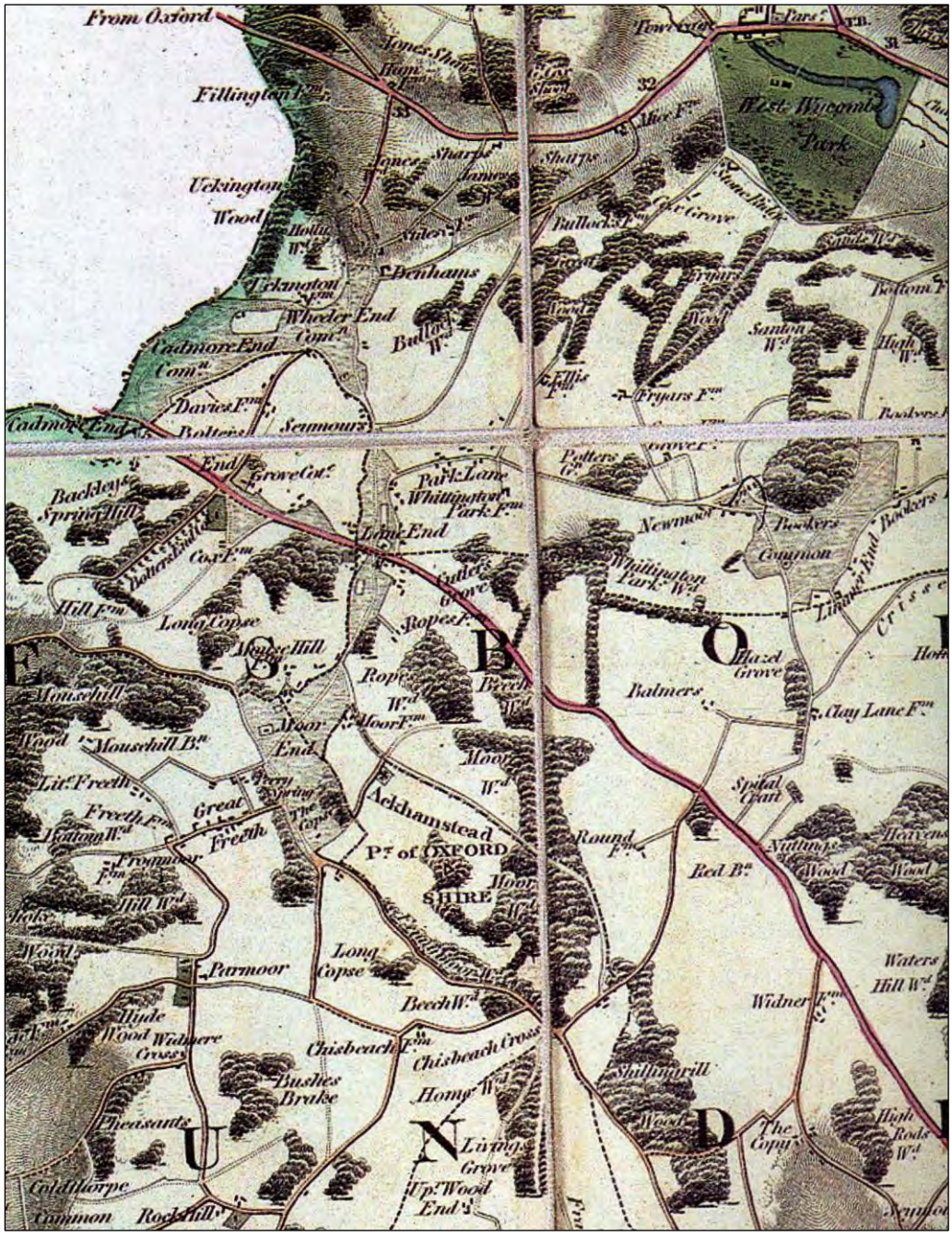


Figure 6.2 (a) Bryant 1825 of Moorend Common and the wider area

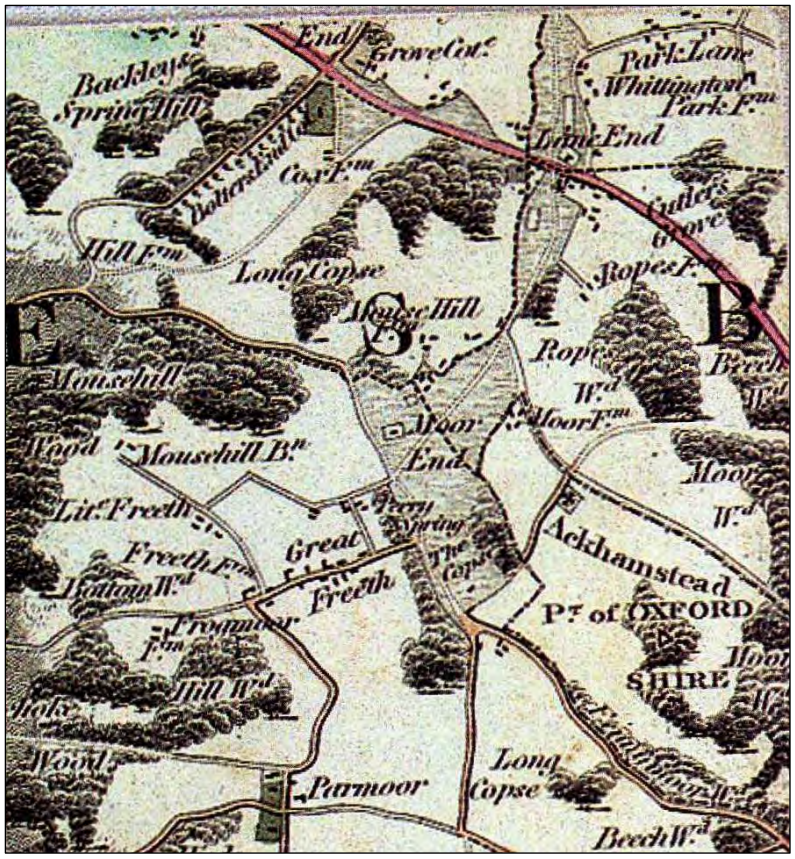
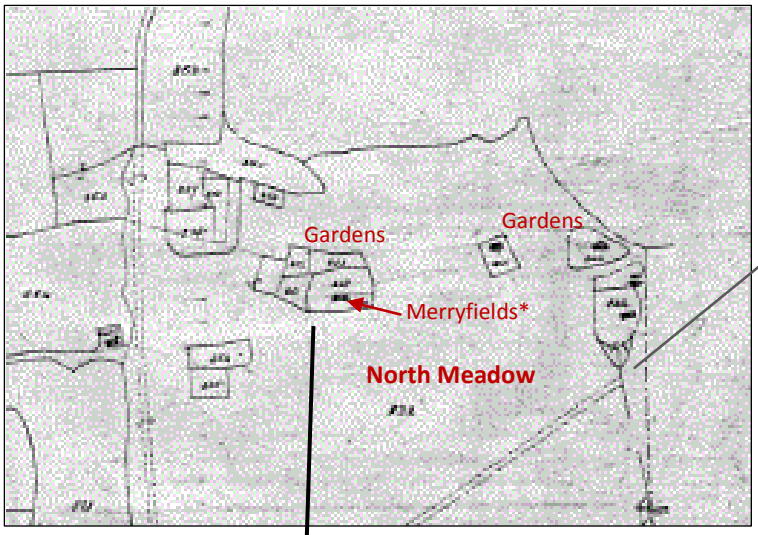


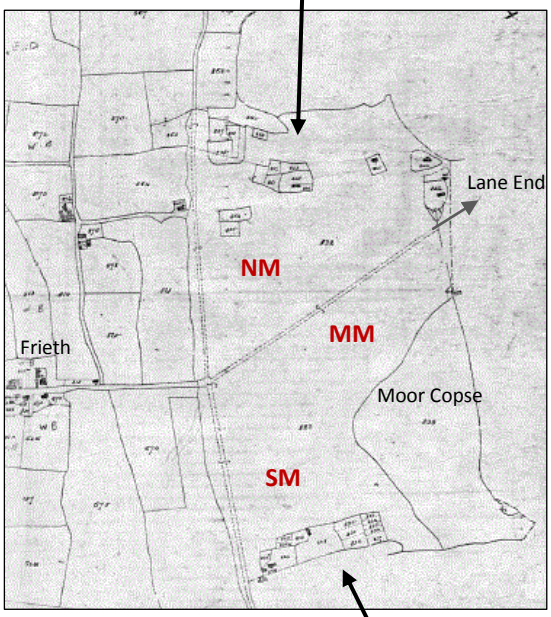
Figure 6.2 (b) Close-up of Moorend Common, Bryant 1825

Moorend and the wooded copse must have been a much used area for the residents of Ackhampstead. Ackhampstead continued as a detached part of the parish of Lewknor-up-hill until 1844, when it was transferred to Buckinghamshire by the Counties (Detached Parts) Act of 1844. At a meeting held in 1847 by the nearby Cadmore End residents (also in detached ownership as Lewknor-up-hill Parish) it emerged that their population had increased to 114 people and it was recorded that Ackhampstead had declined to 58 people living in two farmhouses and ten cottages (Bell, 1998). The residents therefore resolved to have the chapel at Ackhampstead moved to Cadmore End. At a hearing of the Consistorial Court of the Diocese of Oxford in April 1848 it was resolved that the church at Ackhampstead could be taken down and the stone used to build a new church for Cadmore End (to be named St Mary le More) and the residents of Ackhampstead would be able to worship at a new church to be consecrated in Frieth. In 1885 the division of Lewknor-up-hill was divided up and handed to other authorities. Ackhampstead was transferred to Great Marlow parish in 1895 (Page, 1925). In 1934 the western side (which includes Moor Farm) became part of Fingest and was re-named Fingest and Lane End in 1937 (GB Historical GIS, 2013), but is now part of Lane End Parish.

The 1845 tithe map shows Moorend with Moor Copse with precisely the same boundaries as in maps following this date. It is remarkable how the wood, common and footpaths have been maintained precisely for a very long time. The tithe map lists the owners and occupiers of several cottages, gardens and a couple of orchards on South Meadow and the west side of North Meadow. (By the 1940s the gardens in South Meadow had become allotments.)

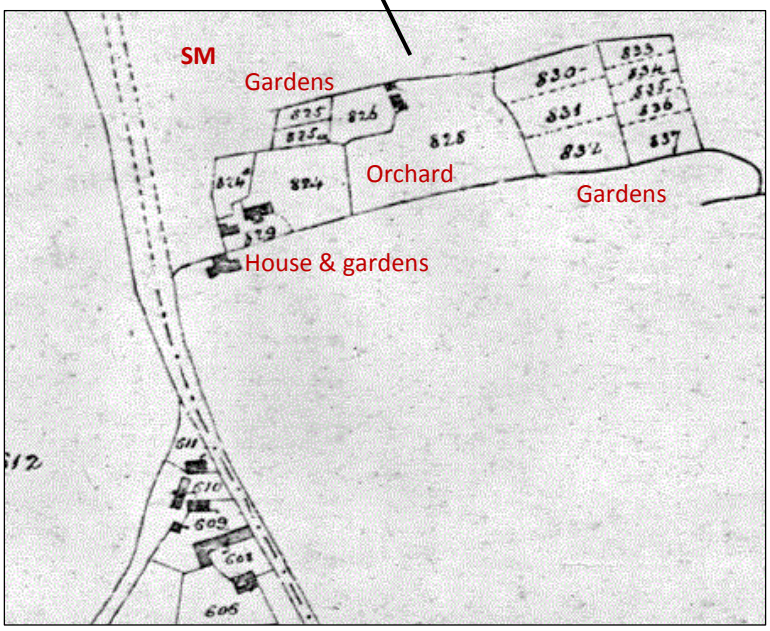


Detail North Meadow



NM	North Meadow
MM	Middle Meadow
SM	South Meadow
*	*Original name*

Moorend Common tithe map extract 1845



Detail South Meadow

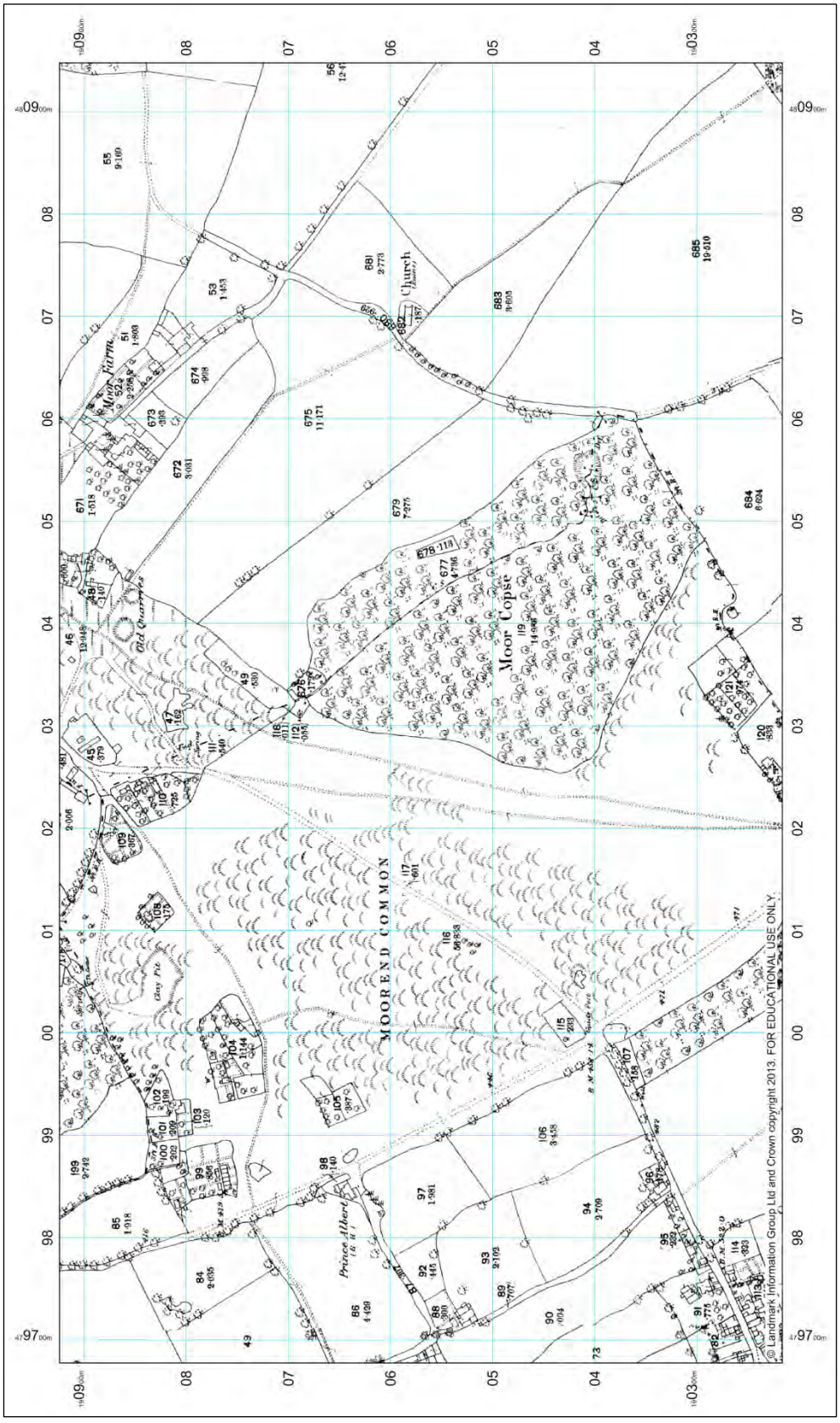


Figure 6.3a The 1883 Ordnance Survey map, 1st edition. Scale 1: 10560 showing the wider area around the Common. For a close view showing old quarries and the church ruins see Fig 6.3b. For a close up of North Meadow with Moor Common see Fig. 6.3c. © Crown copyright 1883.

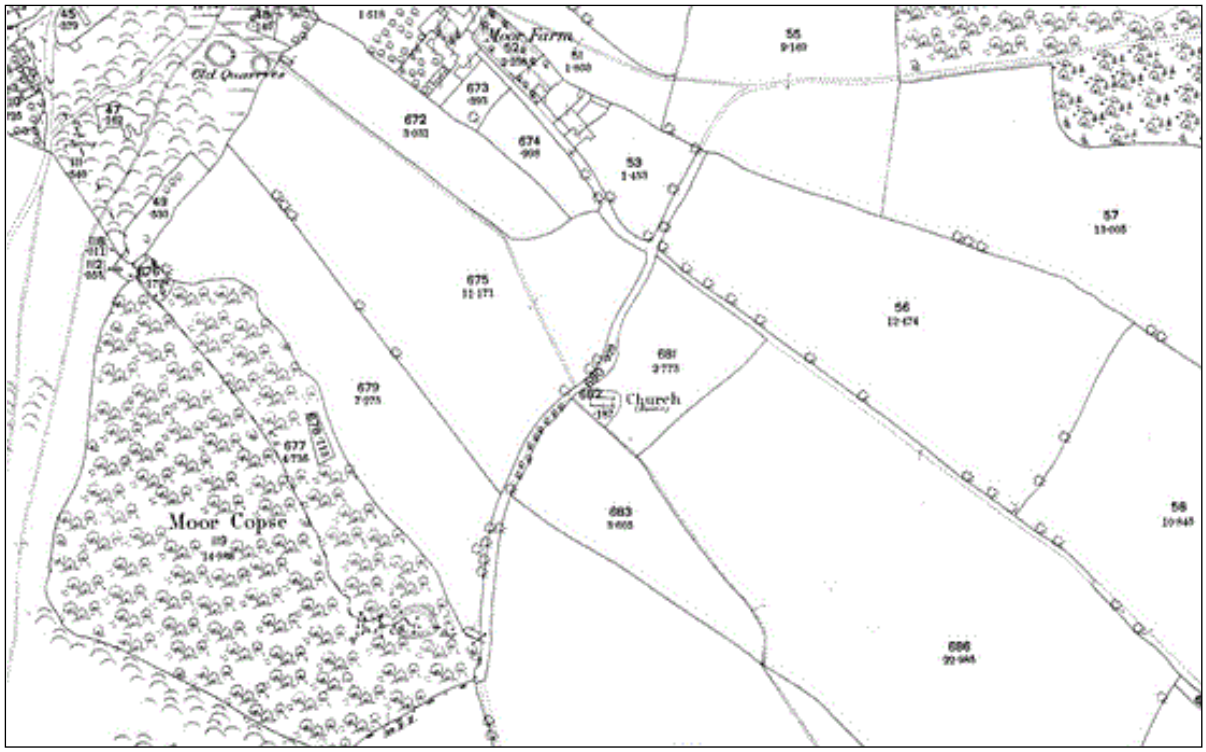


Figure 6.3 b Close-up of Moorend, Moor Copse, old quarries to the north and the Ackhamstead church location. © Crown copyright 1883.

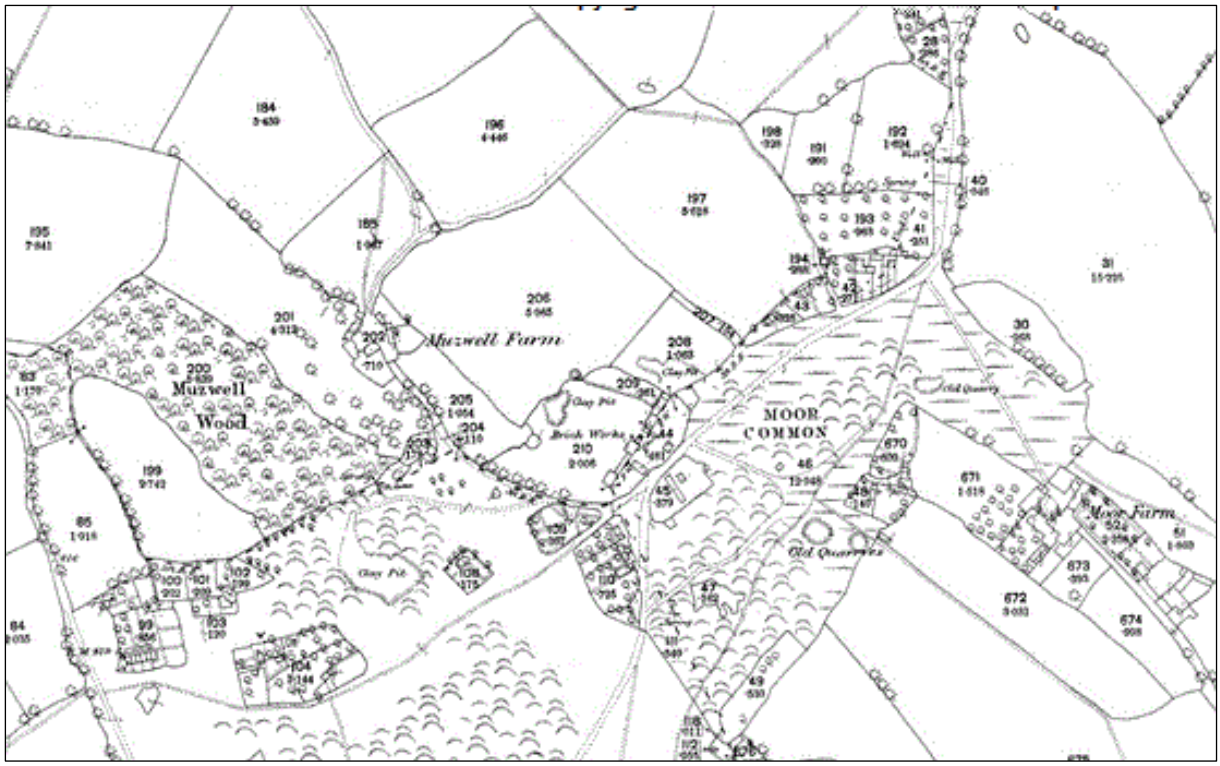


Figure 6.3 c Close-up of the 1883 map showing clay extraction areas and the location of the brick works.

From the 1883 map of Figures 6.3 a, b and c above, it can be seen that Moorend Common (as the current South, Middle and North Meadow areas) remains relatively open and Moor Copse remains very well defined woodland. There are already old quarries on Moor Common with a large one opened up on the North Meadow of Moorend Common. The brickworks lies just north of both extraction sites. The large area for the works would be required not just for the kiln, but for clay processing, brick manufacturing and drying areas, as well as some storage of the finished product.

The pond in Moor Copse is in place by 1883, presumably for animal use. Also on the 1883 map (Fig. 6.3b) the chapel of Ackhampstead is ‘ruins’ as St Mary le More at Cadmore End has been built from stones taken from the demolition (Figure 6.4).

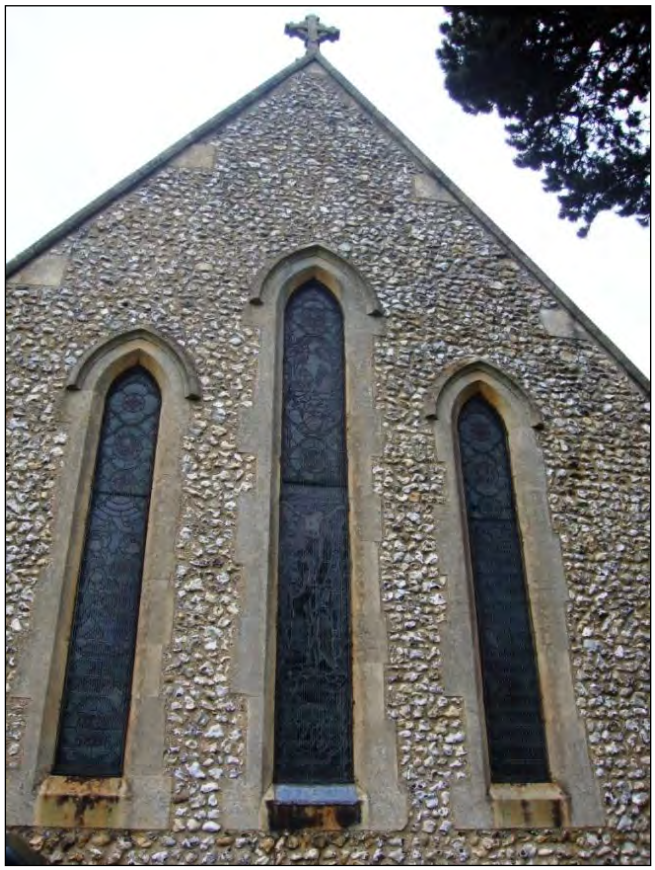


Figure 6.4 Two photographs of St Mary le More in Cadmore End taken in 2013.

The church has utilised stone taken from the demolition of Ackhampstead church. Most of the stone in the structure is flint in mostly natural (unworked form) with some crudely knapped. There are also a few sandstone cobbles. The corner blocks of Portland Limestone are the 19th century sourced stone. This tallies with the ruins of the church near Moorend which show foundations of similar flint, no doubt sourced locally.

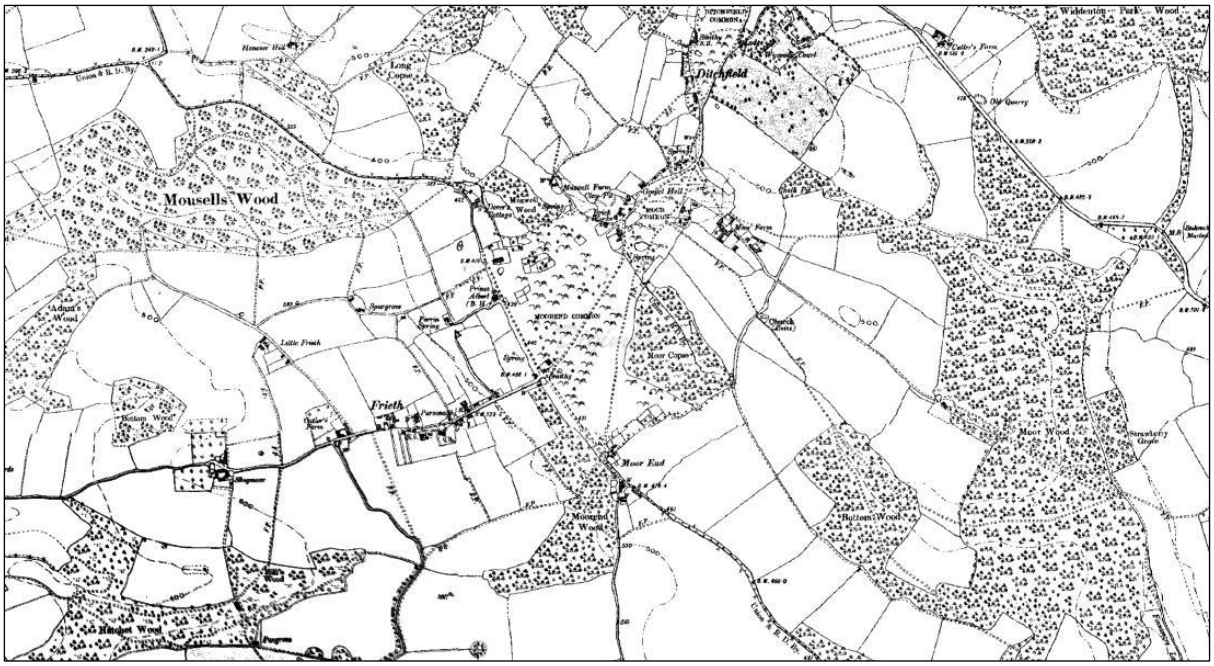


Figure 6.5 The 1900 Ordnance Survey 1st revision to the 1: 10560 map. © Crown copyright 1900.

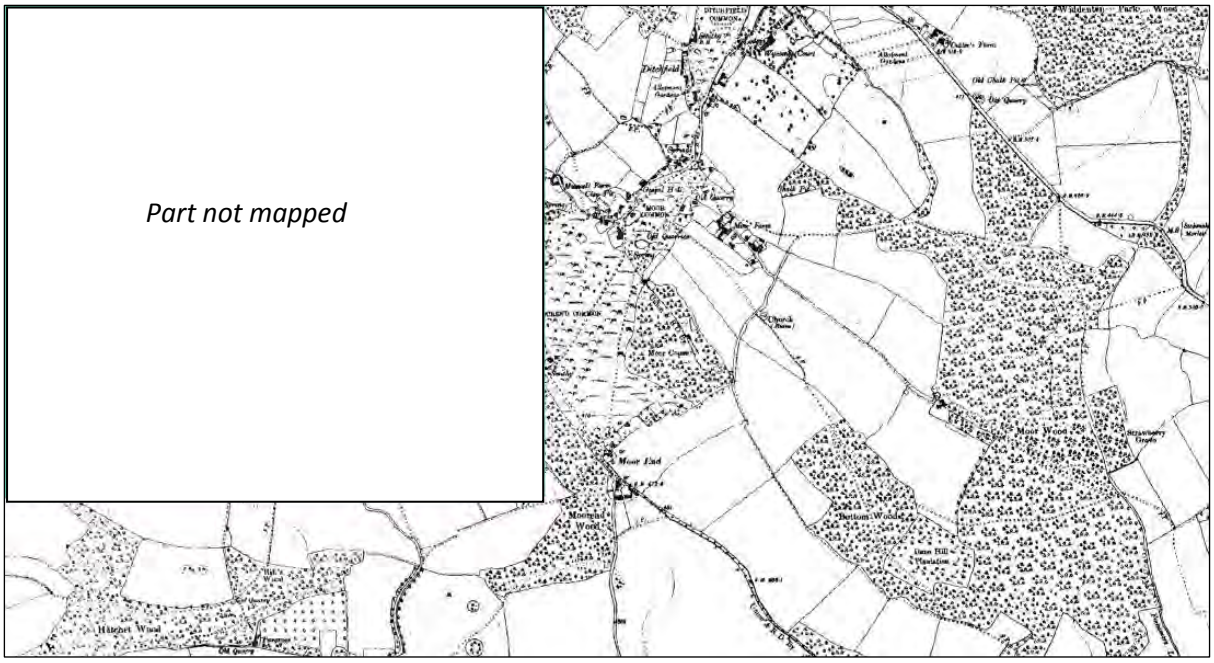


Figure 6.6 The 1910 Ordnance survey map 1: 10560 scale. © Crown copyright 1910.

Both the 1900and the 1910 maps show a very similar road, field and track layout to the previous 1883 map, no quarries mapped. The footpath across Middle Meadow is now well established – having as much prominence as the Lane End to Frieth road, which is not yet metalled – both are cart tracks and/or footpaths. South Common has garden plots still delineated as does the west side of North Meadow, which have been in place, but not further developed, since the 1845 tithe map shows numerous gardens and some orchards.

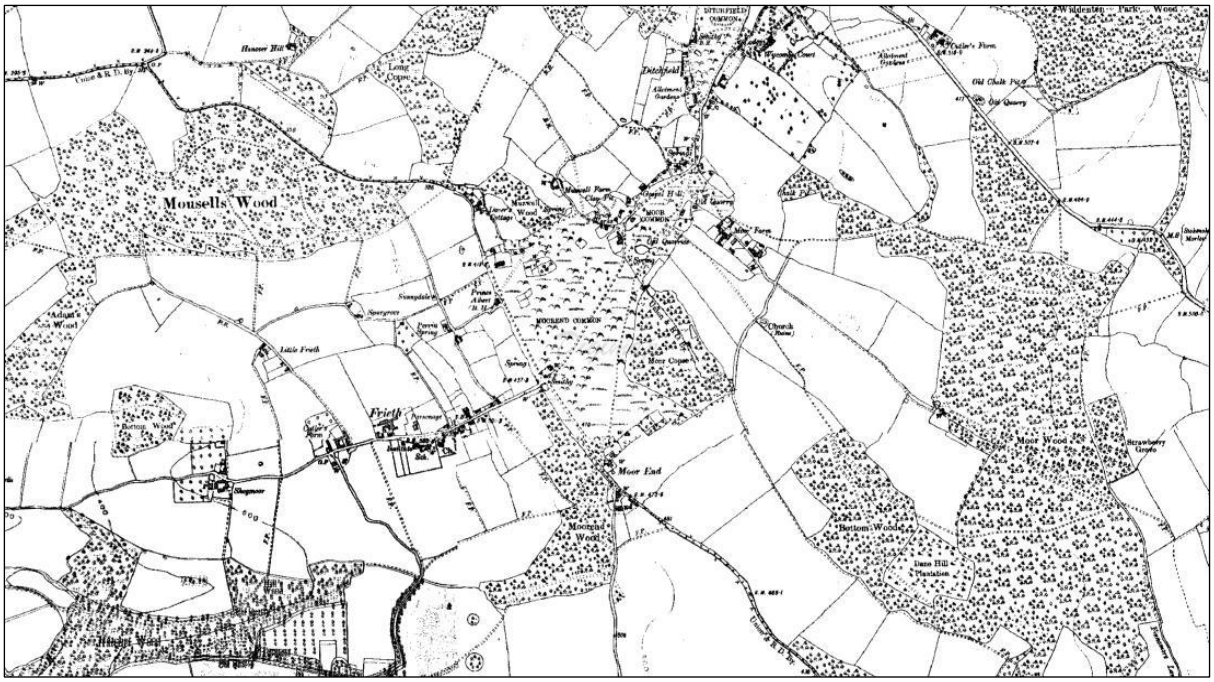


Figure 6.7 The 1922 Ordnance Survey, 2nd Revision to the 1: 10560 scale map. © Crown copyright 1922.

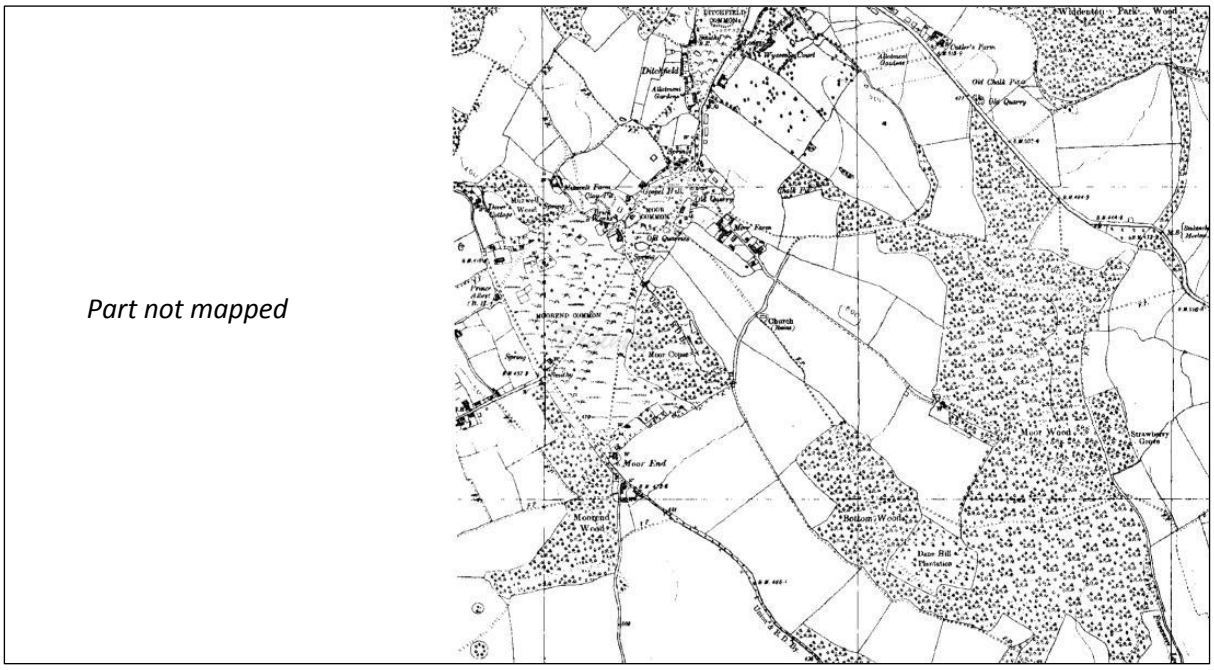


Figure 6.8 The 1938 Ordnance Survey, 3rd Revision to the 1: 10560 map. © Crown copyright 1938.

The 1922 and 1938 maps (Figs 6.7 and 6.8 above) show a virtually unchanged picture for Moorend. However in each of these series of maps have no quarries been shown for Moorend, and although the brickworks closed around 1910, quarries were mapped during the 2012 survey which were sufficiently large to be mapped. Their omission is due to mapping error or to incomplete surveying. Note: the Lane End to Frieth road is still not metalled and

remains a simple cart track, but more buildings have sprung up around the common edge (south and northwest).

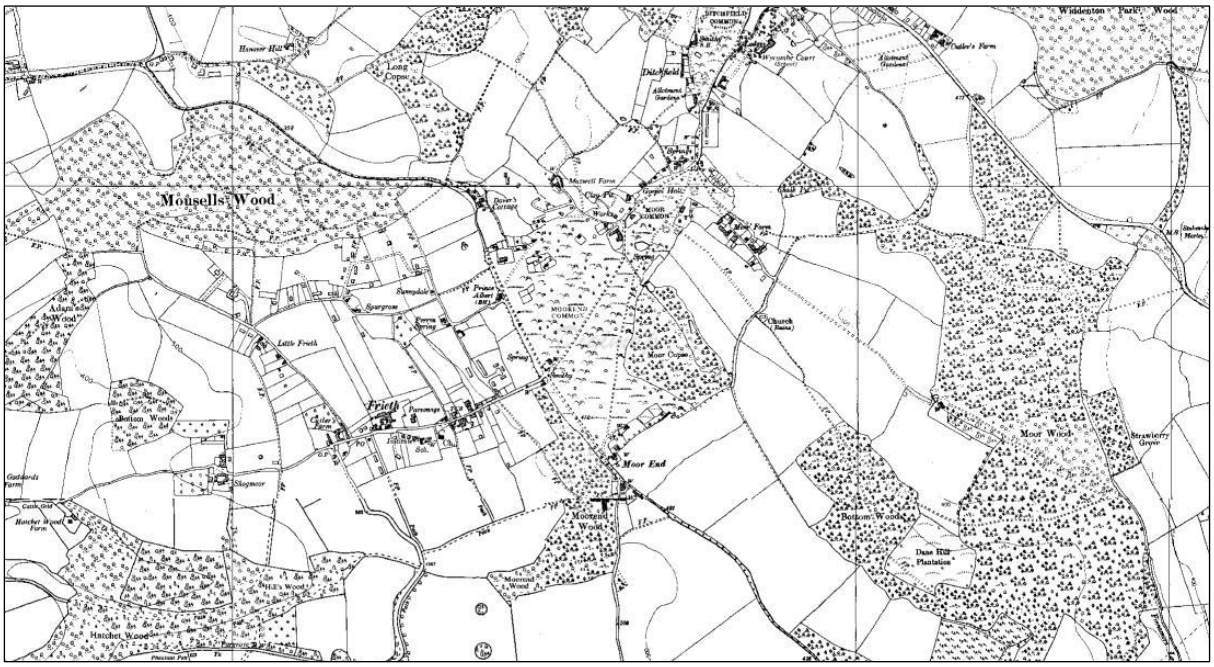
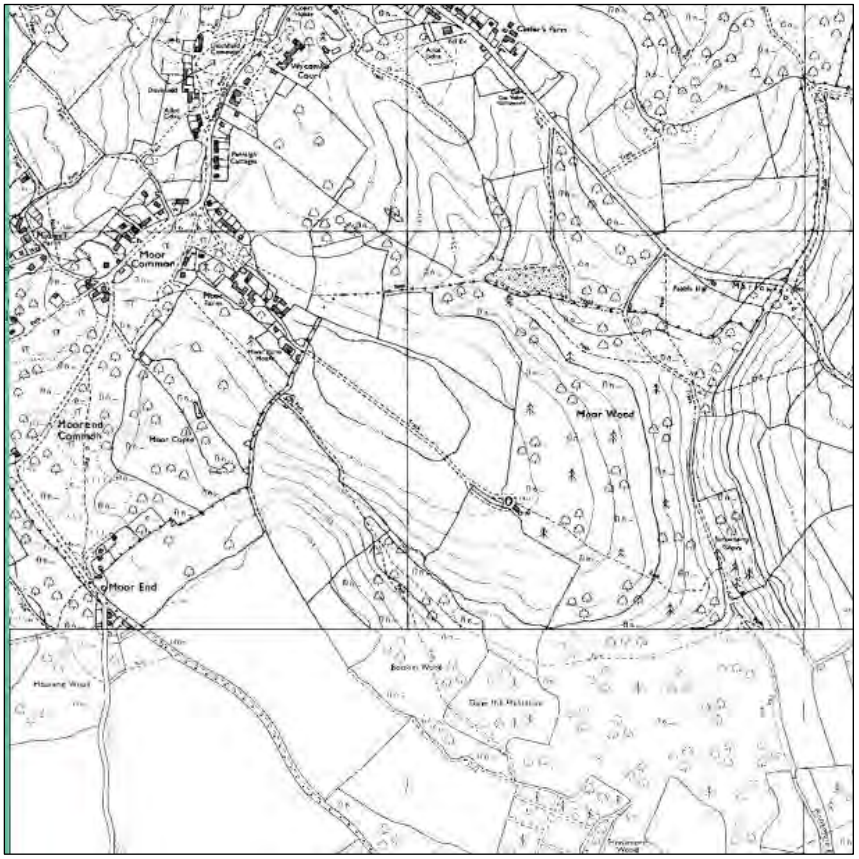


Figure 6.9 The 1967 National Grid 1: 10560 map. © Crown copyright 1967.



These are both remarkably similar maps to previous years, excepting that during the 1940s the Lane End to Frieth road had been finally formalised with a tarmac surface.

Figure 6.10 The National Grid 1977 1: 10 000 scale map. Crown copyright. All rights reserved. Licence No.100051837.

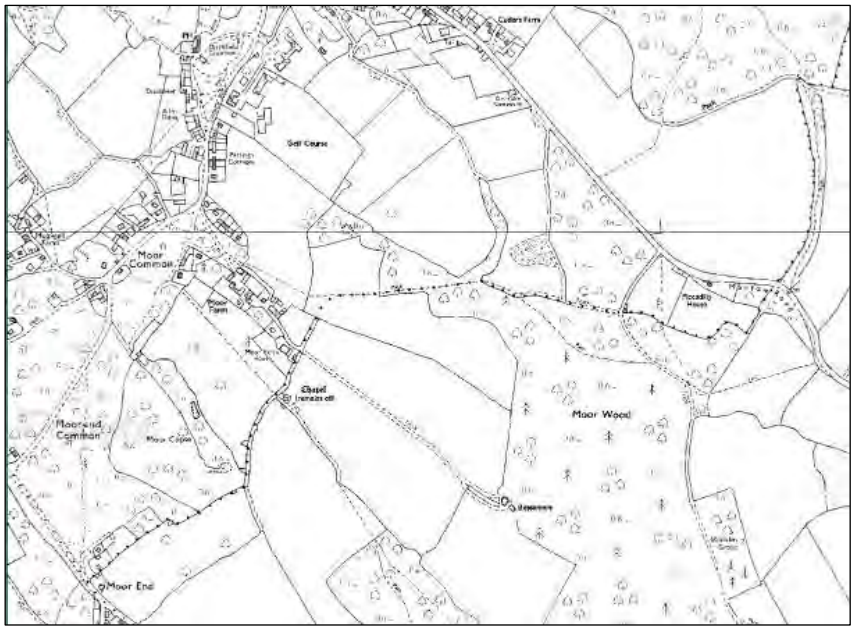


Figure 6.11 The 1994 National Grid 1:10 000 map (partial revision). Crown copyright. All rights reserved. Licence No.100051837.

7. Archaeological feature survey of Moorend Common

During November 2012 a team of local volunteers assisted a survey of Moorend Common in order to assess archaeology that may still be visible from both that documented on previous maps (section 6) and also to explore any further archaeology which might be detected by a landscape survey. In order to link features into the landscape and interpret successfully, the geology and soils were assessed at the same time. Pits, ditches and banks were measured using hand tapes and staffs, and geophysical 2D section profiling of a major ditch was undertaken. The results are plotted on the base maps of Figures 7.1 and 7.2 and the following account lists and describes the features on these two base maps.

As for many commons, activity occurs mostly around the common edge. This is where those using the grazing and wood rights are living, and where there is also an industrial presence in the form of quarrying and brick-making.

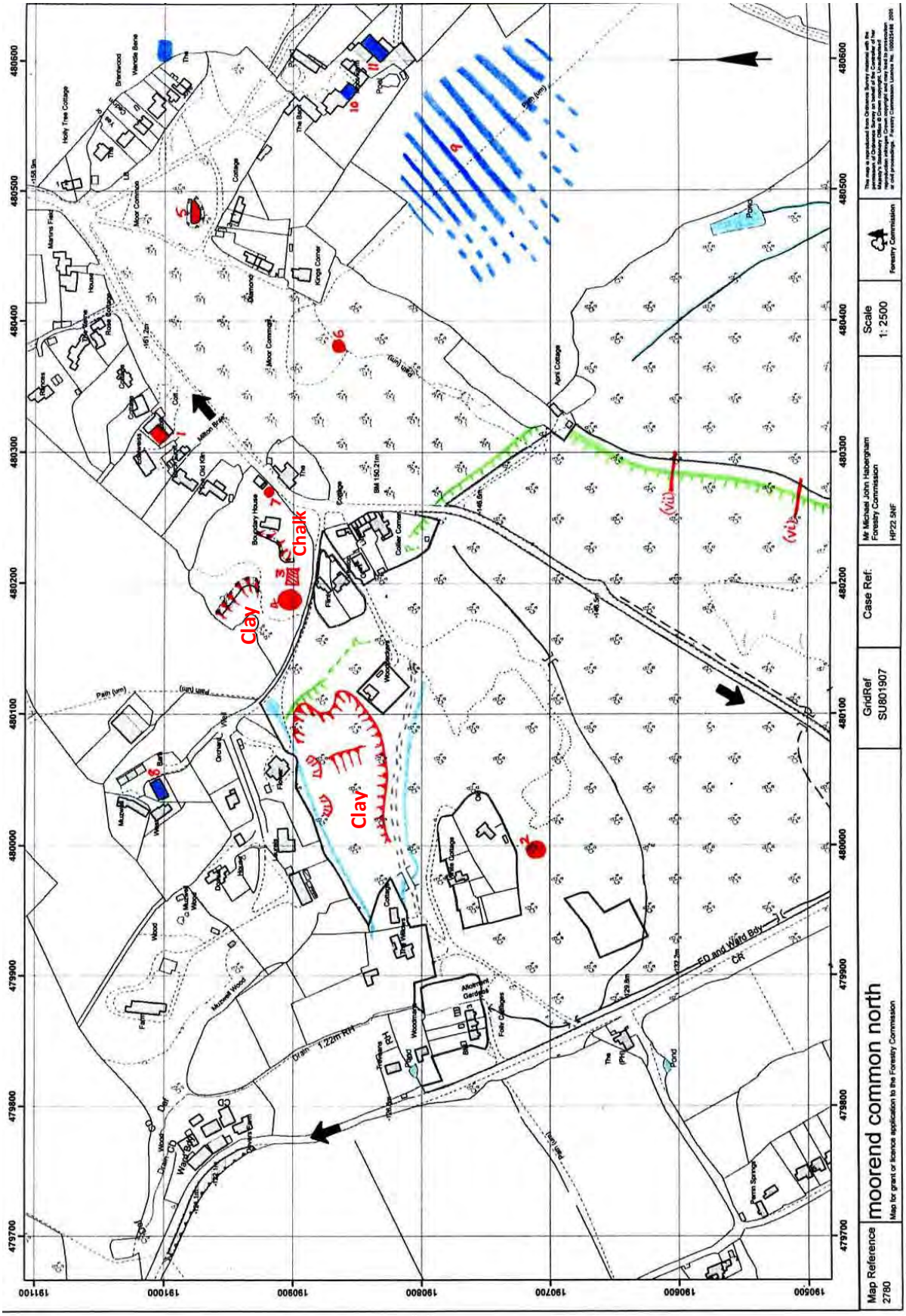


Figure 7.1 Moorend Common showing archaeological features on North and Middle Meadow as well as adjacent areas of Moor Common and Moor Copse. (Key over page.)

The features marked on the north area map of the Common (Figure 7.1) include pits and ditches discovered on the survey in addition to those appearing on historical maps. Only Common areas were visited; no private property was investigated, as described below. Clay and chalk pits, as well as the brick kiln are marked in **red** and historic houses are marked in **dark blue**. A major boundary ditch is marked in **green** and waterways and ponds in **blue.**

Features on the map of Figure 7.1:

1. **Clay pit** (SU 803 910). This pit is shown on the 1st edition OS 1883 (surveyed in 1880). There are no pits indicated on Bryant's 1925 map, but four large pits have appeared with a brick works on the 1883 OS map (Figs 6) The pit was therefore present from at least 1880 and must have been active all through the 1880s and 1890s as it is shown as a much larger pit on the 1900 OS map, extending to the northwest of the modern housing of Edelweiss and Birchcroft. It is sited on the Reading Beds Formation clays, which are of top quality for brick-making.

2. **Clay Pit** (SU 800 908). This pit was sited on the central North Meadow. Similar to clay pit 1 of this map, it is mapped on the 1883 OS sheet and therefore has a similar date from 1880, but as it is not shown on the 1900 OS map, its closure must have occurred at some point during the 1890s. The brick kiln is central to both pits 1 and 2 and is marked as 3 on map Figure 7.1. Other pits are close-by.

3. **Brick kiln** (SU 802 909). The brickworks were located on the site of today's Boundary House (built in the 1920s) and many of the bricks for the house were gained from the demolition of the kiln. There is no part of the structure visible today, but next door is another house called 'The Old Kiln'. Boundary house garden shows considerable evidence of quarrying – the largest faces shown on Figure 7.1 by red hachuring. One pit within the Boundary House gardens was for clay and the other for Chalk and is the site of a bell pit (mine, No. 7). The site is also surrounded by other clay pits (marked numbers 1, 2 and 4 on the map which have been recorded on County records, but the largest clay extraction area lies to the east-south-east within grid square SU 908 800, where it was surveyed during this project (Figure 7.3, discussed below). The brickworks was built at some time between 1825 and 1880, on map evidence. It was still in use until the earliest 1900s, but was closed and not on the 1910 map. It was demolished by 1920, with bricks providing material with which Boundary House was built within the same grounds.

4. **Brickworks and associated features** (SU 801 909). Sited adjacent to the kiln (3 above). Built as part of the brickworks auxillary building, no further information was traceable except that one of the buildings was used as a garage for Boundary house when built in the 1920s.

5. **Quarry** (SU 805 910). This quarry is at the northern end of Moor Common and was extracting the Reading Formation clays for brick-making. This appears on the 1883 map

(surveyed 1880). Moor Common is seen to be the first extraction areas for clay for the new brickworks – further pits subsequently opened up on Moorend Common.

6. **Quarries** (SU 804 909). Shown on the 1883 OS map (surveyed 1880) and part of the first extraction areas on Moor Common, again exploiting the Reading Beds clays.

7. **Bell-pit, a form of Chalk mine** (SU 803 909). EH monument No. 1029106. These are sometimes called 'dene holes' in the literature. On the east side of present-day Boundary House, and close to the road, a shaft was reported in 1978 (Farley 1979). An investigation revealed a shaft entrance approximately 1.6 metres in diameter which was lined with blocks of sandstone. The sandstone reinforced the top sediment of loose Reading Formation clays and/or sands. At 5.5 metres depth the shaft opened out into a bell shaped chamber cut out of the chalk, which was 11 metres from top to base, the whole mine being 16.5 metres deep. Five galleries spread out from the main shaft and pick marks were evident on the walls. It appeared that a fault had caused excavation to stop – and this fault trending NW-SE is now known to be the northern edge of the Moorend Common graben (Section 4). There was heaps of chalk in prepared piles in the bell-pit. This indicates that some size reduction of quarried material was undertaken before hoisting it to the surface. Chalk mines, especially as bell-pits have a history in the Chilterns (e.g. Ivinghoe, Naphill, Speen and Hambleden are just a few locations where examples are known). Most mined chalk was for use as lime as obtaining the chalk at depth produced a better quality product for this purpose. Chalk was also used for road making (local knowledge), but this may have been sourced from several small open chalk pits, one in Boundary House. Mining for chalk also did not 'sterilise' land by open quarrying methods, hence allowing surface land to be farmed or be available for other uses. There were no items that might date the workings, but the earliest Chalk mine ever recorded was 1733, with a peak production in the mid-1800s, such mining virtually ended by the early 1900s. It is therefore probably 19th century, but might date back earlier to the late C18th.

Historic buildings or house platforms:

8. **C17th timber-framed farmhouse** at Muzwell Farm (SU 800 910). A few of these houses to the north of Moorend Common show where quality housing was located from the 1600s.

9. **Settlement of Ackhampstead** from 11th century (SU 807 907, central point). In Section 6 the documentary evidence for Ackhampstead was described which indicates an 11th century start for this village. The field of the suspected location is arable and the farmer reported small areas of banks and hummocks had been levelled in 1960. Medieval and post-Medieval pottery has been found in the field and possible house platforms were seen on a field visit (HER office, BCC record 0120302000). The chapel (No 12 on Figure 7.2) is adjacent and formed part of the village.

10. **C17th farmhouse** at Moor Farm (SU 8057 9086). This is one of several buildings of this date north of Moorend.

11. C17th house at Moor Farm (SU 8065 9083). This is another of several buildings of this date north of Moorend.

12. **Ackhampstead chapel** (SU 8069 9058). Monument No. 248842. The site is overgrown, but currently this is visible as an earth platform with the base level of flint walls for a rectangular building measuring approximately 16.5 x 5.5 metres. The date is not certain, but is likely to be 13th century (the first mention was in 1242 in the Deanery registry of Aston (Rowant) and it was put in place for the growing population of Ackhampstead village.

Clay and Chalk pit areas to the northwest

The largest clay workings are on North Meadow (Figure 7.1) and in the past this area plus Moor Common provided clay for the brickworks. As mentioned above with the Brick Kiln (3) is lies and fills a large part of grid square SU 908 800 and is sited between modern housing of the Woodpeckers, Flower and White Cottages.

This pit appears on the 1883 map along with the brickworks. Both are part of the 19th century industry of the Common, with Moor Common offering the first clay extraction sites - seen as the two pits on Moor Common which are labelled 'Old Quarries' in 1883. This infers the large quarry in North Meadow became the active area and by far the largest extraction was from here by1883. It grew larger in size between the years of 1883 to 1900, but oddly it is not mapped on the 1900 or subsequent maps. It was present and certainly large enough to be mapped, although clearly no longer active. Presumably this was a mapping omission error which repeated itself on all later maps – as it still remains visible today (2013; Figures 7.3 and 7.4).

The extraction in the quarry was sand and clay. The orangey-brown, medium grained, iron-stained sands of the Reading Formation are very approximately 2 metres thick at this location. They overlay the Reading Beds clay. The tiny and highly rounded pebbles seen at the base of the deposit indicate that a thin horizon of the Upnor Beds is present – this is not a regular feature in the Buckinghamshire Reading Formation and thus represents a fuller sequence than that seen elsewhere in the County.

This large pit is currently divided into two sections, the largest being 55 metres by 30 metres. (The divisions are partly the lobed shape and partly vegetation which requires negotiating to enter both sides – north and south.) The height varies across the quarry being 3.2 metres at the north end, reducing to 1.3 metres, and then becomes 2.7 m further down at central south. The second section shows a steep 6 metre face at one end with a length of 45 m and width of 34 m. The total extraction area is therefore around 15,000 cubic metres, about half of this clay for the nearby brickworks. The sand would be for the construction industry. However this in no way gives a total production as immediately surrounding this pit is the evidence of many workings, some very sinuous where smaller 'threads' of clay have been chased.

The quarry has a step in the floor where the western end has been dug to a lower level (Figure 7.1) and there is a sudden drop with the edge of an old face to the house gardens at the north.

The works therefore seem to be a continuation of an expanding operation utilising both the sand deposit, which was stripped off first, and then removing the clay beneath. The excavation stops at the northern end as it meets a large bank. It was not possible to see if there had been a ditch (similar to the bank and ditch on Middle Meadow) as this had been removed at the far north end, and the remaining area was too overgrown to get sufficiently close to examine. The bank is orientated NW-SE and can be projected onwards where it would meet the major feature clearly seen as it emerges from Middle Meadow and into Colliers Corner (Figure 7.1).

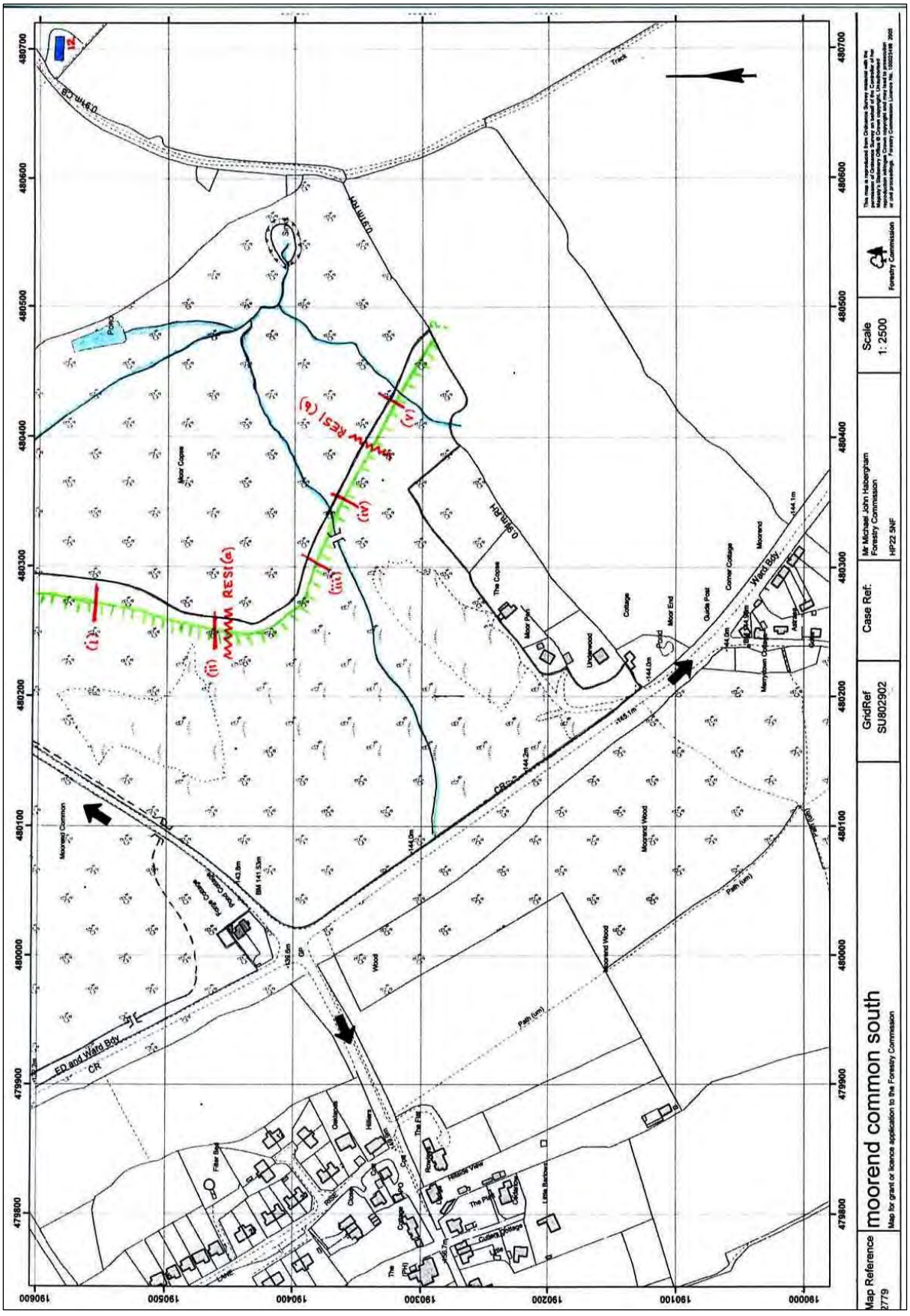


Figure 7.2 Moorend Common showing archaeological features on South and Middle Meadow. The two zigzag lines show the locations of the resistance profiles and the

roman lettering (i to vii) notes the locations for topographic profiles of the large bank and ditch (marked in green – with the ditch to the west, on the Moorend Common side). The pond and the four streams draining into the sink on Moor Copse are also shown.

Figure 7.3 Quarry North Meadow, behind Woodpeckers. Looking down from the top of the main face, the slopes are degraded and the area is returning to woodland.

Figure 7.4 Bank at the top edge of the quarry in North Meadow. Orientation of the bank is NW-SE, which is on a projected line to meet up with the large ditch and bank mapped on Middle Meadow.

Major bank and ditch

As the ditch is followed from North meadow, eastwards and on to Middle Meadow (Figures 7.1 and then 7.2) it continues SE until April Cottage and then turns south. From this point it follows the line of Moor Copse very closely.

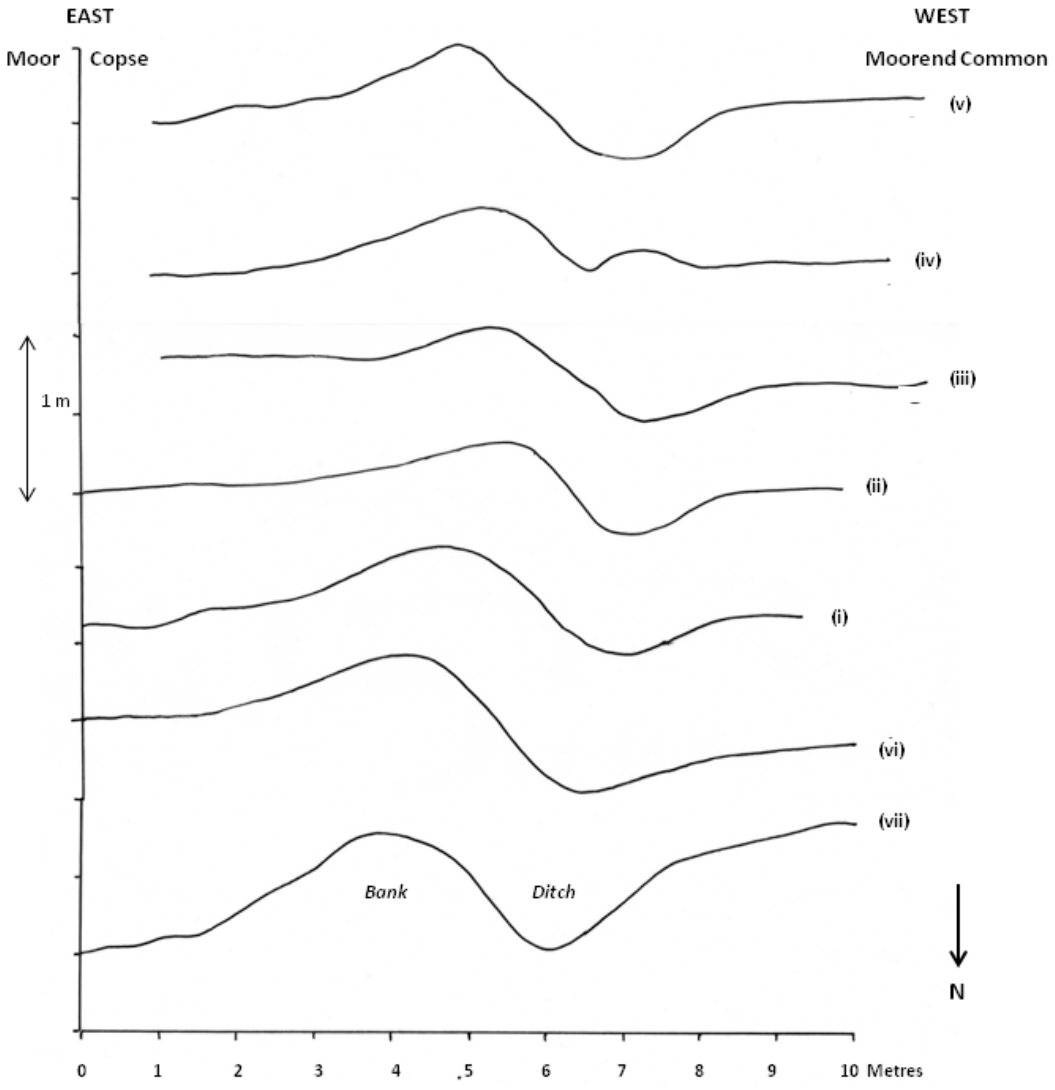


Figure 7.5 Profiles across the major bank and ditch bordering Moor Copse and present in both Middle and North Meadow. The ditch is on the Moorend Common side.

The size of the bank and ditch is significant to its age. A rule of thumb is the larger and wider the feature plus the more sinuous it is, the older it is. However, function must also come into this determination. The seven profiles (Figure 7.5) ranged in size with a bank height varying from 75 to 25 cm and a visible ditch depth of 80 to 25 cm. However, the original height of the bank and depth of the ditch would be considerably more than this due to erosion of the bank and filling of the ditch (the latter particularly active now as it is within woodland, Figure 7.6). The width is also significant being mostly 5 to 5.5 metres across from the bank to the ditch edge. This is a significantly large feature and indicates a pre-1700 date. The final depth of the

ditch would be required to make an assessment and this was determined by the geophysical technique of 2-D section profiling (below).

Figure 7.6 Bank and ditch defining the Moor Copse boundary with Moorend Common.

Resistance survey

A series of 2-D resistance sectioning was undertaken for the large bank and ditch. Although the bank is clearly seen as a topographic feature and the bank often a notable depression, it is of interest to know the total depth of the original ditch. Banks become significantly reduced in height and ditches fill up over time. The older banks and ditches are significantly wider and deeper. However, the technique requires as little present-day topography as possible. The bank has been worn down in places where pathways have been forged, and hence this technique becomes viable at those places. These are especially good locations as it can be easily judged where the ditch is located by viewing the intact areas either side.

The survey was set up to investigate the total depth of the original ditch. The ditch was placed central to the probe array. Profiling used a 20 probe array which is a non-destructive method revealing ditch depth and shape. The parameters set for the equipment were:

Array: =20 probe
Range = 20 ohms
Filter = urban 2.5s
Y = 20
X = 6
Pitch = 1.0
Logging mode = manual.

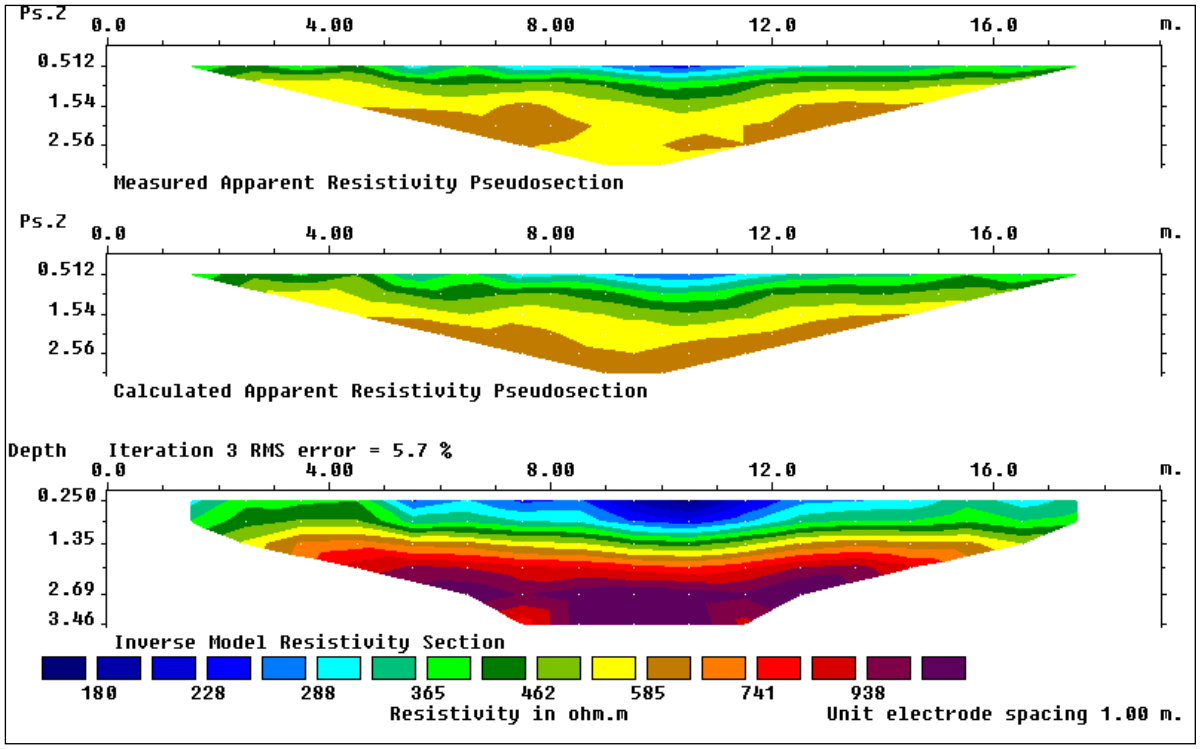


Figure 7.7 Results of the 2D section profiling of the large ditch running the full length of Middle Meadow and westwards towards the quarry on North Meadow. The 3 print outs are given above to show processing methods to the expert eye. The final section shown is the inverted result. As expected the ditch fill is low resistance and indicates a 1 metre depth and round bottom ditch, full of moist loamy fill but with stony or gritty layers in the base. The pristine geological layers (the green 360 ohm layers and below) represent humus, soil profiles, clay and maybe sands or a flinty layer. These almost horizontal layers show that little has occurred to disturb the sediment for a very long time (that is no notable ploughing).

The technique relies on an electrical current passing through the probes of the resistance equipment and into the ground. The wires are moved further and further apart during the survey so that the machine can record deeper and deeper into the ground. The measurements are of the resistance of the sediment layers to the electrical current (and hence the measurement value is in ohms). High resistance is characteristic of rock, pebbles, masonry walls, etc and low resistance occurs where moisture can penetrate, such as ditch fills. The result for one survey line is shown above in Figure 7.7. The other profile sections undertaken were unsuccessful due to the high rainfall and long period of water-logging of the clayey Common soils. This resulted in the current simply passing along a surface layer instead of passing through it (effectively short-circuiting the system). However, the one successful 2D electrical section survey along with the topographic profiles and mapping were sufficient to make conclusions on length, width, height of bank, depth of ditch, location, function and date constraints. It confirmed that this ditch is definitely older than the early 1700s. As it follows the Moor Copse boundary quite closely, but then turns west, with the ditch on the inside, then it is clearly keeping something inside Moorend Common. This function is most likely to be animal containment and, given the character of the meadows, this is most likely to be cattle.

The pond at Pond Cottage and the streams were therefore important features. As the streams are seasonal, it is suggested that grazing was also seasonal.

8. Conclusions

The survey provided a good insight into Moorend Common from several angles. It was able to link the underlying geology, soils, landscape and nature, whilst weaving in the story of the people that have lived and used the Common over many thousands of years.

With this in mind, Moorend is very important due to the uniqueness of the underlying geology – that is, unique for the Chilterns. It is the interplay of Reading Formation sands and clays overlying chalk punctured by a graben fault system that explains the complexities of the habitats and diversity of organisms found there. Continued management as an open common area, with some woodland and importantly without fertilisers being applied or ploughing, has without doubt contributed to that biodiversity.

Features visible on the common and from local place names provide evidence of the first inhabitants - both Viking and Anglo-Saxon homesteads. It provides evidence for the Medieval villagers of Ackhamstead that would have walked through the woods and onto the Common and either dug the ancient ditch and bank, or knew those that did. The vicar called them a ‘heathen bunch’ yet towards the end of the little chapel’s life there were between 80 to 90 turning out for services. Their parish boundary can be confirmed (Figure 7.8), given all the features and map evidence, as butting the South Meadow and seemingly butting Moor Copse and not incorporating it (which sheds suspicion that Moor Copse was once part of Moorend with a functional division marked by the ancient bank and ditch to keep animals one side and woodland management the other).

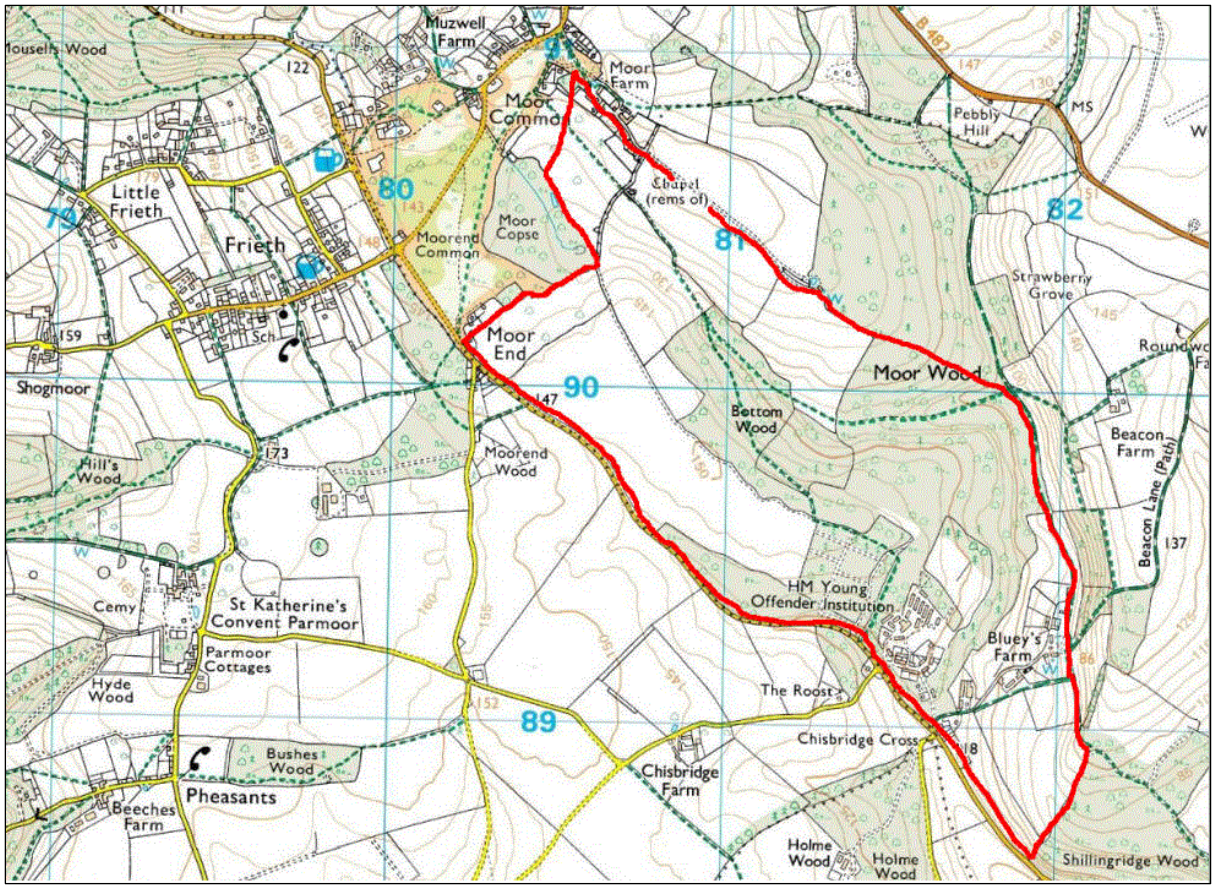


Figure 7.8 Modern OS map with the boundary of Ackhmapstead – the detached parish of Lewknor-up-Hill, belonging to Oxfordshire until 1885.

From the Medieval to the post-Medieval period the community continued to develop to the south (cottages, gardens and orchards on South Meadow, and more housing in Frieth) and also developed to the north (Moor Common). Frieth and Moor Common seem to be where 'better' housing developed and indeed, some buildings dating to the 17th century are still in place.

On the other hand, the smaller cottages at the common edge (South and North Meadow) are no longer present, but glimpses of walls and tiny scatters of masonry and household debris testify to these dwellings on poor ground. The Common of the 1700s to 1800s witnessed that while cattle grazed some parts, other parts were dug for clay and sand, cartloads being taken north up the road to the brickworks. This would be seasonal work and presumably those involved would be the recorded farm labourers of the area (as it was not a revered profession to be a brick-maker). Whilst the kilns were firing, smoke would hang in the air, there would be piles of clay weathering in preparation for the next year's production. Chalk extracted from the bell-pit would add to the smells in the air when transformed to lime (a toxic and dangerous commodity) and then it would be slaked (hydrated) for transport for agriculture or for mortar in nearby housing.

However, the mainstay of the common – that of animal husbandry, coppicing and no doubt many woodcrafts and foraging – remain elusive. A future follow-on project could entail a core of the clayey, waterlogged soil with a view to pollen analysis. This may be the only way to see the intricate and subtle changes that occur on some of our commons that are simply that – land for common agricultural use.

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Ordnance Survey historical maps (as seen in section 6).

Useful addresses

CAS. County Archaeology Service, County Hall, Aylesbury.
http://www.buckscc.gov.uk/leisure-and-culture/archaeology/archaeology-and-development

Chiltern Archaeology, 13 Pusey Way, Lane End, Bucks, HP14 3LG
www.chilternarchaeology.com

HER. Historic Environment Record. Found under 'County Archaeologists' Office' at Bucks County Council, County Hall, Aylesbury.
http://www.buckscc.gov.uk/bcc/archaeology/Historic_environment_record.page

10. Acknowledgements

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