

Heaths, Commons, and Wastes:

An investigation into the character, management, and perceptions of heathland landscapes in the medieval and post-medieval periods, with particular reference to the counties of Norfolk, Suffolk, Essex, and Hertfordshire

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List of Abbreviations

Bibliographical

ERO	Essex Record Office
HALS	Hertfordshire Archives and Local Studies
NRO	Norfolk Record Office
SROB	Suffolk Record Office, Bury St. Edmunds
SROI	Suffolk Record Office, Ipswich
SROL	Suffolk Record Office, Lowestoft

Linguistic

ME	Middle English
Lat.	Latin
OE	Old English
OF	Old French
OFrisian	Old Frisian
ON	Old Norse
RB	Romano British

Abstract

Lowland heathland is a priority habitat for conservation in the United Kingdom but is also valued as a historical cultural landscape.¹ Many rare or endangered species of both flora and fauna, unable to thrive in modern agricultural or urban landscapes, inhabit heathland environments. These have long been recognised as the products of past management systems which have been in decline since at least the 18th century, and have now been largely discontinued.² For the purposes of conservation, the practices which created and sustained them, based on historical examples, must be maintained or reintroduced in order to perpetuate conditions favourable to those species.³

This research details both the landscape character of historic heathland within the study area, and the various management practices which influenced and changed that character. As well as making an original contribution to a subject of historical importance, and modern interest, this research will inform the future management of heathland landscapes by showing, clearly and with evidence, how they were managed in the past.

Where management practices were referred to directly in historical documents, or recorded in full, this work presents them in detail and each technique is analysed in terms of its probable environmental impacts. Where heaths appear in the documentary record, but direct references to management were not found, landscape character was reconstructed using place-name and other linguistic evidence, and by examining what flora and fauna were mentioned in association with them – many of which lived only in certain kinds of habitats.

The results of this work detail a highly variable landscape. Heaths were sometimes open and characterised by low shrubs, but also sometimes wooded – either sparsely or densely – or even largely devoid of flora in some parts. The fauna present on heaths also varied widely between regions and periods; including sheep, pigs, cattle, horses, deer, goats, rabbits, geese, and the Brown Bear. Heaths historically were found on a broad range of soil types, not all of them sandy in nature, and contained a variety of both wet and dry habitats. As the term ‘heath’ was applied to all of these landscapes historically, cultural perceptions of what constituted heathland were also highly variable.

¹ English Nature, Lowland Heathland: A Cultural and Endangered Landscape (Peterborough, 2002) p.2

² Rackham, O., The History of the Countryside (London, 2000) pp.296-297

³ Webb, N.R., Heathlands (London, 1986) p.182

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General Aims

This thesis examines common assumptions made about the species, management, locations, and origins now considered characteristic of heathland landscapes within a historical context. The scope of the thesis falls between the publication of Domesday Book in 1086 and the end of the Napoleonic Wars in 1815 – with contextual references to prehistory and modern history. The study area comprises the English counties of Norfolk, Suffolk, Essex, and Hertfordshire. It presents research detailing the historical management and landscape character of heathlands within the study area and compares those with the products of modern conservation projects. Differences between them are identified and discussed. The possible benefits, to biodiversity and conservation outcomes, of a more varied approach to heathland regeneration or recreation (based on historical models) are extolled.

1. Introduction

Lowland heathland is a priority habitat for conservation recognised at national and international levels. At a European level, the 1992 Council Directive 92/43/EEC ‘on the conservation of natural habitats and of wild fauna and flora’, also known as the Habitats Directive, identified heaths as habitat types ‘requiring the designation of special areas of conservation’.⁴ The United Kingdom Biodiversity Action Plan (BAP) of 1994 established heathland as a priority habitat for conservation and regeneration efforts in this country. That significance has continued through the updated plan, published in 2007, and into the newer UK Post-2010 Biodiversity Framework introduced in 2012. The definition of lowland heathland established in the BAP, and still associated with the current framework, is as follows:

Lowland heathland is described as a broadly open landscape on impoverished, acidic mineral and shallow peat soil, which is characterised by the presence of plants such as heathers and dwarf gorses. It is generally found below 300m in altitude in the UK, but in more northerly latitudes the altitudinal limit is often lower. Areas of heathland in good condition should consist of an ericaceous layer of varying heights and structures, plus some or all of the following additional features, depending on environmental and/or management conditions; scattered and clumped trees and scrub; bracken; areas of bare ground; areas of acid grassland; lichens; gorse; wet heaths, bogs and open waters. Lowland heathland can develop on drift soils and weathered flint beds over calcareous soils (limestone or chalk heath). Lowland heathland is a dynamic habitat which undergoes significant changes in different successional stages, from bare ground (e.g. after burning or tree clearing) and grassy stages, to mature, dense heath. These different stages often co-occur on a site. The presence and numbers of characteristic birds, reptiles, invertebrates, vascular plants, bryophytes and lichens are important indicators of habitat quality.⁵

⁴ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01992L0043-20130701&from=EN> (Accessed 05/06/2017) pp.20-21

⁵ <http://jncc.defra.gov.uk/page-5706> (Accessed 05/06/2017) p.2

This definition can be broken down into nine parts. The first five constitute definitive statements intended to provide a solid theoretical framework for what a heath is. First, for example, heaths in the United Kingdom are broadly open landscapes – meant not to indicate ‘bare’, i.e. devoid of plant life altogether, but rather ‘treeless’. Second, they occur on acidic soils (with a pH below 7), and third, their characteristic vegetation consists of heathers and gorses.

Altitudinal limit, the fourth part, is stated with a degree of geographical variance but for the most part in terms of a single fixed measurement. This has been included, presumably, to separate heathland landscapes from moorland landscapes. Although dry moors can have light, acidic soils not unlike those of numerous surviving heathlands, they are commonly wetter and characterised more by the presence of peat than of sand.⁶ As the BAP limitation of 300m would suggest, moors are also a highland or upland landscape rather than one of the lowlands. At lower altitudes (towards 300m) these can be locally dominated by heather, if the soil is well-drained enough, and the division between the two landscapes can become blurred. They are, for the most part, though, dominated by wetland species of grasses, mosses, and lichens and, due to their altitudinal ranges, found much further north in the British Isles than the study area of this work.⁷ The most northerly point within the study area is the north Norfolk coast, sited firmly within that part of the country with a heathland altitudinal limit of 300m.

The fifth part, in effect, repeats the point made in part three – that the characteristic flora of heaths are heather plants. The term ‘ericaceous’ used here refers to the Ericaceae family of plants of which all heather species are members. Counterintuitively, although most heathers are of the genus *Erica* and easily associated with the family name referenced in the description (for example Bell Heather or *Erica cinerea*), by far the most widespread species of heather found in the study area is Common Heather (*Calluna vulgaris*) of a different genus altogether yet still in the family Ericaceae. Part five also simply states that a mix of heather species, of different heights and growth patterns, would be preferable compared to a monospecific flora.

The remaining four points consist of vaguer statements sometimes at odds with those made in the first five. It is seemingly intended to account for small variations in the landscape character of heaths as they appear in reality, outside of a ‘perfect’ theoretical model. Though open landscapes of dwarf shrubs are preferable, for example, some sites

⁶ Rackham, The History of the Countryside p.305

⁷ *ibid.*

might have limited tree cover, or any combination of the other stated ‘additional features’ not considered necessary characteristics of heathland. Tree cover in particular is allowed for but is generally deemed uncharacteristic of heathland – the words ‘open’ and ‘treeless’ being synonymous in this context, and the act of tree clearance being specifically mentioned later in the description. Heathland soils, moreover, although characteristically acidic, can be calcareous, but the resulting landscape would be a subgroup of specifically limestone or chalk heath rather than simply ‘heath’. Allusion is briefly made to heathlands being more ‘dynamic’ landscapes than initially stated, but only during the process of establishing the goal of ‘mature, dense heath’ following the original characteristic model defined in the first five parts. Finally, the quality, or authenticity (or even ‘accuracy’), of any regenerated or recreated heathland is to be judged on the presence of species thought to flourish within unshaded, dense stands of heather and gorse of different heights and ages – in other words, in the perfect heathland.

In all, apart from some minor variations, the definition of heathland given in the BAP is quite narrow, presenting a constricted view of what a heath is and should be. In the reality of the conservation world, though many sites do possess ‘additional features’, the stated aims of some heathland conservationists present an even narrower view of what they perceive a heath to be. Tree cover especially has often been targeted for complete removal, while the dominance of heather is deemed a necessary element of a heathland community. When discussing targets for recreation or regeneration, acidic sandy soils are almost always preferred, even if they must first be created.

A common view of heathland in conservation

Openness and heathland trees

An English Nature publication of 2006 recommended that maintaining the openness of heaths was integral to their conservation and restoration.⁸ As modern surviving heathlands are, the work suggests, less intensively managed than in previous centuries, species of tall shrubs or ferns, such as Bracken (*Pteridium aquilinum*), and woodland trees can regenerate there and, if not controlled, overshadow preferred heathland species, namely heather.⁹ As a result, these ‘invasive’ species, especially trees, must be actively removed to preserve an established heathland character. Though the work acknowledges that heathlands can be ‘much more than heathers and gorses’, and even allows for ‘some trees’ to be present early

⁸ English Nature, Lowland Heathland p.13

⁹ *Ibid.* p.13

in the work, it then advocates for their removal further on.¹⁰ A major study conducted in 2008 by the same organisation (by then called Natural England), on the impact of heathland restoration and recreation on soil characteristics and underlying archaeology, compiled a database of the most common techniques conservation practitioners used across 26 sites. In the majority of cases where trees were present on sites to be regenerated, they were removed, with the stumps being either dug out or chemically treated to prevent regrowth.¹¹

The Tomorrow's Heathland Heritage (THH) project, led first by English Nature and then by Natural England, took a similar approach. Running from 1997-2008, the project operated across 72% of the remaining UK-wide heathland resource.¹² Though it adopted 'a broad landscape view when considering applications' with regards to what a well-maintained heath should look like, a preference for heather was clear and much effort was put into removing its natural competitors.¹³ With a budget of £26 million, for example, £1.14m (4.4%) was spent on removing Bracken – a common target for removal in many heathland conservation projects across the country.¹⁴ A further £6.24m (24%) was spent on 'scrub control', including tree removal.¹⁵ Complete clearance of woodland specifically was expensive, averaging £1,475 per hectare, but deemed necessary.¹⁶

During heathland restoration work in Nottinghamshire in 1997-98, similarly, the Forestry Commission sought to remove all tree cover as a matter of course. Young trees were treated with herbicide until dead and mature trees mechanically felled with their stumps treated to prevent regrowth.¹⁷ A long-term heathland regeneration project undertaken at Cavenham Heath in Norfolk between 1978 and 1996 also considered all tree species already present on the site to be undesirable and had them removed.¹⁸ One

¹⁰ English Nature, Lowland Heathland p.3

¹¹ Hawley, G., Anderson, P., Gash, M., Smith, P., Higham, N., Alonso, I., Ede, J. and Holloway, J., Impact of heathland restoration and re-creation techniques on soil characteristics and the historical environment, Natural England Research Report NERR010 (2008) pp.69-75

¹² Clarke, S., "Tomorrow's Heathland Heritage' (THH) Five Years On" Journal of Practical Ecology and Conservation Special Series 5 (2009) p.23

¹³ *Ibid.* p.26

¹⁴ *Ibid.* p.25; Lewis, N. and Shepherd, A., "Mechanical management of Bracken (*Pteridium aquilinum*) in Sherwood Forest" Journal of Practical Ecology and Conservation Special Series 5 (2009) p.99; Marrs, R.H., Johnson, S.W. and le Duc, M.G., "Control of bracken and restoration of heathland VIII: The regeneration of the heathland community after 18 years of continued bracken control or 6 years of control followed by recovery" Journal of Applied Ecology 35 (1998) p.858

¹⁵ Clarke, "Tomorrow's Heathland Heritage" p.25

¹⁶ *Ibid.* p.28

¹⁷ Barwick, P., "Making a Silk Purse out of a Sow's Ear – Heathland Restoration from Forestry Plantations" Journal of Practical Ecology and Conservation Special Series 5 (2009) p.14

¹⁸ Marrs *et al*, "Control of bracken and restoration of heathland" p.858

important topic of research for this thesis more generally is to examine whether or not heathland in the study area has always been managed in such a way that reduces or removes tree cover.

The pre-eminence of heather

As well as trees, many grasses and non-ericaceous types shrub have often been viewed unfavourably as heathland species during conservation work. Plans for regeneration work at Cavenham, already mentioned, for example, listed *Calluna vulgaris* as the only species to be of essential conservation importance for the heath.¹⁹ The THH project, too, based much of its work on this assumption. On the 2,500ha of heaths recreated under the scheme, heather dominance was not only encouraged but ensured through the deliberate introduction of large quantities of heather seeds.²⁰ At one such site in Cornwall, total coverage of the heath was ensured by dropping seeds from a helicopter at great expense.

The Forestry Commission's efforts in Nottinghamshire, already mentioned, similarly required the deliberate sowing of heather seedlings on restored heathland at ratios of up to 32 plants per square metre.²¹ A heathland recreation project undertaken on disused colliery spoil in Rufford, also in Nottinghamshire, in 1996, also introduced heather seeds on a large scale. This was done specifically to aid the swift development of a heathland community dominated by heather, where the alternative would have been to allow species already present in the surrounding landscape to colonise over time.²² Pywell *et al* have suggested turf translocation from existing heathland, bringing with it plants, root systems, and topsoil. This was based on the results of a 17-year experiment seeking the most effective way of reproducing a heathland plant community dominated by heather on former agricultural land where the soil pH had been raised through chemical means in the past.²³

These projects are exemplary in the use of what Bradley and Lewis refer to as an 'interventionist methodology', as opposed to sites being allowed to 'regenerate naturally'.²⁴ Although the history of all anthropogenic heathland is one of human

¹⁹ Marris *et al*, "Control of bracken and restoration of heathland" p.858

²⁰ Clarke, "Tomorrow's Heathland Heritage" pp.25,27

²¹ Barwick, "Making a Silk Purse" p.15

²² Bradley, J. and Lewis, N., "BAPs, Planners, Miners and Ecologists: a Tale of Heathland Restoration in Nottinghamshire" *Journal of Practical Ecology and Conservation Special Series* 5 (2009) p.63

²³ Pywell, R.F., Meek, W.R., Webb, N.R., Putwain, P.D. and Bullock, J.M., "Long-Term Heathland Restoration on Former Grassland: The Results of a 17-Year Experiment" *Biological Conservation* 144 (2011) p.1608

²⁴ Bradley and Lewis, "BAPs, Planners, Miners and Ecologists" p.67

intervention, none of these conservation projects have provided evidence for the deliberate introduction of heather onto heaths, or for its universal dominance on heaths in England before the 19th century. Some recent studies have, indeed, suggested that bare ground characterised by no flora at all might have been widespread on heaths, especially after the Norman introduction of the rabbit.²⁵ Another important topic of research for this thesis more generally is to examine whether or not heather has always been the dominant ground flora on heaths within the study area.

Acidity assumed: heathland soils in conservation

Although attempts were made in the BAP description to allow for non-acidic soils to be characteristic of heathland, conservation work has often targeted these soils specifically for recreation efforts. The Natural England report on heathland soil characteristics, for example, suggests recreation efforts be focussed on ‘acidic podzolic’ soils.²⁶ This refers to the podzol, or ‘iron pan’, formed beneath sandy or other large-particle soil types wherein minerals, leached downwards from the upper layers by rainfall, have compacted in the lower strata to form a dense, solid mineral layer – said to be ‘like iron’ to dig through. Such soils are commonly found in sandy regions such as the Brecklands of Norfolk and Suffolk or the Sandlings of the Suffolk coastline.

English Nature’s 2002 guide to Lowland Heathland states that heaths ‘are generally found on poor, acidic soils’ without further exploration of heaths overlying alternative soil types.²⁷ Even Webb, an authority on heathlands for decades, has written of heaths occurring characteristically on poor soils depleted of nutrients, both in the modern day and back into the Neolithic period.²⁸ These two examples, however, are exemplary of a current and long-standing assumption among conservationists and ecologists alike – that heathlands surviving today are archetypal of all heaths throughout history. This may be true. It is worth mentioning that, within the study area, by far the most numerous (and largest) surviving heaths are found in Breckland and the Sandlings, much of which are characterised by acidic, sandy soils prone to podzolization. The potential for confirmation

²⁵ Dolman, P., Panter, C. and Mossman, H., “The biodiversity audit approach challenges regional priorities and identifies a mismatch in conservation” *Journal of Applied Ecology* **49**, 5 (2012) p.991; Robertson, D. and Hawkes, R., “Nature conservation, ground disturbance and protecting archaeological remains on Brecks heaths” *The Journal of Breckland Studies* **1** (2017) p.6

²⁶ Hawley *et al*, *Impact of heathland restoration and re-creation* p.iv

²⁷ English Nature, *Lowland Heathland* p.1

²⁸ Webb, N.R., “The traditional management of European heathlands” *Journal of Applied Ecology* **35**, 6 (1998) pp.987,989

bias based upon where heathlands were more likely to survive into the modern day, rather than where heaths were evidently present in the landscape before widespread destruction in the 18th and 19th centuries, is therefore great.

For now, the link between acidic sands and heathland seems indissoluble. Indeed, on numerous occasions, the acidification of soils deemed too calcareous has been commenced to create more ‘ideal’ circumstances for preferred heathland species to flourish. Of the 26 respondents to Natural England’s survey, for example, all 18 sites not already in possession of acidic soils were treated to increase acidity, remove nutrients from the topsoil or, in some cases, to simply remove the topsoil altogether.²⁹ The introduction of elemental sulphur directly into the soil (to lower the pH value) was common.

A further important research topic for this thesis is to examine whether or not heathland in the study area has always been so closely associated with acidic sandy soils, either practically or culturally, or if such a strong connection with them is a more recent phenomenon.

A time of origin

Open heathland has often been assumed to be prehistoric in origin. Webb, for example, wrote that ‘today we recognise that these heathlands developed about 4,000 years ago as a result of forest clearances’.³⁰ English Nature, meanwhile, have stated simply that ‘most heathlands developed during or after the Stone Age (some 3,500 ago [*sic*])’ and, in so doing, allowed for a prehistoric origin of the type Webb suggests.³¹ Gimingham also wrote of a broad period of development extending from around 6,000 years ago to the beginning of the Iron Age roughly 2,500 years ago.³² These notions are based, in part, on archaeological evidence but for the most on palynological studies. Archaeologically the presence of barrows, or burial mounds, on heaths has been taken to suggest open landscapes. Field, for instance, has argued that barrows were sited to improve the distance and angles from which they could be viewed – impossible should they be surrounded by mature woodland.³³ Not all heaths have barrows, though, and elsewhere pollen analysis has been relied upon.

Palynology is the study of fossilised pollen grains taken mostly from peat deposits,

²⁹ Hawley *et al*, Impact of heathland restoration and re-creation pp.69-75

³⁰ Webb, “The traditional management of European heathlands” p.987

³¹ English Nature, Lowland Heathland p.1

³² Gimingham, C.H., Ecology of Heathlands (London, 1972) p.21

³³ Field, D., “Round barrows and the harmonious landscape: placing Early Bronze Age burial monuments in south-east England” Oxford Journal of Archaeology **17**, 3 (1998) pp.315-316

out of which cores have been extracted.³⁴ By identifying pollen captured and preserved in anaerobic conditions, and sequencing them chronologically based on their stratigraphic distribution, researchers have attempted to plot the vegetational histories of the deposit's immediate surrounds. Cores from two heaths in southern England, for example, suggest they became dominated by heather (*Calluna vulgaris*) in the late Bronze Age, c.3,000 years Before Present (BP).³⁵ At the same time, pollen and microfossils revealed 'increases in indicators of grazing and burning, demonstrating an association between the development of heathland and human activity'.³⁶ The clearance of woodland at Black Heath near Huddersfield in West Yorkshire, too, was dated to c.6,800 BP due to a similar increase in charcoal being deposited at that time.³⁷

Pollen analyses are useful indicators for the presence of particular species near cored sites. They are, however, limited in their usefulness or reliability for studies on a wider scale. First, data can only be collected from suitably peaty soils, which are not found everywhere. Second, the distance travelled by the pollen of different species (and the amount produced by each) can affect which pollen is deposited in the first place – distorting the picture presented to us through their study. Some research, for example, has suggested that *Calluna vulgaris* pollen will only be deposited if the source is within four metres of the peat.³⁸ Heather plants identified on the two heaths mentioned here, then, might only have stood in a limited area just metres across.

Conclusions drawn wholly from palynological evidence, then, have broad scope for inaccuracy. So too do certain common assumptions made by those who utilise these data. The direct attribution of charcoal to deliberate burning, and the earliest management of anthropogenic heathland, for example, is open to interpretation. After all, such fires 'could also have been set through natural causes such as lightning strikes, and the microscopic charcoal derived from domestic (camp) fires'.³⁹ The attribution of increased grazing pressure to domesticated herds, too, is not necessarily accurate. Some ecologists have

³⁴ Muir, M. and Sarjeant, W. (eds), *Palynology, Part 1: Spores and Pollen* (Stroudsburg, 1977) p.1

³⁵ Groves, J.A., Waller, M.P., Grant, M.J. and Schofield, J.E., "Long-term Development of a Cultural Landscape: The Origins and Dynamics of Lowland Heathland in Southern England" *Vegetation History and Archaeobotany* **21**, 6 (2012) p.453

³⁶ *Ibid.*

³⁷ Ryan, P. and Blackford, J., "Late Mesolithic environmental change at Black Heath, south Pennines, UK: a test of Mesolithic woodland management models using pollen, charcoal and non-pollen palynomorph data" *Vegetation History and Archaeobotany* **19** (2010) p.555

³⁸ Bunting, M. and Hjelle, K., "Effect of vegetation data collection strategies on estimates of relevant source area of pollen (RSAP) and relative pollen productivity estimates (relative PPE) for non-arboreal taxa" *Vegetation History and Archaeobotany* **19** (2010) p.373

³⁹ Groves *et al*, "Long-term development of a cultural landscape" p.465

theorised that herds of undomesticated large herbivores numerous enough to create and maintain gaps in woodland were present in later prehistory. Ideas such as these have formed the basis for a theoretical non-anthropogenic origin for some open areas within wider prehistoric woodlands before deforestation by humans became widespread. These are discussed in the following section.

This thesis will not study in detail the prehistoric management of heathland, mentioning it only as context both here in the introduction and in later chapters focussing on the management of heaths in particular regions. Considering a common notion of heathland being either universally or mostly prehistoric in origin, however, it will seek to identify whether any of the heaths examined in detail in those later chapters were either created or became open landscapes during the historic period rather than the prehistoric.

A type of origin

Although a general consensus existed between ecologists, historians, and archaeologists in the 20th century that heathland was human-made, one ground-breaking new theory was posited at the turn of the millennium.⁴⁰ Arguing against a ‘null hypothesis’, in which north-western Europe was covered by a continuous closed-canopy forest before deforestation by humans, Frans Vera concluded that:

The null hypothesis must be rejected in favour of the alternative hypothesis, that the natural vegetation is a mosaic of grasslands, scrub, trees and groves in which large plant-eating mammals play an essential role in the process of regeneration of trees and have a determining effect on the succession of species of trees.⁴¹

In effect, that relatively open and wood-pasture landscapes were, without human intervention, created by the interconnected grazing habits of large herbivores – creating a ‘half-open’, and in places ‘savannah-like’, landscape.

He suggested that grazing in gaps in the forest would favour thorny bushes, which most herbivores avoid eating. These would create patches of thorny scrub in which saplings could grow without being eaten, aided in their establishment by specific fauna burying seeds for winter. These include acorns buried by Jays (*Garrulus glandarius*),

⁴⁰ Groves *et al*, “Long-term development of a cultural landscape” p.467; Rackham, The History of the Countryside pp.282-283; English Nature, Lowland Heathland p.1

⁴¹ Vera, F., Grazing Ecology and Forest History (Wallingford, 2000) pp.8,378

which prefer to bury them on the fringes of thorny scrub.⁴² These trees then outgrow the scrub and extend branches over them – shading out the thorns which begin to die. This clump of trees Vera calls a ‘grove’. Grazing animals then enter the ‘grove’ through gaps where thorny bushes have died, and graze on any shade-tolerant saplings growing within. In this way, the species and age composition of trees at the centre of the canopy remains as it first grew. Over time, those trees die and more light penetrates the canopy, allowing for grasses and herbs to re-establish themselves. As there are no thorns, there is no successful establishment of young trees to replace the old – their shoots being eaten by the grazers. Eventually the surface of the open space becomes large enough that grazing pressure cannot stop new thorns from growing, thus restarting the cycle. On a landscape scale, the result would be a permanently shifting mosaic of denser ‘groves’, scattered trees, and grassland with grazing as the major driver of this process. This Vera termed ‘the theory of the cyclical turnover of vegetations’.⁴³

The ‘Vera hypothesis’, as it became known more widely, was integrated into an existing debate about the prehistoric origins and extent of wood-pasture landscapes, ongoing since Peterken first drew attention to their potential importance for conservation in Britain in 1977.⁴⁴ Its introduction prompted significant debate within the ecological community – both in person and in print. This included an entire issue of the journal *Forest Ecology and Management* studying the effects of grazing by large herbivores on woodland regeneration in 2003, a special supplement of the journal *British Wildlife* in 2009, and a series of major international conferences held in Sheffield, UK.⁴⁵

It also raised the profile of practical experiments in ‘naturalistic grazing’ techniques for landscape management, most notably at Oostvaardersplassen in the Netherlands, where Vera had been a driving force behind the project. Starting in the 1980s, a 5,600ha area of wetland, reclaimed from the sea using dykes, was grazed year-round by free-roaming herds

⁴² Vera, *Grazing Ecology* p.302; Green, T., “Ancient Trees and wood-pastures: Observations on recent progress” in Rotherham, I.D. (ed.), *Trees, Forested Landscapes and Grazing Animals: A European Perspective on Woodlands and Grazed Treescapes* (Abingdon, 2013) p.140

⁴³ Vera, *Grazing Ecology* p.378

⁴⁴ Kirby, K.J., “English Nature’s Interest in the Role of Large Herbivores in Forest Systems” in Hodder, K.H., Bullock, J.M., Buckland, P.C. and Kirby, K.J., *Large Herbivores in the Wildwood and Modern Naturalistic Grazing Systems* English Nature Research Reports, Report Number 648 (2005) p.19

⁴⁵ *Forest Ecology and Management* **181**,1-2 (2003); Buckland, P.C., “Palaeoecological Evidence for the Vera Hypothesis?” in Hodder *et al*, *Large Herbivores in the Wildwood* p.63; *British Wildlife* **20**,5 (special supplement) (2009); Rotherham, I.D. (ed.), *Trees, Forested Landscapes* p.2

of cattle, horses, and red deer with very little human intervention.⁴⁶ Population levels were unregulated: food and shelter were not provided, disease was not treated, and animals were only culled when their appearance and behaviour suggested they were very near death.⁴⁷ It was, however, disputed whether these animals could realistically recreate ‘natural’ grazing conditions.⁴⁸ The site, though large, was fenced off on all sides – if food became scarce, they could not simply migrate to find more.⁴⁹

Due to the fertility of the soil, stocking density remained so high that, after 20 years, there was almost no sign of woodland regeneration taking place.⁵⁰ Although it was expected that several decades would have to pass before significant woodland regeneration could begin, political pressure forced the experiment to be abandoned. In winter 2017-2018, heavy rainfall gave way to harsh frosts – severely reducing the amount of grass and other forage available to the grazers. More than 60% of the population was culled on grounds of animal welfare (i.e. to avoid mass starvation) and the resulting public outcry led to the termination of the project in its existing form.⁵¹ Since then, the horse population has been removed and remaining numbers of cattle and deer have been managed through regular culling.⁵² Whether the failure of the project was due to an error in Vera’s hypothesis, the impracticality of implementing ‘naturalistic’ grazing within an enclosed environment, or simply a public unwillingness to view animal deaths as an acceptable result of ‘natural’ processes has not yet been comprehensively investigated.

Vera was not the first to suggest that some areas of open land might have existed within an otherwise densely wooded ‘natural wildwood’ before the impact of human deforestation became significant. Watt in 1947, for example, recognised that any closed forest must contain temporary openings in the canopy left by dead and dying trees – what he called a ‘gap phase’⁵³. Harding and Rose in 1986 argued that the number of plant, bird, and insect species found in modern woodland, which require well-lit conditions to survive,

⁴⁶ Hodder, K.H. and Bullock, J.M., “Naturalistic Grazing and Conservation” in Hodder *et al*, Large Herbivores in the Wildwood p.124; Hodder, K.H. and Bullock, J.M., “Really Wild? Naturalistic Grazing in Modern Landscapes” British Wildlife **20**,5 (2009) p.38

⁴⁷ *Ibid.*

⁴⁸ Hayward, M.W. and Kerley, G.I.H., “Fencing for Conservation: Restriction of Evolutionary Potential or a Riposte to Threatening Processes?” Biological Conservation **142** (2009) p.6; Lakhani, V. and de Smalen, E., “Introduction: Using Memory Studies in Environmental Policy” RCC Perspectives **3** (2018) p.5

⁴⁹ Theunissen, B., “The Oostvaardersplassen Fiasco” Isis **110**,2 (2019) p.342

⁵⁰ Hodder and Bullock, “Really Wild?” p.40

⁵¹ Theunissen, “The Oostvaardersplassen Fiasco” p.343

⁵² *Ibid.*

⁵³ Watt, A.S., “Pattern and Process in the Plant Community” Journal of Ecology **35**,1-2 (1947) p.12

suggests ‘the wildwood may have had numerous glades and gaps, and was not uniformly dense’.⁵⁴ A decade later, in 1996, Peterken wrote of the ‘natural forest’ that:

Openings of various kinds form a permanent and sometimes common component. Individual gaps and other disturbance-generated openings are individually transitory but, collectively, gaps are permanent, in the sense that new gaps form somewhere in the landscape almost every year.⁵⁵

What was radical about Vera’s hypothesis was on the one hand that these openings constituted roughly half of the overall ‘forest’ landscape, and on the other that large herbivores were the main drivers of their creation, compared to, for example, fire or storm damage. As Kirby wrote: ‘The key question is not therefore whether a herbivore-driven regeneration cycle can occur, but (a) whether it was the dominant mechanism for landscape regeneration; and (b) if so what were the temporal and spatial scales for the different elements of the cycle – would it necessarily produce a half-open park-like landscape?’⁵⁶ In asking these questions, numerous ecologists have concluded that Vera’s hypothesis is, at least to some extent, incorrect.

Svenning’s 2002 review of published palaeoecological data, for example, concluded that ‘the vegetation in ‘normal’ uplands would predominantly be closed forest, but with localised longer-lasting openings’.⁵⁷ These would be created mostly by fire, but sometimes by windthrow, localised herbivore grazing (for example near ponds), and perhaps by soil infertility or rocky ground.⁵⁸ Floodplains would likely have been more open than upland sites and, based on the abundant dung beetle remains found in such areas, grazing animals were probably the main drivers of this openness, as Vera had suggested.⁵⁹

Whitehouse and Smith, also using beetle remains, argued that the early Holocene was quite open, resembling a wood-pasture landscape, but that the forest canopy then closed, leaving only locally open spaces.⁶⁰ As the overall numbers of dung beetles

⁵⁴ Harding, P.T. and Rose, F., Pasture Woodlands in Lowland Britain: A Review of their Importance for Wildlife Conservation (Cambridge, 1986) pp.28-29

⁵⁵ Peterken, G.F., Natural Woodland (Cambridge, 1996) p.197

⁵⁶ Kirby, “English Nature’s Interest” p.22

⁵⁷ Svenning, J.C., “A Review of Natural Vegetation Openness in North-Western Europe” Biological Conservation **104** (2002) p.140

⁵⁸ Svenning, “A Review of Natural Vegetation” p.140

⁵⁹ *Ibid.* pp.140-141

⁶⁰ Whitehouse, N.J. and Smith, D., “How Fragmented was the British Holocene Wildwood? Perspectives on the “Vera” Grazing Debate from the Fossil Beetle Record” Quaternary Science Reviews **29** (2010) p.551

remained low throughout this time, they concluded that there was little evidence this openness was driven mostly by animal grazing.⁶¹ Buckland, while concluding that ‘the insect record does provide some support for the Vera hypothesis’, has drawn attention to the commonality of pyrophilic elements within the surviving beetle fauna of Britain.⁶² He presents this as evidence that fire was probably the chief cause of openness in the pre-agricultural wooded landscape, rather than grazing.⁶³

Bradshaw and Hannon have used pollen analysis and plant microfossil remains to also argue that fire and flooding were more likely the causes of openness within a gradually changing but mostly closed forest canopy, while ‘large ungulates only had a minimal impact on forest openness’.⁶⁴ Kirby, meanwhile, has expressed reservations over whether ‘the herbivore population was large enough to have the impact [Vera] proposes’.⁶⁵ Elsewhere, Mitchell has compared pollen evidence from mainland Europe to that from Ireland, where large herbivores were either absent or rare during the early Holocene. His results suggest that shade-intolerant trees were similarly well represented in the pollen record for both places.⁶⁶ If large herbivores were the chief drivers of openness in the wildwood (as Vera suggests), he argues, shade-intolerant trees should be less well represented in Ireland where fewer of those herbivores are known to have existed.⁶⁷

The publication of Vera’s hypothesis has prompted rigorous ongoing debate within the ecological community. Some contributors to that debate have concluded that Vera’s ideas must be rejected in favour of a closed-canopy model. Others have attempted a synthesis between the two, allowing for more open and wood-pasture landscapes within a wider closed forest, though not to the same extent (or always for the same reasons) as posited by Vera. As Hodder and Bullock wrote: ‘Vera’s null hypothesis and its alternative both contain several elements, and it is not necessary to accept either all or none of the elements in each.’⁶⁸

Shaw and Whyte concluded that while there ‘may be some evidence for open areas

⁶¹ Whitehouse, and Smith, “How Fragmented was the British Holocene Wildwood?” p.551

⁶² Buckland, “Palaeoecological Evidence for the Vera Hypothesis?” p.94

⁶³ *Ibid.* p.63

⁶⁴ Bradshaw, R.H.W. and Hannon, G.E., “The Holocene Structure of North-West European Temperate Forest Induced from Palaeoecological Data” in Honnay, O., Verheyen, K., Bossuyt, B. and Hermy, M. (eds.), Forest Biodiversity: Lessons from History for Conservation (Wallingford, 2004) p.22

⁶⁵ Kirby, K.J., “Conclusions” British Wildlife **20**, 5 (Special Supplement), (2009) p.63

⁶⁶ Mitchell, F.J.G., “How Open Were European Primeval Forests? Hypothesis Testing Using Palaeoecological Data” Journal of Ecology **93** (2005) p.168

⁶⁷ *Ibid.*

⁶⁸ Hodder, K.H. and Bullock, J.M., “The ‘Vera Model’ of Post-Glacial Landscapes in Europe: A Summary of the Debate” in Hodder *et al*, Large Herbivores in the Wildwood p.52

within natural woodlands ... this is probably overstated by Vera'.⁶⁹ Hodder *et al*, while acknowledging the 'wildwood' probably contained more wood-pasture than previously allowed for, concluded that a 'half-open' landscape is simply 'not currently supported by the evidence'.⁷⁰ Svenning concluded that:

The most widespread natural vegetation type would be closed old-growth forest and that scattered old trees and dead wood probably would be also present in the more open vegetation.⁷¹

Some of these syntheses have been incorporated into the Vera hypothesis, and a refined version of it now has a considerable body of supporting evidence.⁷²

The proposed presence of more wood-pasture and scattered trees in 'open' parts of pre-agricultural woodland in Britain is of particular interest to this thesis. If correct, as Vera has argued, such a model would have made scattered or clumped trees 'an integral part of heathland' before overgrazing by domesticated animals became widespread.⁷³ An important topic of research in this thesis will be whether or not any apparently prehistoric, or at least longstanding, wood-pasture or woodland survived on heathlands in the study area into the historic period.

A popular view of heathland in the late 18th to early 20th centuries

Overall, several assumptions often made both in the theoretical framework for what constitutes a 'heath' within government circles and among some heathland conservationists – that they mostly overlie acidic, preferably sandy soils, ideally possess no tree cover at all, are usually grazed by sheep, and are frequently dominated by a single species – reflects a popular model of heathland presented in the 19th and early 20th centuries in literature and art.

In the late 18th and early 19th centuries especially, some artists turned to heaths and other common lands in search of the 'sublime' and often concentrated on landscapes, seemingly infinite in extent, populated by low shrubs and little else. In Richard Wilson's

⁶⁹ Shaw, H. and Whyte, I., "Palaeoecological records of woodland history during recent centuries of grazing and management examples from Glen Affric, Scotland and Ribblesdale, North Yorkshire" in Rotherham, Trees, Forested Landscapes and Grazing Animals p.224

⁷⁰ Hodder, K.H., Buckland, P.C., Kirby, K.J. and Bullock, J.M., "Can the pre-Neolithic provide suitable models for re-wilding the landscape in Britain?" British Wildlife **20**, 5 (Special Supplement), (2009) p.12

⁷¹ Svenning, "A Review of Natural Vegetation" p.141

⁷² Rotherham, Trees, Forested Landscapes p.5; Vera, F. "Can't See the Trees for the Forest" *Ibid.* pp.99-126

⁷³ Vera, F., "The Wood-pasture: a Model for Heath?" Journal of Practical Ecology and Conservation Special Series **5** (2009) p.10

On Hounslow Heath, for example (figure 1.1), the eye is drawn not to the small clumps of trees at the water's edge but to the apparently endless expanse of open country beyond. Detail in the foreground shows the viewer this is characterised by low green shrubs of heather or gorse. Figures, either human or animal, are present but few in number, with none shown in the heathland vista at all. Crome's *Mousehold Heath, Norwich* (fig. 1.2, c.1818-1820) shows an infinite landscape of low shrubs, picked out with only scattered sheep and sandy ruts.

Those ruts, however, as well as the heathland-edge trees shown by Wilson in the first figure, raise some questions as to the validity of some modern official prescriptions for heathland character already discussed. Although the majority of both paintings, and certainly the areas intended to be the focus of each, show endless landscapes of shrubs and low bushes, small amounts of tree cover and bare ground were alluded to in these artworks as late as the 19th century.

Common to these two paintings, and others like them, though, was a sense of emptiness – symptomatic of a decline in the intensity of heathland exploitation which had, already by that point, begun to take hold.⁷⁴ Human figures were often solitary and, it seems, sometimes included more to emphasise perspective than to reflect reality. More frequent, in painting and writing, was the presence of sheep. In 1804, for instance, Arthur Young wrote of the appearance of Norfolk's heaths as the 'result of an absurd prejudice in favour of these old heaths for sheep'.⁷⁵ Just a few years later, and within three years of each other, both Crome and Cotman (both members of the Norwich School of painters, founded in 1803) painted views of Mousehold characterised only by sheep and the low shrubs or grass they fed upon, with sandy roads and patches of bare ground giving the heath a rough, weathered look (figs. 1.3 and 1.4). It is important to note that most of Mousehold Heath had been enclosed from open common land by the time these 'Norwich School' artists had begun to paint them. As such they did not necessarily produce scenes of 'traditional' heathland management.

In Crome's rendition, though, neither are we presented with a necessarily 'up to date' picture of the heath as it appeared when he was painting it. Instead, we are likely shown an interpretation of the heath, intended by the artist to 'uplift' the viewer, and provide evidence for the nobility of divine creation. Fawcett, for example, said of Crome's artistic approach that:

⁷⁴ Waites, I., *Common Land in English Painting, 1700-1850* (Woodbridge, 2012) p.65

⁷⁵ Young, A., *General View of the Agriculture of the County of Norfolk* (London, 1804) p.385

the grandeur that Crome looked for in landscape painting fulfilled more than pictorial needs. Just as religious or ‘history’ painting was believed to have a powerful moral effect on the spectator ... so too in the more humble department of landscape painting we are taught “to look through nature up to nature’s God”.⁷⁶

His painting, then, should not perhaps be interpreted as an accurate picture of Mousehold, but rather as an artistic rendering replete with alterations intended to reflect subtle meaning. Indeed Crome himself is said to have told a student of his that ‘trifles in nature must be overlooked ... that we may have our feelings raised by seeing the whole picture at a glance, not knowing how or why we are so charmed’.⁷⁷ His painting does, however, present a picture of what he, as a contemporary of *en masse* heathland enclosure by parliamentary act, thought unenclosed heaths to be – at times beautiful (though only when framed as such) but economically barren.

Further south Constable’s famous view of Hampstead Heath from c.1820 shows a more populated landscape than any of those already mentioned (fig. 1.5). A working landscape is alluded to by the presence of workmen, though they were not engaged in the direct exploitation of heathland resources. More likely they were dumping material to fill a hollow that would otherwise collect rainwater (like one in the bottom right of the painting) or, simply, dumping waste.⁷⁸ Were they, instead, extracting material from the ground it seems unlikely their cart would be tipped. Indeed, the idea of the heath, at the time, being the site of regular hard labour is undermined by the presence of a well-dressed couple walking their dog along a wide, well-kept path in the right of the painting.

⁷⁶ Fawcett, T. “John Crome and the Idea of Mousehold” *Norfolk Archaeology* **38** (1983) p.177

⁷⁷ *Ibid.*

⁷⁸ Waites, *Common Land in English Painting* p.143



Figure 1.1. *On Hounslow Heath* by Richard Wilson, c.1770.



Figure 1.2. *Mousehold Heath, Norwich* by John Crome, c.1818-20.



Figure 1.3. *View on Mousehold Heath* by John Crome, c.1812

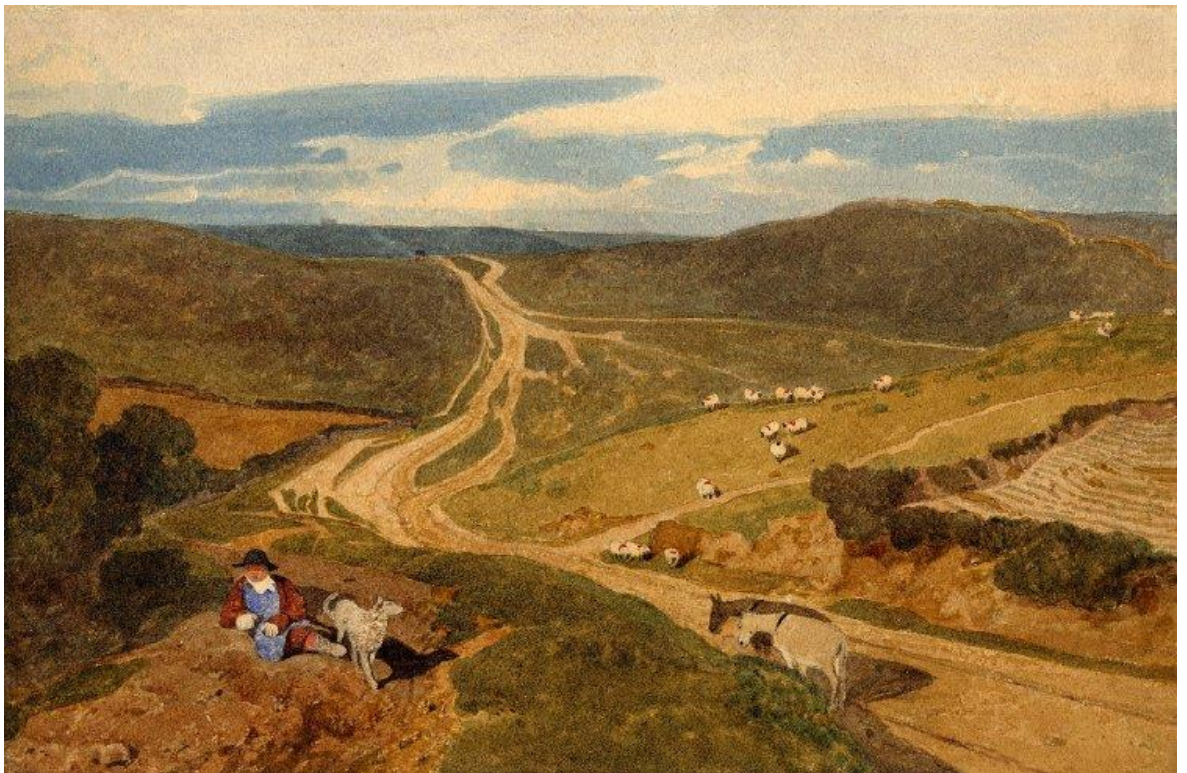


Figure 1.4. *Mousehold Heath, Norwich* by John Sell Cotman, c.1809-10.



Figure 1.5. *Hampstead Heath* by John Constable, c.1820.



Figure 1.6. *Hampstead Heath with a Rainbow* by John Constable, c.1836.

Another of Constable's works, *Hampstead Heath with a Rainbow* from about 1836 (fig. 1.6), also alludes to industry on that heath by the inclusion of a windmill in the centre of the painting. The windmill itself, and the cottage accompanying it, however, never actually existed – instead being copied from a sketch the artist had done in around 1824 of a windmill in Brighton.⁷⁹ Thirty years later, John Ritchie's *View Over London from Hampstead Heath* of 1859 (fig.1.7) shows how distanced it had become from the notion of a working landscape, instead showing well-dressed family groups enjoying it as they might a public park in modern times.⁸⁰ The use of commons close to urban centres for recreation was increasingly popular and not isolated to those near the capital. By the 1850s Mousehold Heath, for example, was regularly used by Norwich's wealthier inhabitants to walk and ride over, years before it became a public park.⁸¹ One town councillor declared it 'one of the finest places in the world to gallop over'.⁸²

Turner's views of Blackheath, near London, emphasised more clearly the three 'S' words characteristic of contemporary heathland – shrubs, sand, and solitude (figs. 1.8 and 1.9). Though not legally a common the tract was, at the time, 'a five-hundred-acre expanse of heath that was nonetheless used as a common; an uncultivated and unimproved landscape of gorse, scrub, pits and hollows'.⁸³ A lack of cultivation or 'improvement' of any kind on otherwise 'barren', open heaths covered only in shrubs is almost universal in depictions of heathland landscapes throughout the period.

Later in the 19th century, and into the early 20th century, between 1870 and 1910, heathlands became one of many rural landscapes incorporated into the 'Heroic Period' of painting. They were used as landscapes 'in which men, and more rarely women, could be seen in an heroic mould', battling the elements, alongside barren moorlands, vast forests, and violent coastlines.⁸⁴ As with Crome's earlier depiction of Mousehold Heath, though, the intention seemed not to be to accurately depict these landscapes but to dramatise them. Heaths in Surrey, for example, were regularly painted as parts of a 'luxuriant tract of country ... full of hills and dale, woods and pastures, perfumed heaths and breezy downs'

⁷⁹ Bermingham, A., *Landscape and Ideology: The English Rustic Tradition, 1740-1860* (London, 1987) p.149

⁸⁰ *Ibid.* p.174

⁸¹ MacMaster, N., "The Battle for Mousehold Heath 1857-1884: "Popular Politics" and the Victorian Public Park" *Past & Present* **127**, 1 (1990) p.127

⁸² *Norfolk Chronicle* (23rd May 1857) p.4

⁸³ *Ibid.* p.93

⁸⁴ Howard, P., *Landscapes: The Artists' Vision* (London, 1991) p.102



Figure 1.7. *View Over London from Hampstead Heath* by John Ritchie, 1859.

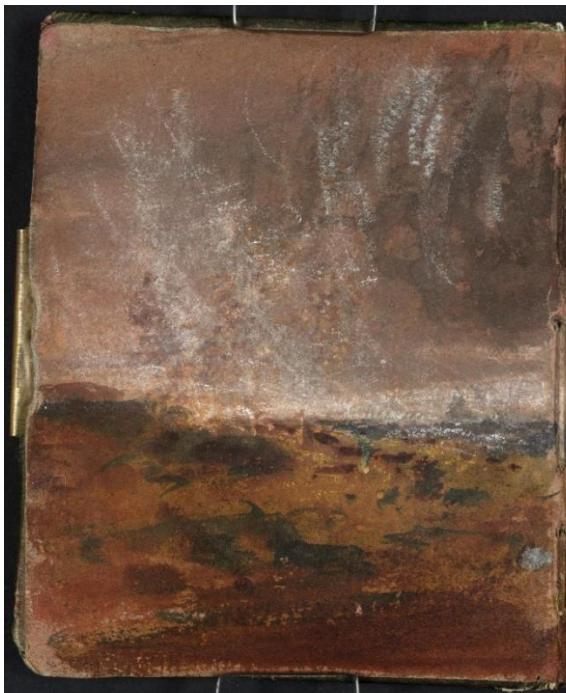


Figure 1.8. *View from Blackheath, with St. Paul's in the Distance* by J.W. Turner, c.1796-7.



Figure 1.9. *A Road Leading Uphill towards a Windmill* by J.W. Turner, c.1796-7.

yet the flat, open heaths of the Suffolk Sandlings were ‘rich neither in scenery nor in associations, and all but unvisited by the tourist’.⁸⁵ Heaths were drawn and painted but more often as part of a varied, dramatic landscape alongside other landscapes, rather than because heathland, or its management, was in itself of interest.

The character of heaths as barren and dominated by heather remained central to descriptions of heathland written throughout the period between the 18th and 20th centuries, especially in Breckland. The French traveller the Duc de la Rochefoucauld, for instance, described the Ingham road in 1784 as ‘sandy and heavy on account of the large quantity of shifting sand in which the district abounds ... also the whole of the country through which the road runs for a distance of eight miles is covered with heather in every direction as far as the eye can see’.⁸⁶ Blomefield in 1745 wrote of the land ‘being Sandy and Barren’ in the hundred of Grimshoe (where the bulk of Norfolk’s Brecklands can be found), and where the ‘most barren part’ farmed for rabbit pelts ‘would otherwise be of no use’.⁸⁷ W.G. Clarke’s popular work of 1925, similarly, in which the term ‘Breckland’ was first coined, regularly refers to ‘open’ heaths as ‘barren wastes’ on ‘highly acid ‘podsolised’ soils’.⁸⁸

As industry and enclosure became more commonplace into the 19th century, however, to some authors heaths became increasingly symbolic of a simpler, pre-industrial, often romanticised way of life. Many of the works of the poet John Clare, for example, focus on his boyhood pastimes of heathland exploration. In them, he frequently reveals an awareness of many cultural perceptions of heathlands discussed in this section so far – albeit from a childish perspective. In his autobiography, for example, speaking of his time as a boy in the 1790s, he wrote:

I had often seen the large heath calld Emmonsales stretching its yellow furze from my eye into unknown solitudes when I went with the mere openers & my curiosity urgd me to steal an opportunity to explore it that morning I had imagined that the world’s end was at the horizon & that a days journey was able to find it so I went on with my heart full of hope’s pleasures & discoverys expecting when

⁸⁵ Howard, *Landscapes* p.111

⁸⁶ Roberts, S. (trans.), *A Frenchman in England, 1784: Being the Mélanges sur l’Angleterre of François de la Rochefoucauld* (Cambridge, 1933) p.210

⁸⁷ Blomefield, F., *An Essay Towards a Topographical History of the County of Norfolk* Vol. II (London, 1805) p.270

⁸⁸ Clarke, W., *In Breckland Wilds* 2nd Ed. (Cambridge, 1937) pp.1,3,91

I got to the brink of the world that I could look down like looking
into a large pit & see into its secrets.⁸⁹

Elsewhere in the same work, he speaks of wandering the heath ‘in raptures among the rabbit burrows & golden blossomed furze’.⁹⁰ Pertinently, in both instances, Clare does not mention meeting another human being on the heath until returning home at the end of the day. Here, then, is apparent lived experience of heaths as vast, uninhabited landscapes filled with nothing but grazing rabbits and low shrubs. In his poem entitled *Emmonsale’s Heath*, written in the 1820s, Clare also touched upon the common notion of heaths being ancient landscapes, remaining unchanged over thousands of years, and typified in the lines ‘Creation’s steps one wandering meets, untouched by those of man, things seem the same in such retreats, as when the world began’.⁹¹ This theme of a universally pre-human foundation for heathland remained common into the 20th century and is explored in more detail later in this chapter.

In his other poetical works, he goes into more detail about the species and landscape types he encountered on the heath. The poem *Emmonsail’s Heath in Winter* (c.1820s), for example, using an alternative spelling of the name Emmonsales used above, reads as follows:

I love to see the old heath’s withered brake
Mingle its crimped leaves with furze and ling,
While the old heron from the lonely lake
Starts slow and flaps his melancholy wing,
And oddling crow in idle motions swing
On the half-rotten ash tree’s topmost twig,
Beside whose trunk the gipsy makes his bed.
Up flies the bouncing woodcock from the brig
Where a black quagmire quakes beneath the tread;
The fieldfares chatter in the whistling thorn
And for the hawk round fields and closen rove,
And coy bumbarrels, twenty in a drove,

⁸⁹ Tibble, J.W. and Tibble, A. (ed.), *The Prose of John Clare* (London, 1970) p.13

⁹⁰ *Ibid.* p.25

⁹¹ Tibble, J.W. (ed.), *The Poems of John Clare, Volume One* (London, 1935) p.382

Flit down the hedgerows in the frozen plain
And hang on little twigs and start again.⁹²

Being the son of a farm labourer, Clare maintained much of his Northamptonshire dialect into adult life and used it freely in his work. The word ‘odding’, for example, means ‘solitary’, while ‘brig’ is a shortening of ‘bridge’, and ‘bumbarrell’ was a local name for the Long-Tailed Tit, *Aegithalos caudatus*.⁹³ The Fieldfare (*Turdus pilaris*) is a type of Thrush.⁹⁴

The joyous, celebratory tone of this and others of his works is far removed from the bleak and barren representations of heaths found in Blomefield or Rochefoucauld. Here, Emmonsales is somewhere Clare ‘loves’ to be, while a focus on birds and their lively movements suggests life amongst an otherwise frozen, dormant landscape. Nor is this enjoyment limited to a certain time of year. In his poem simply entitled *The Heath*, the author wrote of springtime on Emmonsales:

The rabbits from the furze would squat and run;
The daisies filling every open space
And crowds of kingcups golden as the sun
Shone on the mole-hills of that happy place.⁹⁵

What Clare called ‘kingcups’ are more commonly known as Buttercups, genus *Ranunculus*.⁹⁶ Here, though, was not a worthless landscape worthy of destruction and derision as an improver like Young might have seen it (who called Breckland a ‘desert’ and said ‘I must consider commons, however naturally rich in soil, as wastes’).⁹⁷ This was not a landscape in need of modernisation and industry, but one valued precisely because it remained untouched by either of those things.

The variety of landscape types alluded to by Clare in his *Winter* poem is also noteworthy. Furze (gorse) and ling (heather) prefer freely-draining soils, while brakes (ferns) prefer damp, shaded conditions. Mention of a lake and a bridge suggest standing

⁹² Tibble, J.W. (ed.), *The Poems of John Clare, Volume Two* (London, 1935) p.146

⁹³ *Ibid.* pp.559,564; Hume, R., Still, R., Swash, A., Harrop, H. and Tipling, D., *Britain’s Birds: An Identification Guide to the Birds of Britain and Ireland* (Princeton, 2016) p.445

⁹⁴ *Ibid.* p.382

⁹⁵ Tibble, *Poems of John Clare vol.II* p.404

⁹⁶ *Ibid.* p.563; Rose, F., *The Wild Flower Key: How to Identify Wild Flowers, Trees and Shrubs in Britain and Ireland* (London, 2006) p.102

⁹⁷ Young, *General View of Norfolk* p.385; Young, A., *General View of the Agriculture of the County of Lincoln* (London, 1799) p.223

and flowing water respectively, while a quagmire would be waterlogged and stagnant and hedgerows, of course, suggest enclosed fields. Most of these do not feature in the majority of artistic and literary representations given in this section so far – with the exception of the lake or river shown by Wilson in figure 1.1. Although Clare’s relevant works focus almost entirely on just one heath, and are not, therefore, representative of wider trends, this variety of landscape types within heathlands is a common theme commented on by contemporaries throughout history and across the study area. These will be explored in more detail in the following chapter on etymology and later chapters focussing on the heaths of specific regions.

Later in the 19th century, Thomas Hardy’s *Return of the Native* of 1878 demonstrates several of the same literary conventions surrounding heaths alluded to by Clare, and which persisted throughout the Victorian period into the 20th century. The story revolves around the inhabitants of Egdon Heath in the fictitious county of Wessex, based on England’s West Country between Devon and Berkshire. Crucially, although said to be based on the very real Slepe Heath near Morden in Dorset, the great expanse of Egdon Heath featured in the book is itself entirely fictional.⁹⁸ Hardy himself first described his Wessex as ‘a merely realistic dream-country’, later adjusting the description to that of a ‘partly-real, partly dream-country’.⁹⁹ Whatever the reasons for the slight variation in terms, as Gatrell writes, ‘the main thrust of the phrase is to call Wessex wholly a dream-country realistically presented’.¹⁰⁰ Despite being make-believe, Hardy’s presentation of Egdon usefully describes to us (as it described to his increasingly urban Victorian readership) what he imagined a heath to be.

Like the Emmonsales Heath of Clare’s youth, Egdon was immense, ancient, and a haven from the fast-moving experience of industrial modernity. It was a ‘vast tract of unenclosed wild’ where:

the eye could reach nothing of the world outside the summits and
shoulders of heathland which filled the whole circumference of
its glance, and to know that everything around and underneath
had been from prehistoric times as unaltered as the stars

⁹⁸ Pite, R., *Hardy’s Geography: Wessex and the Regional Novel* (Basingstoke, 2002) pp.2-3

⁹⁹ Gatrell, S., “Wessex” in Kramer, D. (ed.), *The Cambridge Companion to Thomas Hardy* (Cambridge, 1999) p.30

¹⁰⁰ *Ibid.*

overhead, gave ballast to the mind adrift on change, and harassed by the irrepressible New.¹⁰¹

This mirrors a sense of endlessness seen in several pictorial artworks featured in this section from the 18th and earlier 19th centuries. It also reflects a separation from the dirty, unhappy realities of metropolitan living echoed in Ritchie's *View Over London* in fig.1.7 and Constable's *Branch Hill Pond, Hampstead Heath, with a Boy Sitting on a Bank of* c.1825 (fig. 1.10), in which the capitol presents a murky backdrop to the sunlit, carefree delights of the heath.¹⁰²



Figure 1.10. *Branch Hill Pond, Hampstead Heath, with a Boy Sitting on a Hill* by John Constable, c.1825.

¹⁰¹ Hardy, T., *The Return of the Native* (London, 1975) pp.33,35-36

¹⁰² Bermingham, *Landscape and Ideology* pp.163,165

Like heaths in the writings of Young, it was acknowledged as an ‘obscure, obsolete, superseded country’ which had no identifiable place in the modern economy.¹⁰³ It was also a place, however, where agricultural improvement was both undesirable and unfeasible. It was an ‘untameable, Ishmaelish thing’ and ‘civilisation was its enemy’.¹⁰⁴ The word ‘Ishmaelite’ means an outcast, referring to the eldest son of Abraham who, in the Old Testament, was banished to the wilderness.¹⁰⁵ This imperviousness to improvement is exemplified in the story of Wildeve’s Patch:

a plot of land redeemed from the heath, and after long and laborious years brought into cultivation. The man who had discovered that it could be tilled died of the labour: the man who succeeded him in possession ruined himself by fertilising it.¹⁰⁶

To this can be added a sense of sublimity – a profound emotional connection to, and appreciation of, the place which stood outside the refined, genteel world of accepted beauty. This was embodied in Hardy’s words setting the scene in the introduction as follows:

Twilight combined with the scenery of Egdon Heath to evolve a thing majestic without severity, impressive without showiness, emphatic in its admonitions, grand in its simplicity. The qualifications which frequently invest the façade of a prison with far more dignity than is found in the façade of a palace double its size lent to this heath a sublimity in which spots renowned for beauty of the accepted kind are utterly wanting... Haggard Egdon appealed to a subtler and scarcer instinct, to a more recently learnt emotion, than that which responds to the sort of beauty called charming and fair.¹⁰⁷

Stunning, obsolete, humble, untameable, and fake: the image of Egdon Heath presented to the Victorian reader was a vision of Britain that never was, but which looked good on paper.

¹⁰³ Hardy, Return of the Native p.35

¹⁰⁴ *Ibid.*

¹⁰⁵ *Ibid.* p.407

¹⁰⁶ Williams, M., Thomas Hardy and Rural England (London, 1972) p.136

¹⁰⁷ Hardy, Return of the Native p.34

The overlapping narratives of the artistic and literary sources so far cited in this section present a common vision of heathland. They were sandy and either mainly or totally treeless, covered instead in short masses of heather or gorse. They were separate from, but often close to, urban centres and, certainly by the late 18th century, possessed little industry and limited agricultural value of their own. Human inhabitants were few in number, with sheep and rabbits being the more common occupants of the heath. Lastly, they were old – their appearance and usage had remained unchanged since before the coming of humankind. The research undertaken in this work will, in part, seek to establish whether modern recreated or regenerated heathlands, many of the characteristics of which are recognisable in these post-1750 examples, have a historic precedent beyond that depicted in the late 18th to early 20th centuries in any part of the study area.

Variations in practice

Although many of the descriptions and examples of heathland and its management given earlier in this chapter display a homogenised image of ‘traditional’ heathland, it is worth noting that not all heaths have been managed uniformly in recent years. Conditions sought by managers vary between restoration and recreation projects depending on the intended future use of the land in question, as well as how it was used in the past. The success of each project can also be judged on contrasting criteria, e.g. whether aims were set to meet biodiversity targets, to recreate a known historical model, or a combination of the two. The following are examples of heathland conservation projects intended to reflect a broad range of purposes, techniques, and results observable in recently published material.

Heathland recreation at Prees Heath Common in Shropshire, for example, was loosely based on a historical model but was chiefly concerned with the conservation of butterflies. Since the 1970s, heather stands growing on the common have supported the last population of Silver Studded Blues (*Plebejus argus*) left in the English midlands.¹⁰⁸ On heathland, young Common Heather (*Calluna vulgaris*) is the preferred larval foodplant for the species, with less frequent use of Bell Heather (*Erica cinerea*), Cross-Leaved Heath (*E. tetralix*), gorses (*Ulex* spp.) and, occasionally, Bird’s-Foot Trefoil (*Lotus corniculatus*) – a member of the pea family.¹⁰⁹ Areas totalling 60ha of the common were bought in 2006 by

¹⁰⁸ Davis, J., Lewis, S. and Putwain, P., ““Robust” Interventions: The Re-Creation of Dry Heathland and Habitat for Nationally Threatened Butterfly at Prees Heath Common Reserve, Shropshire” in Alonso, I., Underhill-Day, J. and Lake, S. (eds.), Proceedings of the 11th National Heathland Conference, 18-20 March 2015 (2015) p.42

¹⁰⁹ *Ibid.* pp.43,44

the charity Butterfly Conservation to safeguard the persistence of the species.¹¹⁰

Terms of historical reference were not of great importance for target-setting, with managers stating simply ‘most of the 126ha common is thought to have been covered by grazed, lowland heathland in 1880’.¹¹¹ Of far greater practical importance was land-use on the heath since that time. By 2006, much of it had been converted to arable land, with some woodland, scrub, and coarse grassland. The purchased sites had high nutrient and pH levels as a result of past chemical enrichment and the disposal of large quantities of chicken manure.¹¹² As such, ‘robust’ interventions were required to reduce fertility and increase acidity in order to grow more heather for the butterflies and to meet the BAP description for heathland soils.¹¹³

Two fields were subjected to deep-ploughing to bury the 300mm-thick, nutrient-enriched topsoil and raise the underlying glacial sands to the surface, and then acidified using elemental sulphur.¹¹⁴ They were both then seeded with heather brash bearing ripe seed harvested from heathland in Cannock Chase at an estimated density of 37,000 seeds per square metre.¹¹⁵ The year after, weeds growing on the site were hand-pulled and spot-sprayed with herbicide to maintain ‘bare sandy soil suitable for heathland plant seedlings’.¹¹⁶ The year after, in 2009, they were both also planted with 20,000 young Bell Heather plants (or ‘plug plants’) raised in a local nursery and broadcast with the seed of Wavy Hair-Grass (*Deschampsia flexuosa*) harvested from elsewhere on the heath.¹¹⁷

The first field to be seeded with heather took well, but the second did not. Having become overrun with weeds requiring removal by machine, the whole was sprayed with herbicide, harrowed, reseeded with heather brash and planted with 10,000 more Bell Heather plug plants.¹¹⁸ By 2014, average *Calluna* coverage in the first field was 52% with 2.2% Bell heather and 30% bare ground. In the second field, average *Calluna* coverage was 12.9% with 6.6% Bell Heather and 61% bare ground.¹¹⁹ Also by that time, approximately 1.5ha of heather in the first field had grown to a height of 700mm, which is

¹¹⁰ Davis *et al*, “Robust Interventions” pp.42,43

¹¹¹ *Ibid.* p.43

¹¹² *Ibid.* p.44

¹¹³ *Ibid.*

¹¹⁴ *Ibid.* pp.44-46

¹¹⁵ *Ibid.* p.46

¹¹⁶ *Ibid.*

¹¹⁷ *Ibid.* p.47

¹¹⁸ *Ibid.* pp.49-50

¹¹⁹ *Ibid.* p.50

too tall for successful colonisation by the Silver-Studded Blue, so this was mown.¹²⁰ A large existing rabbit population was expected to slow the establishment of the heather sward, and limited control by shooting was undertaken in 2009.¹²¹ Once the heather had become established, though, rabbit grazing was not considered damaging – instead it became beneficial by reducing heather height, thus making it more accessible to the butterflies.¹²²

The aims of heathland recreation at Prees Heath Common, then, were dictated by the needs of a particular species which depends upon heather to propagate. Soil inversion and acidification were deemed necessary to undo decades of enrichment introduced under arable cultivation. Control of undesirable species was required to avoid the heather being outcompeted, which would have rendered the project a failure when considering its aims. Some Wavy Hair-Grass was introduced, however, to increase species variety. Rabbit grazing was, in time, permitted but there are no plans to introduce grazing by larger animals on the site. Scrub and tree removal were not mentioned because neither were present on the fields selected for the project. Reproducing the ‘traditional’ management of the heath was not itself important, and so neither was a sense of historical accuracy or cultural ownership.

Restoration of Bluebell Heath, part of Stanmore Common in the London Borough of Harrow, however, was based almost entirely on the desire to recreate a past landscape. Two points of historical reference are given in the project description, both from the 19th century. The first is the 1822 ordnance survey map, which shows the common as an open landscape.¹²³ The other comes from 1879 when a local naturalist wrote of ‘the furze on Stanmore Common spreading over more than 200 acres of undulating ground’.¹²⁴

By the 1990s, much of the common had become wooded with the largest open area being the 2.2ha of Bluebell Heath. Starting in 2011, local residents sought funding to ‘restore a small part of the extensive heath that existed here in the early 19th century’.¹²⁵ To do so, they intended to ‘restore Bluebell Heath as a continuous open space dominated by heather at the northwest end (“heathland”) grading to a dominance of grass and acid

¹²⁰ Davis *et al*, “Robust Interventions” p.52

¹²¹ *Ibid.*

¹²² *Ibid.*

¹²³ Harrow Heritage Trust/Harrow Nature Conservation Forum, Evaluation Report: Restoration of Bluebell Heath, Stanmore Common (2015) p.2

¹²⁴ *Ibid.*

¹²⁵ *Ibid.* p.22

grassland herbs at the southeast end (“acid grassland”).¹²⁶ Despite the local naturalist referring to ‘furze’ in the 1870s, and not heather or grasses, gorse is not mentioned in the evaluation report. Interpretation panels, leaflets, and guided walks would also be organised to encourage local inhabitants to use the space and to ‘alert visitors to plants and animals to look out for’.¹²⁷

Secondary woodland was machine cleared from 1.5ha of the site to join up parts of the heath which had become isolated, and to connect those to nearby New Heath.¹²⁸ Approximately 0.5ha of that had been wooded for at least 30 years, and so was scraped to remove leaf litter and expose the topsoil. Some trees were removed by hand to avoid ‘damage to groundwater movement that would be caused by vehicles’ in order to protect a stand of Heath Spotted Orchid (*Dactylorhiza maculate*), which requires damp conditions to thrive.¹²⁹ Bracken was sprayed with herbicide on a yearly basis, alongside other methods of control using hand tools.¹³⁰ Finally, seeds gathered from elsewhere on the heath were sown on the former woodland sites – heather in the northwest and grasses in the southeast.

Conservation at Bluebell Heath was focussed more on historical restoration, with biodiversity being a secondary consideration. Although some management decisions were made specifically to protect a single species in one instance (regarding orchids), this philosophy did not extend to the whole site, as at Preen Heath Common. Soils were not acidified as they had not been chemically altered in the past. Woodland was removed in order to restore the ‘traditional’ open nature of the heath, based on 19th century examples, but some mature oaks and Scot’s Pines were retained in an ‘open parklike setting’.¹³¹ Although openness in the 19th century was somehow both obtained and maintained without ploughing, neither mowing nor grazing was mentioned as part of this management scheme.

Experimental management at Skipwith Common in North Yorkshire, however, focussed entirely on grazing. As in Harrow, heather regeneration through tree and scrub removal was the chief purpose of the project, but this was achieved principally with sheep. A point of historical reference is provided for openness and again came from the 19th century when ‘records show... as a result of grazing pressure, the whole expanse of

¹²⁶ Harrow Heritage Trust, Evaluation Report: Restoration of Bluebell Heath p.2

¹²⁷ *Ibid.*

¹²⁸ *Ibid.* p.9

¹²⁹ *Ibid.* p.10

¹³⁰ *Ibid.* pp.12,19

¹³¹ *Ibid.* p.22

heathland was open', totalling some 250ha.¹³² Reference was also made to livestock grazing more generally having taken place since the Norman Conquest through rights of common.¹³³ Grazing ended during the inter-war period and, after a Second World War airbase on the edge of the common was abandoned, management became limited to occasional game shooting.¹³⁴

Initially, small herds of Swaledale and Dalesbred sheep breeds were introduced to browse year round on the birch scrub with some success. However, they were also 'clearly damaging the ericaceous vegetation' and so were removed.¹³⁵ The smaller, thriftier Hebridean breed was successfully introduced and birch 'grazed at sufficient pressure to remove most of the leaf were killed in a single grazing season'.¹³⁶ Being diminutive, however, Hebrideans can only browse up to one metre high, so taller birches were coppiced to allow the sheep access to the new shoots.¹³⁷ Where this was done, these stools were also killed within one grazing season.

The reintroduction of grazing at Skipwith was undertaken mainly for the purpose of experimentation - to inform future management by establishing suitable breeds and stocking densities for birch scrub control, informed by local historic management practices. As at Bluebell Heath, the soil had not been enriched as part of historical arable farming practices at Skipwith, so soil acidification was not necessary. Unlike at Bluebell Heath or Prees Heath, though, heather was not seeded to accelerate the establishment of stands but allowed to self-seed. Bracken and weeds were not controlled with herbicide but simply by adjusting stocking densities – 2.4 ewes plus lambs per hectare until scrub was controlled, and then 1 ewe plus lambs per hectare after that.¹³⁸ Although felling of larger trees was undertaken, as at Bluebell Heath, the open spaces this created would be maintained solely through grazing.

Heathland management on Chobham Common in Surrey was also experimental. It was established to monitor the effects of different management techniques on heathland vegetation, including mowing, turf stripping, and burning. This was done to 'help guide future management of the nature reserve in the context of the results of a public

¹³² Braithwaite, D., "Sheep Grazing at Skipwith Common, North Yorkshire" Journal of Practical Ecology and Conservation Special Series 5 (2009) p.76

¹³³ *Ibid.*

¹³⁴ *Ibid.*

¹³⁵ *Ibid.* p.77

¹³⁶ *Ibid.*

¹³⁷ *Ibid.* p.78

¹³⁸ *Ibid.* p.77

consultation into restoration of grazing on the common'.¹³⁹ As the consultation was concerned with grazing, in this case by cattle rather than sheep, this was also the focus of the published results.¹⁴⁰

The key heathland vegetation type given was H2 *Calluna vulgaris-Ulex minor* heath.¹⁴¹ No examples of historical management specific to the site were given beyond use of the word 'restoration' with reference to grazing, implying a historical precedent. Reference was briefly made to 'traditional burning and grazing practices' historically maintaining openness on heaths more generally.¹⁴² Evidence for burning as an element of 'traditional' management was taken from Rodwell 1991, in which heath fires in the New Forest are given as a modern example but no historical instances are cited.¹⁴³ Questions concerning the perception of fire as a 'traditional' management technique on heaths nationwide, and evidence for its use beyond only specific areas in the historic past, are discussed later in this chapter.

Belted Galloway cattle were introduced into five fenced enclosures on the heathland vegetation of the common in 2012, with ten 4mx4m sample quadrats distributed between the five areas.¹⁴⁴ Data from these were collected every year for four years and compared to un-grazed controls. Average heather (*Calluna vulgaris*) coverage in the grazed areas decreased significantly from just under 70% in the first year to 47% at the end of the fourth year, but young heather plants became more common – increasing from just 1% of all heather plants recorded in the first year to 22.5% in the fourth.¹⁴⁵ Heather coverage on the control plots decreased only slightly from 53% to 45% in the same time.¹⁴⁶ Average height of dwarf shrubs under grazing (including Common Heather, Bell Heather, Cross-Leaved Heath, and Dwarf Gorse *Ulex minor*) decreased considerably over the four years from 47.5cm to 29.6cm, while data from the un-grazed plots showed little difference.¹⁴⁷ Average bare ground cover in the grazed plots increased significantly from less than 1% in the first year to almost 15% in the second, but stabilised at between 2% and

¹³⁹ Cox, J. and Bealey, C., "Monitoring Effects of Management on Chobham Common NNR" in Alonso, I., Underhill-Day, J. and Lake, S. (eds.), Proceedings of the 11th National Heathland Conference, 18-20 March 2015 (2015) p.15

¹⁴⁰ *Ibid.* pp.14-29

¹⁴¹ *Ibid.* p.15

¹⁴² *Ibid.*

¹⁴³ Rodwell, J.S. (ed.), British Plant Communities Vol. 2, Mires and Heaths (Cambridge, 1991) pp.383-388

¹⁴⁴ Cox and Bealey, "Monitoring Effects of Management on Chobham Common" pp.17-18

¹⁴⁵ *Ibid.* p.22

¹⁴⁶ *Ibid.*

¹⁴⁷ *Ibid.* pp.21,24

3% in years three and four.¹⁴⁸ Average bare ground cover in the control plots changed only slightly.¹⁴⁹

In contrast to all of the sites so far discussed, management on Chobham Common was undertaken with no obvious objectives regarding wildlife conservation, woodland clearance, or heather establishment. It was an experiment designed to guide future management based on ‘re-establishing’ a grazing regime presumably based on known historical examples – or at least influenced by a fundamental understanding of ‘traditional’ heathland management more generally. Management choices produced results relevant to the project but involved very little direct alteration of the environment.

Conversely, large-scale recreation of heathland in Cannock Chase, Staffordshire employed a variety of intensive management methods. These included scrub and woodland clearance, various forms of bracken control, and heather seeding.¹⁵⁰ The aims of the project were to recreate historical management practices based on grazing. Two points of historical reference were given. The first is a map produced in 1775 which shows around 22,500ha of open heath in the Chase at that time – 90% of which was converted to either arable or industrial purposes during the 18th and 19th centuries, or forestry and urbanisation during the 20th century.¹⁵¹ The second is a reference to the cessation of common grazing on the Chase in 1904.¹⁵² Clearing trees, scrub, and bracken and reestablishing a more widespread heather population were methods employed by the *Saving Cannock Chase* project to help the area ‘regain its former condition’, which could then be maintained by grazing as it was before the early 1900s.¹⁵³

Mature conifer plantations were removed and the remaining stumps ground down by machine to prevent regrowth. Areas of both dense and scattered birch-pine woodland were likewise cleared, and their stumps treated with herbicide. Bracken control was attempted in several ways, the simplest being the application of herbicide. In 2009, for example, 240ha of bracken was treated by aerial spraying using a helicopter, and a further 111ha using ground vehicles.¹⁵⁴ Other more experimental techniques were tested on smaller plots. Bracken on one plot was, for example, cut and bailed once a year for five

¹⁴⁸ Cox and Bealey, “Monitoring Effects of Management on Chobham Common” p.19

¹⁴⁹ *Ibid.*

¹⁵⁰ Sheppard, S., “Cannock Chase Heaths” *Journal of Practical Ecology and Conservation Special Series 5* (2009) p.116

¹⁵¹ *Ibid.* p.117

¹⁵² *Ibid.* p.118

¹⁵³ *Ibid.*

¹⁵⁴ *Ibid.* p.120

years, which reduced average bracken height by half but did not significantly affect density of growth.¹⁵⁵ Another plot of long-established bracken measuring 3ha was cut and all litter, containing buried rhizomes, was stripped at great cost (£15,000/ha) before being seeded with heather brash ‘to speed up heathland recovery’.¹⁵⁶ After four years a ‘vigorous’ stand of young heather had become established, intermixed with some grasses and occasional cowberry and bilberry plants.¹⁵⁷ An area of capped colliery waste and a former plantation site were also seeded with heather brash and small amounts of grass seed.¹⁵⁸ These grasses were acknowledged as a necessity: ‘if the longer-term plans involve grazing, then a higher proportion of grasses than presently exist on the Chase will be desirable’.¹⁵⁹

As at Prees Heath, then, heather brash was used in Cannock Chase to help accelerate the establishment of heather on cleared sites, although grasses were also seeded in much smaller quantities. In contrast to restoration on that site, however, soils in the Chase were not inverted or acidified. The rationale behind the project also differed, being based on re-establishing a historical model, rather than the conservation of a particular species. Like work undertaken on Bluebell Heath, woodland clearance to create and connect open areas of heathland was a primary objective of *Saving Cannock Chase*, although undertaken on a much larger scale. Similar to the projects at both Chobham and Skipwith Commons, much of the work was experimental and aimed at establishing an effective model for sustainable grazing to maintain openness in future.

Funds available for the project were clearly substantial, considering the costs of some treatments and experiments (£15,000/ha clearing 3ha of bracken litter, £1,600/ha clearing mature plantations of conifers and stump grinding, £500/ha seeding land with heather brash) but some smaller projects have faltered in the face of insurmountable costs.¹⁶⁰ Heathland restoration work on former arable land on Scotton Common in Lincolnshire, for example, suffered multiple setbacks due to lack of funds available for keeping sufficient grazing stock.

The Lincoln shire project was focussed on restoring landscape character recorded at the beginning of the 19th century, when ‘Scotton and Laughton Commons supported a

¹⁵⁵ Sheppard, “Cannock Chase Heaths” p.120

¹⁵⁶ *Ibid.* p.121

¹⁵⁷ *Ibid.*

¹⁵⁸ *Ibid.* p.119

¹⁵⁹ *Ibid.* p.122

¹⁶⁰ *Ibid.* pp.119,121

tremendous range of heathland plants and animals'.¹⁶¹ Plant species included Oblong-Leaved Sundew (*Drosera intermedia*), Marsh Lousewort (*Pedicularis palustris*), and Lesser Butterfly-Orchid (*Platanthera bifolia*), all of which prefer damp or boggy ground.¹⁶² Bird species included Black Grouse (*Tetrao tetrix*) which prefer low vegetation on the edge of woodland, Stone Curlew (*Burhinus oedicanus*) which prefer dry grassland or heather, and possibly Ruff (*Philomachus pugnax*), a type of wading bird.¹⁶³ Several species of butterfly were also recorded, including the Silver-Studded Blue variety found at Prees Heath which prefer heather as a larval foodplant.¹⁶⁴

Some parts of the heath had been converted to arable cultivation by the 1920s, and between 1922 and 1940 the Forestry Commission planted some 600ha with conifers, leaving only small areas of open heathland.¹⁶⁵ Numbers of all the above species declined rapidly during the 1950s and most had disappeared by the end of the 1970s.¹⁶⁶ The project began with the Lincolnshire Wildlife Trust's purchase of 15ha of relict heathland on the common in 1955 for a nature reserve.¹⁶⁷ More recently, management has focussed on heathland restoration on former arable and pasture fields purchased in the late 1990s.¹⁶⁸ Initially, the intentions of the project were to re-establish open heathland maintained through grazing, with heather as a major floral component, and, in so doing, recreate conditions favourable to several rare species lost since the 19th century.¹⁶⁹

Scotton Beck, a small watercourse, ran through one of the fields – thus making it marshy with heather only present in one discrete area. As such, it was decided that 'maintaining the site as grass heath and acid grassland was a more viable option than trying to create large areas of *Calluna*'.¹⁷⁰ The remaining fields maintained high nutrient levels due to past enrichment for arable cultivation, and sheep grazing was intended to reduce those levels over time.¹⁷¹ This was attempted using the Trust's own Hebridean flock, but demand for them for use on other sites was high. As the Trust owned several nature reserves designated as Sites of Special Scientific Importance (SSSIs), they bore a legal

¹⁶¹ Pike, N., "Scotton Common: Heathland Restoration on Former Arable Land" Journal of Practical Ecology and Conservation Special Series 5 (2009) p.92

¹⁶² *Ibid.*

¹⁶³ *Ibid.*

¹⁶⁴ *Ibid.*

¹⁶⁵ *Ibid.*

¹⁶⁶ *Ibid.*

¹⁶⁷ *Ibid.* p.91

¹⁶⁸ *Ibid.* p.94

¹⁶⁹ *Ibid.* pp.91-97

¹⁷⁰ *Ibid.* p.93

¹⁷¹ *Ibid.* p.94

obligation to maintain them in favourable conditions. As a result, the sheep were regularly removed from the Scotton Common fields at inconvenient times. The result over several years was a significant growth of thistles and a ‘massive increase in ragwort’.¹⁷² Two of the fields were also sown with barley in an attempt to reduce nutrient levels, with the stubble grazed by the sheep after this was harvested. Again, the sheep were removed too early and by the summer of 2002 ‘ragwort had become a serious problem’ with the preferred flora hardly established.¹⁷³ Overall, progress was hampered by limited supplies of both sheep and labour. As the managers have written: ‘with finite sheep resources, and given that flock managers occasionally need to sleep and eat, there are usually too many places needing sheep and too few sheep in the spring and summer’.¹⁷⁴ As a result, the aims of the project were subject to several revisions.

As in most of the examples given in this section, then, recreation of open heather heathland was the intension at Scotton. This was frustrated, however, by lack of resources, leading to a change in objectives. As the managers have written: ‘we were initially hoping for *Calluna* heathland from our restoration plots; acid grassland or grass heath is now our first priority’.¹⁷⁵ As at Prees Heath, high soil nutrient levels were considered an obstruction to the establishment of new stands of heather, but soil inversion or acidification were not attempted. Tree and scrub clearance was not necessary on the fields purchased for heathland restoration because none were present. Some birch clearance had taken place on the original 15ha heathland site in the mid-1990s to ‘restore open heathland’, but how this was approached is not clear.¹⁷⁶ As at Cannock Chase and Chobham and Skipwith Commons, the intention was to establish an effective grazing regime for the maintenance of ericaceous plant cover and openness in future, though with limited success.

The limited successes of restoration work at Scotton Common highlight some benefits enjoyed by larger-scale projects such as *Saving Cannock Chase*. Having more resources on hand to tackle urgent problems, for example, makes it more likely that the project’s aims will be met. As managers at Scotton Cotton have written: ‘where money is an object, it is dangerous to hold absolute, set ideas about your desired end result’.¹⁷⁷ In the Chase, the limited success of some bracken control methods was not detrimental to the

¹⁷² Pike, “Scotton Common” p.95

¹⁷³ *Ibid.* p.96

¹⁷⁴ *Ibid.* p.95

¹⁷⁵ *Ibid.* p.97

¹⁷⁶ *Ibid.* p.93

¹⁷⁷ *Ibid.* p.97

work ongoing elsewhere on the site, or the achievement of their overall aims. At Scotton, however, limited success in weed control resulted in a major realignment of project objectives because there were no other resources available to deal with issues as they emerged.

These examples have been given to illustrate some variations in management techniques employed in heathland restoration, recreation, and maintenance demonstrable from across England within the past thirty years. Although the increase of heather is often a preferred outcome, some project aims might include a more mixed target vegetation. Whereas the project at Prees Heath, for example, targeted almost total heather dominance, work at Cannock Chase included deliberate sowing of grass seed to provide forage for future grazing animals. Tree removal is also commonly undertaken but methods of doing so can vary. At Cannock Chase, most trees were removed by machine cutting, whereas at Skipwith Common birch control was almost entirely reliant on grazing pressure. At Bluebell Heath, moreover, some scattered mature tree cover was deliberately maintained. Furthermore, not all heathland restoration projects are founded on the principal of historical reconstruction, with biological conservation often being a secondary objective or, as at Prees Heath, a primary one.

It is worth noting that almost all historical reference points used in the projects outlined above (where they were given) originate in the 19th century. As such, they reflect many of the common heathland features shown in the art and literature of that century discussed in the previous section. Without further historical research, managers and practitioners cannot know whether the landscape characters and management regimes of their heaths were different or more varied in the more distant past, and so cannot take these potential differences into account when seeking to recreate historical models. The concept of ‘traditional management’ of heathland was explicitly referenced in only one of the above examples. To what extent some practices regularly labelled as ‘traditional’ were demonstrably employed throughout Britain in the historic past, however, especially that of burning, is not clear. Part of the following section explores this subject in more detail.

‘Traditional’ management

In 2012 Groves *et al* wrote that the history of English heathland was still ‘poorly understood’.¹⁷⁸ When referenced in terms of recreation or regeneration, the past management of heaths has often been approached only briefly and within the paradigm of ‘traditional’ management. This is presented in a way that implies patterns of use before the late 19th century were long-standing, little-changed, and, crucially, widespread. Natural England, in its lowland heathland handbook, for example, state simply that ‘grazing or burning’ was traditionally used to maintain openness on heaths, without exploring a sense of regionality or change over time.¹⁷⁹

Gimingham, in his report on heathland also compiled for Natural England, gives slightly more detail. Grazing, cutting of heather (above ground), turf-cutting, cropping (for temporary agriculture), and burning are all given as examples of traditional heathland management.¹⁸⁰ In Britain, examples of turf cutting are given from the New Forest, Dorset, Cornwall, Surrey, and East Anglia. Cropping, too, is associated with East Anglia but cutting and grazing are given as common methods nationwide. Burning is said to have ‘been employed occasionally... for a long time over much of the western European heath region’ but probably more often in northern England and Scotland than on the lowland heaths of the south.¹⁸¹ Changes in management over time are discussed only in terms of the ending of traditional management in the 20th century. He also asserts that ‘whichever form of management was traditionally employed, it tended to maintain the dominance of heather’ – again reinforcing a predisposition towards heather already discussed.¹⁸²

Walker *et al*, discussing heathland recreation on former arable land, only briefly mention grazing and disturbance as past management methods on two sites in East Anglia.¹⁸³ Pywell *et al*, discussing the 17-year heathland restoration experiment already mentioned, simply wrote that heaths are ‘the product of a long-history of human utilisation, including grazing, burning and cutting of both vegetation and turf’ without providing

¹⁷⁸ Groves *et al*, “Long-term development of a cultural landscape” p.453

¹⁷⁹ English Nature, Lowland Heathland p.1

¹⁸⁰ Gimingham, C.H., The Lowland Heathland Management Handbook English Nature Science Report Number 8 (1992) pp.34-35

¹⁸¹ Gimingham, The Lowland Heathland Management Handbook p.35

¹⁸² *Ibid.* p.36

¹⁸³ Walker, K.J., Warman, E.A., Bhogal, A., Cross, R.B., Pywell, R.F., Meek, B.R., Chambers, B.J. and Pakeman, R., “Recreation of Lowland Heathland on Ex-Arable Land: Assessing the Limiting Processes on Two Sites With Contrasting Soil Fertility and pH” Journal of Applied Ecology **44** (2007) pp.574-575

further detail.¹⁸⁴ Writing about heathland regeneration on former plantation sites, the same principal author wrote of the ‘recent cessation of traditional management practices, such as grazing and burning’ but did not discuss the subject further.¹⁸⁵ Meanwhile, Newton *et al* wrote of ‘a widespread decline in the traditional use of heathlands, which typically included livestock grazing, controlled burning and cutting of vegetation for use as fuel and animal fodder, together with the cutting of turf and peat’ without exploring any potential regional or temporal differences.¹⁸⁶

Webb, and particularly his 1998 *Traditional Management of Heathland*, is often referenced as a source for historical management methods but is itself quite vague. He writes that ‘in Britain the lowland heaths were grazed, peat and turf cut, and the vegetation cut for fodder and fuel’.¹⁸⁷ Except for a brief reference to East Anglian sheep-corn husbandry, and the free-range grazing of the New and Ashdown Forests, a sense of temporality or regionality within Britain is not explored. He also acknowledges that ‘we have a poor idea of how English lowland heaths were managed’ and yet this work is commonly cited as an authority on the subject.¹⁸⁸

Webb is often given as a reference for the practice of burning on English heaths, including in many of the works featured in this section and in Natural England’s report on heathland restoration and the historical environment already mentioned. In *Traditional Management* he writes that ‘burning is an effective way to deplete nutrients that has been widely used for heathland management and should be used more’.¹⁸⁹ This, in turn, is based on another of Webb’s works published a year earlier in which he asserts that ‘fire has played an important role in the formation and persistence of the heathlands in Southern England as well as elsewhere in Britain’ but only gives one historical example.¹⁹⁰ This comes from the *Natural History of Selborne* by Gilbert White, first published in 1789. When discussing the old royal hunting forest of Woolmer in Hampshire, it is said that:

Though (by statute 4 and 5 W. and Mary c.23) “to burn on any waste, between Candlemas and Midsummer, any grig, ling, heath

¹⁸⁴ Pywell *et al*, “Long-Term Heathland Restoration” p.1602

¹⁸⁵ Pywell, R.F., Pakeman, R.J., Allchin, E.A., Bourn, N.A.D., Warman, E.A. and Walker, K.J., “The Potential for Lowland Heath Regeneration Following Plantation removal” *Biological Conservation* **108** (2002) p.247

¹⁸⁶ Newton, A.C., Stewart, G.B., Myers, G., Diaz, A., Lake, S., Bullock, J.M. and Pullin, A.S., “Impacts of grazing on Lowland Heathland in North-West Europe” *Biological Conservation* **142** (2009) p.935

¹⁸⁷ Webb, “The traditional management of European heathlands” p.988

¹⁸⁸ *Ibid.*

¹⁸⁹ *Ibid.* p.989

¹⁹⁰ Webb, N.R., “The Effects of Fires on the Dynamics of Heathland Communities in Southern England” *NNA Berichte* **10** (1997) p.134

and furze, goss or fern, is punishable with whipping and confinement in the house of correction”; yet, in this forest, about March or April, according to the dryness of the season, such vast heath-fires are lighted up, that they often get to a masterless head, and, catching the hedges, have sometimes been communicated to the underwoods, woods, and coppices, where great damage has ensued. The plea for these burnings is, that, when the old coat of heath, etc. is consumed, young will sprout up, and afford much tender brouze for cattle; but, where there is large old furze, the fire, following the roots, consumes the very ground; so that for hundreds of acres nothing is to be seen but smother and desolation’.¹⁹¹

The word ‘grig’, used here, was a colloquial word for heather.¹⁹² Candlemas falls on 2nd February and Midsummer on 24th June. This example is detailed and noteworthy, but only applies to one place – White’s own words limit the practice only to ‘in this forest’.

Although the statutes listed at the beginning applied nationwide, suggesting fires were a nuisance (at least during those times of year), there is no indication as to how common the deliberate setting of fires was. Indeed, the presence of ‘hundreds of acres’ of ‘large old furze’ implies a long time between burnings at Woolmer. Furthermore, Webb calls this ‘one of the earliest accounts of burning heathland’ suggesting a lack of evidence for heathland burnings in the historical period before the 1780s. As a result, any work which references Webb’s *Traditional Management* as a source for burning heaths is basing that assertion on only one historical example from the late 18th century.

In recent years, it has been suggested that more detailed historical research, undertaken by historians, be integrated into restoration and recreation projects which seek to emulate past management methods or the effects these had on wildlife. Balaguer *et al*, for example, assert that conservation efforts are often ‘hampered by an incomplete or flawed concept of historical reference used when choosing or constructing a target ecosystem or landscape to restore to’.¹⁹³ They conclude that more detailed research

¹⁹¹ White, G., The Natural History & Antiquities of Selborne in the County of Southampton (London, 1900) p.20

¹⁹² Hanmer, T., “Papers in Agriculture” Transactions of the Society, Instituted at London, for the Encouragement of Arts, Manufactures, and Commerce **9** (1791) pp.78,80

¹⁹³ Balaguer, L., Escudero, A., Martín-Duque, J.F., Mola, I. and Aronson, J., “The Historical Reference in Restoration Ecology: Re-Defining a Cornerstone” Biological Conservation **176** (2014) p.13

underpinning historically-inspired restoration work makes those projects more likely to succeed because goals and benchmarks (against which to compare progress) are better defined and so ‘better guide the planning, implementation and evaluation of effective restoration projects’.¹⁹⁴ In their review of more than 200 historical ecological studies, and the recommendations which they advanced, Beller *et al* found that nearly one quarter of them contained data which challenged mainstream management techniques across several landscape types.¹⁹⁵ Further detailed research might produce more data relevant to conservation, and which might also suggest a change in management practice.

In 2016, Fuller *et al* lamented that, in both biodiversity conservation and ‘rewilding’ circles, ‘knowledge of past land-use systems has often been limited or simplistic’.¹⁹⁶ Authors on the paper are interdisciplinary, including environmental scientists, an ecologist, and a landscape historian. Their research determined that open anthropogenic habitats are:

Often considered to have changed little in the period up to industrialisation and are frequently discussed in terms of a relatively limited number of homogenous ‘types’. In reality, patterns of exploitation changed over time in response to an interconnected raft of economic, social, tenurial, technological and demographic drivers; what we tend to think of as a single habitat type often displayed considerable variation from place to place.¹⁹⁷

On heathland, they acknowledged a broad timeframe of development ranging from the Bronze Age to the 18th century and gave examples of varied management techniques including the maintenance of scattered tree cover.¹⁹⁸ Their conclusion is, in effect, the inspiration for this thesis and the rationale behind much of its methodology:

Synergy between ecologists and historians can help create a better understanding of past environmental heterogeneity – its causes and how it scaled across time and space – which can assist the development of future resilience for biodiversity... The overriding

¹⁹⁴ Balaguer *et al*, “The Historical Reference” p.13

¹⁹⁵ Beller, E.E., McClenachan, L., Zavaleta, E.S. and Larsen, L.G., “Past Forward: Recommendations from Historical Ecology for Ecosystem Management” *Global Ecology and Conservation* **21** (2020) p.1

¹⁹⁶ Fuller, R., Williamson, T., Barnes, G. and Dolman, P., “Human activities and biodiversity opportunities in pre-industrial cultural landscapes: relevance to conservation” *Journal of Applied Ecology* **54**, 2 (2017) p.460

¹⁹⁷ *Ibid.* p.462

¹⁹⁸ *Ibid.* p.463

message is that simplistic, generalised notions of ‘traditional management’ practices are meaningless because land-use systems displayed a high degree of spatial and temporal variation.¹⁹⁹

Palaeobotanists and palaeoecologists, through the pollen analyses and animal/coleoptera remains studies already mentioned, have attempted to build a body of evidence to substantiate several visions of heathland in the prehistoric period. These visions sometimes conflict, but the scarcity of surviving evidence (and an absence of written sources) makes this almost unavoidable. The nature and diversity of heathlands within the historic period remains under researched, in part due to limited communication or interdisciplinary work between historians and ecologists. What might also have hampered progress in the past is the belief that heathland management, as implied in numerous works referenced in this section, remained unchanged (or little-changed) since prehistory up to as late as the 20th century.

The purpose of this thesis is to provide both a historical context for understanding how the concept of heathland has changed over time, as well as detailed examples of how varied heathland landscapes were in the historic period within the study area. It is also to suggest ways in which this data can be integrated into conservation efforts to the benefit of biodiversity, and resilience in the face of climate change and the accelerated spread of disease caused by globalisation. It is also hoped that the data presented in this thesis can demonstrate to its readers that future detailed research into heaths and their management, within and far outside the given study area, is both valuable and necessary.

Heaths outside of East Anglia

It is worth noting that Lowland heaths are not limited to East Anglia and the southeast, and some heaths in England have been the subjects of extensive study. Heaths in Cannock Chase in Staffordshire, for example, which contains the largest area of heathland in the midlands, were the subject of a detailed historical study undertaken by Keele University as part of *The Chase Through Time* landscape partnership scheme.²⁰⁰ This uncovered documents detailing grazing rights on Cannock Heath held by local copyholders in the 17th

¹⁹⁹ Fuller *et al*, “Human Activities and Biodiversity Opportunities” p.467

²⁰⁰ Carpenter, E., Knight, D., Pullen, R. and Small, F., Cannock Chase, Staffordshire: The Chase Through Time, Historic England Contribution Historic England Research Report Series 7 (2018) p.3

century, as well as the right to take fuel, marl, and gravel from off the same.²⁰¹ It also presents evidence for the illegal burning of the heath in the 1770s.²⁰² Accompanying research by Historic England focussed on the archaeology of the Chase, in which lidar evidence revealed medieval or post-medieval temporary cultivation on a heath near Gentleshaw Hill and earthworks on Brindley Heath which might be the remains of enclosed woodlands recorded in the 16th century.²⁰³

An ecological history of the New Forest in Hampshire, written in the 1960s, shows evidence of agriculture and settlement on heaths there in the Bronze Age, and that many heaths which are now open were once wooded.²⁰⁴ Another, more recent, study used pollen analysis to date multiple enclosures on heaths within the perambulation of the old forest, with some dating back to the Iron Age and others originating as late as the middle ages, when enclosing new land was illegal under forest law.²⁰⁵

Borlase, in his *Natural History of Cornwall* of 1758, observed that honeybees were kept on heaths in that county, but would often stray to feed on the salt-coated rocks of the coast. He also observed that heaths at the very end of the Cornish peninsula, between Mount's Bay and St. Ives, were used for grazing and the cutting of turfs for fuel.²⁰⁶ Archaeological reports from the 1980s show that some heaths on the Lizard Peninsula in the Goonhilly Downs had been ploughed up during the 13th and early 14th centuries, before a period of agricultural contraction after the Black Death of 1348.²⁰⁷ Pollen analysis of waterlogged samples taken on the Lizard shows that the landscape was mostly open and treeless during the Bronze Age, when a remarkable number of barrows were constructed on what is now heathland.²⁰⁸ Similar investigations undertaken between 2007 and 2010 showed that some heathlands near Lower Lancarrow had started to become open in the upper Palaeolithic period.²⁰⁹

The natural history and historical management of Britain's moorland has also been extensively studied, for example in north-east Yorkshire where heather was used for

²⁰¹ Sargent, A., The Chase Through Time Archival Research: Final Report Keele University Research Report (2018) pp.24-25

²⁰² *Ibid.* p.31

²⁰³ Carpenter *et al*, Cannock Chase pp.60,154-155

²⁰⁴ Tubbs, C.R., The New Forest: An Ecological History (Newton Abbott, 1968) pp.8,11,13

²⁰⁵ Jones, E.L., "Heathland" in Jones, E.L., Landscape History and Rural Society in Southern England (London, 2021) p.62

²⁰⁶ Borlase, W., The Natural History of Cornwall (Oxford, 1758) pp.2,250

²⁰⁷ Smith, G., "Excavations on Goonhilly Down, The Lizard, 1981" Cornish Archaeology **23** (1984) pp.5,11

²⁰⁸ *Ibid.* pp.27-28

²⁰⁹ Forster, E. and Robinson, D.E., The West Cornish Heath: Landscape Studies in Southwest England (English Heritage Research Department Report Series 53 (2011) p.26

thatching in the medieval period and as late as the 17th century.²¹⁰ Simmons' comprehensive work on English and Welsh moorland shows evidence of human activity stretching back millennia. These include Mesolithic settlement, e.g. 5,000 microliths found within an 8 metre radius on Snilesworth Moor in North Yorkshire, moorland agriculture in the 12th and 13th centuries in the Berwyn Mountains of North Wales, and afforestation on Dartmoor during the 1780s.²¹¹ Moorlands themselves, however, are not the subjects of this thesis, as explained in the next section.

The changing perceptions of heathland

At this point, it would be useful to illustrate a central concept behind the formation of this thesis: that what we call a heath in the modern world would not necessarily be a heath to someone living in the past, or vice-versa. As indicated in the title and abstract, outlining the changing cultural perceptions of heathlands over time (including what qualifies and disqualifies a landscape from being one) is important to this study. Some historical landscapes which modern observers might deem relevant due to being 'heath-like' have, as a result, been omitted. This was deliberate. In the context of this thesis, if past inhabitants have left no evidence that they considered a landscape a heath, it is not appropriate or useful for that term to be imposed retrospectively. To do so would be anachronistic. It would, in effect, be a symptom of presentism: 'an interpretation of history that is biased towards and coloured by present-day concerns, preoccupations and values'.²¹²

Labelling a historical moor, warren, or common a 'heath' because it contained heather would be like labelling a medieval woodland a 'forest' because it contained planted trees – accepted usage of words and concepts have changed and, if we are to avoid presentism, those of us who write about history must acknowledge our own incognizance. To that end, in this thesis, a retrospective application of the term 'heath' to historical landscapes not labelled as such by a contemporary will be diligently avoided.

The aims of this study

The objectives of this thesis are fourfold. First, as a work of history. The history of English lowland heathland is under-researched, and some possible reasons for this have already been discussed earlier in this chapter. The work presented here is intended to illustrate the

²¹⁰ Hartley, M. and Ingilby, J., Life and Tradition in the Moorlands of North-East Yorkshire (Otley, 1990) p.82

²¹¹ Simmons, I.G., The Moorlands of England and Wales: An Environmental History, 8000BC-AD2000 (Edinburgh, 2003) pp.29,61,116

²¹² Walsham, A., "Introduction: Past and ... Presentism" Past & Present **234**,1 (2017) p.213

diversity of management methods and landscape characters associated with heathland within the study area between the early medieval period, when surviving documentary evidence becomes more common, and the end of the Napoleonic Wars in 1815, after which homogenised depictions of heaths shown in art and literature discussed earlier in this chapter became commonplace. To that end, case studies in this thesis were selected based on two main criteria: detail and diversity.

Secondly, to examine the evolution of heathland as a cultural concept. By examining the etymological evolution and literary usage of the term ‘heath’ and its compounds, this thesis seeks to clarify what landscape or landscapes were encompassed within the meaning of words and phrases like ‘heathland’ or ‘heath-like’ in the historic period, and whether these meanings differ from a modern understanding of such terms. This evolution is traced through several iterations of the English language beginning with Old English, in which the first recognisable ancestor of the word ‘heath’ appears.

Analysis of the locations and environs of past and former landscapes labelled as heathland contributes to this exercise by testing a common modern association with acidic sandy soils, discussed earlier in this chapter. Heaths most often survive into the modern period on these soils, but as other examples of them provably existed and persisted on a range of soil types in the historic past, this suggests such an association is a more modern construct. The need to test this association is, in part, responsible for the selection of Norfolk, Suffolk, Essex, and Hertfordshire as a study area. Underlying geology varies widely throughout the four counties, and whereas Norfolk and Suffolk carry sizeable areas of acidic sandy soils prone to podsolization, of a type favoured by modern conservationists for heathland recreation, neither Essex nor Hertfordshire possess any such soils visible on large-scale soil maps. Including these two counties in the study area provides the opportunity to study the history of their heathlands within a broader edaphic context.

Detailed research illustrating the management methods historically employed on heaths in the study area, how these methods altered the physical appearance and ecological functions of those heaths, and how these methods varied both spatially and over time, also contributes to an understanding of what was meant by the term ‘heath’. Landscapes labelled as heaths provably contained a variety of ground cover, including woodland, arable crops, and bare ground, and this suggests a broader meaning for the word in the historic past beyond that of an open landscape dominated by heather often shown in the art and literature of the 19th and 20th centuries.

Thirdly, as a work of historical ecology. Examining the relationship between

woodland, wood-pasture, and heathland informs ongoing debate surrounding the so-called ‘Vera-hypothesis’ and other theories regarding the origins of heathland as an ‘open’ landscape. As some landscapes labelled as heaths within the study area maintained either scattered or dense woodland into the historic period, theories regarding a prehistoric origin for all or most open heaths are called into question, and Vera’s argument that scattered or clumped trees were an integral part of heathland (already discussed) is strengthened.

Fourthly, to inform future conservation projects. Heathland restoration and recreation projects based on historical models discussed earlier in this chapter often relied upon 19th century depictions as reference points. Where earlier recorded activities and trends within heathland management diverged from practices common in the modern period, these are identified and discussed. Detailed research into heathland management within the study area presented within this thesis therefore sheds light on matters of importance not only to landscape historians and historical ecologists, but also to those involved in heathland conservation and management.

It is hoped that this evidence, if then applied to heathland regeneration and recreation projects in future, might help repair a ‘cultural severance’ that has occurred between these landscapes and the people who use or live near them, as identified by Rotherham.²¹³ If the landscape to be created or conserved could, legitimately, be said not only to have close geographic historic precedence, but to be the product of historic land use unique to that locality, perhaps a greater sense of ownership (rather than apathy) might prevail within the local populace. Furthermore, the recreation or restoration of heathland landscapes displaying a wide variety of flora would increase biodiversity and might help insulate heaths against damage from species-specific diseases introduced from abroad, such as Dutch Elm Disease (*Ophiostoma ulmi*) or Ash Dieback (*Hymenoscyphus fraxineus*) but which target species commonly maintained on or introduced into modern heathlands, for example heather (*Calluna vulgaris*).

²¹³ Rotherham, I.D., “Cultural Severance in Landscapes and the Causes and Consequences for Lowland Heaths” Journal of Practical Ecology and Conservation Special Series 5 (2009) pp.130-143

2. What did it mean? The etymology and historic associations of ‘heath’

As historic landscapes, that is to say, landscapes the origins of which lie in the (presumably distant) past, the existence of heathlands in England can be traced through over a thousand years of written history and across numerous iterations of the English language. Studying the etymological construction of the word ‘heath’, and other words containing or related to it, as well as their literary associations in each period and language, could provide valuable evidence as to the character of heathland, or the opinions of the authors about such landscapes, in each context.

Although modern conservationists broadly agree on what constitutes a modern heath – with regards to soil type, species present, and appropriate management techniques – it is possible that the uses and locations of heaths (as well as even the meaning of the word ‘heath’ itself) have changed over time. Although archaeological evidence for these changes (should there have been any) might not have survived, references to them in contemporary written sources may well have.

As such, written sources from all periods of English history from the Anglo Saxon, or ‘Early Medieval’, period, during which the word ‘heath’ first appeared in the Old English language, onwards were studied. Particular attention was paid to those texts from which management techniques, either on or nearby heaths, could be inferred. Emphasis was also placed on finding references to what were considered heathland species (of both flora and fauna) in each context. Conclusions were then drawn as to the historic landscape character of the heaths they mentioned, based on facts inferred from the texts, as well as their surrounding environments where possible.

Old English

Hǣþ, hæþ, and hæð

The modern word ‘heath’ derives from the Old English (OE) *hǣþ* – the accented ‘æ’ being pronounced as ‘ea’ in ‘heat’ or ‘meat’.²¹⁴ The last letter is a ‘thorn’ producing a hard ‘th’ sound as in ‘thin’ or ‘throw’.²¹⁵ As spelling was not standardised, however, the ‘a’ and ‘e’ are sometimes found reversed, and the thorn sometimes replaced with the letter ‘eth’ (ð) producing a softer ‘th’ sound as in ‘soothe’.²¹⁶ In short, then, both the spelling and pronunciation in modern English has changed only slightly.

²¹⁴ Bosworth, J. and Toller, T., An Anglo-Saxon Dictionary (Oxford, 1898) pp.8,502

²¹⁵ *Ibid* p.1

²¹⁶ *Ibid*.

In Anglo-Saxon documents the word was often used as a noun referring to a heath (i.e. a piece of land), but sometimes also to heather as a plant. The boundary clause of a West Saxon charter, dated AD 951, for example, contains the phrase ‘thence along the enclosure to the beech-tree, from the beech-tree there north out to the small heath-field’.²¹⁷ Another of the same date reads ‘from the ford west by the marsh until it comes to the fallen post, from the post along the hedge out to heath field’.²¹⁸

Both of these examples are from Berkshire (then part of the kingdom of Wessex) and give little hint as to the landscape character of heathlands there. They do, however, show that by the mid-10th century, in that locality at least, either heathlands themselves had begun to be enclosed, or that enclosure had spread close enough to the edges of extant heathlands that proximity to them became the defining feature of those fields. By extension, then, enclosed arable land either beside or replacing heathland is by no means a modern phenomenon. Neither is a linguistic (and therefore probably physical) distinction between enclosed ploughed land and heathland. In this context, then, heaths were described in a manner very much recognisable to a modern observer.

Most dictionaries of Old English also attribute the word *hæþ* to the heather plant and some early medieval documents would seem to confirm this in context. A prescription in the ‘*Medicina de Quadrupedibus*’ – originally an Old English medical text of the early 11th century, attributed to the (probably fictional) Sextus Placitus – reads as follows:

For sore of joints, take goats turd, mingle with sharp acid, and smear therewith, it healeth well; and smoke with heath, and drink the same in wine.²¹⁹

Contextually this passage cannot refer to heathland but rather to a plant. Although a reference specifically to a heather plant seems obvious here, some near-contemporary sources suggest that the word ‘heath’, where not referring to land, could in fact refer to one of several (superficially similar) species.

The vocabulary, or ‘glossary’, of Archbishop Ælfric, written in the 10th century, for

²¹⁷ “þonon 7lang hagan to þam bæce of þam bæce þær norþ ut an þone lytlan hæþfeld” Birch, W., *Cartularium Saxonicum* Vol. III (London, 1893) p.52. Translation my own.

²¹⁸ “of þan forða pest be more oþ hit cymð on þone licgendan stoc of þan stocce 7lang hagan ut to heað felda” *Ibid.* p.47; Translation from Wright, J., *A Natural History of the Hedgerow: and ditches, dykes and dry stone walls* (London, 2016)

²¹⁹ “smeoce mid hæþe” (“smoke with heath”) Cockayne, O., *Leechdoms, Wortcutting, and Starcraft of Early England* Vol. I (London, 1864) pp.xc,354-355; Anderson, G., *The Literature of the Anglo-Saxons* (Princeton, 1966) p.388

instance, is an early Latin to Old English dictionary which gives numerous meanings to the word not associated with heather. It contains two entries for ‘heath’ under two different spellings – *hæp* and *hæð* – both equated with the Latin (Lat.) *mirica* or *myrica*.²²⁰ The former OE spelling is presented as a straightforward translation of the Latin, almost certainly referring to the genus of plants of that name within the Myricaceae family. Of those by far the most common in England is *Myrica gale* or ‘bog myrtle’, which grows mostly in acidic peat bogs, where heather cannot survive due to the waterlogged conditions. With a long-recorded history of use as an ingredient in perfume and in the brewing of beer in England, from the time of the Roman occupation to the Later Middle Ages, the *hæp* referred to in the above prescription might well be bog myrtle and not heather at all.²²¹

The latter OE spelling is presented alongside the words *Marica, vel brogus* with Lat. *vel* meaning ‘or’. The first word was almost certainly a misspelling of *Myrica* – the only word in the Latin language with the other spelling being the personal name of a nymph in Roman mythology.²²² The other word – *brogus* – is not a recognised Latin word and is probably also a misspelling. Wright translated it as a corruption of Lat. *brya* meaning ‘shrub’ or sometimes specifically ‘Tamarisk’ – the common name for the *Tamarix* genus of plants of which some are native to the Mediterranean, and of which heather is not a member.²²³ Cockayne translated it as a form of *bruscus* meaning ‘brushwood’.²²⁴ If correct, what Ælfric recorded was heathland characterised by a patchwork of scrubland and sparse woodland or brushwood, indicated by the latter spelling, and a ‘heath-dwelling’ plant which only grows in peat bogs indicated by the former. An 8th-century Latin to Old English glossary instead equated OE *haet[h]* to the Lat. *thymus*, referring to the plant genus of that name commonly called Thymes.²²⁵

Those species of *Myrica* and *Thymus* most common in England share many qualities with those of *Calluna* and *Erica*, to which all heather species belong. All are evergreen aromatic shrubs with woody branches that were traditionally used in medicine in the Anglo-Saxon period.²²⁶ Garden Thyme, or *Thymus vulgaris*, like *Calluna/Erica*, can only thrive on well-drained soils in direct sunlight, but cannot survive on acid soils as

²²⁰ Wright, T., *A Volume of Vocabularies* (London, 1857) p.33

²²¹ Skene, K., Sprent, J., Raven, J. and Herdman, L., “*Myrica gale* L.” *Journal of Ecology* **88** (2000) p.1090

²²² Wright, *A Volume* p.33

²²³ *Ibid.*

²²⁴ Cockayne, O., *Leechdoms, Wortcutting, and Starcraft of Early England* Vol. III (London, 1866) p.329

²²⁵ Hessels, J., *An Eighth-Century Latin-Anglo-Saxon Glossary* (Cambridge, 1890) p.115

²²⁶ Cockayne, *Leechdoms* Vol. I pp.57,232-233,274-275,344-355

heather can. Bog Myrtle (*M. gale*), unlike heather, can only thrive in poorly drained, watery conditions but can survive both acid or alkaline soils and partial shade. There was undoubtedly a strong etymological, and therefore cultural, and probably physical, association between heather and heathland in England before the Norman Conquest. What this research shows, though, is that it was not the only species to have that association. That all of these species have been directly etymologically connected, in contemporary Old English sources, to heaths suggests such landscapes could be found on a number of different soil types. The shrubs found upon any of them may well have been ‘heath’ but not necessarily ‘heather’.

As well as those species referred to simply as ‘heath’ in original sources, a further two species were closely related enough to have the word included in their names. The OE word *hæpberige* or ‘heath-berry’ referred to the Bilberry, *Vaccinium myrtillus*.²²⁷ This deciduous shrub prefers moist but well-drained soils and can thrive in partial shade. It is rarely found on lowland heaths in England today, being instead a characteristic species of upland moors. The OE word *hæðbremel* or ‘heath-bramble’ referred to the European Dewberry, *Rubus cæsius*, another shrub which can tolerate most soil acidities but actually prefers partial shade.²²⁸ Although heather cannot tolerate overshadowing by taller species, or very wet conditions, then, these two other species associated with ‘heaths’ in Anglo-Saxon English sources either could or preferred to do so, or else were characteristic of other kinds of environments which were, to those describing them, also kinds of heaths. These circumstances would perhaps suggest that the term ‘heath’ was itself more widely applied than today, to a more diverse range of uncultivated environments.

Hæþen

Heath, both in Old and Modern English, also forms the core of the word ‘heathen’, or ‘heath-dweller’. Its religious connotation is ‘non-Christian’ and likely follows the same etymological model as *paganus*, the Latin root of the modern word ‘pagan’.²²⁹ Itself stemming from Lat. *pagus*, meaning ‘country district’, it first came to mean those who inhabited the country (as opposed to the cities). As early Christianity spread throughout the Empire it did so much faster in urban centres, with rural communities maintaining traditional pre-Christian religious practices for longer. The meaning of the term then

²²⁷ Cockayne, O., Leechdoms, Wortcutting, and Starcraft of Early England Vol. II (London, 1865) p.389

²²⁸ *Ibid.*

²²⁹ Velten, H., “Studies in the Gothic Vocabulary with Especial Reference to Greek and Latin Models and Analogues” The Journal of English and Germanic Philology 29, 4 (1930) p.491

changed to not only mean country- or field-dwellers, but also non-Christians. Heathen likely followed the same evolution. By association, then, heaths must have been viewed as both separate and geographically distant from urban and cultural centres, but were not necessarily heathland environments as we understand them today.

That said, then as now there was also a physical association between pre-Christian religions and some heathlands in the form of burial mounds. One charter from AD 958, for example, reads ‘from the brook to the heathen burials, from the heathen burials to the heath down to Studley gate’.²³⁰ That the mounds were still visible at that point suggests both a lack of cultivation there since their erection, and a degree of continuity in openness at least until the 10th century.

Hæð-stapa

As well as numerous species of flora, heaths were linguistically linked to several species of animal through the concept of the *hæð-stapa* or ‘heath-walker’. Sources variably refer to deer, wolves, and bears in this sense. Four lines from the Anglo-Saxon poem of Beowulf, for example, read ‘although the heath-stalker, by the hounds wearied, the hart firm of horns, seek that holt-wood’.²³¹ The ‘hart’ here is a stag or male deer. The OE word *holt* is a specialised term which refers to a single-species wood, or, at least, a wood in which one species is noticeably dominant.²³² The contrast with heathland is likely to be between a rough, partially wooded landscape and one of denser woodland. Woodland dense enough to hide a hart and heathland were clearly separate landscapes, but a close proximity between the two is apparent.

Evidence for an association between deer and heaths by the 9th or 10th century is limited. One of few tangential links can be found in the boundary clause of an AD 969 charter, also from Bedfordshire, which reads ‘from the deer gate over the heath to the hollow, thence round Westley’²³³. The definition of *deórgæat* as ‘a gate for deer to pass

²³⁰ “of þan broce on hæðennan byriels, of þan hæðenan byrielse on heað dune on stod lege get” Birch, Cartularium Saxonicum p.238. Translation my own.

²³¹ “þeáh þe hæð-stapa, hundum geswenced, heorot hornum trum, holt-wudu séce” Thorpe, B., The Anglo-Saxon Poems of Beowulf, The Scôp or Gleeman’s Tale, and The Fight at Finnesburg (London, 1889) p.92. Translation from the same.

²³² Gelling, M., Place-Names in the Landscape: The Geographical Roots of Britain’s Place-Names (London, 1984) p.196; Hooke, D., “The Woodland Landscape of Early Medieval England” in Higham, N. and Ryan, M. (eds.), Place-Names, Language and the Anglo-Saxon Landscape (Woodbridge, 2011) pp.159-160

²³³ “fram þam déorgæte ofer þone hæþ to þam cúmbre þonon ymbe pestlea” Birch, Cartularium Saxonicum p. 517. Translation my own.

through' suggests deer wandering on to the heath was still a common occurrence.²³⁴

The wolf is similarly described as a heathland beast. A collection of poems, donated by Leofric, first Bishop of Exeter, to the Cathedral there in the 11th century, refers to the wolf as 'the hoar traverser of the heath'.²³⁵ The word 'hoar' here being an archaic one meaning 'grey' or 'greyish-white'. The bear, meanwhile, features in an Old English maxim, or 'wisdom poem', in a passage that reads as follows:

A fish must be in water to conceive kindred. A king must share out
rings in the hall. A bear must be on the heath, old and terrible.²³⁶

All of these species have one thing in common – their habitat. They are woodland edge creatures.

Red deer have a historic association with woodland-edge habitats, both in the wild and in royal hunting forests, spending most of their time grazing.²³⁷ If most of their time was spent on the heath (as the term *hæð-stapa* would suggest) then that heathland almost certainly had trees on it, though more sparsely scattered than in thick *holt* woodland. Wolves, too, were found in woods and the woodland-edge landscapes of royal forests as late the 14th century.²³⁸ In the pre-Conquest period, when wolf populations were higher and more unmanaged woodland was available to them, they hunted game like deer in the winter, and so hunted wherever the deer could be found.²³⁹ The brown bear (*Ursos Arctos*) most likely inhabited woodland and woodland-edge landscapes in England, before being hunted to extinction there, as they still do in some Northern and Eastern European countries.²⁴⁰

The use of the term 'heath', alone or in compounds, in Old English suggests that 'a heath' was not necessarily a specific kind of environment, or, at least, did not necessarily refer to an open, treeless landscape as it often does today. Instead, it seems to have been

²³⁴ Bosworth and Toller, *An Anglo-Saxon Dictionary* p.99

²³⁵ "pulf ... hár hæð-stapa" Thorpe, B., *Codex Exoniensis: A Collection of Anglo-Saxon Poetry* (London, 1842) p.328

²³⁶ "Fisc sceal on wætere cynren cennan. Cyning sceal on healle beagas dælan. Bera sceal on hæðe, eald and egesfull" Neville, J., *Representations of the Natural World in Old English Poetry* (Cambridge, 2004) pp.71-72. Translation from the same. See also Poole, R., *Old English Wisdom Poetry* (Cambridge, 1998) p.209

²³⁷ Johnston, H., *British Mammals* (London, 1903) p.185; Macpherson, H., "Natural History" in Watson, A. (ed.), *Fur, Feather, and Fin Series: Red Deer* (London, 1912) pp.17-19

²³⁸ Harting, J., *British Animals Extinct Within Historic Times* (Boston, 1880) pp.116,147

²³⁹ Dent, A., *Lost Beasts of Britain* (London, 1974) pp.108,111

²⁴⁰ Harting, *British Animals Extinct* pp.20-21; Zedrosser, A., Dahle, B., Swenson, J. and Gerstil, N., "Status and Management of the Brown Bear in Europe" *Ursus* 12 (2001) pp.9-20

employed for describing a range of uncultivated lands, often carrying a measure of tree cover.

Middle English and post-Conquest medieval use

Myricaceae, Genisteeae and Tamarix

After the Norman Conquest in the 11th century, specifically Anglo-Saxon letters increasingly fell out of use in favour of those in use on the continent, and the OE *hæþ* became the Middle English (ME) *heth* or *heth*e – usually equitable in Latin documents to *bruera* or *brueria*.²⁴¹ The linguistic association with Lat. *mirica*, visible before the Conquest, however, did not alter.

The *Promptorium Parvulorum* English to Latin vocabulary, originally printed c.1440, likens ‘Lynge of the heth’ (the word ‘ling’ still meaning ‘heather’ in some parts of England) with ‘*Bruera, vel brueria, mirica*’.²⁴² What is more the same vocabulary also equated the Lat. *mirica* with the Common Broom plant, rather than with heather, and the genus *Genisteeae* more generally, of which both Broom and Gorse are members. Like Cockayne’s translation of Ælfric’s glossary, written almost five centuries earlier, the author also associated *mirica* with brushwood. The entry for ME *brome* reads ‘*brusche. Genesta, mirica*’ – ME *brusche* meaning the same as Lat. *bruscus*.²⁴³

As well as a hint towards a thinly wooded landscape character, these entries suggest an overlapping meaning of three words. ‘Ling’ – itself directly linked to heathland in the wording of the *Promptorium* - meant both *brueria* and *mirica*, while the latter meant both *lynge* and *brome*, and possibly also gorse. The meaning, it seems, was quite broad. Indeed, in contemporary Latin documents, the most common meaning for Lat. *myrica/mirica/merica* was simply ‘shrub’, though sometimes specifically broom (one entry, for example, explicitly referenced ‘a thicket of broom’).²⁴⁴

Other contemporary glossaries showed the same associations. Though not using the word *heth* or *heth*e they often gave meanings only for *bruera*. An untitled 15th-century word list, preserved in the British Museum, for example, contains the entries ‘*Hec pruera,*

²⁴¹ Stratmann, F., *A Middle-English Dictionary* (London, 1891) p.318; Kuhn, S. (ed.), *Middle English Dictionary, Part H.3* (Ann Arbor, 1966) p.732

²⁴² Way, A., *Promptorium Parvulorum Sive Clericorum: Lexicon Anglo-Latinum Princeps* (London, 1865) p.305

²⁴³ *Ibid.* pp.53,54

²⁴⁴ Latham, R., *Revised Medieval Latin Word-List* (Oxford, 1965) p.310

lingge; Merica, idem est'.²⁴⁵ The word *pruera* is a corruption of the Lat. *bruera*, and *Merica* of *mirica* – thus the entries translate as ‘this heath, ling; *mirica* is the same’.²⁴⁶ The meaning, is, then, similarly broad. Reinforcing further the notion for an imprecise meaning of *mirica*, the *Catholicon Anglicum* of 1483 has an entry for *Brume* (ME *brome*) which reads ‘*Brume; genesta, merica, tramarica*’.²⁴⁷ The final word, alongside *tramaricum* and *tramaricium*, is a variant spelling of the aforementioned Lat. *tamarix* meaning tamarisk.²⁴⁸

The link between ME *hethe* and the Lat. *mirica* is a confusing one, but if the former was equated to the latter, and the latter was equated not only to the former but also to broom, gorse, and tamarisk the meaning in Middle English seems quite as broad as that of *hæþ* in Old English – a plant of the heath but not necessarily heather.

One other species recorded to have inhabited heaths, alongside but mentioned separately from ling, and therefore *mirica* or broom, was Juniper *Juniperus communis*. A manuscript written c.1400, and displaying a late survival of the OE thorn, reads ‘in Wiltshire nere Shaftesbury, is an heth þat groweþ ful of þat (Junipere femel) and of lynk, and þe lynk is heyre þan þat, and is faste by an heyh wey’.²⁴⁹ The ME word *femel* means female’.²⁵⁰ As *J. communis* is dioecious, the male and female flowers grow on different plants, so only the green-flowering female plants (as opposed to the yellow-flowering male variety) are referenced here.²⁵¹ What is noteworthy is that juniper is not a characteristic plant of modern heaths, or indeed of well-drained acid soils, being instead primarily a plant of limestone chalk, and (more rarely) of shallow peats.²⁵²

Middle English Literature

The story of *Sir Orfeo*, written in the 13th or 14th century, is a Middle English retelling of the story of Orpheus from Greek mythology. In it the title character, a noble or king, loses his wife Heurodis to the machinations of the fairy king and must leave the courtly human realm in search of her – first passing into the wilderness, and from there into the ‘other’

²⁴⁵ Wright, *A Volume* p.201

²⁴⁶ *Ibid.* Translation my own.

²⁴⁷ Herrtage, S., *Catholicon Anglicum: an English-Latin Wordbook, dated 1483* (Oxford, 1882) p.45

²⁴⁸ Adams, J., *Social Variation and the Latin Language* (Cambridge, 2013) p.564

²⁴⁹ Forshall, J., *Catalogue of Manuscripts in The British Museum, New Series Volume I, Part I: The Arundel Manuscripts* (London, 1844) p.9; Way, *Promptorium Parvulorum* p.305

²⁵⁰ Way, *Promptorium Parvulorum* p.154

²⁵¹ Fitter, R., Fitter, A. and Blamey, M., *The Wild Flowers of Britain and Northern Europe* (London, 1991) p.24

²⁵² Mitchell, A., *A Field Guide to the Trees of Britain and Northern Europe* (London, 1974) p.75

world and back again. During the first part of that journey, the story goes that ‘þurch wode and ouer heþ, into þe wilderness he geþ’.²⁵³ The ME word *þurch*, used here, means ‘through’ while *geþ* means to ‘go’ or ‘depart’, related to our word ‘get’ in the phrases ‘get out’ or ‘get away’.²⁵⁴

Heathlands are depicted as transitional landscapes on the border between the civilised world and the untamed wilderness – bearing similarities to the meaning of ‘heath’ in Old English implied by the concept of the ‘heathen’. This ‘wildness’ is paralleled in other contemporary stories, for example in the story of *Sir Degaré* where a maid ‘went forth over wyld heth’ or in *Lay le Freine* which uses similar language.²⁵⁵ In further similarity to Old English depictions, heaths and woods are presented as separate landscapes. A passage describing Sir Orfeo’s return journey, in fact, mirrors almost exactly the language seen in *Beowulf* as he and his wife ‘passyth over holtys and heth’ while fleeing the realm of the fairy king.²⁵⁶

A cultural association between trees and heaths might, however, be inferred from a segment later in the story. After returning unrecognised to the city he once ruled, Sir Orfeo is said to resemble a gnarled tree:

Also thei seyð, everychon,
How the mosse grew hym upon:
“Hys berd is grewyn to the kne;
Hys body is clong as a tre!”²⁵⁷

The word *clong* is part of the ME verb *clingen* from which we get our verb to ‘cling’, and in this context means ‘matted’ or ‘hardened’, with the word ‘mosse’ artistically referring to his hair.²⁵⁸ As this point, with harp in hand, Orfeo declares ‘Icham an harpoure of hethenisse’.²⁵⁹ The last word could mean one of two things. Either he is presenting himself as someone with experience of uncivilised, ‘non-Christian’ life in the wilderness (heathenness), or as someone who can speak for the heath itself (heath-ness).²⁶⁰ If the latter, it is notable that he is compared in appearance to a tree and not to a shrub or an animal. If the

²⁵³ Sisam, K. (ed.), *Fourteenth Century Verse & Prose* (Oxford, 1962) p.21

²⁵⁴ *Ibid.*; Kuhn, S.M. (ed.), *Middle English Dictionary Volume 4: G-H* (Ann Arbor, 1963) p.99

²⁵⁵ Rumble, T.C. (ed.), *The Breton Lays in Middle English* (Detroit, 1965) pp.51,87

²⁵⁶ *Ibid.* p.222

²⁵⁷ *Ibid.* p.223

²⁵⁸ *Ibid.*; Stratmann, *A Middle English Dictionary* pp.122-123

²⁵⁹ Rudd, G., *Greenery: Ecocritical Readings of Late Medieval English Literature* (Manchester, 2007) p.107

²⁶⁰ *Ibid.* p.108

former, the etymological and cultural associations between ‘heathen’ and ‘heath’ seen in Old English persisted in Middle English – both in *Sir Orfeo* and in contemporary texts. In *The Visions of Piers Plowman* (published c.1370s), for example, William Langland wrote that “‘Hethen” is to mene after heeth and untiled erthe – as in wilde wildernesse wexeth wilde beestes, rude and unresonable, rennyng withouten keperes’.²⁶¹ The word *wexeth* (elsewhere *waxeth*) is an alternative spelling of ME *waxen* – in this case meaning to ‘grow’ or ‘grow up’.²⁶² The first part of the word survives to the modern day in the phrase ‘wax and wane’. For ‘untiled’ read ‘untilled’.

The dichotomy between holt, meaning dense woodland, and heath is also touched upon by Chaucer in his *Canterbury Tales*, published c.1400.²⁶³ In contrast to the themes of *Sir Orfeo*, however, neither is described as ‘wild’ in a distant or uncivilised sense. Instead, they feature in a celebration of the beauties of spring. Thus, the prologue reads:

Whan Zephirus eek with his sweete breeth
 Inspired hath in every holt and heeth
 The tendre croppes, and the Yonge sonne
 Hath in the Ram his half cours yronne

Zephyrus was the god of the west wind in Greek mythology, and the bringer of spring. For *eek* read ‘eke’ in modern English or *eac* in an earlier form of ME – an addition or increase.²⁶⁴ The Ram is an astrological term, referring to the zodiacal sign of Aries of which, in the late 14th century, the first day was considered to be 12th March.²⁶⁵ The word *yronne* means ‘run’, in the past tense.²⁶⁶ Here, then, alongside talk of flowers and birdsong, the heath is presented as a thing of natural beauty.

Early-Modern English and the 16th-century herball

Heaths in Theatre

On stage, heaths were frequently presented as places detached from the civilised world – much as they were in *Sir Orfeo* – but often through an association with social outcasts and otherwise maligned people. Not all are explicitly negative. In the anonymous play *Look*

²⁶¹ Schmidt, A.V.C. (ed.), *The Vision of Piers Plowman* (London, 1978) pp.190-191 (Passus XV:457-9)

²⁶² Stratmann, *A Middle English Dictionary* p.672

²⁶³ Willard, R., “Chaucer’s ‘Holt and Heeth’” *American Speech* **22**, 3 (1947) p.196

²⁶⁴ Stratmann, *A Middle English Dictionary* pp.183-184

²⁶⁵ Eisner, S., “The Ram Revisited: A Canterbury Conundrum” *The Chaucer Review* **28**, 4 (1994) p.330

²⁶⁶ Stratmann, *A Middle English Dictionary* p.508

About You of 1600, for example, Blackheath outside London is the home of a hermit alternately referred to as a ‘wizard’ and a ‘holy man’.²⁶⁷ Many, however, were. Thomas Dekker in his *Lanthorne and Candlelight* of 1608, for example, asserts that Romani people (widely maligned in English society and law) habitually resided on some ‘large heath or a fir bush common’, while Shakespeare famously chose a ‘blasted’ heath as the location for a clandestine meeting between three witches and the title character in *Macbeth* (1606).²⁶⁸

The employment of witches in particular was probably a deliberate attempt to cast the heath in a bad light. It is likely that the play was written for the king, James I, who hated witches so much he had written a book about identifying black magic (and which encouraged witch-hunting), introduced legislation to make punishments for witchcraft harsher, and personally presided over the trials of accused witches in the decade before the play was written.²⁶⁹ Culturally, Shakespeare’s audience might already have associated heaths with dangerous people. Within living memory, a rebel army of 16,000 men had gathered on Mousehold Heath outside Norwich in what became known as Kett’s Rebellion in 1549.²⁷⁰

Elsewhere in Shakespeare’s works, heaths and heathland plants were presented as the archetypes of dry land. In *The Tempest* (c.1610), a group of travellers are shipwrecked on a desert island. In the first scene, as the ship is caught in a storm and threatened with destruction, Gonzalo says:

Now would I give a thousand furlongs of
sea for an acre of barren ground; long
heath, brown furze, any thing. The wills
above be done! but I would fain die a dry
death.²⁷¹

The word ‘fain’, used here, means ‘glad’ or ‘gladly’.²⁷² Despite this artistic association with dry land, however, numerous scientific works from the 16th and 17th centuries

²⁶⁷ Greg, W.W. (ed.), *Look About You, 1600* (Oxford, 1913) pp.35-36; Lancashire, A.B., “*Look About You* as a History Play” *Studies in English Literature* 9, 2 (1969) pp.321-334

²⁶⁸ Borlik, T.A., *Shakespeare Beyond the Green World: Drama and Ecopolitics in Jacobean Britain* (Oxford, 2023) p.39

²⁶⁹ Borlik, *Shakespeare Beyond the Green World* p.33

²⁷⁰ Fletcher, A. and MacCulloch, D., *Tudor Rebellions* (Harlow, 2008) p.67

²⁷¹ Losey, F.D. (ed.), *The Kingsway Shakespeare* (London, 1932) p.4

²⁷² Coles, E., *An English Dictionary, 1676* (Menston, 1971) section FA

describe many plant species which prefer wet or waterlogged conditions as inhabitants of heathland, alongside those that prefer freely-draining soils.

Heaths in Herballs

Printed ‘herballs’ – guides to the identification and uses of herbs and plants – first gained in popularity during the 16th century. With wide distribution made possible through use of the printing press, the spelling of words become more standardised within individual works, but still varied between authors. In most, however, the modern word ‘heath’ was spelt *heth* and ‘heather’ as *hather*. Thus, Turner’s entry for *Erice* reads ‘it is named in english Heth hather, or ling ... it groweth on frith and wyld mores’.²⁷³ The term ‘frith’ meant ‘a wood or a plain between woods’, or ‘brushwood’ – once more suggesting a link to woodland-edge or sparsely wooded landscapes.²⁷⁴

Turner only features one variety of ‘heath’ or heather. As the 16th century progressed, however, the authors of herballs began identifying greater numbers of variants and subspecies. Lyte’s translation of Dodoens’ ‘A New Herball’, published in 1586, for instance, lists two kinds – Long Heath and Small Heath.²⁷⁵ The first is likely Common Heather (*Calluna vulgaris*) and was described as:

a wooddish plant full of branches, not much unlike the lesser Tamarisk ... it hath very small jagged leaves, not much unlike the leaves of garden Cypres ... the flouers be like small knops or buttons parted in foure, of a faire carnation color ... growing amongst the branches from the middle upwarde even to the top.²⁷⁶

Association, and possible reason for confusion, with tamarisk remained clear with authors and, presumably, readers of the 16th century. The second type of heather was almost certainly what later authors called Chalice Heath (*Erica tenuifolia caliculata*) or what is currently called Bell Heather (*Erica cinerea*). Both types were said to grow ‘upon mountains that be dry, hungrie and barren, and in plains, woods and wildernes’ and were called ‘heath, hather, and lyng’.²⁷⁷ Here, then, the word ‘heath’ (when not referring to a heathland) referred directly to heather, without confusion or overlapping with other species

²⁷³ Britten, J. (ed.), The Names of Herbes: By William Turner, A.D. 1548 (London, 1881) p.35

²⁷⁴ Coles, An English Dictionary section FR; Shipley, J., Dictionary of Early English (Paterson, 1963) p.283

²⁷⁵ Lyte, H. (trans), A New Herball, or Historie of Plants (London, 1586) pp.786-787

²⁷⁶ *Ibid.* p.786

²⁷⁷ *Ibid.* p.787

– though reference to similarities with tamarisk shows continuity with earlier glossaries. Mention of heather being native to woodland environments also shows a continued association which is not mirrored in today’s meaning.

Gerard’s herball of 1597 listed ten varieties of ‘heath’.²⁷⁸ The first was our *Calluna vulgaris* (then called *Erica vulgaris*) and was again likened in appearance both to Tamarisk and Garden Cypress – otherwise known as ‘Heath Cypress’, *Lycopodium alpinum* and now as Alpine Clubmoss, *Diphasiastrum alpinum* found on mountains and moores.²⁷⁹ All other varieties match those known today except two. The first, called ‘Broad leafed Heath bearing berries’, was probably a type of Crowberry, either *Empetrum nigrum* or *E. rubrum*.²⁸⁰ The other, called ‘Small leafed Heath with berries’, has proved difficult to identify.²⁸¹ A 1636 edition of the herball equates it with what Charles de L’Écluse (*alias* Carolus Clusius) labelled *Erica coris folio X* in 1601.²⁸² In 1810, William Aiton equated that species with what he called the ‘White-berried Heath’ or ‘Portugal Crake-berry’ *Empetrum erectum*.²⁸³ More recently, *E. erectum* has been equated with what is now called the Portuguese Crowberry, *Corema album*, native to the Iberian Peninsula.²⁸⁴

Both *Empetrum* and *Corema* are genera within the *Ericaceae* family, and are therefore related to both the *Erica* and *Calluna* genera which contain all the most common heather plants found growing in Britain. Labelling them as species of ‘heath’, alongside and in the same terms as heathers, shows a cultural and linguistic association which is perhaps lost in today’s insistence that heather is *the* heathland species. In Gerard’s day, heathlands may well have been dominated by ‘heath’ plants including heathers but not limited to them.

Myrica and Tetralix

Historical confusion between species of heather, myrtle, and tamarisk was partly explained in the three 16th-century volumes featured here, each of which touched on their similarities.

²⁷⁸ Gerard, J., The Herball or Generall Historie of Plantes (London, 1597) pp.1196-1200

²⁷⁹ Britten, The Names of Herbes p.130

²⁸⁰ Gerard, The Herball p.1199; von Haller, A., Enumeratio Methodica Stirpium Helvetiae Indigenarum Vol. I (Göttingen, 1742) p.162; Lyons, A., Plant Names Scientific and Popular (Detroit, 1900) p.145

²⁸¹ Gerard, The Herball p.1199

²⁸² de L’Écluse, C., Rariorum Plantarum Historia (Antwerp, 1601) p.45; Gerard, J., The Herball or Generall Historie of Plantes (London, 1636) p.1383

²⁸³ Aiton, W.T., Hortus Kewensis; A Catalogue of the Plants Cultivated in the Royal Botanic Garden at Kew Vol.5 (London, 1813) p.366

²⁸⁴ López-Dóriga, I., “The Archaeobotany and Ethnobotany of Portuguese or White Crowberry (*Corema album*)” Ethnobiology Letters 9, 2 (2018) pp.19-32

In every case, however, the authors also attempted to dismiss longstanding confusion on the matter. Turner, for instance, wrote of Myrica:

otherwise named tamarix ... the scholemaisters in Englande have of longe tyme called myrica heath, or lyng, but so longe have they bene deceyved altogether. It maye be called in englishe, Tamarik.²⁸⁵

Lyte, after discussing a similarity to heather, clarified that Tamarisk was named ‘in Latine Myrica, and Tamarix’, while Gerard wrote of heather that ‘divers do falsely name it Myrica’.²⁸⁶

Our interests here are twofold. First, it shows an attempt to codify exactly which plant each word referred to, where earlier authors seemed content to apply each one to a broader array of species. In turn this shows us when in the evolution of modern English the word ‘heath’ might have come to refer only to heather itself. Second, it shows that such longstanding confusions were still prevalent enough in the 16th century for these authors to write about them. This lends weight to an interpretation of the word ‘heath’, in the context of a plant or ingredient and written about either in this period or before, as referring to one of a number of shrubs and not necessarily to heather in particular.

Heath-named plants

Like OE *hæpberige* and *hæðbremel*, early modern English sources contained reference to other heathland species so closely associated with the landscape that the word ‘heath’ was inserted into their names. The ‘Heath Cypress’ *L. alpinum* has already been mentioned. Descriptions of the ‘Heath of Jerico’, meanwhile, give some indication as to the meaning of ‘heath’ when applied to plants’ names in this period. Also called the ‘Heath Rose’ it is today the White Mustard Flower, *Anastatica hierochuntica*, and Gerard wrote of it:

the which doubtlesse is a kinde of Heath, as the barren soile, and that among Heath doth evidently shewe, as also the Heathie matter wherwith the whole plant is possessed, agreeing with the kinds of Heath in very notable points ... the whole plant is of the substaunce of Heath, and woodie.²⁸⁷

²⁸⁵ Britten, The Names of Herbes p.54

²⁸⁶ Gerard, The Herball p.1200 (this and all subsequent references are to the 1597 edition); Lyte, A New Herball p.785

²⁸⁷ Gerard, The Herball p.1201

The intention here was to signify a low, woody species that might grow in a nutrient-poor environment, rather than a genetic relation to heather.

Other plants of the heath

Turner, in his work, occasionally recorded the habitats in which some species he recorded could be found. These were geographically unspecific - giving only the types of landscapes with which he associated them, rather than precise locations. They do, however, provide us with a few examples of plants not associated with heaths by name but which nonetheless commonly inhabited them. Gerard, on the other hand, unlike Turner or Lyte, featured descriptions of where he had seen individual species. These sightings were usually made during his own tours undertaken mostly in the southeast, close to the Capital. As such he provides the modern reader with an extensive list of species not named for heathland, but still found upon it during his lifetime in the 16th century. A combined list of heathland species mentioned by Turner and Gerard is contained within the following table. It is hoped that this resource might one day prove useful to those involved in the modern-day conservation of heathlands, discussed in the introduction to this work, who believe a ‘traditional’ model of heaths was one almost entirely dominated by heather.

General locations given by Turner are presented in squared brackets. Specific locations of plants in the 16th century were taken exclusively from Gerard’s Herball already referenced and are not individually footnoted. Where modern habitat data is unreferenced, that information was taken from Fitter *et al*’s ‘Wild Flowers of Britain and Northern Ireland’ also referenced previously in this work. Where additional printed material was required to harmonise Gerard’s obsolete common and scientific names with current ones, it has been duly referenced in the relevant column entries.

Table 2.1. A list of species observed in heathland environments during the 16th century by Turner and Gerard. Arranged alphabetically with current common and scientific names, location of historic sightings, and modern habitat data.

Common Name	Scientific Name	Where Found	Habitat
Bearberry, Black ²⁸⁸	<i>Arctostaphylos alpina</i>	Hampstead Heath	Moors, mountains, rocks, open woods, scrub
Bilberry	<i>Vaccinium myrtillus</i>	Hampstead Heath	Heaths, moors, open woods, not

²⁸⁸ Stokes, J., A Botanical Materia Medica Vol. II (London, 1812) p.510

			on lime
Broom	<i>Cytisus scoparius</i>	Hampstead Heath	Heaths, open woods
Broom, Butcher's	<i>Ruscus aculeatus</i>	Hampstead Heath	Woods, scrub, hedge-banks
Broomrape, Greater	<i>Orobanche rapumgenistae</i>	Hampstead Heath	Parasitic; hosted by shrubby peaflowers especially Broom and Gorse
Bugle	<i>Ajuga reptans</i>	Blacke Heath	Damp woods, grassland
Cloudberry	<i>Rubus chamaemorus</i>	'Upon Ingleborough hills among the heath and ling'	Upland bogs and damp moors
Cottongrass, Common	<i>Eriophorum angustifolium</i>	Hampstead Heath	Bogs and other wet, peaty, mainly acid places ²⁸⁹
Cowberry ²⁹⁰	<i>Vaccinium vitis-idaea</i>	Hampstead Heath	Moors, heaths, mountains, open woods
Cow-wheat, Common	<i>Melampyrum pratense</i>	Hampstead Heath	Woods, heaths, grassland
Cow-wheat, Crested	<i>Melampyrum cristatum</i>	Hampstead Heath	Dry grassy, rocky places, wood margins
Fern, Hard	<i>Blechnium spicant</i>	Hampstead Heath	Acidic peaty places; acid woodlands and open heaths ²⁹¹
Fern, Royal	<i>Osmunda regalis</i>	Hampstead Heath and a heath near Brentwood, Essex	Wet, acidic habitats; fens and boggy woodland ²⁹²
Gentian, Spring	<i>Gentiana verna</i>	Heath near Colnbrook, Berks.	Short, often stony turf in hills and mountains
Golden-Rod	<i>Solidago virgaurea</i>	Dawes Heath, Southfleet	Woods, scrub, heaths, grassy and rocky places
Gorse, Dwarf	<i>Ulex minor</i>	Hampstead Heath	Heaths, grassland

²⁸⁹ Fitter, R., Fitter, A. and Farrer, A., Grasses, Sedges, Rushes and Ferns of Britain and Northern Europe (London, 1984) p.120

²⁹⁰ Stokes, A Botanical p.368

²⁹¹ Page, C., The Ferns of Britain and Ireland (Cambridge, 1982) p.143

²⁹² *Ibid.* p.243

Gratiola ²⁹³	<i>Gratiola officinalis</i>	Hampstead Heath	Wet places
Haircap Moss, Common ²⁹⁴	<i>Polytrichum commune</i>	Hampstead Heath	Wet, highly acidic moorland or bog ²⁹⁵
Juniper	<i>Juniperus communis</i>	Hampstead Heath	Coniferous woods, moors, heaths, scrub
Lady's Tresses, Autumn	<i>Spiranthes spiralis</i>	Barn-elms and Stepney Heaths	Dry grassland
Lady's Tresses, Irish	<i>Spiranthes romanzoffiana</i>	Barn-elms and Stepney Heaths	Wet grassy places, peat marshes, bogs
Lily of the Valley	<i>Convallaria majalis</i>	Hampstead Heath, Bushey Heath	Drier woodland
Michaelmas Daisy ²⁹⁶	<i>Aster amellus</i>	Hampstead Heath	Dry grassy places
Moonwort	<i>Botrychium lunaria</i>	Cox Heath, Kent, and Blacke Heath	Dry grassy, rocky places, heaths
Mouse-ear, Little	<i>Cerastium semidecandrum</i>	[Heaths]	Sandy ground
Mullein, Great	<i>Verbascum thapsus</i>	Blacke Heath	Dry grassy and bare places, open scrub
Mullein, White	<i>Verbascum lychnitis</i>	Blacke Heath	Dry bare and sparsely grassy places
Orchid, Greater Butterfly ²⁹⁷	<i>Platanthera clorantha</i>	Hampstead Heath	Woods, open scrub, grassland
Orchid, Musk ²⁹⁸	<i>Herminium monorchis</i>	Barn-elms and Stepney Heaths	Grassland, on lime, dry turf
Pea, Tuberous ²⁹⁹	<i>Lathyrus tuberosus</i>	Richmond Heath	Grassy and cultivated ground
Plantain, Buckshorn ³⁰⁰	<i>Plantago coronopus</i>	Blacke Heath	Dry bare, often sandy places
Starwort, Spiny ³⁰¹	<i>Pallenis spinosa</i>	Hampstead Heath	Dry uncultivated places in

²⁹³ Jackson, B., A Catalogue of Plants Cultivated in the Garden of John Gerard, In the years 1596-1599 (London, 1876) p.36

²⁹⁴ Miller, J., Botanicum Officinale (London, 1722) p.16

²⁹⁵ Watson, E., British Mosses and Liverworts (Cambridge, 1968) p.140

²⁹⁶ Edwards, S., The Botanical Register Vol. IV (London, 1818) p.340

²⁹⁷ Bicheno, J., "Observations on the Orchis militaris of Linnæus" Transactions of the Linnean Society of London **12** (1818) p.30

²⁹⁸ Jackson, A Catalogue p.52

²⁹⁹ The Society of Improvers in the Knowledge of Agriculture in Scotland, Select Transactions of the Honourable the Society of Improvers in the Knowledge of Agriculture in Scotland (Edinburgh, 1743) p.307

³⁰⁰ Jackson, A Catalogue p.31

³⁰¹ *Ibid.* p.26

			Southern Europe ³⁰²
Swinecress, Lesser	<i>Cornopus didymus</i>	Blacke Heath	Waste places
Tormentil	<i>Potentilla erecta</i>	[Moors and heaths]	Moors and grassy places, not on lime
Vetch, Kidney	<i>Anthyllis vulneraria</i>	Hampstead Heath and Blacke Heath	Dry grassland, often by sea and mountains
Whin, Petty	<i>Genista anglica</i>	Hampstead Heath	Heaths, moors
Willow, Creeping ³⁰³	<i>Salix repens</i>	Hampstead Heath	Swamps, bogs, fens, dune slacks

Although there exists, in modern conservation circles, a preference for recreating heaths in dry, sandy environments, a number of these species prefer wet habitats and the descriptions given by Gerard reveal some wetter local variations in landscape character on heaths visited by him. Many Bugle plants, for example, were found ‘in a moist ground upon Blacke Heath neere London’.³⁰⁴ A map of London and its surrounds, published by John Rocque in 1746, shows ‘Black Heath Common’ without any clear indication of wet or boggy ground upon it.³⁰⁵ To the east, though, was an area labelled ‘Ridley Marsh’, separated from the heath only by the grounds of Wicklemarsh House. As the house was not erected until the 1720s, it is possible this marsh ground once formed part of the heath during the time of Gerard’s surveys.³⁰⁶ Abutting the heath to the south west, on the banks of the Ravensbourne river - also on Rocque’s map - was also an area of flood plain, by then enclosed, called ‘The Water Splash’ which might alternatively have been a periodically waterlogged part of Blackheath in previous centuries. Like the Bugle, The Royal Fern was said to grow ‘in the midst of a bogge, at the further end of Hampsteede Heath from London ... as also upon divers bogges on a Heath or common neere unto Burntwood in Essex’.³⁰⁷ The name Burntwood, used here, refers to the town now called Brentwood in that county.

Other entries reveal major human disturbances on heaths, some specifically to

³⁰² Polunin, O., *Flowers of Europe* (London, 1969) p.435

³⁰³ Pennecuik, A., *The Works of Alexander Pennecuik, Esq.* (Leith, 1815) p.316; Robson, S., *The British Flora* (York, 1777) p.219

³⁰⁴ Gerard, *The Herball* p.506

³⁰⁵ <https://collections.rmg.co.uk/collections/objects/542319.html> (Accessed 06/04/2019). Original held at the National Maritime Museum in Greenwich, London.

³⁰⁶ Walford, E., *Old and New London* Vol.VI (London, 1878) p.236

³⁰⁷ Gerard, *The Herball* p.969

control the flow of water. Gratiola was found upon the same ‘bog or marrish ground’ on Hampstead Heath as Royal Fern, ‘neere unto the head of the springs that were digged for water to be conveied to London 1590’.³⁰⁸ The word ‘marrish’, used here, meaning ‘marsh’. Dwarf Willow was found growing in a wet ditch near the same bog or marsh ground.³⁰⁹ South of the Thames, Lady’s Tresses were found growing ‘upon the heath at Barne-Elmes, neere unto the head of a conduit that sendeth water to the house belonging to the late Sir Frances Walsingham’.³¹⁰ The heath disappeared before the 1880s but the house and park survived into the 20th century, and the name Barn Elms survives within the district of Barnes in the London borough of Richmond. Both boggy ground and human-made earthworks or excavations intended to divert water, then, were present on London heaths at this time.

Excavations for mineral extractions were also referred to in the text. Kidney Vetch, for instance, was again found on Hampstead Heath but ‘neere unto a gravell pit’.³¹¹ The Royal Ferns growing on a heath near Brentwood, meanwhile, were found ‘especially neere unto a place there that some have digged, to the ende for to finde a nest or mine of golde’.³¹² Built structures were also present on some heaths, such as the lime kiln on Black Heath beside which Great Mullein was found to be growing.³¹³ These landscapes, then, were not all the sandy, sparsely-populated empty wastes depicted in heathland paintings in the 18th and 19th centuries, shown in the previous chapter. They were, instead, both busy and varied, and often, in part, rather wet.

Although heather also inhabited these landscapes it was, by far, not the only species growing in them. Other species were, indeed, sometimes found in abundance. Common Cow-Wheat, for instance, was found growing ‘upon Hampsted heath ... among the Iuniper bushes, and Bilberrie bushes in all the parts of the said heath’.³¹⁴ Neither were these heathlands stable and devoid of human interference - in some cases undertaken on an industrial scale. Nor were they entirely dry and sandy. Though numerous heaths survive today in acidic sandy conditions elsewhere in the study area, mapping exercises comparing soil data to the locations of known heaths – discussed in the following chapter – have

³⁰⁸ Gerard, *The Herball* p.466

³⁰⁹ *Ibid.* p.1205

³¹⁰ *Ibid.* p.168

³¹¹ *Ibid.* p.1061

³¹² *Ibid.* p.969

³¹³ *Ibid.* p.630

³¹⁴ *Ibid.* p.85

raised further doubts as to whether this environment was as universal in underlying lowland heathland as modern conservation literature might suggest.

Conclusions

The term ‘heath’ may have had a range of meanings in the past. These included reference both to heather as a plant – as well as to other, superficially similar but unrelated species – and to heathland, or at least heath-like, landscapes as we might understand them today. With reference commonly made either to waterlogged areas or wetland species on heaths, especially in herballs, though, these were seemingly more closely and regularly associated as parts of wider, dryer heathland habitats in the past than they are today. So too were patches of peaty or chalky soils more common within those landscapes – based on the mention of plant species which require them – than a modern reliance on podsollic sands would suggest.

Furthermore these texts demonstrate quite clearly that the modern obsession with openness on heaths is misleading, and so too the single-minded focus on heather. The concept of the *hæð-stapa* as a woodland edge creature alone suggests the pre-Conquest heaths in question were closer in character to wood-pasture than to open stands of heather. The association – linguistically or literally – of numerous species now not considered to be heathland plants with historic heathlands, meanwhile, in part discredits a reliance on such heather-dominated, single-species stands in modern conservation.

3. Where were they found? The locations and environs of historic heathland

Domesday Book and Population

Etymology, as discussed in the previous chapter, suggests that heaths were viewed as geographically distant from urban or cultural centres during the Anglo-Saxon period. Domesday Book, compiled in the late 11th century, is the earliest surviving document from which we can extrapolate population density or intensity – with some degree of uniformity – for all parts of the study area. By comparing that data spatially with the locations of later heaths, that model can be tested. It is worth noting, however, that Domesday Book does not lend itself well to this kind of population modelling. As a result of the methods by which it was surveyed, the data it contains is not entirely fit for our purposes and can only provide an incomplete picture of how many people lived where in the 1080s.

Most importantly, Domesday Book does not contain population data *per se*. Unlike a modern census, it was not so much concerned with the recording of people but rather the tax certain people were required to pay. It was, above all, an assessment for the ‘geld’ (or ‘danegeld’) – a form of land tax introduced during the Anglo-Saxon period which persisted after the Conquest until 1162.³¹⁵ Entries are ordered first by tenant-in-chief (starting with the king), then by hundred, and then by manor or vill. Each one lists all the agricultural assets associated with the manor as well as the occupiers of all lands subject to the geld who were, in some way, answerable to the tenant-in-chief there. One entry for Massingham in Norfolk, for example, reads as follows:

The land of the King

Freebridge Hundred and a half

Harold [Godwinson] held Massingham before 1066, 3 carucates of land.

Then 4 villeins, when Roger acquired it 3, now the same; always 1 bordar.

Then 4 slaves, later and now 1.

Meadow, 7 acres. Then 2 ploughs in lordship; later and now 14. Woodland,

10 pigs.

Here appertain 25 sokemen, 3 carucates of land and 20 acres. Then and

later 6½ ploughs, now 3½. Always 7 pigs; 64 sheep.

Value then and later 40s; now £10

³¹⁵ Mitchell, S.K., *Taxation in Medieval England* (Yale, 1971) pp.4,112; Roffe, D., *Decoding Domesday* (Woodbridge, 2007) p.191; Stenton, F.M., *William the Conqueror: And the Rule of the Normans* (New York, 1908) p.460

25 sokemen are missing from this manor who were there before 1066 with all customary dues. Guy of Anjou holds 20 of them; they have 2 carucates of land and 58 acres, and the fourth part of 1 acre; William of Warenne 3, who have 120½ acres; Roger Bigot 1, who has 15 acres; William of Ecouis 1, at 10 acres. 14 free men and 12 villeins have also been taken from this manor, whom Ralph Baynard holds.

All this has 1 mile in length and ½ in width, at 20s it pays 16d in tax.³¹⁶

Villeins (Lat. *villani*) were the most common social class listed in Domesday Book, constituting almost half of all households recorded in England.³¹⁷ Legally they were free men, in the sense that they were not slaves and were bound only by agreements they freely entered into, but were tied to the lord from whom they held land and owed him service.³¹⁸ The Black Book of Peterborough contains a survey listing the duties and payments owed by the villeins (and others) of Pytchley in Northamptonshire in 1125 as follows:

There are there 9 full villeins and 9 half villeins and 5 cottagers. The full villeins work 3 days a week up to the feast of St. Peter in August and thence up to Michaelmas every day by custom, and the half villeins in accordance with their tenures; and the cottagers one day a week and two in August... Each full villein ought to plough and harrow one acre at the winter ploughing and one in the spring, and winnow the seed in his lord's grange and sow it. The half villeins do as much as belongs to them. Beyond this they should lend their plough teams 3 times at the winter ploughing and 3 times at the spring ploughing and once for harrowing. And what they plough they reap and cart. And they render 5 shillings at Christmas and 5 shillings at Easter and 32 pence at St. Peter's feast... And all the villeins render 32 hens at Christmas. The full villeins render 20 eggs and the half villeins 10 eggs and the cottagers 5 eggs at Easter.³¹⁹

The number of days worked, and the payments made, varied between manors but much of the villein's time was spent working his lord's land, with the remainder spent tending to

³¹⁶ Brown, P. (ed.), *Domesday Book: Norfolk, Part One* (Chichester, 1984) 1,1

³¹⁷ Vinogradoff, P., *English Society in the Eleventh Century: Essays in English Mediaeval History* (Oxford, 1908) pp.446-7

³¹⁸ *Ibid.*

³¹⁹ Stenton, D.M., *English Society in the Early Middle Ages, 1066-1307* (Harmondsworth, 1951) p.137

the land he held of his lord for his own gain.³²⁰ Bordars (Lat. *bordarii*), as mentioned in Domesday, and cottagers (or ‘cotars’, Lat. *cottarii*), as mentioned in Pytchley, were subject to a similar feudal system of land in return for dues and services. The time and payments they owed were lesser than those of their villein neighbours, though, as the plots they held were smaller – with bordars generally holding less than villeins, and cottagers generally holding less than bordars, if anything at all.³²¹ Although a slave (Lat. *servus*) might in some cases hold a tiny amount of land from his master he was, legally speaking, that man’s property.³²² Sokemen (Lat. *sochemanni*) and free men (Lat. *liberi homines*), on the other hand, owned their own land – although the former probably had to seek permission from the lord before granting or selling it.³²³

Regarding population, then, this is an account only of tax-relevant tenants and occupiers attached to the king’s manor of Massingham, listed according to their legal-economic status.³²⁴ With no record of their families or households (or if they had any) the true population of Domesday England, or any part of it, cannot be known. As Darby wrote:

The details that recur in entry after entry do not provide us with the total populations of manors and villages, and we are left to suppose that each recorded man was the head of a household. We are thus faced with the difficult question of the size of the Domesday household.³²⁵

Numerous scholars have suggested numbers by which the recorded households should be multiplied to obtain a more accurate figure for a general population. Maitland, for example, suggested we ‘for the sake of argument’ multiply the recorded men by 5, Krause suggested either 4.5 or 5, and Russell suggested a figure no greater than 3.5.³²⁶ Darby, meanwhile, reminds us that the realities of life in the eleventh century led to great variation in life expectancy: ‘life was short, many children were born but many died’.³²⁷ For the purposes of the current exercise no such multiplication will be attempted, as the comparison of

³²⁰ Stenton, English Society pp.138-9; Maitland, F., Domesday Book and Beyond: Three Essays in the Early History of England (Cambridge, 1921) pp.26-79

³²¹ *Ibid.* p.40; Vinogradoff, English Society in the Eleventh Century pp.456,460-1

³²² Maitland, Domesday Book and Beyond pp.28,33,42,54; Stenton, English Society p.135

³²³ Maitland, Domesday Book and Beyond pp.95-110; Vinogradoff, English Society in the eleventh Century p.433

³²⁴ Darby, H.C., The Domesday Geography of Eastern England (Cambridge, 1952) p.113; Maitland, Domesday Book and Beyond p.408; Poston, M.M., The Medieval Economy and Society: An Economic History of Britain in the Middle Ages (London, 1972) pp.27-8

³²⁵ Darby, H.C., Domesday England (Cambridge, 1977) p.87

³²⁶ *Ibid.* pp.87-8; Maitland, Domesday Book and Beyond p.437

³²⁷ Darby, Domesday England p.88

recorded household data within a spatial context would not benefit from doing so – the relative difference in population between settlements would remain constant.

Entirely missing from the measurable population are all tenants-in-chief and under-tenants, as well as their families and attendants. Although the former were listed at the beginning of the folios for each county, there is no indication as to where any of them (or their sizeable households) actually resided.³²⁸ Under-tenants were similarly geographically disconnected, with the added complication that (with often only a first name recorded in each instance) it is ‘not always possible to know whether the repetition of the same name implies one man or more than one’.³²⁹

Beyond the medieval household, the inhabitants of all religious houses in England went unrecorded, with only one exception (which conveniently lay within our study area). The entry for Bury St. Edmunds in Suffolk reads as follows:

In Bury St. Edmunds the town where St. Edmund the glorious King and martyr lies buried, Abbot Baldwin held 118 men before 1066 for the monks’ supplies.

They could grant and sell their land.

Under them, 52 smallholders from whom the Abbot could have a certain amount of aid. 54 free men, somewhat poor; 43 almsmen; each of them has 1 smallholder.

Now 2 mills; 2 ponds or fishponds.

Value of this town then £10; now £20.

It has 1½ leagues in length and as much width.

When the Hundred pays £1 in tax, then 60d goes from here to the monks’ supplies; but this is from the town as it was before 1066 and yet it is the same now although it is enclosed in a larger circuit of land which then was ploughed and sown but where now there are 30 priests, deacons and clerics, and 28 nuns and poor persons, who pray daily for the King and all Christian people. Also 75 bakers, brewers, tailors, washers, shoemakers, robemakers, cooks, porters, bursars; all these daily serve St. Edmund, the Abbot and the brethren. Besides these, there are 13 reeves in charge of the land who have their houses in the same town; under them, 5 smallholders.

³²⁸ Darby, *Domesday England* p.88

³²⁹ Darby, *Eastern England* p.54

Also now 34 men-at-arms, including French and English; under them 22 smallholders. Now in all there are 342 houses in lordship on land which was St. Edmund's arable before 1066.³³⁰

The purpose for including such detail was not to accurately record the population of the abbey. Instead, it drew attention to a change in circumstances regarding arable land, taxation, and the amount of money given over to the monks' supplies. Nevertheless, it gives an indication of the size of monastic populations – including not just the priests themselves but also the people who served them – which were not recorded elsewhere in Domesday. Table 3.1 contains a list of all religious houses, both large and small, either certainly or likely to have been active within the study area at the time of the Survey. To this absence might be added most of the clergy resident at large churches. Although entries in Domesday Book often record a priest within the manor in question, establishments larger than the parish church were usually overlooked. The Church of St. Mary's the Greater in Thetford, for example, was the cathedral church of Norfolk before the see was translated to Norwich in 1094, but no regular clergy were recorded there in 1086.³³¹ The only clergymen mentioned were two prebendaries, most likely employed at the secular college attached to the cathedral there.³³²

There is also the issue of errors committed by the Domesday scribes themselves. Not only could numbers have been copied inaccurately, but sometimes manors were recorded without any households attached to them. In Suffolk, for example, the manor of Chattisham is recorded as being eight furlongs in length and six in width, but with no one living there.³³³ It paid 6½d. in tax, so production of some kind must have been taking place, but we are not told who was doing it. In Essex a similar entry for Stanmer and Crays Hill mentions assets, including two ploughs in lordship and two 'men's oxen' but neglects to mention any men.³³⁴ In a curious entry for the lost manor of *Torp* in Loddon hundred, Norfolk, we are told that the geld of six sokemen and eight bordars is valued as part of Bergh Apton, but Bergh Apton itself was not entered into Domesday Book.³³⁵ To these absences can, of course, be added the recorded populations of all those settlements (like

³³⁰ Rumble, A. (ed.), Domesday Book: Suffolk, Part One (Chichester, 1986) 14,167

³³¹ Blomefield, Topographical History of Norfolk Vol. II pp.47-8,59

³³² Knowles, D. and Neville Hadcock, R., Medieval Religious Houses: England and Wales (New York, 1972) pp.411,418

³³³ Rumble, Domesday Book: Suffolk I 1,106

³³⁴ Rumble, A. (ed.), Domesday Book: Essex (Chichester, 1983) 57,1

³³⁵ Brown, P. (ed.), Domesday Book: Norfolk, Part Two (Chichester, 1984) 15,28

Table 3.1. A list of all monastic houses either definitely or likely to have been active in the counties of Norfolk, Suffolk, Essex, and Hertfordshire in 1086.³³⁶

County	Name or Location	Rank	Dependant On or Note
Norfolk	Binham	Priory Cell	St. Albans
	Mullicourt (in Outwell)	Priory	
	St. Benet of Holme (in Ludham)	Abbey	
	Thetford	Priory	Bury St. Edmunds
	Well Hall (in Gayton)	Alien Cell	St. Etienne, Caen
Suffolk	Bury St. Edmunds	Abbey	Accounted for in Domesday Book
	Dunwich	Alien Priory	Eye Priory
	Eye	Alien Priory	Bernay, Normandy
	Hoxne	Priory	
	Rumburgh	Priory	St. Benet of Holme
Essex	Barking	Abbey	A nunnery
	Panfield	Alien Cell	St. Etienne, Caen
	Takeley	Alien Priory	St. Valery, Picardy
	West Mersea	Alien Priory	St. Ouen, Rouen
Herts.	Hertford	Priory	St. Albans
	St. Albans	Abbey	Also a nunnery on the same site
	Ware	Alien Priory	St. Evroul, Normandy

Torp) for which no evidence remains in the modern landscape, and which cannot therefore be mapped.

Despite these shortfalls as a source, Domesday Book remains the only early medieval document, which survives in its entirety, from which comparative data indicative of population density and intensity can be extrapolated for each of the four counties within the study area. For the purposes of this exercise, then, there is no alternative.

Mapping Households in Domesday Book

Household data was gathered from the Open Domesday website, based on data from the University of Hull, and tabulated in an excel spreadsheet.³³⁷ Although printed translated sources for each of the four counties were available, a reliable digital source was deemed more accessible and convenient, considering the digital method of tabulation.

Every entry for each vill extant in the study area in 1086, which has not been lost since, was assessed and the households they mentioned added together. Where an entry concerned more than one vill, without indicating which vill each household pertained to,

³³⁶ All data from Knowles and Neville Hadcock, Medieval Religious Houses

³³⁷ www.opendomesday.org

the total number of households mentioned in that entry were divided equally between all the villas concerned. Although this unavoidably adds to the inaccuracy of the exercise, the alternative would be to attribute more households to one villa mentioned in an entry at the expense of all others – with no evidence to support such a distribution.

All heads of households and individuals enumerated in Domesday Book were counted and taken at face value. The monastic population at Bury St. Edmunds was included in full, despite there being no equivalent population given at any of the other monastic sites listed in table 3.1. Although the brothers of the abbey, by nature of their vow of celibacy, could not potentially be the heads of households like a free man or a villein might, they have been included here in the same way that priests in other villas have been. To remove them would require the removal of all priests mentioned in Domesday Book, most of whom were listed in precisely the same way as their secular neighbours. Retaining them, however, suggests to the reader how much larger the display points for St. Albans (and elsewhere mentioned in table 3.1) might have appeared, if their monastic populations had been equally well recorded. The totals for each villa were attached to spatial data in excel matching the locations of their modern-day equivalents and imported into ArcGIS to be mapped. Figure 3.1 displays this data proportionally, overlaid onto the national NATMAP Vector soil map to give an edaphic context. Discernible heathland featured on 18th century maps for the four counties, discussed in greater detail later in the current chapter, is also included for comparison.

The data shows that, for the most part, villas that were not urban centres were home to similarly small numbers of taxable households – generally fewer than 40. The largest concentrations of geldable households were found where expected. By far the largest concentration in the study area was situated in Norwich (with 1,358), with other centres in Thetford (841), Dunwich (485), Wymondham (376), and Ipswich (322). Smaller centres were found in West Ham (260), Bungay (215), and Sawbridgeworth (209). Bury St. Edmunds appears larger than it ‘should’ do with 207, proportionally speaking, but the reasons for that have already been discussed. By comparison, another abbey town of St. Albans recorded only 91.

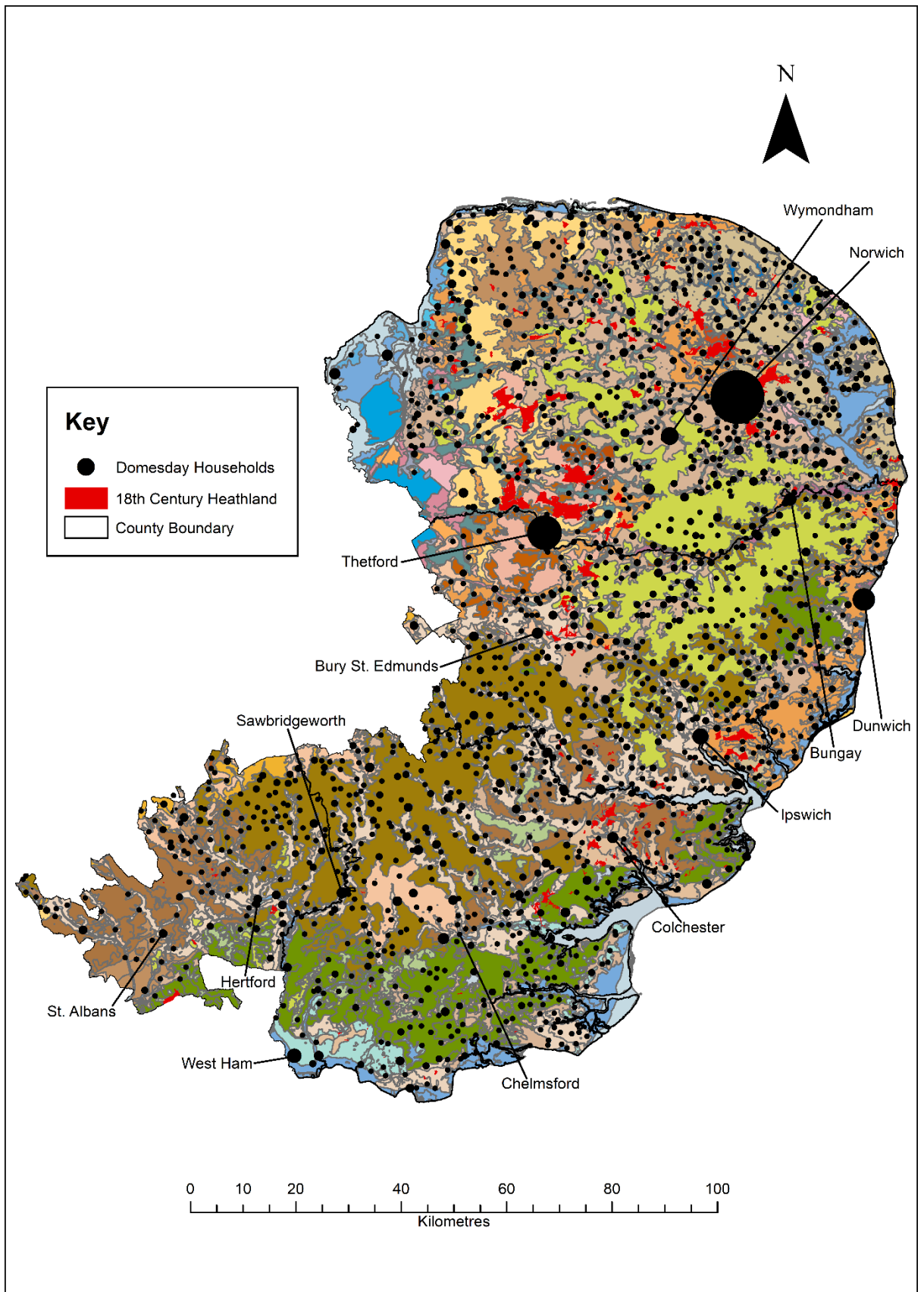


Figure 3.1. A map showing the relative distribution of households recorded in Domesday Book for Norfolk, Suffolk, Essex, and Hertfordshire alongside bounded heathland shown on 18th century county maps for the same places. All overlaid onto the association level National Soil Map.

The most obvious relationship to mention is that those counties which had the most heathland in the 18th century – Norfolk and Suffolk – carried the two largest populations of geldable households at Domesday. Norfolk boasted the most at 26,903.7, with Suffolk at 18,728.6. Essex, meanwhile, contained 13,258.6 and Hertfordshire only 4,603. If any conclusion can be drawn from this data alone, it is that a larger overall population somehow aided the longevity of heathland – perhaps in terms of demand for the resources they produced, such as fuel. At a more microeconomic level, it is worth noting that many late-surviving heaths occupied the middle ground between vills that were urban centres in the eleventh century and those that clearly weren't. Mousehold Heath around Norwich; the Breckland heaths around Thetford and Bury St. Edmunds; the Sandlings heaths near Ipswich; and the cluster of heaths around Colchester all fit this model.

Perhaps a large *nearby* population was necessary for the long-term maintenance of heathland. Conversely, perhaps a large nearby source of fuel and grazing land was necessary for the development of large urban centres, especially in a world without reliable roads, an efficient canal system, or refrigeration. It is also worth mentioning, at this point, that the two much smaller county towns featured on this map – Chelmsford and Hertford – either did not maintain their heathlands long term or did not have many of them to begin with.

Whatever the association between large, localised medieval populations (such as we can calculate them) and the long term survival of heathland, what this data mostly shows is that heaths themselves survived longest on land where people did not live in the early medieval period and, for the most part, have not lived since. Settlements shown on this map regularly lay near the borders of later heathland, but never within them. What is obvious, however, is that late-surviving heathland bears little positive correlation with smaller medieval populations. On a county-wide basis the two counties with the lowest number of households recorded in Domesday Book – Hertfordshire and Essex – respectively contain the smallest areas of heathland to survive into the 18th century.

Domesday Book and Place Names

References to heaths and heathland species detailed in the previous chapter, on etymology and literary usage, challenge certain assumptions made by some modern conservationists, set out in chapter one, that the majority of heaths in England were necessarily characterised by an absence of tree cover and the dominance of heather. This chapter, in turn, seeks to examine two further assumptions. First, that the characteristic, and dominant, soil type associated with both current and historic heathland is a podzolic sand. Secondly, that the openness of the majority of, if not all, heathlands originated in prehistory.

In order to examine the first, the locations of historic heathlands traceable in certain documents were compared digitally to modern soil distribution data. These locations were taken from two datasets. In the first, heathland locations were inferred from place-name evidence recorded in the 11th century. In the second, both the locations and the geographic extents of heathlands were taken directly from maps published in the 18th century. The relationships between these locations and different soil types were then examined, and conclusions drawn as to whether sandy soils were as dominant among heathland soils, in these two periods, as modern practices might suggest.

To examine the second, woodland-indicating place-names from the 11th century were mapped with particular focus on those areas characterised by large open heathlands in later centuries. Where many woodland place-names were found in such areas, it was deemed that the open heathland later found there must have become cleared during the historic period, rather than in prehistory. The historic relationship between heathland and woodland – that is, whether the two have always been considered separate (and incompatible) landscapes – will be investigated at greater length later in this thesis.

Heathland in the 11th century: the place-names of Domesday

Before the 18th century no records for the locations and areas of historic heathland have survived which would allow fair comparison between the four counties constituting the core study area of this work. Some surviving documents chronicle the locations of specific heathland but only at a local level. Although heaths themselves were not chronicled in the Domesday Book of 1086, the place-names of individual manors were and some linguistic elements they contained specifically referenced heathland, while others have been associated with it in the past. A map of heathland-indicating place-names in Domesday, then, would provide some insight into the location of areas characterised as ‘heath’ in the

middle Saxon period, when most of these places received their names.

Research detailed in chapter two has already implied a linguistic association between heathland, woodland-edge environments, and brushwood in Old English. A comparison between the locations of heathland-indicating place-name elements and those indicating woodland, then, would be particularly instructive in throwing light on the true environmental character of heaths in Anglo-Saxon England.

Settlement selection and Domesday Book

Although some near-contemporary sources record place-names not mentioned in Domesday Book, settlements not documented in Domesday, whether their names incorporated relevant elements or not, were not considered for inclusion in the data analysed in this exercise for three reasons.

First, Domesday represents the first approximation of a 'comprehensive' settlement list that England can boast, compiled with anything resembling uniformity. Some idiosyncrasies and inaccuracies found in Domesday Book have been mentioned in the previous section concerning population. To these might be added the curious method of measuring woodland (not usually by area but by how many pigs it could theoretically feed), the fact the organisation of the Domesday surveys, not by settlement or parish but by vill, can confuse where the land recorded laid compared to the demesne (some, indeed, lay in a different township), and the fact that each circuit generated data surveyed differently to the others.³³⁸ To a modern mind Domesday is neither accurate nor comprehensive. It is, however, the most comprehensive, accurate, and accessible medieval document which survives for all four counties.

Second, the place-names listed in Domesday represent a much more accurate portrayal of their Old English (or contemporary) names when compared to those in modern documents. Thus, the place-name elements they contain – often describing topographic features near the settlement – are clearer, and much closer in spelling and meaning to those given to a settlement at the point when that name became fixed in the language of those who knew them. Quite when in the pre-Conquest period these names became fixed is debateable. Watts' argument that names could be altered, through 'folk etymology' - a change in pronunciation of part of a name over time - or after a change of ownership

³³⁸ Darby, H.C., "Domesday Woodland" *The Economic History Review* 3,1 (1950) p.22; Taylor, C., Village and Farmstead: A History of Rural Settlement in England (London, 1983), p.130

deemed important, is compelling.³³⁹ With an expansion of written documentation after the 8th century, it seems likely they became fixed in the Mid-Anglo-Saxon period and had changed little by the time of Domesday Book. Although, as Watts suggested, certain elements might have been altered colloquially, this does not seem to have been widespread between the point at which they became fixed and the Domesday surveys of the late 11th century. As Gelling points out ‘most of them make better sense than would be expected from such a process’.³⁴⁰

Since Domesday, however, most place-names have changed in their pronunciation or spelling and, as a result, meaning over time. Relying on modern spellings would mean including almost a thousand years of variation unnecessarily. Using the entries as they were recorded in Domesday gives more clarity to what elements they contain, and highlights some relevant names which, in their modern forms, might have gone unnoticed. Sco Ruston in Norfolk, for example, is deceiving, with no obvious woodland connotations. In Domesday, however, it was *Ristuna*, showing more clearly the element OE *hrīs* meaning ‘brushwood’.³⁴¹ The three Birchams, also in Norfolk, suggest an arboreal relationship in modern English, yet were *Brecham* in Domesday Book, including OE *bræc* meaning ‘breck’ – a form of temporary cultivation associated with heath. Thus, the three were listed here as heathland-indicating, rather than woodland-indicating names. As the purpose of this, and indeed any, place-name study in landscape history is to acquire a snapshot of landscape character at the point a name became static, to use the earliest recorded example of it seems prudent, within the confines of doing so uniformly.

Lastly, and simply, to have been recorded in Domesday each settlement must have existed by that point. As the purpose of the current exercise is to compare the landscape character around a settlement, inferred from that settlement’s place-name and soil context, in 1086, to include settlements abandoned earlier or founded later would be counterproductive.

³³⁹ Watts, V., “The Evidence of Place-Names II” in Sawyer, P. (ed.), English Medieval Settlement (London, 1979) pp.125,129-30

³⁴⁰ Gelling, M. “The Evidence of Place-Names I” in Sawyer, P. (ed.), English Medieval Settlement (London, 1979) p.111

³⁴¹ Rye, J., A Popular Guide to Norfolk Place-Names (Dereham, 1991) p.17

Place-name elements: heaths

The heathland-related place-name elements selected for investigation are contained within the following table, accompanied by their, generally, accepted definitions:³⁴²

Table 3.2. A list of Old English, Middle English, Old Norse (ON), Old French (OF), and Romano-British (RB) place-name elements indicating heathland, each searched for in the names of Domesday villis for the current exercise. Arranged alphabetically, using the standard Latin alphabet, with language of origin, current definition, and equivalent spellings in modern place-names where appropriate.

Element	Origin	Definition	Modern Equivalent(s)
<i>bouge</i>	OF	Land not yet cultivated, but covered in heather	boulge
<i>brēc, brāc</i>	OE	Land broken up for cultivation	breck-
<i>ēowestre</i>	OE	Sheep pasture, sheep fold	easter
<i>fyr</i>	OE	Furze (gorse, genus <i>Ulex</i>)	fers-
<i>gorst</i>	OE	Gorse	None
<i>hæth</i>	OE	Heath, heather, uncultivated land overgrown with heather	had-, hat-
<i>hāth</i>	OE	Heath, heather, uncultivated land	had-, hat-, heth-
<i>hvin</i>	ON	Gorse	None
<i>lyng</i>	ON	Ling, heather	None
<i>ros</i>	RB	Moor, heath	None
<i>whin</i>	ME	Whin, gorse	whin-

The 'modern equivalents' given here were taken from examples found within the four counties in which this investigation is based. The absences of such for *hvin*, *lyng*, and *ros* are due to there being no evidence for them in any place-names present in Domesday Book for the region, or, therefore, in any modern versions of them. These elements remain included in the table as they were part of the original list of elements searched for.

Two elements shown here, especially, might require some explanation as for their inclusion. First, the element *brēc* can be equated with the Latin *assarto/essarto* meaning 'to clear land' – sometimes specifically to clear woodland – but has a documented relationship with clearing only for temporary cultivation, and has traditionally been used in

³⁴² Mawer, A. (ed.), The Chief Elements Used in English Place-Names: Being the second part of the introduction to the survey of English place-names (Cambridge, 1924) pp.24, 28, 31, 46, 64; Mills, A., A Dictionary of English Place-Names (2nd Ed.) (Oxford, 1998) pp.401-7

connection with such practices in the heathland-dominated Breckland region of Norfolk and Suffolk.³⁴³ It was, therefore, included in the original list on the merit of this association. Secondly, the element *ēowestre* was included in the original list because of an existing strong relationship between some areas, later dominated by heathland, and sheep in Domesday Book – explored in detail later in this work. It does not, however, necessarily refer to the grazing of sheep on heaths, but rather on any kind of pasture.

Very few place-names recorded in Domesday show evidence of heathland. Only 17 were found to contain at least one of the elements in table 3.2 across the four counties. Of those, two are considered only possible indicators of heathland in the surrounding landscape of the relevant vill – one due to the ‘indicator’ element being *ēowestre*, and the other due to a possible alternate meaning which does not reference heath. Both of these have been marked in the following table. It is notable that this paucity of heathland-indicating place-names compares very poorly to the abundance of woodland-indicating place-names listed later in this chapter. Woods, it seems, were probably far more common than heaths in the mid Anglo-Saxon period. The details of each vill recorded containing a heathland-indicating place-name element are listed as follows:

Table 3.3. A list of heathland-indicating place-names recorded in Domesday Book in Norfolk, Suffolk, Essex, and Hertfordshire. Arranged alphabetically by county with modern settlement name, Domesday vill-name, and place-name elements present, with notes where appropriate.

County	Modern Settlement Name	Domesday Vill Name	Place-Name Elements	Notes
Norfolk	Bircham, Great	Brecham	OE <i>brāc</i> + <i>ham</i> (farm)	
	Bircham Newton	“	“	
	Bircham Tofts	“	“	
	Breckles	Breccles	OE <i>brāc</i> + <i>lēah</i> (clearing)	
	Fersfield	Fersuella	OE <i>fȳrs</i> + <i>feld</i> (open land)	
	Hethel	Hethella	OE <i>hæth</i> + <i>hyll</i> (hill)	
	Hethersett	Hederseta	Either OE <i>hæth</i> or <i>heahdor</i> (Stag deer) + <i>(ge)set</i> (fold)	Considered only a possible indicator of heathland.

³⁴³ Clarke, *In Breckland Wilds* p.1; Fisher, J., *A Medieval Farming Glossary of Latin and English Words: Taken Mainly from Essex Records* (Chelmsford, 1997) pp.6,15; Latham, *Revised Medieval Latin Word-List* p.180; Mawer, *The Chief Elements* p.8

	Whinburgh	Wineberga	ME <i>whin</i> + OE <i>burh</i> (fortified place)	
Suffolk	Boulge	Bulges	OF <i>bouge</i> ³⁴⁴	
	Hadleigh	Hetlega	OE <i>hæth</i> + <i>lēah</i>	
Essex	Easter, Good	Estra	Possibly OE <i>eowestre</i>	Might refer to non-heathland pasture.
	Easter, High	“	“	“
	Hatfield Broad Oak	Hadfelda / Hatfelde	OE <i>hæth</i> + <i>feld</i>	
	Hatfield Peverel	Hafelda / Hadfeldham	“	
Herts.	Hadham, Much	Hadam	OE <i>hæth</i> + <i>ham</i>	
	Hadham, Little	“	“	
	Hatfield	Hatfeld(e)	OE <i>hæth</i> + <i>feld</i>	

‘Heathland’ place-names not included

Some place-names, still visible on a modern map, though outwardly heath-denoting, were omitted from this list. This is either because their heath-indicating elements were additions inserted after 1086, were misspellings, or because they were not recorded in Domesday Book for any of the four counties. They are listed here to satisfy any queries the reader might have as to why they were not included. Lyng in Norfolk (‘Ling’ in DB), for example, derives not from ON *lyng* but OE *hlinc* meaning ‘bank’.³⁴⁵ Lingwood in east Norfolk, too, took its name from *hlinc* and, besides, was not recorded in Domesday Book.

In Suffolk, Horningsheath was ‘Horningsworda’ at Domesday, with the root of the end element being unclear.³⁴⁶ Before that, however, earlier documents gave the spelling as ‘Horningsherth’ – with the end element deriving not from *hæth* but from OE *heorth*, usually used to denote a dwelling.³⁴⁷ Lakenheath was ‘Lakingheth’ in Domesday but the root of the end element was similarly unclear. Earlier spellings record the ending as either ‘-huth’ or ‘-hith’ and can, therefore, only derive from OE *hyth*, meaning a ‘landing place’, rather than from *hæth* or *hāth*.³⁴⁸ Before parts of the fens were drained in the 17th century the settlement would have been accessible by water. The end element of Leavenheath in south Suffolk, on the other hand, does derive from *hæth*, but the vill was not recorded in

³⁴⁴ Skeat, W., *The Place-Names of Suffolk* (London, 1913) p.119; Martin, E., “Place-Name Patterns” in Dymond, D. and Martin, E. (eds.) *An Historical Atlas of Suffolk* (Ipswich, 1999) p.50

³⁴⁵ Rye, *A Popular Guide* p.35

³⁴⁶ Skeat, *The Place-Names of Suffolk* p.66

³⁴⁷ *Ibid.*

³⁴⁸ *Ibid.* p.67; Mawer, *The chief elements* p.41

Domesday Book and so was not included in this list.

In Essex, the first element of Hadleigh also stems from *hæth* but the vill was, again, not recorded in Domesday. Braxted was ‘Brac(c)hestedam’ and ‘Bracteda’ in Domesday and could descend from *bræc* but more likely from OE *bracu* meaning ‘fern-brake’ + *stede* (place).³⁴⁹ In Hertfordshire, the vill name Hadley (or Monken Hadley as it is commonly known today) almost certainly translates as ‘heath clearing in a wood’, suggesting a substantial area of open heathland, or at least heathland more open when compared to nearby dense woodland, in the vicinity.³⁵⁰ It was, however, part of the county of Middlesex until 1904, and so was not recorded in the study area at the time of Domesday Book’s compilation.³⁵¹

Place-name elements: woods

The woodland-related place-name elements selected for investigation are contained within the following table, likewise accompanied by their origins, generally accepted definitions, and modern equivalents where appropriate:³⁵²

Table 3.4. A list of place-name elements indicating woodland, each searched for in the names of Domesday villas for the current exercise. Arranged alphabetically, using the standard Latin alphabet, with language of origin, current definition, and equivalent spellings in modern place-names.

Element	Origin	Definition	Modern Equivalent(s)
<i>bearu</i>	OE	Grove, wood	
<i>cēd/cet</i>	RB	(Postulated) forest, wood	chat-
<i>denn, dænn</i>	OE	Wood-pasture	den
<i>feld</i>	OE	Open land, land cleared of trees	-field
<i>fyrth(e)</i>	OE	Woodland, often sparse	None
<i>grāf(a), grāfe</i>	OE	Grove, copse, coppiced wood	-grove, -grave
<i>hangra</i>	OE	Sloping wood, wood on a slope	-hanger, -anger, -hangles
<i>holt</i>	OE	Wood, thicket	holt, -cold
<i>hrīs</i>	OE,ON	Brushwood	rys-, rus-, ris-

³⁴⁹ Reaney, P., *The Place-Names of Essex* (Cambridge, 1935) p.284; Mawer, *The Chief Elements* p.55

³⁵⁰ Gover, J., Mawer, A. and Stenton, F., *The Place-Names of Hertfordshire* (Cambridge, 1938) p.75

³⁵¹ *Ibid.*

³⁵² Jackson, K., *Language and History in Early Britain: A chronological survey of the Brittonic Languages* (Edinburgh, 1953) p.327; Mawer, *The Chief Elements* pp.4, 21, 26, 28-9, 31, 33, 38-40, 45-6, 53, 56, 59, 62-3, 67; Mills, *A Dictionary* pp.401-7

<i>hurst, hyrst</i>	OE	Wooded hill	-hurst, -est
<i>lēah</i>	OE	Wood, woodland clearing	-ley, -leigh, -lee, -le
<i>lundr</i>	ON	Small wood or grove	-land, lound
<i>rydden</i>	OE	Clearing	None
<i>sceaga</i>	OE	Small wood, copse	-shaw
<i>skógr</i>	ON	Wood	sco-, -scoe
<i>stocc</i>	OE	Tree-trunk, stump	stock-
<i>thveit</i>	ON	Clearing, meadow	-twight/-wight
<i>vithr, viðr</i>	ON	Wood	None
<i>wald, weald</i>	OE	Woodland, forest later cleared	-wold, -weald, wald-, wal-
<i>wudu, widu</i>	OE	Wood, forest	wood

Here *bearu*, *fyrth(e)*, *rydden* and *vithr* have no ‘modern equivalents’ for the same reason as *hvin*, *lyng*, and *ros* before. As some elements included in the chart exhibit no immediate reference to woodland, their presence requires clarification. The most notable here is perhaps OE *feld*. At first glance, it would seem to mean the same as the modern word ‘field’, or ‘enclosed farmland’. That is to say, not woodland which is the subject of the current stage of this exercise. Despite its etymological similarity, though, the two differ widely in meaning.³⁵³ Stevenson, indeed, argues that the two have opposite meanings, as *feld* was used to describe ‘a great stretch of unenclosed arable land’.³⁵⁴ More recently Gelling has argued the linguistic association with specifically arable land did not arise until the second half of the 10th century. For most of the pre-Conquest period the association was with open land irrespective of its level of cultivation. Importantly for this study, it also often occurred on the edge of woodland.³⁵⁵

This highlights the purpose of place-names - they exist to differentiate. Just as naming a place with a more ‘obvious’ woodland place name demarcates it from the surrounding, more open, country, identifying a location by its cleared nature suggests a wooded, ‘unclear’ surrounding. Settlement names containing the element *feld* are included here not for the location of the settlement, but of this inferred woodland. Old Norse *thveit* is included for the same reason. Its widely accepted meaning of ‘clearing’ suggests that its

³⁵³ Mawer, *The Chief Elements* p.26

³⁵⁴ Stevenson, W., “Some Old-English words omitted or imperfectly explained in Dictionaries” *Transactions of the Philological Society* 23, 3 (1897) p.531

³⁵⁵ Gelling, M. *Signposts to the Past: Place-Names and the History of England* (London, 1978) p.126; Gelling, M., *Place-Names in the Landscape: The Geographical roots of Britain's place-names* (London, 1984) p.236

surroundings were not clear.³⁵⁶

The Old English *stocc* was included due to its association with felled woodland.³⁵⁷ To ignore evidence of woodland clearance seems detrimental. Also included in the list were place-names containing reference to multiple trees. Boxted in Essex ('Bocstede': OE *bōc* + *stede* - 'place where the beech-trees grow')³⁵⁸, Aspenden in Herts. ('Absedene': OE *æsp* + *denu* - 'valley where aspen-trees grow')³⁵⁹, and Wilton in Norfolk ('Wiltuna': OE *welig* + *tun* - 'settlement in the willows')³⁶⁰, for example, were all included for this reason. The plurality of the trees involved suggests woodland, though with no indication of size. These entries, and others like them, were included in the following results but considered weaker indicators of woodland, compared, for example, to *holt*, *wald* or *hangra*. Appendix one details the 222 place-names recorded in Domesday Book entries for the study area showing evidence of woodland.

'Woodland' place-names not included

Some noteworthy, outwardly woodland-indicating, place names visible on modern maps were omitted from the table in appendix one, as before. In Norfolk, Choseley and Bradfield, for example, were excluded as they were not recorded in Domesday Book. Cockley Cley, in west Norfolk, was recorded as 'Claia' in Domesday – containing OE *clæg* meaning 'clay', with the first word – seemingly containing OE *lēah* – added later.³⁶¹ Wood Dalling and Wood Norton, similarly, had their first elements added later. The former was recorded as 'Dallinga' in 1086, containing OE *Dalla* (pers. name) + *ingas*, and the latter was recorded simply as 'Nortuna' containing OE *north* + *tun*.³⁶²

In Essex, Brentwood, Gosfield, and Horkesley (the latter now two settlements – great and little) were not entered into Domesday Book and so were not listed here. Fyfield, between Chelmsford and Harlow, at first glance contains OE *feld* but was recorded in Domesday as 'Fifhidam' meaning 'five hides' – a hide being a measure of land.³⁶³ Goldhanger would appear, like Birchanger, to contain OE *hangra* but the area is low-lying

³⁵⁶ Gelling, *Place-Names in the Landscape* p.210

³⁵⁷ Mawer, *The Chief Elements* pp.4,56; Mills, *A Dictionary* pp.401,406.

³⁵⁸ Reaney, *The Place-Names of Essex* p.363

³⁵⁹ Gover *et al*, *The Place-Names of Hertfordshire* p.171

³⁶⁰ Rye, *A Popular Guide* p.18

³⁶¹ *Ibid.* p.21

³⁶² *Ibid.* pp.41,68

³⁶³ Reaney, *The Place-Names of Essex* pp.56-57

so a root in OE *anger* (meaning ‘grass-land’) seems more likely.³⁶⁴ Interestingly, the name recorded for Hadstock, on the Cambridgeshire border, at the time of Domesday Book, contained neither OE *hæth* nor *stocc* elements which would make it of interest to this study. Not only does the first element stem not from *hæth* but from the personal name *Hada* or *Haedda*, but the vill name recorded at Domesday made no reference to it.³⁶⁵ Instead it was recorded as ‘Cadenhou’ containing OE *Cada* (pers. name) + *hoh* (ridge, spur of land).³⁶⁶ The modern name is a replacement in use by the end of the 12th century. Saffron Walden was ‘Waledana’ at Domesday and contained not OE *wald* but *wealh* (meaning ‘Briton’ or ‘serf’) and *denu*.³⁶⁷ In Hertfordshire, Northaw, Panshanger, Arkley, and Nettleden (containing OE *lēah* between *netel* (nettle) and *denu*) were not recorded in Domesday Book.³⁶⁸

Mapping the results – methodology and issues

Domesday vills displaying relevant place-name elements were mapped based on the location of their modern equivalents using the Ordnance Survey gazetteer query system on the EDINA website. Paper alternatives, such as Darby's Domesday Gazetteer of 1975, were disregarded as the searchable online service is considerably quicker to use and, arguably, more accurate – benefitting, as it does, from modern satellite mapping techniques. A method of mapping each on the location of its church was considered but dismissed as time-consuming. The method employed, though faster, is not without issues.

First, and most simply, a settlement's location today is not necessarily unchanged since the 11th century. Although it seems unlikely that a settlement recorded at Domesday and one visible today of the same name would differ to a great extent geographically, it is not unknown for communities to shift over time.³⁶⁹ Of the four counties, Norfolk seems most susceptible to this. Here the characteristic ‘isolated medieval church’, such as at Longham, Honing, and Colby, hints at a fluid pattern of settlement drift throughout the medieval period, with the immovable churches marking centres of earlier settlement.

Wade-Martins, in a study of 15 village sites in Launditch Hundred in north Norfolk, for example, found that ‘many villages started to shift in the twelfth century, and this is probably the explanation for the majority of isolated churches in many parts of East

³⁶⁴ Reaney, The Place-Names of Essex p.303

³⁶⁵ *Ibid.* pp.510-511

³⁶⁶ *Ibid.*

³⁶⁷ *Ibid.* p.537

³⁶⁸ Gover *et al*, The Place-Names of Hertfordshire p.48

³⁶⁹ Taylor, Village and Farmstead pp.126-128

Anglia'.³⁷⁰ Some, however, had started shifting earlier as at Mileham where movement had begun as early as the ninth century.³⁷¹ Davison's work in south-east Norfolk, too, has shown that settlement movement in three villages, from a nucleated position near the church to the margins of greens, had 'reached its climax by the thirteenth/fourteenth centuries'.³⁷² Rogerson, meanwhile, has shown that in Fransham, in east Norfolk, settlement denucleation and the establishment of common-edge living had begun by the Conquest and was probably completed by the beginning of the twelfth century.³⁷³ By the time of Domesday Book the main area of settlement sat c.800 metres to the east of the church - making mapping by church location unwise.³⁷⁴ Mapping by modern settlement location, though, will not show precisely the nucleus of settlement in either the mid Anglo-Saxon period or the late 11th century.

Secondly, it meant that some relevant place-names in Domesday Book could not be mapped, as there is no directly comparable modern settlement listed on EDINA. Although Domesday vills often gave their names to later parishes, some ceased to exist as tenurial entities altogether. Professor Maitland's claim, written in the 1890s, that 'the *villa* of Domesday Book is in general the vill of the thirteenth century and the civil parish of the nineteenth' seems in great part to be true.³⁷⁵ There are some, however, that have declined and become isolated farms or hamlets within another parish. Round, in the Victoria County History for Essex, explains some of these losses in terms of church administration; if two vills were serviced by the same church, the one containing the church will generally subsume the other, which will take its name.³⁷⁶ Although their Domesday names are sometimes still in use locally, commonly followed by 'hall' or 'end', or in street names if nothing else, these are now of very minor importance and therefore return no results on the gazetteer query used. Others have simply ceased to exist within the modern landscape. Indeed, this study found examples of vills in each of the four counties, containing woodland place-names, that have been lost, are untraceable and, therefore, 'un-mappable'.

³⁷⁰ Wade-Martins, P., "Fieldwork and Excavation on Village Sites in Launditch Hundred, Norfolk" East Anglian Archaeology Report number **10** (1980) p.87

³⁷¹ *Ibid.*

³⁷² Davison, A., "The Evolution of Settlement in Three Parishes in South-East Norfolk" East Anglian Archaeology Report number **49** (1990) p.67

³⁷³ Rogerson, A., Fransham: An Archaeological and Historical Study of a Parish in the Norfolk Boulder Clay Vol. I Unpublished PhD Thesis (University of East Anglia, 1995) p.161

³⁷⁴ *Ibid.* p.127

³⁷⁵ Maitland, Domesday Book and Beyond p.17

³⁷⁶ Round, J., "Introduction to the Essex Domesday" in Doubleday, H. and Page, W. (eds), The Victoria History of the Counties of England: A History of Essex Vol. I (London, 1903) pp.403-404

The location data taken from EDINA – in the form of national grid coordinates – were inputted into a Microsoft Excel spreadsheet alongside the names of each settlement, the county in which they lie, and the relevant place-name elements they contained at Domesday. This was then displayed visually using a Geographic Information System (GIS). The GIS software chosen was ArcGIS 10.2.

The heathland-indicating place-names in table 3.3 were categorised into four groups based on what heath-indicating elements they contained. These ranged from those most directly associated with heathland, to those only possibly related. Thus, *hæth* and *bouge* elements were classed together as ‘primary’ indicators of a heathland landscape, that is to say, those that directly reference heaths. The elements *bræc*, *fyr*s and *whin* were classed together as secondary indicators, being less direct in their reference to heaths. The element *eowestre* was classed into a tertiary group of its own, being an unreliable indicator of heathland. Hethersett is mapped separately only as a possible indicator. This was necessary to qualify that each was not automatically an equally reliable indicator of historic heathland location as the others. These data are displayed in figure 3.4.

The woodland-related place-names in appendix one were similarly categorised into four subgroups. In the first, *feld*, *lēah*, *grāf(a)*, *holt*, *wudu*, and *wald* were considered ‘primary’ indicators of significant woodland – those deemed to most directly reference substantial areas of trees. The second group contained the elements *denn*, *hangra*, *hrīs*, *hurst*, *lundr*, *sceaga*, *skógr*, and *thveit* as ‘secondary’ indicators – elements known to reference woodland but without a clear indication of woodland size or significance. The third, or ‘tertiary’, group consisted of *cēd*, and *stocc*. As a meaning of ‘forest or wood’ is only postulated for the former, and the latter might well reference felled trees rather than standing woodland, they were both deemed unreliable indicators of significant woodland. The fourth, or ‘quaternary’, group consisted of place-names containing no indicators to woodland except allusion to multiple trees, usually of a single species (such as Elmstead). As well as providing a comparison of reliability between names, this improves the ease-of-use of the map compared to an alternative arrangement where each individual element was assigned its own symbol. These data are displayed in figure 3.5.

To establish whether any relationships could be seen between the locations of these settlements and soil association, both were overlaid onto the 'NATMAP Vector' National Soil Map produced by the Cranfield Soil and Agrifood Institute (CSAI). This layer was chosen over other products, e.g. the 'NATMAP Soilscales' map, as it is the most comprehensive available for all the study area – the alternatives being simplified. As a

representation of subtle changes in soil type on the ground, however, the map used is still a simplification.

The problem with soils - associations and series

Since the 1970s, soil types in England have been categorised using attributes identifiable in the field. Clay, silt, and sand contents are measured in each stratum (or 'horizon') to produce a 'soil texture', within which different patterns are defined using descriptive terms, e.g. 'sandy clay', 'silty clay', or 'silt loam'. This is then contextualised within environmental conditions, such as topography, geology, and vegetation. With this information other properties are then extrapolated, including water retention capacity and porosity. The resulting 'profiles' are then grouped together, with those containing similar horizon sequences originating from analogous lithological parent materials forming a 'series'. Each series is then named after a place where it is commonly found or where it was first encountered. All following samples are then analysed and catalogued under one of these classifications.³⁷⁷ By creating a definable framework for field surveyors to refer to, this system allowed for nation-wide soil surveys to be performed with uniformity.

Due to the magnitude of small-scale investigation that would be required, however, few examples of maps surveyed at series level exist. Instead, most published soil maps have been surveyed at the more general 'association' level – where series often found in association with one another were grouped together for simplicity, the name of the association being taken from the dominant series. These associated series were not, however, necessarily similar to each other in their texture or behaviour, but rather commonly geographically proximate. As a result, much of the detail that a series level map might illustrate is lost at the association level. Figures 3.2 and 3.3 demonstrate this well. Figure 3.2 is a digitally redrawn series-level soil map for a 100km² area around Harleston, near the Norfolk-Suffolk border.³⁷⁸ Figure 3.3 shows the same area as drawn on the association-level NATMAP Vector map. The former contains a much more detailed representation of small changes in soil type. It also quite clearly shows lenses of one soil series, within wider expanses of another group of soil series, which the association-level map does not feature.

In the north west, for example, a projection of Needham (now Hopsford) and Hall series soils (in orange) – clay loam, and sandy loam respectively – extends into an area of

³⁷⁷ Curtis, L., Courtney, F. and Trudgill, S., Soils in the British Isles (New York, 1976) pp.33-36

³⁷⁸ Corbett, W., Soils in Norfolk IV: Sheet TM 28 (Harleston) (Harpden, 1979)

Aldeby and Beccles series soils in light blue. The Aldeby series is a sandy loam stagnogley with a clay-enriched subsoil. This area is itself an island within a wider area of just the Beccles series in darker blue. In the south, too, lenses of Ollerton series soils (acidic sandy or gravelly loams, also in orange) are mapped within a wider area of Ragdale and Beccles series soils in green, the former being a seasonally waterlogged clay or clay loam. None of these distinctions are visible on the association-level map.

Furthermore, the purpose of classification by association was, for the most part, done for the benefit of agriculturists rather than for soil scientists. As a result, much of the published information on the character of associations relates to modern crop rotations and, by extension, drainage capacity. The Burlingham 1 association, for example, which covers some 615km² of Norfolk, contains the Burlingham, Ashley and Hanslope series at Wetness Class III. It also contains the Wick, Newport, Wighill, Wigton Moor and Hopsford series at Wetness Class I (the latter three only after drainage).³⁷⁹ Higher wetness classes match generally wetter conditions.

Maps surveyed at series level would be, then, both more accurate and, arguably, more suitable for use in this investigation. They do not, however, exist for the vast majority of the study area. Association level maps take less time to survey, reducing costs, and have been produced for all areas covered in this study. As a result, all mapping undertaken to find relationships between historic land use and soil types has been done in the context of associations, but with reference to the series that each association contains where appropriate.

³⁷⁹ Hodge, C., Burton, R., Corbett, W., Evans, R. and Seale, R., Soils and Their Uses in Eastern England (Harpenden, 1984) pp.133-134

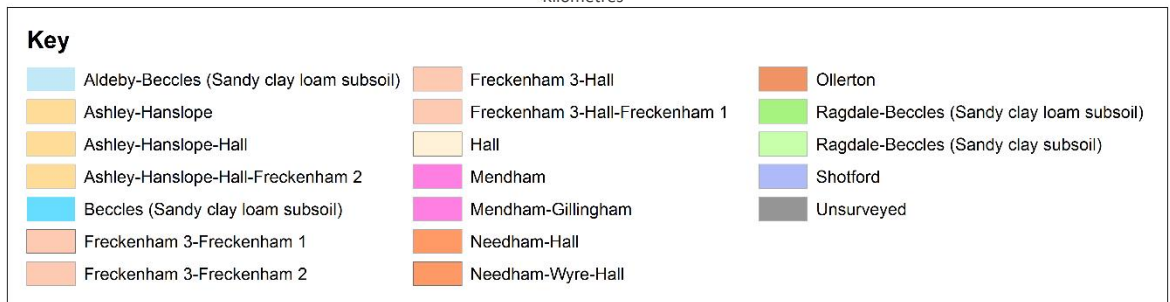
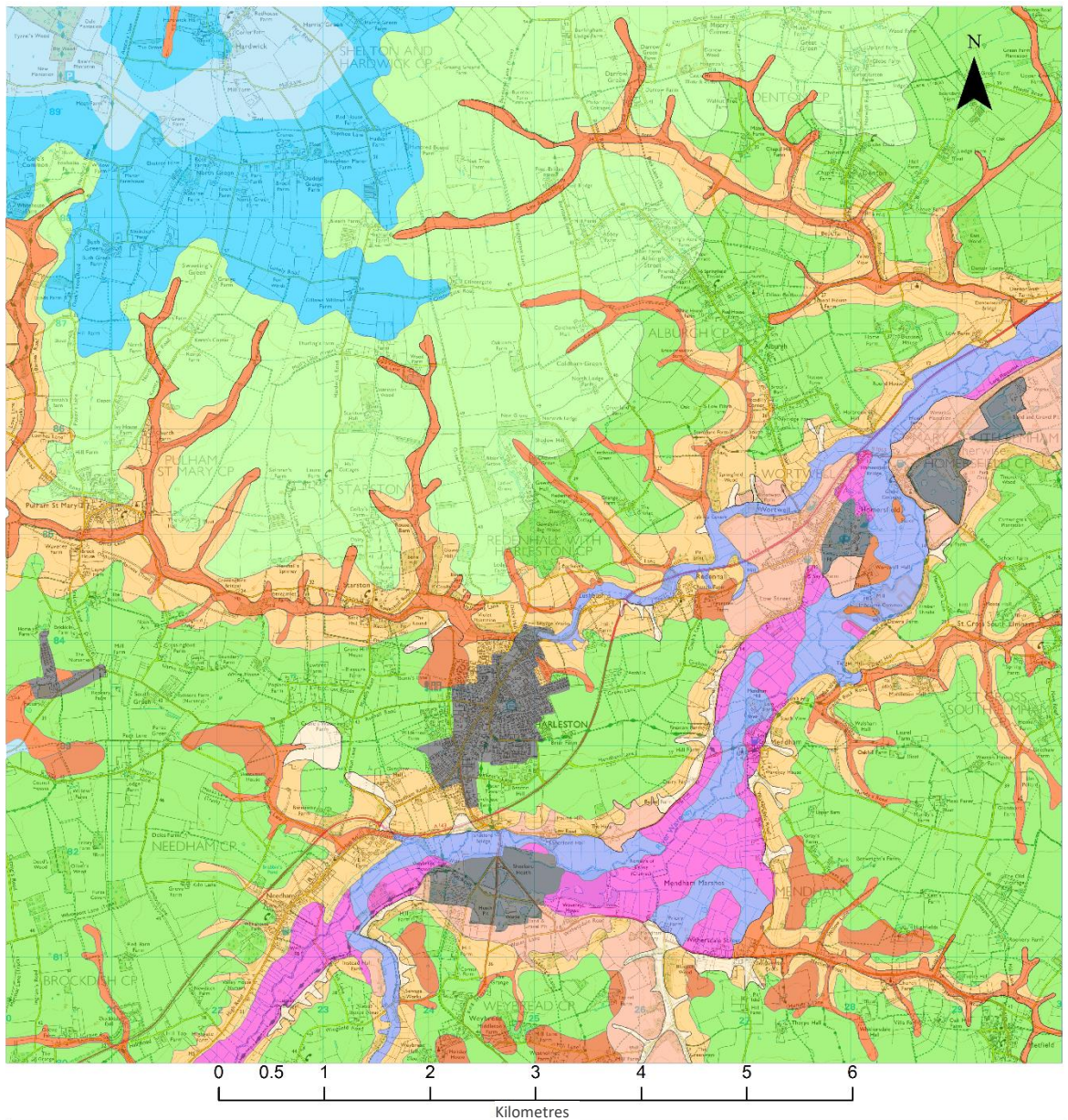


Figure 3.2. A digitally redrawn series-level soil map for a 100km² area around Harleston, near the border between the counties of Norfolk and Suffolk. Overlain onto a modern 1:25,000 Ordnance Survey map of the area. Unsurveyed areas constitute urban centres. Colouring after the original.

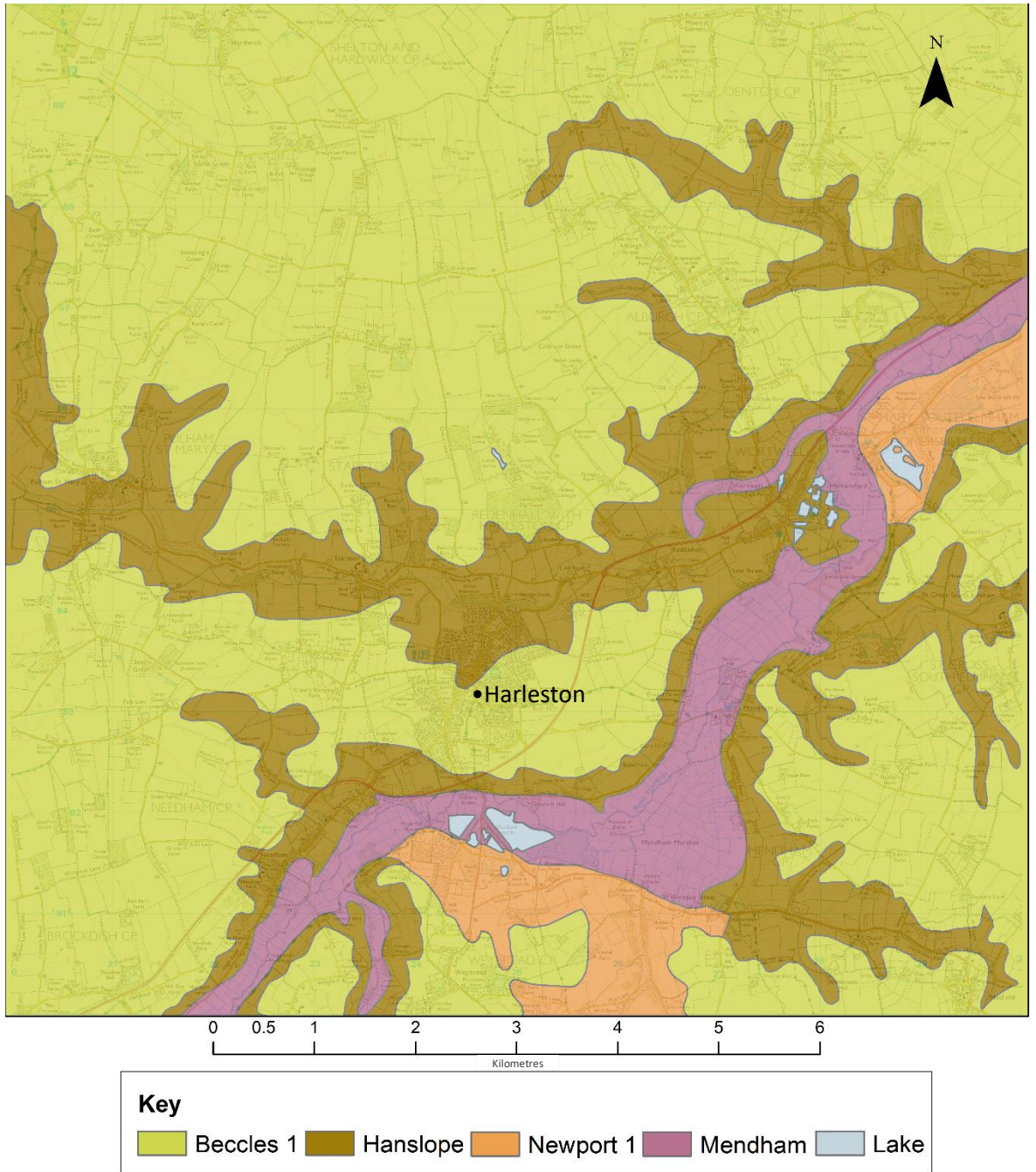


Figure 3.3. Detail of the NATMAP Vector association-level soil map for a 100km² area around Harleston, near the border between the counties of Norfolk and Suffolk and identical to that seen in figure 3.2. Overlain onto a modern 1:25,000 Ordnance Survey map of the area.

Mapping the results

All Domesday vill-names containing heathland-indicating place-name elements (contained in table 3.3), and for which there survives a modern equivalent settlement, are displayed visually in figure 3.4. All vill-names containing woodland-indicating place-name elements (contained in appendix one) are displayed visually in figure 3.5.

To assess any relationships between woodland- and heathland-indicating place-names and physical woodland, a third map, figure 3.6, shows all the above data overlaid with the locations and relative extents of woodlands entered into Domesday Book, after Darby's interpretation.³⁸⁰ For comparison, all three maps include the boundaries of the four counties in the study area.

Place-names and soil associations

Domesday vills containing heathland-indicating place-name elements were, for the most part, found a short distance into large areas of heavy clay soils, often on the edge of an interfluve. All but one of the vills in the primary category follow this trend. Hadleigh in that group, found in south-central Suffolk, does not. Instead, it is found in an area dominated by the deep loams of the Ludford association, directly beside the river Brett, rather than the clays of Hanslope and Hornbeam 3 on the interfluves either side. All but one of the secondary, tertiary, and quaternary group settlements also follow this trend. The anomalous entry – Breckles in the north of the Norfolk Breckland – is the only heathland vill mapped to be found in an area of light, sandy soils as identifiable from the association-level soil map. Though only small numbers of heathland-indicating place-names were found in the study area, almost all had a closer correlation with clay-rich soils than with sand.

Modern settlements, to which vill names exhibiting woodland-indicating place-name elements are attached, frequently appear on or near the point where two soil types merge and, like heathland indicators, often towards the edges of interfluves. Over half of them (52.5%) were found to be on associations characterised by clay soils, while 36.5% are on generally loamy associations, 10% on sands, and 1% on silts. The preference of fertile river-valley soils for farming probably explains the lack of woodland place-name elements in the names of vills associated with them. Of those vills with names indicating

³⁸⁰ Darby, Domesday Geography of Eastern England p.201

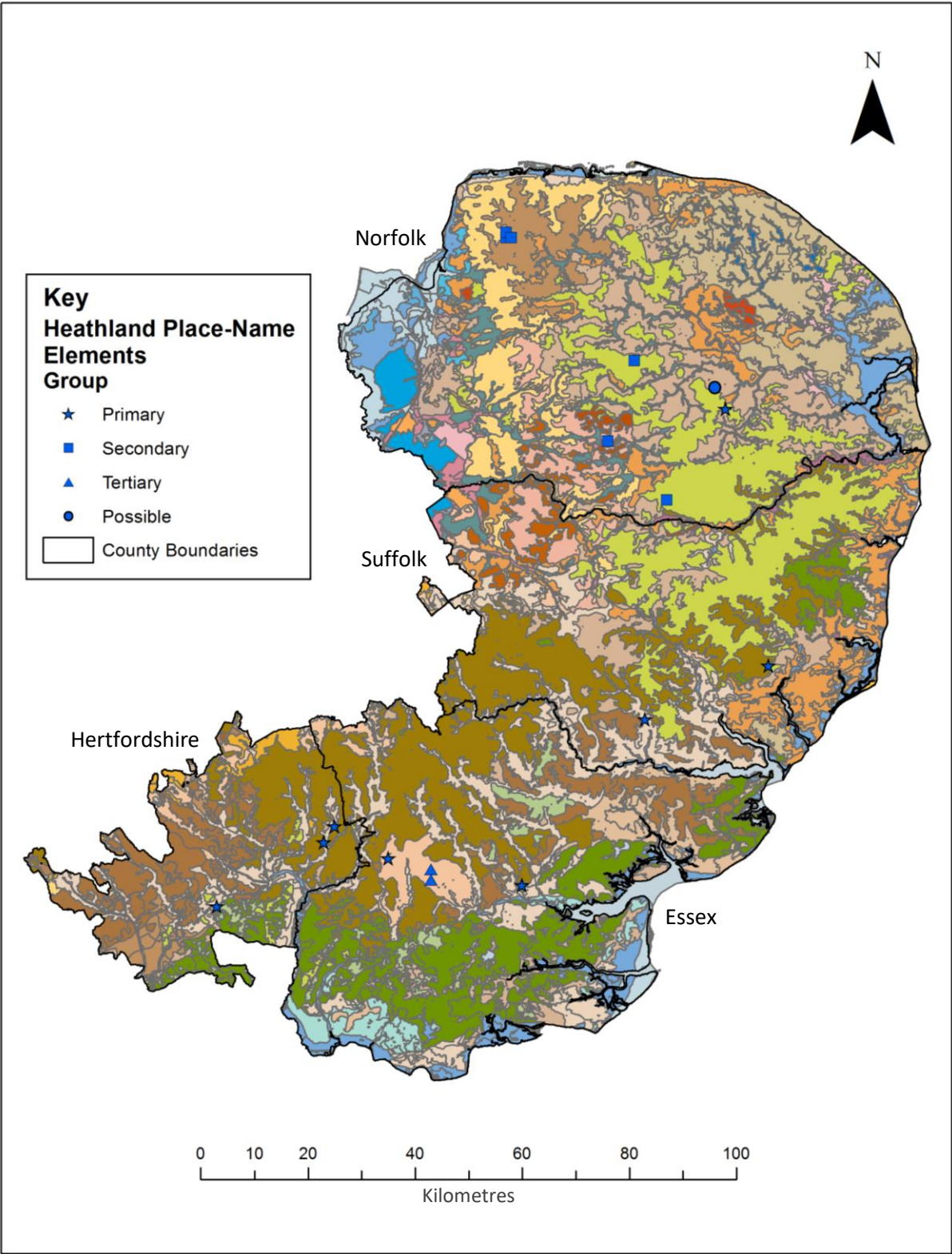


Figure 3.4. A map showing the distribution of heathland-indicating place-name elements recorded in the vill names of Domesday Book in the counties of Norfolk, Suffolk, Essex, and Hertfordshire. All overlaid onto the association-level National Soil Map. For definition of groups see page 91.

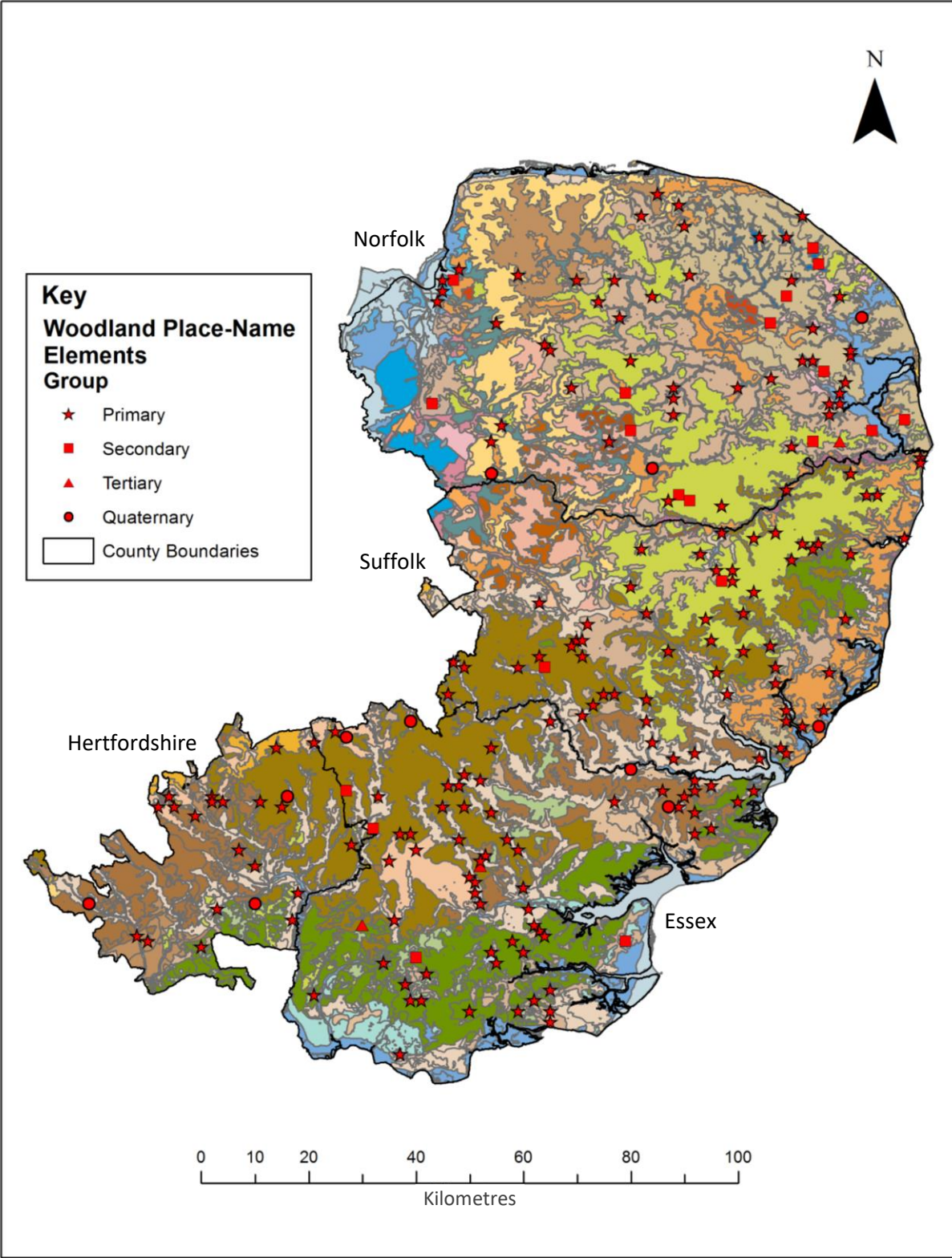


Figure 3.5. A map showing the distribution of woodland-indicating place-name elements recorded in the vill names of Domesday Book in the counties of Norfolk, Suffolk, Essex, and Hertfordshire. All overlaid onto the association-level National Soil Map. For definition of groups see page 91.

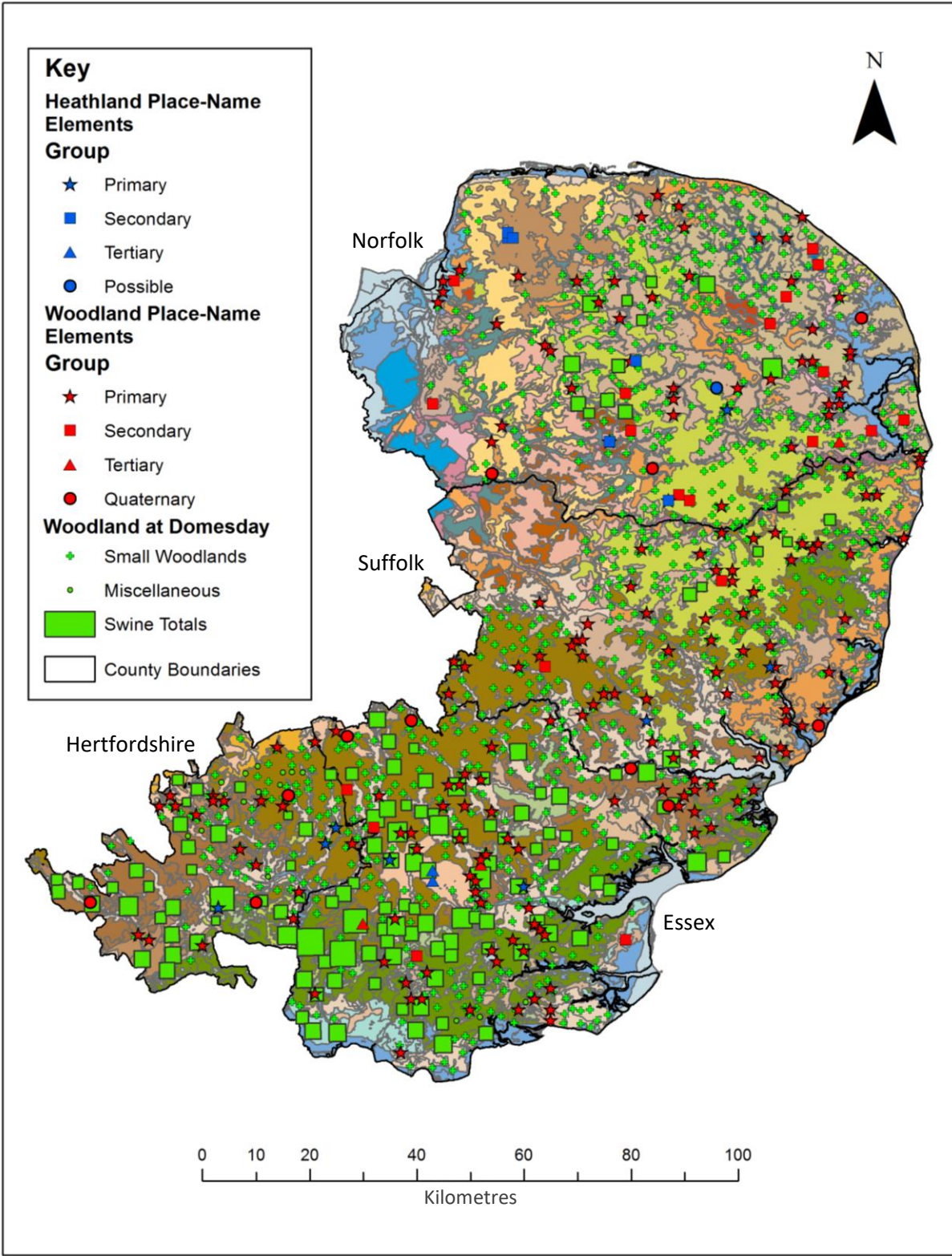


Figure 3.6. A map showing the distribution of heathland- and woodland-indicating place-name elements recorded in the vill names of Domesday Book in the counties of Norfolk, Suffolk, Essex, and Hertfordshire. Also all woodland recorded in Domesday Book, as visualised by Darby (1957). All overlaid onto the association-level National Soil Map. For definition of groups see page 91.

woodland landscapes, found on associations of loams, most were mapped high on the sides of river valleys close to the edges of clay-rich associations on the interfluves. Almost all modern settlements bearing woodland-indicating elements in their names found on clay soils stand towards the edges of larger expanses of those soils, rather than deep within them.

A correlation between clay soils and woodland place-name elements is apparent. A parallel correlation with clay soils is evident with heathland-indicating place-name elements. Almost all heathland-indicating place-names recorded during this exercise were found attached to settlements in the same edaphic circumstances as those with woodland-indicating place-names. Indeed, five names (29.5% of names found indicating heathland) contain indicators of both heathland and woodland. The two landscapes, then – both dense woodland and, probably, less densely wooded heaths – seem to have occurred alongside each other quite often. The vast majority of heathlands indicated by vill names were also found not in areas dominated by sandy soils, but by heavier soils, though it is possible they were managed on lenses of light soils amongst the clays and loams, not visible on the association-level map.

Some areas later dominated by heaths did not become entirely cleared of woodland until after their woodland-indicating vill names had become fixed. The southernmost peninsula of what would become the Suffolk Sandlings, for example, appears to have sustained at least some woodland into the mid Anglo-Saxon period, as shown in figure 3.6. Detailed in figure 3.7, three primary woodland indicator names (two containing OE *lēah* and one OE *holt*), as well as the possibly woodland-indicating vill name of ‘Alderton’, suggest woodland in the landscapes surrounding each settlement. Whether this woodland covered the whole area of what would, in the future, become open heathland, or occupied a smaller area on the edge of an existing heath not indicated in these vill names, is unclear. Indeed, the fact that eight other vill names on the peninsula exhibit no woodland-indicating elements in their names suggests woodland was not dominant across it all.

The cluster of three woodland-indicating vill names in the south of the peninsula, with no other settlement between them, however, suggests the woodland they referred to could have been the same shared wood, filling the area between them. The woodland that stood here, on acidic sandy soils in an area later characterised by large heathland ‘sheepwalks’, was only removed between the fixing of those vill names and the surveying of Domesday Book. By that time no woodland was recorded in the south at all, with only small amounts surviving in the north at Staverton, shown in green.

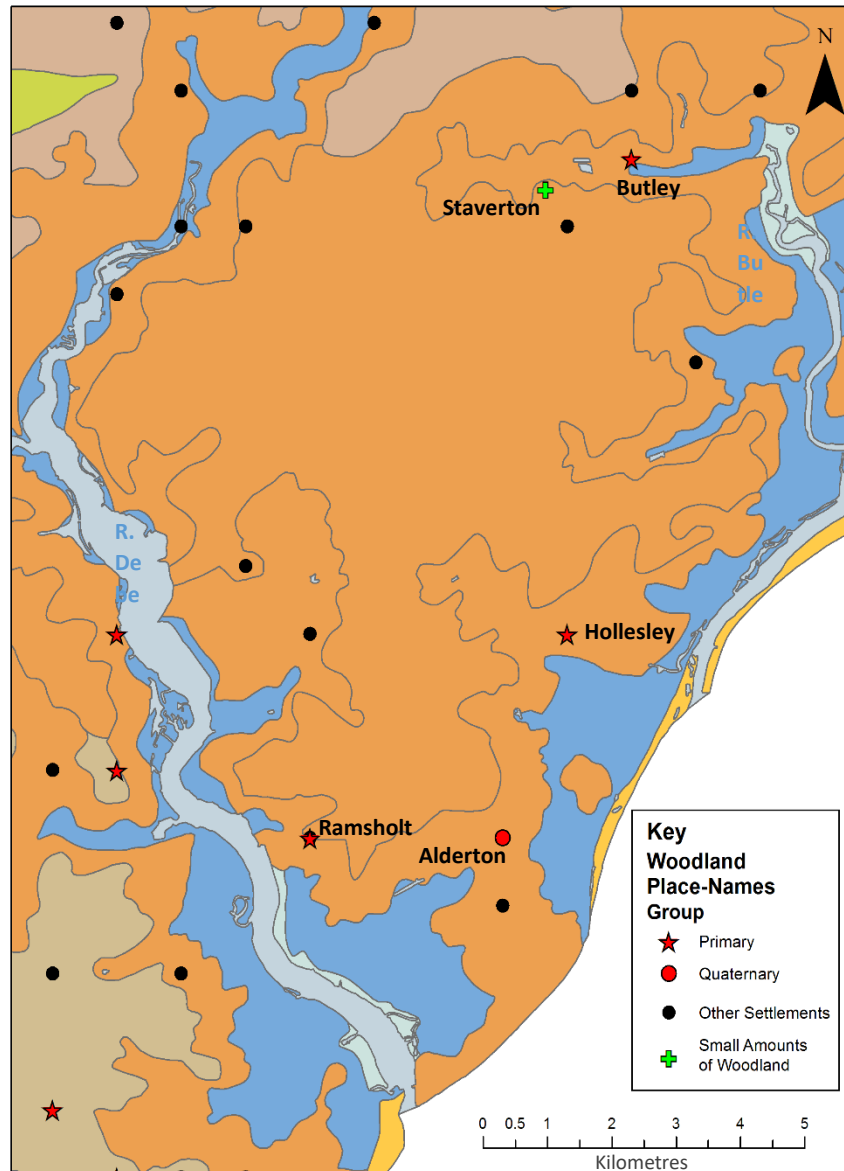


Figure 3.7. Detail of the interfluvium between the rivers Deben in the west and Butley in the north east, on the southern Suffolk coastline. Woodland-indicating vill names and woodland recorded in Domesday Book for the county are shown overlaid onto the association-level National Soil Map.

Place-names recorded in the 11th century and soil associations – conclusions

Evidence for pre-Conquest heathland in place-names in the study area is severely limited. Those that exist suggest a practice of heathland management in limited areas of cleared, or partially cleared, woodland among clay-rich rather than sandy soil types. Woodland-indicating place-names were found, in almost all cases, on identical soil associations and in parallel situations with regards to rivers and interfluvies. Indeed, more than a quarter of the heathland-indicating place names found in this exercise contain elements for woodland as well as heath, suggesting the two were intermixed in those places. Sandy associations

were only very rarely associated with heathland-indicating place-names. This suggests that a strong association between heaths and sandy soils had not yet become established.

Some parts of the Sandlings, later managed as open heathland ‘sheep-walks’, were partially wooded when local place names became fixed and some standing woodland was maintained there in 1086. As Arnott wrote, ‘It would seem ... that East Suffolk may once have been a district of forest land rather than of open heath. The evidence of names which contain the Old English *leah* points to it’.³⁸¹ Some woodland-indicating place names and standing woodland was also recorded in the Norfolk half of Breckland, where open heathland was dominant in later centuries. This would again suggest that woodland and heathland were, at least to an extent, intermixed there at the time of Domesday.

Woodlands recorded on the sandy soils around Norwich are also noteworthy. These are the soils which would later underlie the vast, open Mousehold Heath painted by Crome and Cotman in the 19th century (featured in chapter one), but in 1086 this area was not yet clear of trees. Indeed, the name Mousehold contains the OE element ‘*holt*’, meaning wood, and some tree cover was maintained here far beyond the end of the 11th century. In 1156, for example, Pope Adrian IV referred to ‘the heath with all its wood’ there, and in the 13th century an agent for the Bishop of Norwich complained that he could not stop commoners gathering wood, causing the trees to disappear.³⁸² By the 16th century, maps show that what woodland remained was confined to only a few small areas.³⁸³

The intersection of heathland place names, woodland place names, and standing woodland shown in figure 3.6 suggests that not all heaths in the study area became open in the prehistoric period, as discussed in the introduction. This lends weight to Vera’s suggestion that scattered or clumped trees were an integral part of at least some heathland landscapes into the historic past.

Indeed, it is possible that heathland was more extensive in 1086, at least in western Norfolk, than this place-name study might suggest, and that a correlation with woodland place-names and recorded woodland might have been more widespread there. Darby has suggested that a surprisingly low average land value in Norfolk hints towards a large amount of low-value heathland in that county not otherwise recorded. His analysis has shown that, despite being the most populous county in our study area (discussed earlier in this chapter), Norfolk recorded an average land value of only 40 shillings per square mile.

³⁸¹ Arnott, W., *The Place-Names of the Deben Valley Parishes* (Ipswich, 1946) p.1

³⁸² Rackham, *History of the Countryside* p.301; Barnes, G. and Williamson, T., *Rethinking Ancient Woodland: The Archaeology and History of Woods in Norfolk* (Hatfield, 2015) p.90

³⁸³ Rackham, *History of the Countryside* p.301

This is compared to 53 in both Suffolk and Hertfordshire, and 67 in Essex.³⁸⁴ This, he says, might ‘be explained by the fact that so much of western Norfolk consisted of marsh and heath before the hand of the improver touched them in the eighteenth century’.³⁸⁵

Woodland recorded at Domesday for western Norfolk (east of the fens) is comparable to that recorded in the Norfolk Breckland, where heathland and woodland was probably intermixed. Darby’s analysis suggests this land-use pattern might have extended further north into much of western Norfolk in 1086.

It is also worth noting that heaths themselves were not recorded in the study area. As Darby has noted, heathland (Lat. *bruaria*) was recorded only once in all of England. This was at Boveridge in Dorset where heathland ‘two leagues long and wide’ was recorded between the entries for pasture and woodland.³⁸⁶ As such, this exercise can only give an incomplete picture of the extent to which heathland and woodland overlapped in England in 1086. What conclusions can be drawn for it, however, suggest that heathland and woodland were more closely associated at that time than in later centuries.

The intention of the following exercise is to create a point of comparison between heathland location and soil type data inferable from Domesday Book, and a much later period. By that time, many areas now considered to be ‘traditionally’ heath-like, such as the Sandlings, had lost what remnants of woodland Domesday referred to, either in name or in measured holdings, and instead had become dominated by open heathland.

Heathland in the 18th century: heaths on county maps

Comparable historic mapping data for all four counties in the study area is not available for any period before the late 18th century. At that time, relatively detailed county-wide maps were produced for Norfolk in 1797 by William Faden; for Suffolk in 1783 by Joseph Hodskinson; for Essex in 1777 by John Chapman and Peter Andre; and for Hertfordshire in 1766 by Andrew Dury and John Andrews.³⁸⁷ Unlike place-name evidence, these show the measured geographic extent of heathlands in the landscape of each county. Mapping those boundaries and comparing that spatial data to modern soil distribution data provides the

³⁸⁴ Darby, Domesday England p.228

³⁸⁵ *Ibid.* p.230

³⁸⁶ *Ibid.* pp.152-153

³⁸⁷ Dymond, D. Hodskinson’s Map of Suffolk in 1783 (Dereham, 2003); Essex County Council, A Reproduction of a Map of the County of Essex, 1777 by John Chapman and Peter André (Chelmsford, 1960); Macnair, A. and Williamson, T., William Faden and Norfolk’s 18th-Century Landscape (Oxford, 2010); Macnair, A., Rowe, A., and Williamson, T., Dury & Andrews’ Map of Hertfordshire: Society and Landscape in the Eighteenth Century (Oxford, 2016)

clearest evidence attainable for correlations between historic heathland of the 18th century and soil type, before the *en-masse* parliamentary enclosure of many heathlands during and immediately following the Napoleonic Wars.

Mapping 18th-century heathland – methodology and issues

Digital versions of the four county maps were inputted into ArcGIS 10.2 and georectified to modern maps, so that spatial data taken from them would be directly comparable. The boundaries and extents of all areas labelled ‘heath’ on each map, and for which boundaries were drawn, were redrawn as individual polygon shapefiles in a new layer. Using the NATMAP Vector soil mapping data, previously discussed, each heathland polygon was divided into sections according to which soil association each part of each heathland overlaid. The area of each section was then measured, using the integrated measurement tool in the software, and the measurements of corresponding sections for each soil type combined to give the total area of 18th-century heathland overlying each one.

One issue that arose during this exercise was an inability to map areas labelled ‘heath’ but for which no boundaries were drawn. Faden’s map of Norfolk, for example, labels Banham Heath ‘lately Inclosed’ but gives no clear indication as to the bounds of the former heath (see figure 3.8). Thus, Banham Heath could not be accurately mapped and data concerning the soiltypes it overlaid before enclosure could not be included in this exercise. Livermere Heath in Suffolk, and Marshalls Heath in Hertfordshire are two further instances in which heathland was drawn unbounded on these 18th century maps (see figures 3.9 and 3.10, respectively). This is probably because they were private heathland, for which accurate boundaries were not often drawn on the four county maps, meaning those areas could not be accurately redrawn for the purposes of this exercise. An alternative approach would be to impose arbitrary boundaries onto these heaths and then include those areas in the study, but this would potentially risk distorting the data collected significantly and so was rejected. Most common lands, including common heaths, however, were drawn with clear borders on all four 18th century maps. As a result, all heathland mapped during this exercise, in all counties, was presented as common land.

It is worth noting that inaccurate depictions of landscapes considered to be ‘economically insignificant’, such as commons, was not unknown on 18th century county maps. Peter Burdett’s 1777 map of Cheshire, for example, does not distinguish between different types of common land and gives only a vague outline of many of them, usually

without names.³⁸⁸ His depictions of woodland were also inconsistent, often giving no boundaries for them at all, neglecting to show much of the woodland within Delamere Forest, and missing a great deal of ‘woodland [which] should have been recorded on many heaths and commons’.³⁸⁹ Even if the four county maps used in this exercise contain some small errors, they remain the most detailed and comparable contemporaneous maps available for the study area from the 18th century.

Another issue is that some areas which might potentially have been ‘heath-like’, either by a modern or indeed contemporary understanding of the term, were not mapped because they were not labelled ‘heath’ on the maps. This included some areas bordering or even between other common lands labelled as heaths, but for which the corresponding label did not include that term. Faden, on his map of Norfolk, for example, is known to have labelled some common lands simply as ‘common’ preceded by the name of the nearest settlement, irrespective of its locally recognised name.³⁹⁰ Some surviving manorial documents might give different names for those commons, perhaps including ‘heath’, but cross-referencing every area of common land not defined as a heath on each of the four county maps was beyond the scope of this work. As a result, all names given on the four maps were taken at face value. This approach was taken to avoid the anachronistic or presentist approach, as discussed in chapter one, of retrospectively applying the term ‘heath’ onto past landscapes from a modern perspective.

³⁸⁸ Harley, J.B. and Laxton, P., A Survey of the County Palatine of Chester by P.P. Burdett, 1777 The Historic Society of Lancashire and Cheshire, Occasional Series Volume 1 (1974) p.19

³⁸⁹ *Ibid.* p.20

³⁹⁰ Macnair and Williamson, William Faden p.106

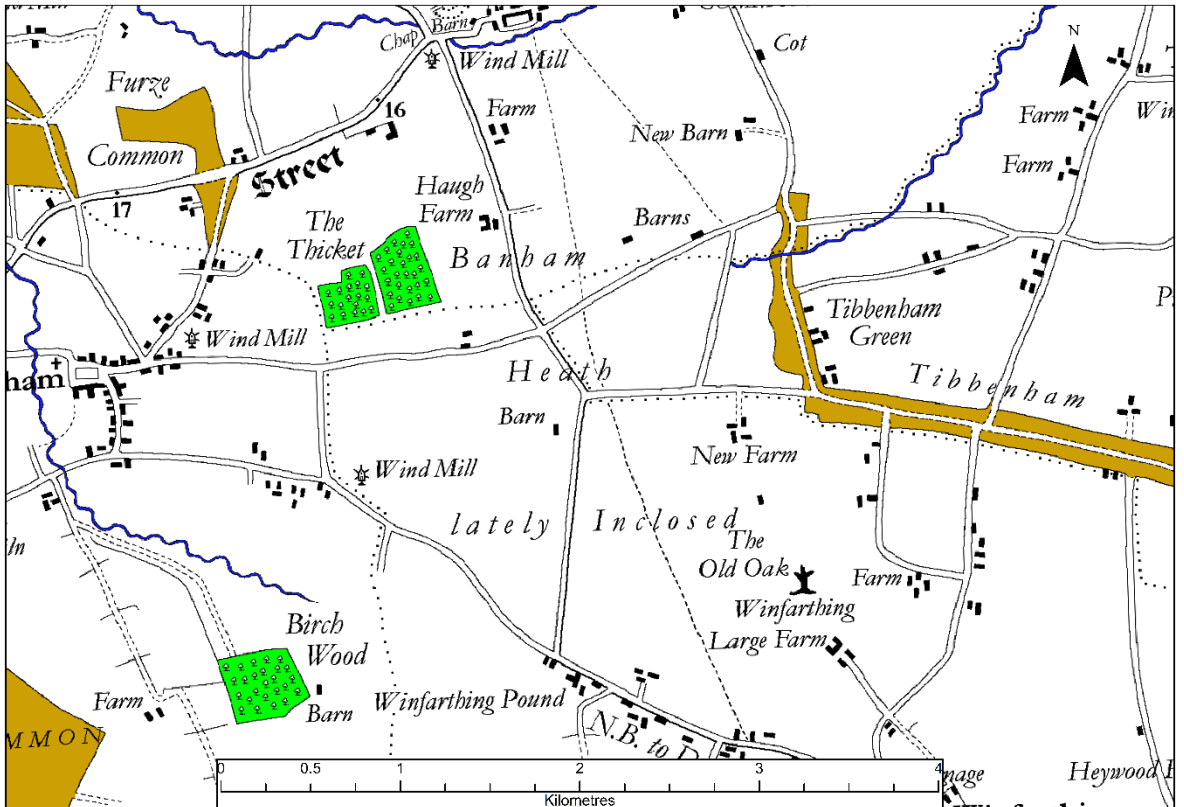


Figure 3.8. A map showing the former site of Banham Heath, near Banham in Norfolk, as it appears on Faden’s map of that county, published in 1797, and digitally redrawn by Andrew Macnair.

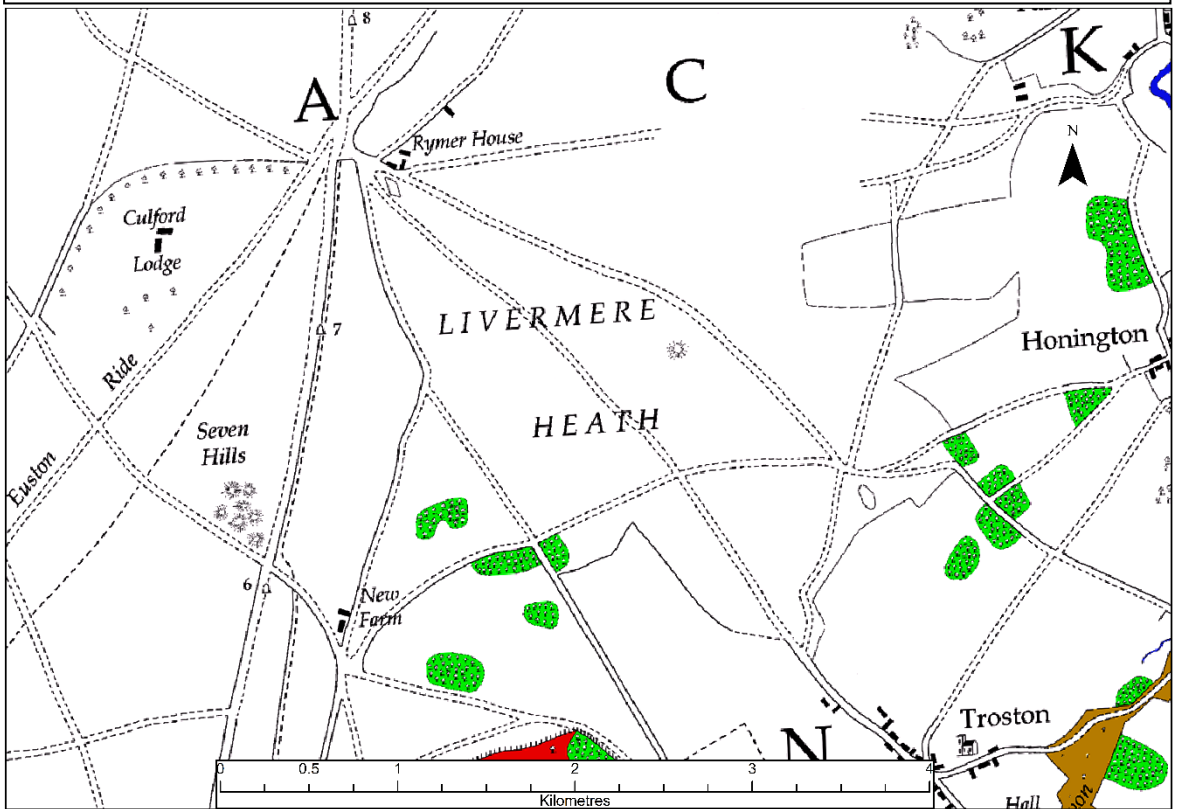


Figure 3.9. A map showing Livermere Heath, near Honington in Suffolk, as it appears on Hodskinsons’ map of that county, published in 1783, and digitally redrawn by Andrew Macnair.

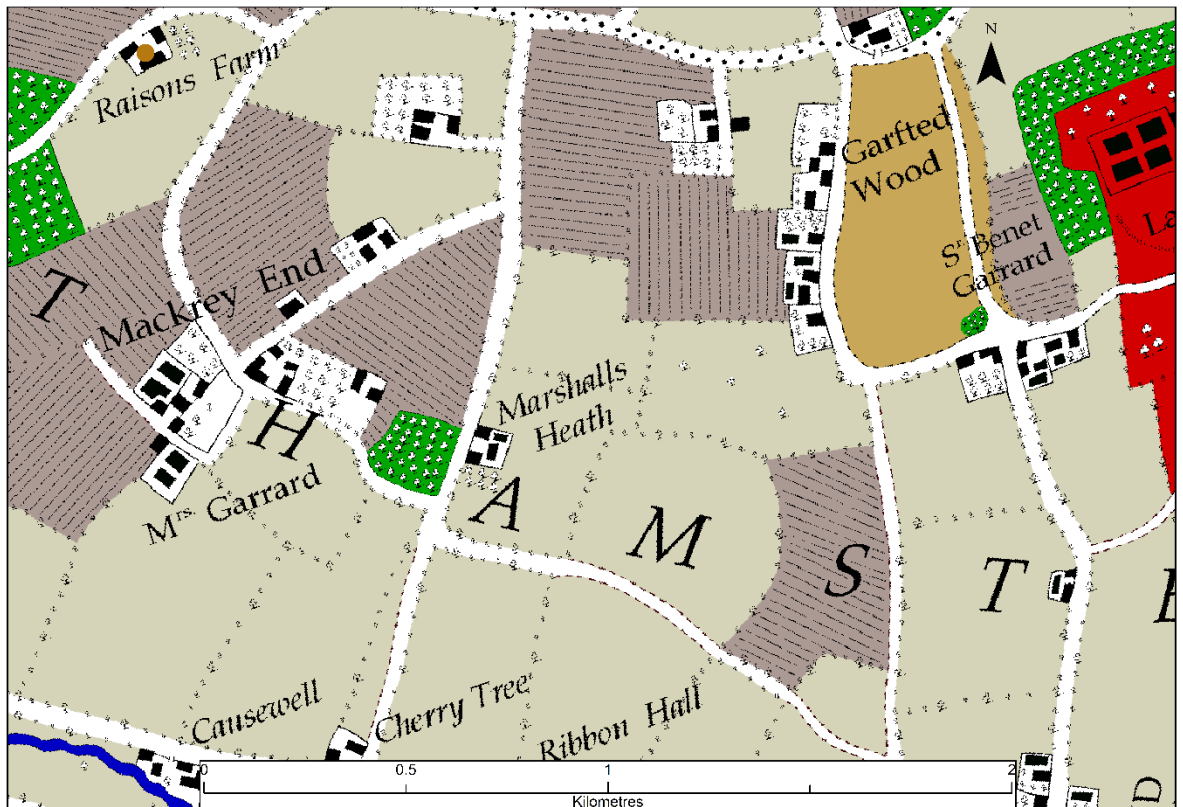


Figure 3.10. A map showing the site of Marshalls Heath, near Wheathampstead in Hertfordshire, as it appears on Dury and Andrews' map of that county, published in 1766, and digitally redrawn by Andrew Macnair.

Mapping 18th-century heathland – results

The percentage of heathland underlain by each soil association is displayed within the following tables. The first, table 3.5, displays the soil types underlying the total area of 18th-century heathland redrawn from maps of all four counties combined. The percentages given, then, are from across the whole study area. The following four charts, tables 3.6-3.9, show the results for each county individually. This is to make clear regional differences in dominant heathland soil type which the combined results might obscure. In each instance, only those soil associations underlying a minimum of 1% of heathland have been given. Appendix two gives brief descriptions for each soil association featured in the preceding tables, without which the reader might not fully appreciate the data. All descriptions were taken from Hodge *et al.*

Table 3.5. The percentage of 18th-century heathlands redrawn from the county maps of Norfolk, Suffolk, Essex, and Hertfordshire underlain by soil associations visible on the Natmap Vector national soil map. Ranked by highest percentage. Total heathland measured: 25,670.29 hectares (ha).

No.	Association	%	No.	Association	%
1	Worlington	19.00	12	Windsor	2.45
2	Newport 4	12.82	13	Felthorpe	2.00
3	Wick 2	8.44	14	Methwold	1.93
4	Beccles 1	6.51	15	Newport 1	1.58
5	Wick 3	6.27	16	Burlingham 3	1.52
6	Newmarket 1	5.43	17	Hornbeam 3	1.45
7	Tendring	4.99	18	Efford 2	1.29
8	Newport 3	3.54	19	Beccles 2	1.26
9	Isleham 2	3.52	20	Melford	1.14
10	Burlingham 1	3.28	21	Ollerton	1.01
11	Wix	2.97			

Table 3.6. The percentage of 18th-century heathlands redrawn from the county map of Norfolk underlain by soil associations visible on the Natmap Vector national soil map. Ranked by highest percentage. Total heathland measured: 17,845.04 ha.

No.	Association	%	No.	Association	%
1	Worlington	24.57	9	Newport 3	3.35
2	Newport 4	13.24	10	Felthorpe	2.88
3	Wick 2	12.14	11	Methwold	2.77
4	Newmarket 1	7.81	12	Newport 1	2.10
5	Wick 3	6.00	13	Burlingham 3	2.06
6	Isleham 2	5.04	14	Beccles 2	1.54
7	Burlingham 1	4.72	15	Ollerton	1.46
8	Beccles 1	4.71			

Table 3.7. The percentage of 18th-century heathlands redrawn from the county map of Suffolk underlain by soil associations visible on the Natmap Vector national soil map. Ranked by highest percentage. Total heathland measured: 4,372.74 ha.

No.	Association	%	No.	Association	%
1	Newport 4	21.22	8	Tendring	2.83
2	Beccles 1	18.98	9	Gresham	2.38
3	Wick 3	12.32	10	Ludford	2.23
4	Worlington	11.30	11	Ashley	1.96
5	Newport 3	7.14	12	Mendham	1.51
6	Melford	6.69	13	Newport 2	1.16
7	Hornbeam 3	5.88	14	Beccles 2	1.07

Table 3.8. The percentage of 18th-century heathlands redrawn from the county map of Essex underlain by soil associations visible on the Natmap Vector national soil map. Ranked by highest percentage. Total heathland measured: 2,934.59 ha.

No.	Association	%	No.	Association	%
1	Tendring	39.44	5	Hornbeam 3	3.40
2	Wix	25.97	6	Hucklesbrook	1.76
3	Windsor	13.83	7	Shabbington	1.05
4	Efford 2	11.25			

Table 3.9. The percentage of 18th-century heathlands redrawn from the county map of Hertfordshire underlain by soil associations visible on the Natmap Vector national soil map. Ranked by highest percentage. Total heathland measured: 517.91 ha.

No.	Association	%	No.	Association	%
1	Windsor	42.98	5	Beccles 3	3.73
2	Essendon	27.30	6	Hornbeam 3	2.98
3	Hamble 2	8.52	7	Gresham	1.47
4	Hornbeam 2	7.30			

The first two entries in the combined results table (3.5) seem to confirm a correlation between acidic sandy soils susceptible to podsolization and 18th-century heathland in the study area. Both also fit well with soil types targeted by modern conservationists for regeneration and re-creation efforts detailed in chapter one. Most of the following entries, however, do not. Wick 2 and Wick 3, for example, together underlying 14.71% of all heathlands measured – more than Newport 4 – are loam soils not sands. Neither does the former, Wick 2, contain any sandy series on which the historical management of heathland might be less surprising. All its constituent series are both freely draining and acidic, rather than calcareous, in similar fashion to the sands of Worlington and Newport 4, but are not sandy. The latter, Wick 3, on the other hand, although similarly dominated by series of loams, does contain the Newport series – dominant in the numerous Newport associations – which here constitutes roughly 10% of the Wick 3 association. It is possible that the heathlands mapped to that association were, in fact, more closely linked to those associated acidic sandy soils than to the fertile loams that are the dominant series.

Beccles 1, meanwhile, is an association of seasonally waterlogged loams and clays. The Beccles series which constitutes most of the association is a stagnogley – an acidified clay soil with an impervious subsurface horizon, meaning plant roots cannot penetrate far underground. Like those of Worlington and Newport 4, these attributes make the soil unsuitable for arable cultivation. Unlike those soils, though, Beccles 1 does not fit well into a modern narrative of all heathland soils being sandy podsols. No associated series are sandy, and neither are they permeable. They are, however, slightly acidic.

Of those associations underlying 2-5% of the whole, both Newport 3 and Felthorpe soils are both sandy and very acidic, and are prone to podsolization. The remaining five, however, do not resemble Worlington and Newport 4 so closely. The first, Tendring, for example, has no associated sandy soils and is split, roughly, between permeable and impermeable soil types at a series level. It is, however, overall slightly acidic. The second, Isleham 2, on the other hand, is mostly made up of sands or sandy loams, with some peat, but is mostly waterlogged and almost entirely calcareous.

The relationship between heathland and the remaining three is, perhaps, best defined with regards to certain series they contain. Whereas most Burlingham 1 soils, for example, are loams or clays, 15% of the total is made up of the acidic, sandy Newport series. The majority of the Wix association, similarly, consists of loams and clays but 10% of it is made up of the Ebtree series – a non-calcareous sandy or sandy gravelly soil not dissimilar to Worlington. Windsor, finally, is almost entirely made up of stagnogleys but

10% of its area is, in fact, covered with the Althorne series. This is an acidic pelosol – a less gleyic soil type which cracks easily in dry conditions but is slowly permeable in wet conditions.

At a county level, Worlington and Newport 4 ranked highly in both Norfolk and Suffolk. Many heathlands were found in Breckland for the former, and Breckland and the Sandlings for the latter, both areas dominated by sandy soils. The amount of non-sandy heaths, though, was still significant. Almost a fifth of heathland area in Suffolk was associated with the universally stagnogleyic Beccles 1 association.

Further south, neither Essex nor Hertfordshire heaths overlaid Worlington or Newport soils in any great number. Indeed, neither county possesses any large areas of soils resembling those of Breckland or east Suffolk at all, yet heathlands still survived – though admittedly were far less common. The majority of those in Essex were found in the Tendring and Wix associations and can probably be explained by the presence of acidic soils within those associations. Almost half of those in Hertfordshire were mapped to the Windsor association or, more likely, to the Althorne series not visible on the association-level map.

What is suggested here, then, is that heathland in the 18th century was, almost without exception, associated with acidic soils but not necessarily with acidic *sandy* soils, or other freely draining soils within which podsoles could form. The one major exception to this position is heathland mapped to the Isleham 2 association. This suggestion is particularly relevant to heaths in the counties of Essex and Hertfordshire, where acidic sandy soil associations are not well represented, and where acidic sandy series do not form part of the top five soil associations there underlying heathland in the 18th century. Instead, heaths there were probably found on lenses of acidic but non-sandy series. It is also possible that some survived on thin layers of acidified material, in turn overlying clay soils contained within some associations discussed here, present in the 18th century but either not extant at the time the association-level map was surveyed, or not noted during.

Thin layers of rust – the chemistry of oxidisation

It is possible that some 18th-century ‘clay land’ heathland in fact survived not on series within wider areas of clay, and not directly upon the clay itself, but upon a thin layer of acidic material formed at the surface of the clay, and which has since been ploughed out or otherwise lost. Catt in his work on Hertfordshire geology has raised the prospect of dispersed Iron Pyrite deposits contained within Gault Clay soils, once buried underground,

rusting upon contact with water and oxygen at the surface. The pyrite (FeS₂) is disseminated throughout the clay 'as small crystals and locally occurs also as nodules'.³⁹¹ Upon contact with water and oxygen the Pyrite oxidises according to the following chemical equation:



Or,

Iron Pyrite + Water = Iron(III) Oxide + Hydrogen + Sulphuric Acid

This sulphuric acid can dramatically lower the pH of surface material, making it unsuitable for most crops or plants in general. It can also react again with iron oxide and potassium-containing alumina silicate minerals within the clay to produce the mineral Jarosite (KFe₃(SO₄)₂(OH)₆) often forming as a powder.³⁹² This powder can be toxic, contaminating the soil it comes into contact with and poisonous if consumed by humans or livestock.³⁹³

Areas of clay containing deposits of iron pyrite, then, especially if widely dispersed, could form a thin layer of acidic and toxic material unsuitable for the production of food crops. Some 18th-century heaths recorded on clay-rich soils might well have been maintained on these landscapes until deeper ploughing removed these upper layers and any remaining iron pyrite deposits near the surface. Despite not forming directly on the clay, though, they remained clay-land heaths and were especially common in Essex and Hertfordshire. As such they did not adhere to the predominance, or even prevalence, of sandy soils beneath historic heathland suggested by some conservation bodies, but still formed in acidic conditions.

Conclusions

What the mapping of data available for the locations of heathland in the mid Anglo-Saxon period, assumed from place-name evidence recorded in Domesday Book, has revealed is, first and foremost, that there were only limited numbers of villas named for the presence of heaths. Contrasted to the magnitude of villas named for the presence of woodland, it can be inferred that open heaths were comparatively rare landscapes. This does not, however,

³⁹¹ Catt, A. (ed.), Hertfordshire Geology and Landscape (Welwyn Garden City, 2010) p.32

³⁹² *Ibid.* p.76

³⁹³ Canarache, A., Vintila, I. and Munteanu, I., Elsevier's Dictionary of Soil Science (London, 2006) p.456; Mukherjee, S., The Science of Clays: Applications in Industry, Engineering and Environment (Heidelberg, 2013) p.319

discount the presence of wooded, or wood-pasture, heaths (mentioned in chapter one, and discussed in later chapters) in those areas named for woodland. Especially if such landscapes occurred on the edges of larger woodlands, as some provably did in the early medieval period (see preceding chapter on etymology) that woodland would still have been the dominant landscape within the vill – and therefore its name. A prehistoric origin for all open heaths in the study area would seem implausible, some probably forming after these names were recorded.

Secondly, where heathland-indicating place-names were recorded they were almost universally found in the same environments as woodlands. Indeed, more than a quarter of names indicating heathland also contained indicators for wood. The prevalence of woodland-indicating place-names in areas later dominated by heaths again requires a later date of origin for some open heaths found there today. Thirdly, it illustrates only a limited correlation between heaths and soil associations dominated by acid sands in 1086. Instead, the data shows more clearly a relationship between near-heathland settlement and soil associations dominated by clays and loams. These might, of course, have contained lenses of acidic material not conducive to the growing of arable crops, but beneficial to the spread of what are now considered heathland plants, namely heather.

Although acidic sandy soils were frequently also heathland soils in the late 18th century, this was limited only to some parts of the counties of Norfolk and Suffolk. Elsewhere in the study area they were far less common or not represented as heathland soils at all. Instead, in Essex and Hertfordshire, heaths survived as late as the 1780s on lenses of acidic but not sandy soil series within wider areas of clay or loam. Heaths may also have formed there on thin layers of acidic non-clay material, which still represented examples of late-surviving heathlands on soils other than podsolized sands. The results of the second exercise in this chapter, then, suggests that heathland landscapes were maintained not just on one kind of soil, but on any deemed unfit for arable production or permanent grassland, considering the technological limitations of the period. They survived on locally ‘poor’ soils, not necessarily poor sandy soils.

The reason for a modern fixation with podsolized sands for conservation is not, perhaps, based on the type of information presented here, but rather on data taken from more modern sources – the majority of historic heathlands which survive today are found associated with acidic sandy soils. This trend is, to an extent, also visible as early as the 18th century in the four county maps used in this chapter. The largest concentrations of heathlands were found in Norfolk, where the largest concentrations had formed on

associations dominated by sand. This work suggests, though, that, both in the 18th century and earlier in history, heaths also formed in areas dominated by other kinds of soil associations – either on lenses of acidic sandy series contained within them, or on other acidic material in similar circumstances. These heaths, it seems, did not survive as late, or in as great a number, as those in Breckland, the Sandlings, and other sandy regions. As the fate of most heaths enclosed during the 18th century was conversion to arable, using new crops, rotations, and marling to neutralise acidity (introduced during the ‘agricultural revolution’ of the earlier 18th century), more fertile acidic soils were targeted first for enclosure.³⁹⁴ This trend likely continued into the 19th century and beyond. The reasons and trends associated with the survival and loss of heathland in the study area after the late 18th century, and implications for a perceived association with acidic sandy soils, are discussed in the following chapter.

³⁹⁴ Darby, H.C., “The Changing English Landscape” The Geographical Journal **117**, 4 (1951) pp.383-385
Williamson, T., “Understanding Enclosure” Landscapes **1**, 1 (2000) p.68; Wade-Martins, S and Williamson, T., “The Development of the Lease and its Role in Agricultural Improvement in East Anglia, 1660-1870” The Agricultural History Review **46**, 2 (1998) pp.127-141

4. Heathland survival and loss: reasons, trends, and soil types

To establish the extent to which historic heaths extant today overly acidic sandy soils, of the type preferred by modern heathland conservationists, those surviving heathlands and the soils they are associated with were mapped. This data was then compared to that provided for 18th-century heathland in the previous chapter. With this data, conclusions were drawn as to which soil types were most likely to have lost their heathland landscapes between the late-18th century and today, and which were more likely to retain their heathland landscapes.

Associations of acidic sandy soils are shown to maintain a greater number of their heaths than other soil types. This might help explain a present-day assumption that a majority of heathland soils are (and always have been) sandy in nature, as the majority of those that survive follow this trend. The disparity between losses of heathland on different soil types is then explored. Reasons for this disparity are then discussed using historic examples from across the study area.

The purpose of this exercise is to expand upon some findings from the previous chapter, and to give a reasonable basis for some assumptions made as to a ‘characteristic’ heathland soil type of podsolized sands, as detailed in chapter one. In doing so, I hope to illustrate a trend in heathland survival and loss taking place over the last two centuries (and likely longer) which points towards a more varied spectrum of soil types historically underlying heathlands in the early modern and medieval periods.

Mapping surviving heathland – methodology and results

Shapefiles containing the locations and extents of surviving heaths was taken from data generated by Natural England and downloaded from their MAGIC website. This data was chosen over other possible sources, compiled at more local levels, as the methods of recording and the availability of spatial data was consistent for all four counties in the study area. A more detailed analysis of the accuracy of this data, for example comparing it to all relevant modern OS maps, was beyond the scope of this investigation. The data was imported into ArcGIS 10.2 and the polygons split according to what soil associations they overly as shown on the NATMAP Vector soil map. The methods used, and issues encountered, were the same as have already been detailed with regards to mapping 18th-century heathland on county maps in the previous chapter, except that all heaths had clear boundaries.

The following tables display the results of this mapping exercise. The information they contain is comparable to that in tables 3.5-3.9 in the previous chapter. Each table contains a column showing percentage change in soil prevalence from those tables. Table 4.1 displays the soil associations underlying the total area of surviving heathland across the whole study area, while tables 4.2-4.5 show the results for each county individually. Once more only soil associations underlying a minimum of 1% of heathland in each case have been given. These are followed by table 4.6 which gives descriptions of soil associations listed here not described in appendix two. All descriptions have been taken from Hodge *et al*, as before.

Table 4.1. The percentage of surviving heathland recorded by Natural England in the counties of Norfolk, Suffolk, Essex, and Hertfordshire underlain by soil associations visible on the Natmap Vector national soil map. Ranked by highest percentage. Total heathland measured: 6,406.79 ha.

No.	Association	%	+/- %	No.	Association	%	+/- %
1	Newport 4	47.94	+35.12	8	Wick 3	1.79	-4.48
2	Worlington	15.55	-3.45	9	Swaffham Prior	1.67	+1.67
3	Newmarket 1	7.56	+2.13	10	Windsor	1.37	-1.08
4	Isleham 2	4.39	+0.87	11	Mendham	1.23	+1.23
5	Methwold	3.95	+2.02	12	Batcombe	1.12	+1.12
6	Felthorpe	2.74	+0.74	13	Barrow	1.09	+1.09
7	Newport 2	1.98	+1.98				

Table 4.2. The percentage of surviving heathland recorded by Natural England in the county of Norfolk underlain by soil associations visible on the Natmap Vector national soil map. Ranked by highest percentage. Total heathland measured: 2,377.17 ha.

No.	Association	%	+/- %	No.	Association	%	+/- %
1	Newport 4	29.76	+16.52	8	Mendham	2.41	+2.41
2	Worlington	23.48	-1.09	9	Burlingham 1	2.20	-2.52
3	Isleham 2	9.77	+4.73	10	Blackwood	1.51	+1.51
4	Newmarket 1	9.31	+1.50	11	Wallasea 2	1.11	+1.11
5	Felthorpe	7.37	+4.49	12	Methwold	1.07	-1.70
6	Wick 3	4.80	-1.20	13	Newport 1	1.06	-1.04
7	Barrow	2.93	+2.93				

Table 4.3. The percentage of surviving heathland recorded by Natural England in the county of Suffolk underlain by soil associations visible on the Natmap Vector national soil map. Ranked by highest percentage. Total heathland measured: 3,678.80 ha.

No.	Association	%	+/- %	No.	Association	%	+/- %
1	Newport 4	64.26	+43.04	5	Newport 2	3.45	+2.29
2	Worlington	11.90	+0.60	6	Swaffham Prior	2.91	+2.91
3	Newmarket 1	7.15	+7.15	7	Isleham 2	1.33	+1.33
4	Methwold	6.19	+6.19				

Table 4.4. The percentage of surviving heathland recorded by Natural England in the county of Essex underlain by soil associations visible on the Natmap Vector national soil map. Ranked by highest percentage. Total heathland measured: 91.86 ha.

No.	Association	%	+/- %	No.	Association	%	+/- %
1	Hucklesbrook	28.88	+27.12	6	Hornbeam 3	5.77	+2.37
2	Windsor	16.24	+2.41	7	Essendon	4.76	+4.76
3	Efford 2	14.52	+3.27	8	Fladbury 3	2.17	+2.17
4	Wix	12.46	-13.51	9	Thames	1.88	+1.88
5	Oak 2	6.57	+6.57				

Table 4.5. The percentage of surviving heathland recorded by Natural England in the county of Hertfordshire underlain by soil associations visible on the Natmap Vector national soil map. Ranked by highest percentage. Total heathland measured: 258.96 ha.

No.	Association	%	+/- %	No.	Association	%	+/- %
1	Windsor	28.22	-14.76	6	Bursledon	3.12	+3.12
2	Batcombe	27.68	+27.68	7	Sonning 1	2.58	+2.58
3	Essendon	16.48	-10.82	8	Ludford	2.17	+2.17
4	Frome	11.93	+11.93	9	Hamble 2	1.41	-7.11
5	Charity 2	4.17	+4.17	10	Fladbury 3	1.04	+1.04

Table 4.6. A list of soil associations underlying surviving heathland recorded by Natural England in the counties of Norfolk, Suffolk, Essex, and Hertfordshire not described in appendix two. Arranged alphabetically with a brief description of each.

Association	Description
Barrow	Deep well drained coarse loamy, coarse loamy over clayey and sandy soils. Some of the latter very acid and with a bleached subsurface horizon especially in woodlands or on heaths.
Batcombe	Fine silty over clayey and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal water logging. Some well drained clayey soils over chalk. Variably flinty.
Blackwood	Deep permeable sandy and coarse loamy soils. Groundwater controlled by ditches.
Bursledon	Deep fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging associated with deep coarse loamy soils variably affected by groundwater. Some slowly permeable seasonally waterlogged loamy over clayey soils. Landslips and associated irregular terrain locally.
Charity 2	Well drained flinty fine silty soils in valley bottoms. Calcareous fine silty soils over chalk or chalk rubble on valley sides, sometimes shallow.
Fladbury 3	Stoneless clayey, fine silty and fine loamy soils affected by groundwater. Flat land. Risk of flooding.
Frome	Shallow calcareous and non-calcareous loamy soils over flint gravel affected by groundwater. Small areas of peat. Risk of flooding.
Oak 2	Slowly permeable seasonally waterlogged fine loamy over clayey and fine silty over clayey soils. Some similar soils with slowly permeable subsoils and slight seasonal waterlogging. Some clayey soils with chalky subsoil.
Sonning 1	Well drained flinty coarse loamy and sandy soils, mainly over gravel. Some coarse loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging.
Swaffham Prior	Well drained calcareous coarse and fine loamy soils over chalk rubble. Some similar shallow soils. Deep non-calcareous loamy soils in places. Striped and polygonal soil patterns locally. Slight risk of water erosion.
Thames	Stoneless mainly calcareous clayey soils affected by groundwater. Flat land. Risk of flooding.

Compared to data given in the previous chapter – detailing the areas and associated soil types of heathlands in the 18th century – some significant differences in both area and soil type dominance are visible here. What is immediately clear is both the substantial loss of heathland in all counties, except Suffolk, and the increased dominance of Newport association soils overall. Those soils, and the similarly acidic sandy Felthorpe and Worlington associations, underlie a total of 68.21% of heaths surviving within the study area. The mainly calcareous sands of the Methwold and Newmarket 1 associations,

meanwhile, underlie a further 11.51% – giving a combined total of 79.72% of surviving heaths overlying sand of some kind. Both an increased share of Newport 4 soils, compared to data in the previous chapter, and a comparatively small loss of heathland area in Suffolk, are explained by inconsistencies in the mapping of heaths in that county.

Figure 4.1 shows the locations of Suffolk heathland mapped in the 18th century, and surviving heathland in the 21st century. Only heaths that were common land were drawn on Hodskinson's map of 1783 with bounds that could be accurately redrawn and mapped, and no common heaths were shown in the central Sandlings on the county's east coast. Many large areas were labelled as 'heath' or 'sheepwalk' but were not given clear boundaries. Conversely, many of Suffolk's surviving heathlands have been mapped by Natural England in precisely these areas, where by far the most dominant soil association is Newport 4. Surviving heaths in the Suffolk Breckland also overlie land labelled 'heath' by Hodskinson, but which was drawn unbounded. Some of these similarly overlie Newport 4, in light orange, but also Methwold in dark orange and Worlington in pinkish-grey, as shown in figure 4.1.

In the space between Breckland and the central and southern Sandlings, all common heathlands have been lost. On the 1st edition 6" OS map, produced during the 1880s, almost all were shown enclosed with the straight-lined field boundary pattern of parliamentary enclosure. Most enclosures were shown as fields at that point, with a few exceptions. Parts of Thurston Heath, for example, had been lost beneath the private parklands of Rougham Hall and Great Barton Place, while parts of the former Ixworth and Pakenham Heaths, on the edge of Breckland, hosted three plantations.

Elsewhere some limited areas completely unsuitable for agricultural production remained unenclosed in the 19th century, while areas that could be made more suitable nearby were turned over to fields. Kirkley Heath, between Kirkley and Lowestoft in the northern Sandlings, for example, was completely enclosed by parliamentary act in 1801 except for the most waterlogged parts on the banks of Lake Lothing.³⁹⁵ The reasons behind these enclosures, and both the capabilities and shortcomings of contemporary agricultural techniques, explain why many heaths were lost in the first place, and why the vast majority of those left to us overlie only a small number of (mainly sandy) soil types.

³⁹⁵ Tate, W., "A Handlist of Suffolk Enclosure Acts and Awards" Proceedings of the Suffolk Institute of Archaeology and Natural History 25 (1952) p.249

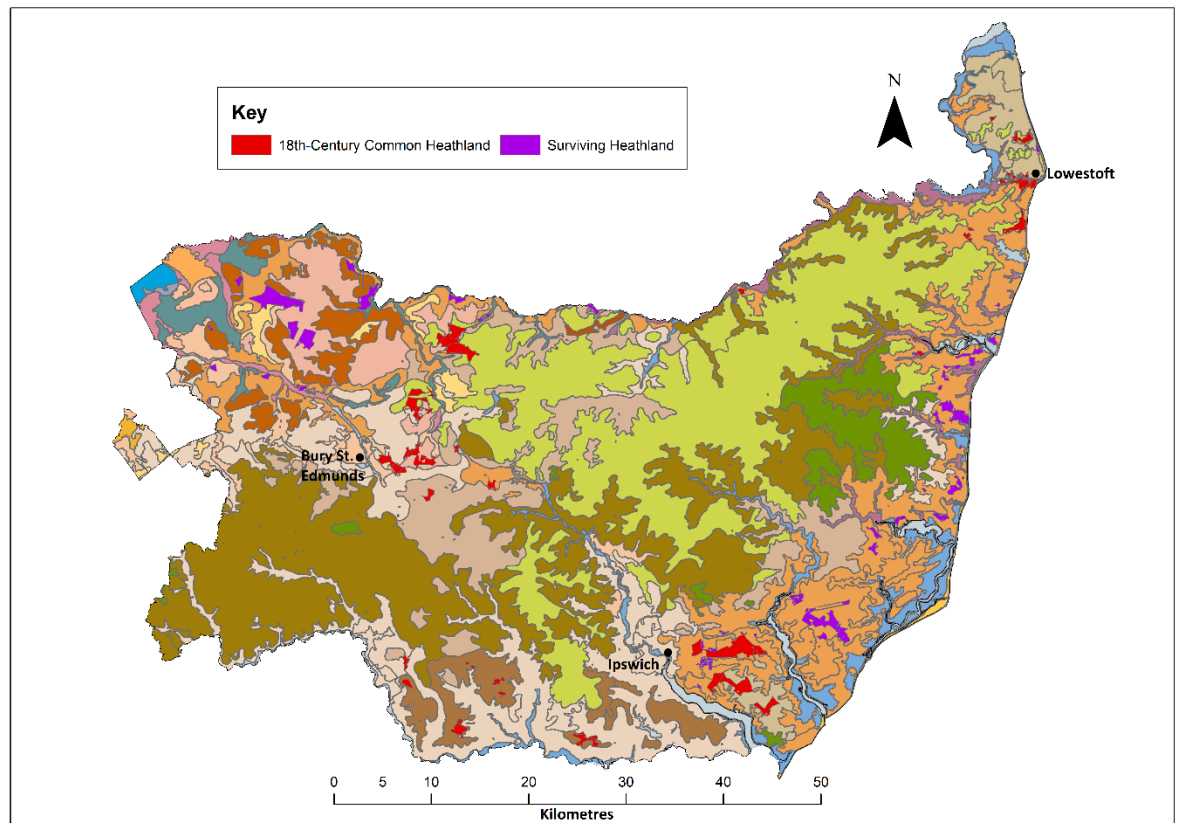


Figure 4.1. A map showing common heathland digitally redrawn from Hodkinson’s map of Suffolk, published in 1783, alongside surviving heathland in that county as recorded by Natural England. All overlay onto the association level National Soil Map.

Although the enclosure and conversion of heathland (as shall be discussed in later chapters) had been taking place since at least the medieval period, many commons were enclosed during the 18th and early 19th centuries through parliamentary act. Parliamentary enclosure, as it is now known, was not new to the 18th century – the first such act was passed in 1604 and applied to land at Radipole near Poole in Dorset.³⁹⁶ In the 18th century, however, and especially in its second half, both the number of acts passed and the area of land affected rose sharply. Between 1604 and 1760, 228 enclosure acts were passed involving 358,241 acres of land, mostly open fields in the English midlands.³⁹⁷ Between 1761 and 1844, however, more than 2,500 acts were passed involving more than four million acres.³⁹⁸ These were focussed more on commons and other ‘wastes’ than many earlier acts were, and between 1760 and 1801 (during which time the four 18th century county maps used in this thesis were drawn), more than 500 acts enclosed over 750,000

³⁹⁶ Wordie, J.R., “The Chronology of English Enclosure, 1500-1914” *The Economic History Review* **36**, 4 (1983) p.486

³⁹⁷ *Ibid.*; Chapman, J., “The Extent and Nature of Parliamentary Enclosure” *The Agricultural History Review* **35**, 1 (1987) pp.32-34

³⁹⁸ Hoskins, W.G., *The Making of the English Landscape* (London, 1988) p.149

acres of common land, including heaths.³⁹⁹ The chief benefit of enclosing common land by this method was that almost all common rights were expunged, leaving the new enclosures ‘free of all common rights, except possibly for a right of way’.⁴⁰⁰

Enclosures, both parliamentary and piecemeal, were driven by economic factors, but also by the ideological aspect of ‘improvement’ as part of the agricultural revolution of the 18th and 19th centuries.⁴⁰¹ Financially, enclosed land commanded a higher rent than unenclosed land.⁴⁰² Also, the price of grain rose steadily throughout the 18th century and, by using new methods of crop rotation and soil enrichment, crops taken from former open heath could be sold at significant profit.⁴⁰³ This was especially attractive to large landowners, for example Thomas Coke, 1st Earl of Leicester, who owned the Holkham estate in north Norfolk. In the 1770s, much of it consisted of agriculturally unproductive heathland and the estate had a value of £5,000 a year in rents and produce.⁴⁰⁴ Through enclosure and a great deal of marling, by 1794 the value had risen to £20,000 a year and was ‘still increasing like a snowball’.⁴⁰⁵

Where it was possible to enclose heaths and other common lands without an act of parliament, many large landowners did so, for example at Felbrigg in south east Norfolk. In 1781, more than half of the parish was ‘an extensive heathy waste, and some common field land... desirable objects of inclosures’.⁴⁰⁶ The lord of the manor, Mr Wyndham, owned all of the parish except a single farm, which he purchased and then set about enclosing the whole. The heath he divided into 30 enclosures of 10 acres each, leaving ‘the least fertile part of the heath, as a common, for the poor to collect firing from’.⁴⁰⁷ These enclosures were then rented to tenants at a profitable fee, even after the costs of enclosure had been taken into account. As Marshall wrote in 1787, ‘Improvements like this are *real*, and bring a *permanent* increase to the rent-roll of an estate’.⁴⁰⁸

Even some very sandy areas were found to have become agriculturally productive

³⁹⁹ Chapman, “The Extent and Nature of Parliamentary Enclosure” pp.32-34; Hoskins, The Making of the English Landscape p.149

⁴⁰⁰ Wordie, “The Chronology of English Enclosure” p.484

⁴⁰¹ Allen, R.C., “Tracking the Agricultural Revolution in England” The Economic History Review **52**, 2 (1999) pp.209-235

⁴⁰² Blum, J., “English Parliamentary Enclosure” The Journal of Modern History **53**, 3 (1981) p.497

⁴⁰³ Darby, “The Changing English Landscape” pp.383-385; Williamson, “Understanding Enclosure” p.68; Williamson, T., Sandlands: The Suffolk Coast and Heaths (Cambridge, 2005) p.63

⁴⁰⁴ Hoskins, The Making of the English Landscape p.154

⁴⁰⁵ *Ibid.*

⁴⁰⁶ *Ibid.* p.154; Marshall, W., The Rural Economy of Norfolk Vol.II (London, 1787) p.365

⁴⁰⁷ Marshall, The Rural Economy of Norfolk II p.366

⁴⁰⁸ *Ibid.* p.371

using new farming methods. Speaking of some of the heaths around Sutton in the Suffolk Sandlings, for example (overlying various Newport association soils above the River Deben), Arthur Young triumphantly remarked in 1795 that:

Having long ago called on the farmers publicly to cultivate them, I cannot but recollect the answers I then received – that it would not answer – and that they were fit only for what they gave – coarse sheepwalk. I have now the pleasure to find my old opinion confirmed, for great tracts have been broken up within these twenty years, and are found to answer well.⁴⁰⁹

Further south, Caddington Heath, on the Bedfordshire border in north Hertfordshire, was enclosed by parliamentary act in 1800.⁴¹⁰ Such was the drive to profit from enclosed heathland, that within 18 months the tenant of 509 acres of it had ploughed up 382 of them for crops.⁴¹¹

Ideologically, the enclosing and ploughing of heaths was seen as progress or ‘improvement’ towards greater industry. A chief proponent of this view was the aforementioned Arthur Young, made Fellow of the Royal Society in 1774 and secretary of the Board of Agriculture in 1793. His language is very often derisory of heaths and common lands, as seen in an earlier chapter (p.27) and praising of its destruction for agriculture. Of the ploughing at Caddington, for example, Young wrote in 1804: ‘such an improvement, effected in such a space of time, I never yet beheld’.⁴¹² In 1784 he had written of the Suffolk Sandlings: ‘nor do I suppose a nobler improvement is any where to be seen, than the conversion of this great extent of country from heaths ... to admirably cultivated fields’.⁴¹³ Elsewhere, in 1774, when the manorial lord of Tottington, in Breckland, complained of the cost of enclosing the heath there, Young wrote that the ‘great expense ... would but ill answer, unless there was a real satisfaction in employing the labourers and bringing forth a ragged dirty parish into a neatness of cultivation’.⁴¹⁴ Order and dignity, then, as well as industry, were important objectives of improvement.

⁴⁰⁹ Williamson, *Sandlands* p.63

⁴¹⁰ Rowe, A. and Williamson, T., *Hertfordshire: A Landscape History* (Hatfield, 2013) p.160

⁴¹¹ Young, A., *General View of the Agriculture of Hertfordshire* (London, reprinted 1813) p.150

⁴¹² *Ibid.* p.151

⁴¹³ Young, A., *Annals of Agriculture, and Other Useful Arts* Vol. II (London, 1784) p.130

⁴¹⁴ Williamson, T., *The Transformation of Rural England: Farming and the Landscape 1700-1870* (Exeter, 2002) p.80

Enthusiasm for the enclosure of heathland and other common lands peaked during the Napoleonic Wars and was driven both by economic necessity and, as a result, financial profit. The first of the wars began soon after the four county maps used in this thesis were published. Economically, France's Continental Blockade, restricting trade between all nations controlled by Imperial France and Britain, severely restricted the supply of international wheat exports to the British market.⁴¹⁵ Imports reduced from 1,427,000 quarters in 1801 to 391,000 in 1804, and dipped as low as 42,000 in 1808.⁴¹⁶ Combined with the effects of a series of bad harvests, the average price of wheat rose from 43 shillings (s.) a quarter in 1792 to 119s. in 1801, and 126s. in 1812.⁴¹⁷

The potential profit to be gained, especially from wheat but increasingly from all agricultural products effected by the blockade, through the 'improvement' of land rose sharply. With the blockade's effects becoming clear, parliament passed the General Enclosure Act in 1801 to encourage the improvement of agriculture, and enclosure by parliamentary act became easier.⁴¹⁸ As a result, enclosing and improving landscapes of poor soils, including heaths, became more painless, patriotic and, importantly, profitable.⁴¹⁹

In the Hertfordshire clay-lands, Bushey Heath, for example, was enclosed five years later in 1806 and put down to a productive rotation of planting wheat followed by beans, followed by a period of fallow.⁴²⁰ In Essex, the earliest heaths to be enclosed were those overlying the sandy loams near Colchester, still visible on Chapman and André's map of 1777. Young's general view of the agriculture of the county, published in 1807, does not mention heaths in the area at all, instead naming it 'turnip country' of which parts 'in wet seasons, yield great crops'.⁴²¹ One thousand acres of Tiptree Heath near Broxton and Great Totham, of which Young was aware to the point of knowing it by name – unlike any of the former Colchester heaths – mostly overlaid Windsor clay and was enclosed in 1804. In order to make it productive, it was improved using 'hollow-draining' to remove

⁴¹⁵ Crouzet, F., "Wars, Blockade, and Economic Change in Europe, 1792-1815" The Journal of Economic History **24**, 4 (1964) p.567-568

⁴¹⁶ Mitchell, B. and Deane, P., Abstract of British Historical Statistics (Cambridge, 1971) p.97

⁴¹⁷ Mokyr, J. (ed.), The Economics of the Industrial Revolution (Totowa, 1985) p.143

⁴¹⁸ Minchinton, W., "Agricultural Returns and the Government during the Napoleonic Wars" The Agricultural History Review **1**, 1 (1953) p.39

⁴¹⁹ Wordie, "The Chronology of English Enclosure" p.488

⁴²⁰ HALS DP/26/26/1; Young, A., General View of the Agriculture of Hertfordshire (London, reprinted 1813) p.99

⁴²¹ Young, A., General View of the Agriculture of the County of Essex Vol. I (London, 1807) p.25

excess ground water.⁴²²

In Suffolk all heaths overlying loam or clay were enclosed and improved. In the southern loam-lands, Leaden Heath, shared by five parishes, was enclosed by parliamentary act in 1815 but had been partly improved years previously.⁴²³ Young's view of the agriculture quotes an inhabitant remarking that 'this large area formerly grew very little wheat or barley ... many of the gravelly hills were covered only with broom, which now, by proper composts with chalk, produce fair crops of the finest wheat and barley'.⁴²⁴ Gravel soils intermixed with the loam, on which the heath was sited, leach easily and become acidic, but application of calcareous chalk can help neutralise the pH value of the soil and increase the chances of successful germination and growth in cereal crops.

Later in the 19th century even Suffolk's two heaths overlying Newport soils (outside of either Breckland or the Sandlings), and visible on Hodskinson's map of 1783, were enclosed and turned over to fields. Both Shotford Heath, on a lens of Newport 1 association soils in the north of the county, and Woolpit Heath, on Newport 3 in the south, are shown as fields on the 1880s OS map. The soils of the latter were clearly undesirable for agriculture in the 18th or early 19th centuries as it was not enclosed until 1851, with others in the county overlying more easily-improved loams or clays, as we have seen, enclosed earlier.⁴²⁵

In Norfolk the pattern of heathland loss was the same. Almost all loam- and clay-soiled heaths shown on Faden's map have been lost. Some, though not all, overlying acidic sandy soils were enclosed and 'improved' over the course of the 19th century, but often later than others more easily improved. Indeed, before the introduction of manufactured or imported fertilisers in the later 19th century, it was recognised that some heathland overlaid soils simply too poor to make productive. Swaffham Heath, which mostly overlaid Worlington association soils, for example, was so unproductive that even Young described it as 'a deep sand; and it is questioned whether it will answer enclosing'.⁴²⁶ Most of the heath was not enclosed until 1868, yet some still remained as unimproved – or un-improvable – heathland.⁴²⁷ Indeed one of the heathlands surviving on Worlington association soils recorded by Natural England in Norfolk today is what

⁴²² Young, General View of Essex Vol. I p.179

⁴²³ SROB FB64/A/2/1

⁴²⁴ Young, A., General View of the Agriculture of the County of Suffolk (London, 1797) p.193

⁴²⁵ SROB FL655

⁴²⁶ Young, General View of Norfolk p.173

⁴²⁷ NRO DC 14/5/1; NRO DC 12/5/2

remains of Swaffham Heath.

West Tofts Heath, also overlying Worlington soils in the Norfolk Breckland, remains unenclosed to the present day, but attempts were made to improve its productivity in the late-19th and early-20th centuries. Recent LiDAR images show evidence of thin ridge and furrow earthworks resulting from temporary ploughing on the heath.⁴²⁸ Clarke's comments, made in 1908, that 'within the past decade big areas of heath and derelict breck – notably on Rushford, Knettishall, Snarehill, Melford, Roudham, and West Tofts heaths ... have been brought under cultivation by the steam plough' date the ridges to the decades either side of 1900.⁴²⁹ Importantly, though, these efforts were attempted and then abandoned – the Worlington soils proved too poor for sustained ploughing to be economically viable.

The same situation arose on Knettishall Heath, overlying Newport 4 association soils in Suffolk, also listed by Clarke above, upon which the outcomes of successive ploughing from the 17th to the 20th centuries failed to result in permanent enclosure and arable conversion – the soils being too poor to be improved.⁴³⁰

Conclusion

It seems the conversion of heathland to arable land required the completion of three stages to become permanent – an attempt to improve, an increase in productivity through improvement, and an increase in financial return through increased productivity. On heaths in West Tofts and Knettishall, among others, the first of these stages was attempted but failed to produce the results required to warrant advancing to stages two and three. In many parts of Breckland and the Sandlings, as well as some other scattered areas characterised by the most acidic sandy soil associations found in the study area – Newport 4 and Worlington – these improvements were simply never attempted. Whereas the soils of other heathland areas responded well enough to improvement to warrant permanent enclosure, those soils were deemed too poor to be improved with contemporary techniques, as by Young at Swaffham. It is these landscapes, then, which are left to us.

⁴²⁸ Horlock, S. and Tremlett, S., Breckland Aerial Investigation and Mapping of Part of the Norfolk and Suffolk Breckland Regions (Stage1) (Gressenhall, 2018) p.42

⁴²⁹ Wade-Martins, S. and Williamson, T., The Countryside of East Anglia: Changing Landscapes, 1870-1950 (Woodbridge, 2008) p.121

⁴³⁰ Williamson, T., Bumstead, J., Frost, J., Owens, L. and Pease, S., "The Landscape Archaeology of Knettishall Heath, Suffolk and its Implications" forthcoming pp.6-8

5. Breckland heaths

The foregoing chapters have sought to question existing assumptions about the origins, locations, and landscape characters of heathland across the study area. This has been achieved mainly through the use of interpreted mapping data, approached at a county level. No attempt has yet been made, in this work, to explain or discuss heathland character at a local parish or manorial level. The intention of this chapter, and of those following, is to provide evidence for the use of various historic management techniques on specific heaths in regions across the four counties of the study area.

The regions chosen for in-depth study were selected chiefly on the basis of the character and extent of surviving documentary evidence. They do not all respect modern administrative boundaries, their bounds instead being dictated more by soil characteristics. The current chapter, for example, is concerned with heathland management in the Breckland region of Norfolk and Suffolk and effectively ignores the county boundary there. Instances where the boundary is mentioned only occur where data or trends apply to sites only in one county or the other. Figure 5.1 shows the Breckland region as mapped by a recent Landscape Character Assessment conducted jointly by Norfolk and Suffolk County Councils.⁴³¹ This region was selected due to a longstanding association with late-surviving heathland.⁴³² Regions selected for study in the following chapters respect more closely a division by county, but were chosen on the basis of the available documentary, edaphic, and historic mapping evidence rather than administrative convenience.

The overall purpose of conducting in-depth, site-specific documentary research of this sort, into the management of heaths from across the study area, is to provide evidence against a conceptualised typicality of management – discussed in the first chapter. Instead it is intended to illustrate the regionality, or local individuality, of management both between and within broader districts. In short, that not all heaths were the same in all places and at all times. Indeed, that some were markedly distinctive or diverse in their historic management, and therefore landscape character, compared to others elsewhere – yet all were heaths in the eyes of those who used them.

⁴³¹ <http://www.breakingnewground.org.uk/assets/LCAP/BrecksLCA2.pdf> (accessed 17/04/2019) p.13

⁴³² Ashwin and Davison, *An Historical Atlas of Norfolk* p.84; Barringer, J., *Faden's Map of Norfolk: First Printed in 1797* (Dereham, 1989) p.6; Dymond and Martin, *An Historical Atlas of Suffolk* pp.20,68 ;Rackham, *The History of the Countryside* pp.296-9

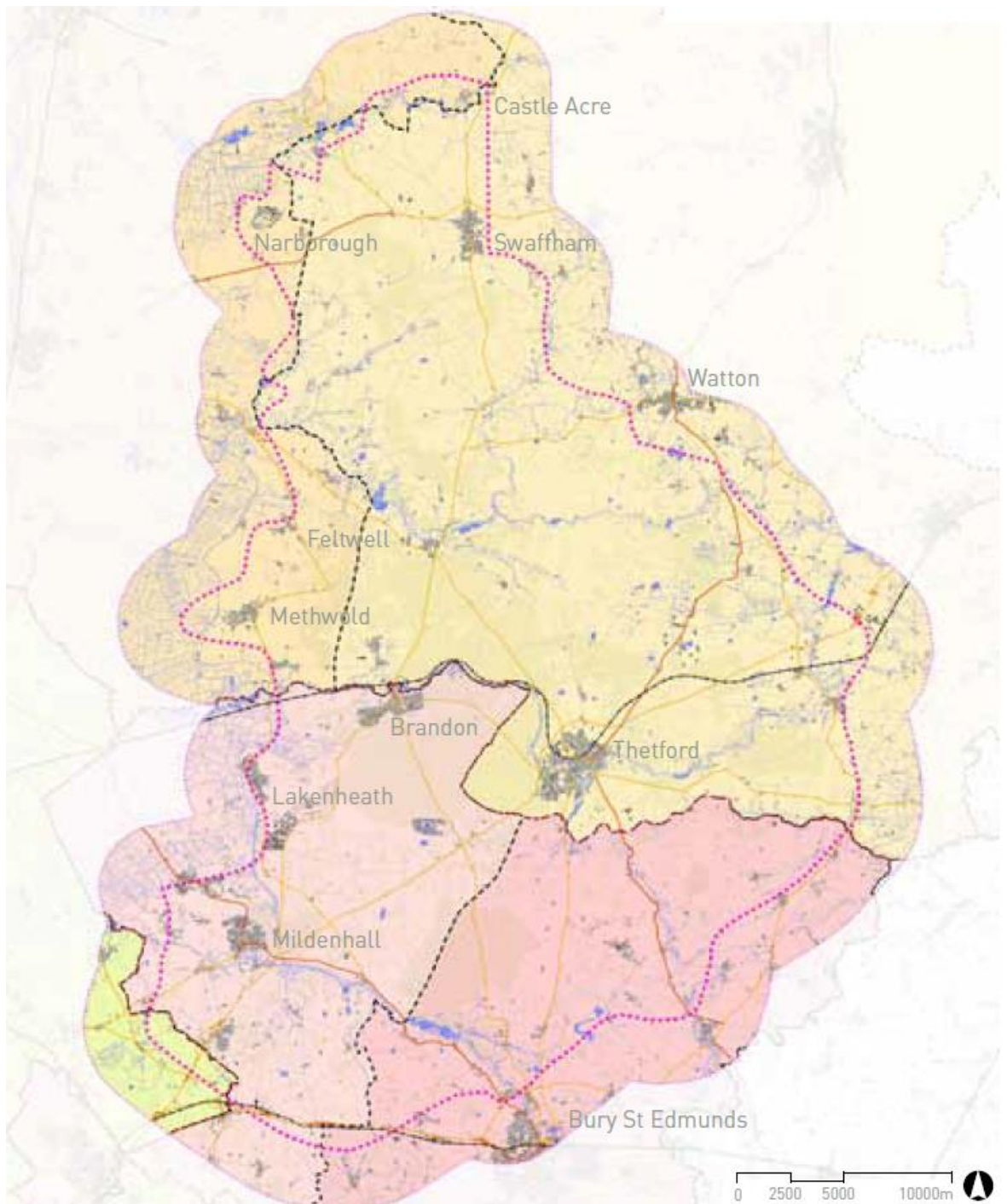


Figure 5.1. The Breckland region of Norfolk and Suffolk, as mapped in the recent Breaking New Ground Landscape Character Assessment conducted jointly by Norfolk and Suffolk County Councils.

In each of the following chapters, then, documentary evidence – for the most part originating from the 16th to 18th centuries – for the methods of exploitation employed on specific heaths is presented and discussed. It is also compared to evidence presented in preceding chapters to highlight both similarities and differences in regional practices. To aid in the effective comparison between each region with the others, all are contextualised within their geological and edaphic conditions. As underlying geology and soil types vary widely across the study area, it is hoped that knowledge of local features and topography might highlight what, if any, effects these might have had on the management of heathlands overlying various materials.

Solid geology of Breckland – bedrocks

The solid geology of the Breckland district of south-west Norfolk and north-west Suffolk is dominated by a single material type – chalk. The oldest geological deposits are found in the west, alongside the Gault Formation mudstones and clays that mark the western edge of this study area, and the beginning of the Fens in west Norfolk and Cambridgeshire. Following a north-south distribution from Fincham, west of Swaffham, in the north to Chippenham, in Suffolk, to the south are a band of contiguous and contemporary chalk formations laid down at the beginning of the Late Cretaceous period.

The first of these lies in the north between Fincham and Brookville, near Northwold, and is a band of West Melbury Marly formation chalks between 2.4 and 5.9km wide. Deposited during the Cenomanian Age at the start of the Cretaceous Period, 100.5 to 93.9 million years ago, this is a soft greyish chalk containing a significant quantity of marl, alternating with a hard grey limestone. Marl is a calcareous mudstone – a mixture between calcium carbonate or lime and clay – which has often, in the past, been extracted and spread onto acidic soils to help neutralise their pH values.⁴³³

To the south of these, from Methwold Hythe to Hockwold, are parallel bands of the same marly chalk, alongside the Zig-Zag Chalk formation – a combination of the now obsolete East Wear Bay and Abbots Cliff formations. This is a light grey chalk with lower strata alternating, this time, between marly chalk and firm white chalk as opposed to limestone. As such the marl still afforded a source of calcareous material for use in improving agriculture to those who dug deep enough to reach it. Further south still, between the Norfolk-Suffolk border and Beck Row, west of Eriswell, are parallel bands of

⁴³³ Humble, W., Dictionary of Geology and Mineralogy 3rd Edition (London, 1860) p.279; Whitten, D. and Brooks, J., Dictionary of Geology (Aylesbury, 1972) p.283

West Melbury Marly chalks and the Grey Chalk Subgroup – constituting a marly chalk throughout, without flints, and with a lower section of alternating marl and limestone.

To the southern end of western Breckland lies a buffer of Zig-Zag formation chalk between 2.0 and 5.5km thick, with a long arm extending further south east from Mildenhall towards Tuddenham and Icklingham. Within it are lenses, or ‘islands’, of the mostly younger Holywell Nodular Chalk and New Pit Chalk formations. These form an undifferentiated parallel band to the east of the Cenomanian chalks in the west of the region, and stretch uninterrupted from the far north of Breckland to its southern edge.

The former Holywell chalk was laid down from the Cenomanian to the Turonian Ages of the Late Cretaceous Period (100.5-89.8m years ago) while the latter New Pit chalk was deposited only during the Turonian Age. Both are firm or hard chalks with interspersed deposits of marl. Flint nodules, some large, occur throughout the upper layers of the New Pit chalks – making fields or open disturbed ground, on areas of them where superficial deposits are thin, stony and difficult to plough.

In the centre of Breckland, an area some 10.5km wide stretching between Tottington in the north and North Stow in the south (with Thetford roughly in its centre) is comprised only of the Lewes Nodular Chalk Formation. Deposited during the Turonian and later Coniacian Ages (93.9 to 86.3m years ago) this is a hard chalk with nodular flint occurring only near the base of the deposits. Some parts are also stained with iron which oxidises if exposed at the surface to produce rust.

To the north, south, and east, the Lewes chalk is intermixed with Seaford, Newhaven, and Culver Chalk formations. Of these the first is the oldest, being deposited from the Coniacian to the Santonian Ages of the Mid-Late Cretaceous Period, ending roughly 83.6m years ago. The chalk is firm with near-continuous flint inclusions, some very large, throughout in both nodular and tabular form, and only thin layers of marl found exclusively in the lowest strata.

The second, Newhaven chalk, is younger – being deposited during the Santonian and Campanian Ages of the Late Cretaceous epoch, ending roughly 72.1m years ago. Unlike Seaford chalks these are mostly soft with regularly-occurring marl seams and regular bands of flint. The last of the three, Culver chalks, were deposited during the Campanian Age only and is different in character again. Like Newhaven the chalk is soft but like Seaford it contains very little marl, with large flint seams in both nodular and tabular forms, especially near the surface. Where these three are intermixed, then, the availability of marl to surface agriculture, the presence of flint (as well as its size and

abundance), and the density and porosity of underlying chalk beds can vary widely within only a small geographic area.

All of these chalks were deposited under warm seas, with the chalk itself composed of the calcareous remains of small, often shelled marine creatures. The deposition of older chalks in the west and younger chalks to the east is the result of a shifting coastal and inter-tidal zone moving east over time, eventually creating the current East Anglian North Sea coastline.

Superficial deposits – soils

Though not as ubiquitous as chalk below ground, the surface of Breckland is similarly dominated by a single material type – sand. These were, for the most part, deposited as till and outwash by seasonal and post-glacial meltwaters in the Quaternary period. The most common sandy soils are those of the Worlington association, within which the Worlington series is the most widespread. Comprising 40% of the association this is a non-calcareous (and therefore acidic) sandy or sandy gravelly soil type. Euston and Newport series soils, comprising 20% of the association each, are similarly classified as acidic sands or gravels, while Redlodge and Santon series soils (10% each) are specifically ‘pod sols’ – being well-drained with a bleached subsurface horizon and prone to the formations of iron pans. The association as a whole occupies almost all the interfluves of Breckland.

Valley sides, and a restricted number of smaller interfluves, are for the most part occupied by Newport 4 association soils, of which the same Newport series mentioned above forms 65% of the association. Of the remainder the most common component is the podsollic Redlodge series also mentioned above, making Worlington and Newport association soils broadly similar. Valley sides not occupied by Newport 4 are otherwise occupied by either Methwold or Newmarket 1 association soils. The dominant series of the former – the Methwold series – represents 65% of the association and is a similarly well-drained but calcareous sand, unlike the non-calcareous Newport series. The remaining 35%, however, is comprised of the same acidic Worlington soils that dominate the association of that name, resulting in an often striped pattern of alternating calcareous and non-calcareous sands.

The latter association, Newmarket 1, is comprised entirely of calcareous brown sands or ‘rendzinas’. With regards to Breckland soils being heathland soils, it is worth noting that no common heathland recorded on county maps for Norfolk or Suffolk in the late 18th century overlaid a majority of Newmarket 1 association soils. They were instead

concentrated on Worlington and Newport 4 soils, with only some extreme edges of the heathlands overlying areas of Newmarket soils. The final soil association found in Breckland is Isleham 2 – of which the dominant Isleham series is a mixture of sandy and peaty topsoils with a non-calcareous subsoil. This association underlies the valley bottoms and river systems of Breckland and, thus, has little to no relationship with heathland there.

Though the sandy soils of Breckland had only a limited correlation with heathland-indicating place names recorded in Domesday Book, detailed in chapter three, the economic data also recorded in that survey displays a clear relationship between Breckland soils and relatively open, treeless landscapes.

Breckland in prehistory

In all of the following regional chapters, including the current one, some consideration will be given to the activities of prehistoric humans in the landscape. As some have suggested a prehistoric origin for most, if not all, of the historic heathland found in England (e.g. Webb) it was deemed necessary to discuss what evidence survives for prehistoric landscape change.⁴³⁴ These sections will discuss where evidence for pre-Roman populations can be found within each region, as well as what changes those people likely made to the landscapes around them – especially in terms of woodland clearance.

Research on the prehistoric occupation of the Breckland landscape has been extensive and, in many cases, internationally significant. The earliest evidence of human activity in the area comes from deposits related to the extinct river Bytham between 600,000 and 500,000 years ago.⁴³⁵ The most important of these sites are found in the heart of the Breckland at Maidscross Hill, Warren Hill, Rampart Field and High Lodge.⁴³⁶ The impact these early people had on the wider landscape is difficult to judge as the evidence has been deeply buried by the till deposited by the subsequent Anglian Glaciation.⁴³⁷ Most of the evidence from this period has come to light through gravel extraction from the ancient river terraces, funded by the Aggregates Levy Sustainability Fund which ended in 2011, and thus the area available for investigation has been limited.

More evidence is available from the Hoxnian interglacial (420,000-390,000 years ago) into the Middle and Upper Palaeolithic, where palaeoenvironmental data can be

⁴³⁴ Webb, “The traditional management of European heathlands” p.987

⁴³⁵ Davis, J., Lewis, S., Ashton, N., Parfitt, S., Hatch, M., and Hoare, P. “The Early Palaeolithic Archaeology of the Breckland: Current Understanding and Directions for Future Research” Journal of Breckland Studies 1 (2017) p.33

⁴³⁶ *ibid.*

⁴³⁷ *ibid.*

extracted from the numerous lake basins formed by the Anglian glaciation.⁴³⁸ Significant sites have been located at Elvedon, West Stow, Lynford and Barnham. A series of excavations at Beeches Pit, West Stow have discovered the first controlled human use of fire in Europe.⁴³⁹ Sediment sampling here suggests that settlement was in an area of grassland within deciduous woodland adjacent to small pools of water.⁴⁴⁰ Similar results from pollen, mollusc and vertebrate analysis at East Farm, Barnham indicate a larger, still, body of water in a grassland clearing surrounded by deciduous vegetation.⁴⁴¹ These results suggests that Palaeolithic groups were taking advantage of grassland clearings in the vicinity of basins created by glacial action. Whether these clearings were anthropogenic in origin has not been determined.

Mesolithic activity (10,000-4,000 BCE) was widespread in Breckland, particularly in the river valleys and in the vicinity of meres.⁴⁴² Significant concentrations of Mesolithic finds have been located in the Norfolk Breckland at Langmere (East Wretham Heath), Fowl Mere (Croxtan) and Hockham Mere.⁴⁴³ In the Suffolk Brecklands occupation evidence has been recovered from Mildenhall, West Stow and High Lodge.⁴⁴⁴ In addition a particularly productive lithic site was discovered at Lackford Heath which produced multiple hearths and over 5,000 flint tools.⁴⁴⁵ Pollen analysis from sediments at Hockham Mere identified the presence of microscopic charcoal dated to the Mesolithic, which might indicate limited woodland clearance in this period.⁴⁴⁶ Similar analysis at nearby Quiddenham Mere found no evidence of charcoal which suggests that the burning must have been on a small scale.⁴⁴⁷ With the exception of the charcoal at Hockham Mere, no evidence has been found to suggest that Mesolithic people made significant alterations to the landscape.

Neolithic (c.5,000-2,500 BCE) changes to the Breckland landscape are much more

⁴³⁸ Davis *et al*, "The Early Palaeolithic Archaeology of the Breckland" p.36

⁴³⁹ *Ibid.* p.38

⁴⁴⁰ Preece, R., Parfitt, S., Bridgland, D., Lewis, S., Rowe, P., Atkinson, T., Candy, I., Debenham, N., Penkman, K., Rhodes, E., Schwenninger, J., Griffiths, H., Whittaker, J. and Gleed-Owen, C. "Terrestrial Environments During MIS 11: Evidence from the Palaeolithic Site at West Stow, Suffolk, UK" Quaternary Science Reviews 26 (2007) p.1260

⁴⁴¹ Davis *et al*, "The Early Palaeolithic Archaeology of the Breckland" p.37

⁴⁴² Watkins, P., and Cattermole, A., Enhancement of Early Prehistoric Information within the Norfolk Historic Environment Record: Resource Assessment (Historic England, 2014) p.45

⁴⁴³ *Ibid.*

⁴⁴⁴ Geary, B., Howard, A., Chapman, H., Down By the River: Archaeological, Palaeoenvironmental and Geoarchaeological Investigations of The Suffolk River Valleys (Oxford, 2016) p.321

⁴⁴⁵ *Ibid*, p.322

⁴⁴⁶ Watkins and Cattermole, Enhancement of Early Prehistoric Information p.45

⁴⁴⁷ *Ibid.*

visible than those from earlier periods. The most obvious of these can be seen at Grimes Graves, where the effects of Neolithic flint mining have produced an extensive concentration of craters at the top of mines shafts, giving the area a lunar appearance. Many of these craters are still being revealed and mapped after a LiDAR survey conducted in 2016 by the Breaking New Ground project was able to scan areas which have been hidden within Forestry Commission plantations since the 1920s.⁴⁴⁸ These areas were likely cleared of woodland prior to any mining activity taking place to prevent the collapse of the edge of the shafts. Evidence of Neolithic settlement has been found in the form of pit clusters and boundary ditches in Shropham, Mildenhall and Kilverstone.⁴⁴⁹ Garrow suggests that those at Kilverstone are likely to be seasonally occupied and returned to on a regular basis, rather than permanent settlement.⁴⁵⁰ Environmental evidence from the floodplain of the river Little Ouse near Brandon has also indicated that peat was formed here during this period, this has been interpreted as being caused by woodland clearance.⁴⁵¹ Further environmental evidence is required to adequately assess the wider landscape change in the Neolithic, however, the available data suggests that deforestation might have been quite dramatic during this period.

The primary evidence of Bronze Age occupation in East Anglia comes from funerary monuments, which take the form of round barrows and ring ditches. The distribution of barrows is largely confined to the lighter soils, and as such there is a high concentration of these in the river valleys of Breckland.⁴⁵² This distribution is also reflected on the heaths of North Norfolk.⁴⁵³ A study in the Netherlands has recently sampled a selection of round barrows ranging in date from the Neolithic to the Iron Age. The study took pollen samples from the buried soil surface beneath the barrows. These samples showed that all barrows in the study area were constructed on areas of pre-existing calluna heathland, which had been present in cleared areas hundreds of years prior to the siting of the barrows.⁴⁵⁴ If this is also the case in Breckland, which has been indicated by

⁴⁴⁸ Tremlett, S. pers. comm.

⁴⁴⁹ Garrow, D., Beadsmoore, E. and Knight, M. "Pit Clusters and the Temporality of Occupation: an Earlier Neolithic Site at Kilverstone, Thetford, Norfolk" Proceedings of the Prehistoric Society **71** (2005) pp.139–57

⁴⁵⁰ *Ibid.* p.54

⁴⁵¹ Geary *et al.*, Down By the River p.322

⁴⁵² *Ibid.* p.324

⁴⁵³ Lawson, A., "The Barrows of Norfolk" in Lawson, A., Martin, E. and Priddy, D., The Barrows of East Anglia East Anglian Archaeology 12, (1981) p.45

⁴⁵⁴ Doorenbosch, M., Ancestral Heaths: Reconstructing the Barrow Landscape in the Central and Southern Netherlands (Leiden, 2013) pp.237-238

evidence at Risby barrow, this could suggest a largely cleared landscape by at least the point of the Bronze Age.⁴⁵⁵

Breckland in the early medieval period

To ascertain what, if any, relationships are visible between soil types and historic landscape use inferred from Domesday data, the economic information provided for each vill in both Norfolk and Suffolk was collated and mapped. These data are displayed in figures 5.2 and 5.3. Although accessible printed versions of Domesday for both counties exist, the time taken to collate all necessary data from these sources would have been excessive. Instead the data used here was taken from the Open Domesday website.⁴⁵⁶

The data collated consisted only of vill name, number of sheep recorded in the vill, if any, and amount of woodland recorded in the vill, if any. The purpose was to quantify, and present visually, disparities between wooded landscapes and those used for intensive grazing (most likely resulting in a more open landscape) across different areas of the two counties. This way the landscape of Breckland could be explored within its wider landscape context.

For each vill the relevant information in each entry associated with that vill was combined and recorded in an excel spreadsheet. Where Domesday entries recorded economic data for more than one vill, the total given was divided equally between all named vills – the alternative methods being to associate the whole total to each vill in turn, or to artificially attribute a greater share of the total to some vills and a lesser share to others. Where woodland recorded was quantified using a measurement other than swine (woodland for x pigs), for example having been measured in acres or chains, this data was discarded. As a result all woodland data displayed is comparable.

Location data for each vill was again taken from Edina, as in chapter three. The ‘Gazetteer Query’ service used in the exercises detailed in that chapter had, by the undertaking of this current exercise, been discontinued. Instead coordinates were found using the ‘Ancient Roam’ service. Using the oldest maps available on Edina – usually from between the 1860s to the 1880s – the locations of churches in each settlement, as the oldest-surviving buildings visible in each case, were recorded alongside the names of vills and their relevant economic data taken from Domesday. Although the locations of churches, variably across the two counties built in the 12th-15th centuries, might not

⁴⁵⁵ Geary *et al.*, *Down By the River* p.322

⁴⁵⁶ <https://opendomesday.org/>

accurately represent the sites of settlements recorded in Domesday, they represent the oldest elements of those settlements visible on the earliest Ordnance Survey maps.

For clarity, as, in most cases, both sheep and woodland data were associated with a single vill, that data has been displayed in such a way that as few examples as possible are obscured by the symbols representing other entries. To this end, where vills possessed both sheep flocks and woodland, the data are displayed as two semi-circles of the relevant colour both emanating from a single point. These are relative in size to full circles used to represent vills which possessed only one of the two resources – that is to say, a semi-circle representing 100 sheep will have the same radius as a full circle representing the same. Vills for which neither woodland nor sheep were recorded at Domesday are mapped in black.

In both counties an absence or scarcity of woodland in Breckland, compared, for example, to that recorded in clay-land vills, is evident. So too is a local economic dependence on the keeping of sheep, though both of these trends are less obvious in Norfolk than in Suffolk. In Norfolk small amounts of woodland persisted while flocks, though in some places substantial, were almost incomparable in size to those found further south. The reasons for this would seem to be edaphic in nature.

North of the border, the river systems of Norfolk's Breckland are more dense and the interfluves relatively slender – providing a wide local availability of fertile valley-bottom soils for agriculture without an immediate need to cultivate less productive, more acidic soils at higher elevations. As a result, the need for fertiliser, and therefore sheep, seems to have been comparatively low. Furthermore lenses or areas of Newmarket 1 sandy loams – which retain nutrients far more efficiently than sandy Worlington or Newport 4 association soils – are widespread. The Suffolk Brecklands, on the other hand, possesses very few lenses of this soil type.

The need, or will, to keep sheep in the Norfolk Brecklands was, indeed, quite insignificant compared to areas in the far west or east of the county, where waterlogged conditions made grazing more profitable than cultivation. Indeed that need was relatively insignificant when compared even with the north west, where large expanses of Newmarket 2 sandy loams and the loamy clays of the Barrow association – with few areas or lenses of more fertile soils nearby – seemingly required greater numbers of sheep for fertiliser than Norfolk's Brecklands did.

Figure 5.2. A map showing the distribution of woodland and sheep recorded in Domesday Book for the county of Norfolk. All overlaid onto the association level National Soil Map.

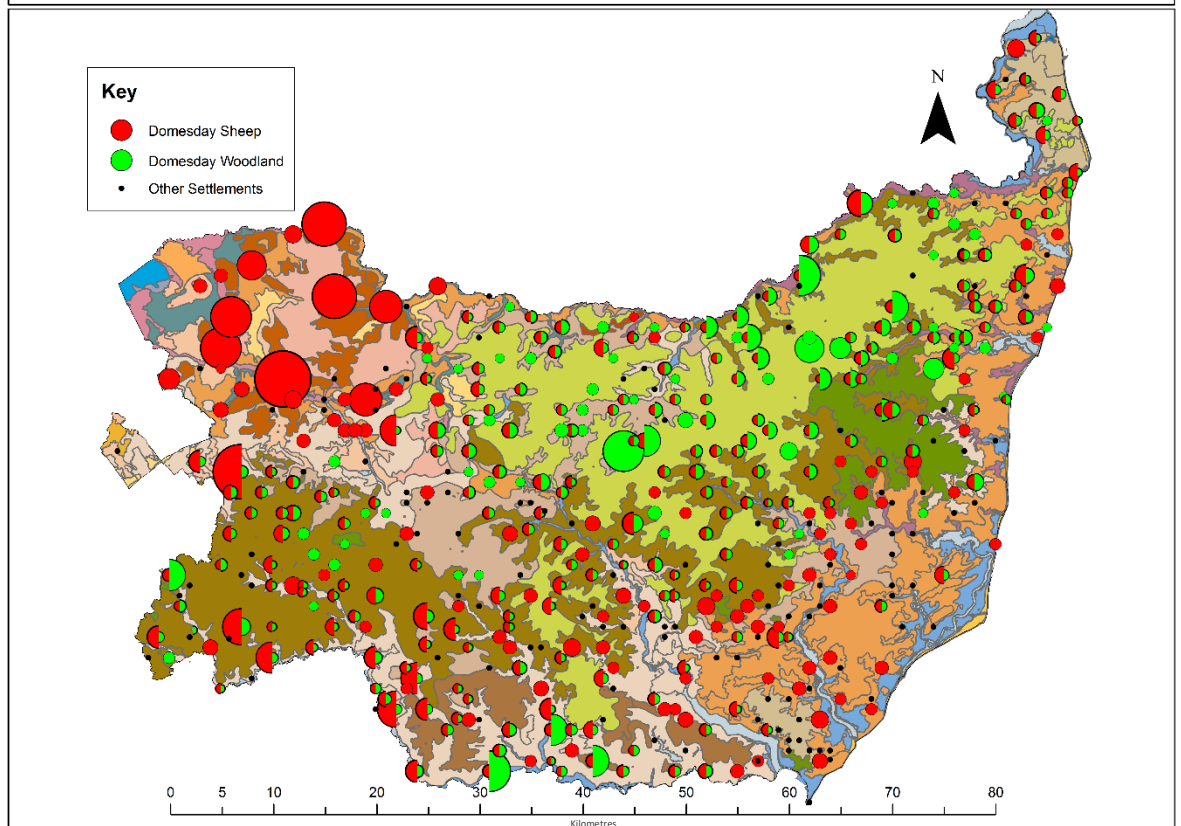
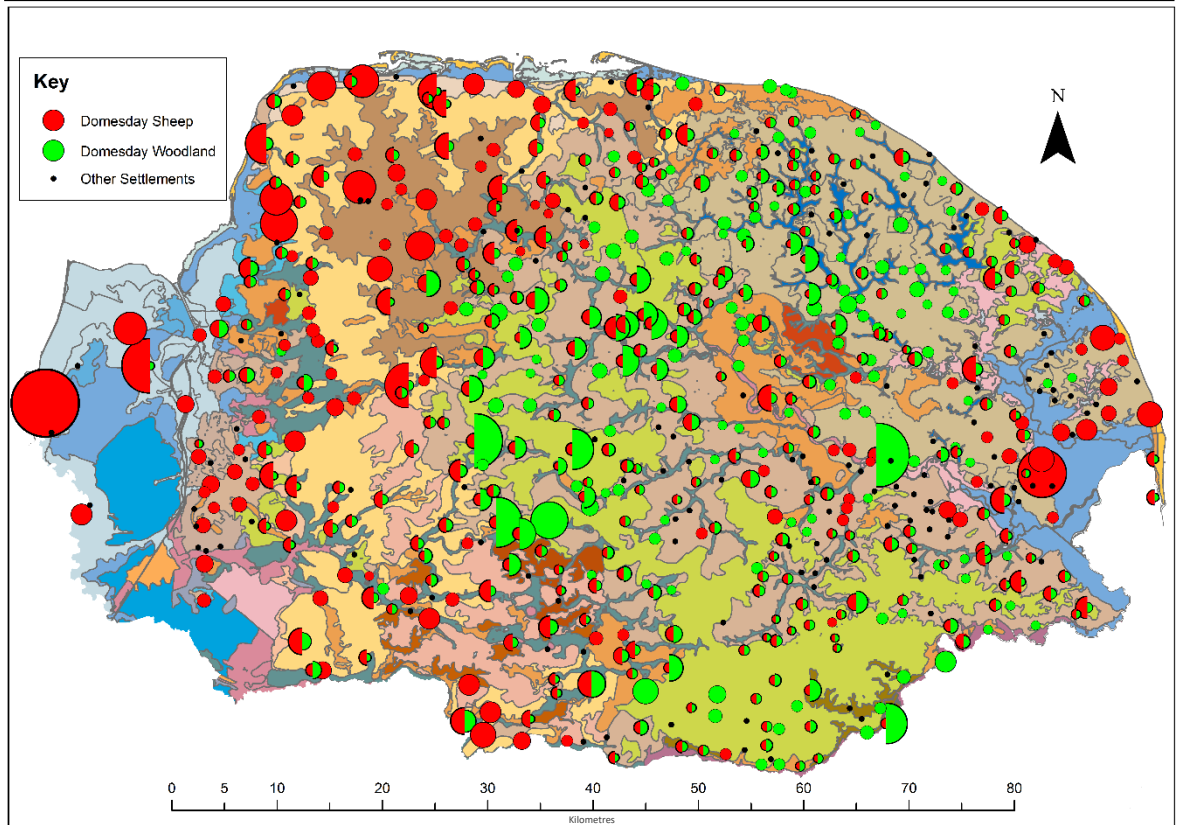


Figure 5.3. A map showing the distribution of woodland and sheep recorded in Domesday Book for the county of Suffolk. All overlaid onto the association level National Soil Map.

Regarding woodland recorded in the Norfolk Brecklands, in part the survival of small amounts at this point can be explained using these same reasons – not all land was required for cultivation. As the soil was not so poor that all lands were kept either ploughed or as open pasture, some could be managed specifically for wood fuel. In part the reasons were also political – Thetford was the site of an aristocratic hunting lodge during the post-Conquest medieval period.⁴⁵⁷ The surrounding landscape, then, required at least some degree of green cover (or ‘vert’) to hide and shelter game. A significant degree of woodland had, however, been lost in the centuries preceding Domesday. The place-names of Northwold, Methwold, and Hockwold, all in the Norfolk Breckland, for example, all contain the element OE *wald* (‘woodland’ or ‘forest’) yet only one – the latter – claimed woodland in 1086. The close proximity of the three vills suggests that each name referred to different parts of the same, extensive woodland – Northwold at its northern edge and Methwold (‘Middle Wood’) towards its centre. This had been almost completely cleared by the late 11th century.

South of the border, in Suffolk, interfluves are wider and the soil is dominated, to a much greater degree, by Worlington association soils with some Methwold and Newport 4. Newmarket 1 soils can still be found but lenses of them are significantly less common compared to those in the north. The result, it seems, was the need for huge flocks of sheep to fertilise the unproductive soil and maintain its fertility, and the need to manage all lands either as arable or pasture and not for wood fuel. If open, tree-less or ‘heath-like’ landscapes existed in Breckland at the point of Domesday – setting aside a lack of place-name evidence for them – they were more likely found (or, at least, found in greater number or extent) in the less fertile Suffolk Breckland than in the Norfolk Breckland.

Breckland in the 12th – 14th centuries

This exercise will seek to present a historic landscape character for parts of Breckland in the centuries following the creation of Domesday Book. Though no data comparative to that recorded in Domesday exists for the whole of the region from this period, some surviving documentary evidence makes reference to landscapes in these areas of Norfolk and Suffolk, and provides a certain level of detail as to their management. In this exercise, the evidence presented was found in numerous charters dating mostly from the 12th to 14th centuries – for the most part recording grants or exchanges of land holdings – collected

⁴⁵⁷ Langton, J., “Royal and non-royal forests and chases in England and Wales” *Historical Research* **88**, 241 (2015) p.392; Martin, T., *The History of the Town of Thetford* (London, 1779) p.57

together during the medieval period for administrative purposes into ‘cartularies’. Most surviving cartularies studied were those of monastic houses and, thus, pertained to the administration of church lands, but some cartularies exist for lands (often in a particular geographic area) not owned by religious houses.

Creake Abbey, Binham Priory, Stoke-by-Clare Priory, Colne Priory, Eye Priory, and the Priory of St. Pancras of Lewes all held lands either in south-west Norfolk or north-west Suffolk.⁴⁵⁸ The Knights Hospitaller (also known as the Knights of St. John of Jerusalem) also held lands in those areas, as did at least four of the six religious hospitals founded in Bury St. Edmunds in the medieval period (namely St. John’s, St. Nicholas’, St. Peter’s, and St. Saviour’s).⁴⁵⁹ To these religious collections were added the secular cartularies of the manors of Ixworth Thorpe and Stanton, both in Suffolk.⁴⁶⁰

Whereas most charters contained within these cartularies make reference simply to a grant or exchange of ‘land’ (Lat. *terra*), some contain reference to specific, non-arable landscapes – including heaths. Figure 5.4 is a map of all such references made in these cartularies between the 12th and 14th centuries. This information is also overlaid on to the association level soil map to allow for comparison between landscape type and soil type, as well as to aid comparison between this data and that displayed in figures 5.2 and 5.3. Here, each type of landscape or management practice mentioned in the documents is represented by a different symbol. The symbols used were the same whether a single heath, wood, or piece of land was granted in that locality or several. As numerous landscapes were often mentioned in various documents all pertaining to the same manor or locality, many of the symbols are, by necessity, overlapping. As a result, the map has been drawn in such a way that no symbol entirely obscures another, but in some cases certain symbols remain partially concealed.

The data used were compiled from reading modern, printed copies of each of the cartularies in full, noting each occurrence of selected words, as well as the vill with which they were associated. As the documents were, for the most part, transcribed rather than

⁴⁵⁸ Bedingfield, A., A Cartulary of Creake Abbey (Norwich, 1966); Margerum, J. (ed.), The Cartulary of Binham Priory (Norwich, 2016); Harper-Bill, C. and Mortimer, R. (eds.), Stoke by Clare Cartulary parts I-III (Woodbridge, 1982, 1983, and 1984); Fisher, J., Cartularium Prioratus de Colne (Colchester, 1946); Brown, V. (ed.), Eye Priory Cartulary and Charters parts I and II (Woodbridge, 1992 and 1994); Bullock, J. (ed.), The Norfolk Portion of the Cartulary of the Priory of St. Pancras of Lewes (Norwich, 1939)

⁴⁵⁹ Gervers, M. (ed.), The Cartulary of the Knights of St. John of Jerusalem in England parts I and II (Oxford, 1982 and 1996); Harper-Bill, C. (ed.), Charters of the Medieval Hospitals of Bury St. Edmunds (Woodbridge, 1991)

⁴⁶⁰ Church, S. (ed.), The Pakenham Cartulary for the Manor of Ixworth Thorpe, Suffolk: c.1250-c.1320 (Woodbridge, 2001); Dymond, D., The Charters of Stanton, Suffolk: c.1215-1678 (Woodbridge, 2009)

translated by their editors, the vocabulary searched for was chiefly in Latin rather than in English.

Regarding woodland, for example, the word most commonly used by scribes in each case was the Latin *boscus*, with *nemus* also regularly appearing. The former translates as ‘wood’ or ‘woodland’, but can also sometimes refer to wood as a material.⁴⁶¹ The latter translates more specifically as ‘underwood’, but can likewise refer to the material.⁴⁶² In the various texts, however, there was no discernible difference in implied meaning between the two words, with both used in precisely the same sentence structures and with no accompanying information that would suggest a denser or more sparsely wooded area. Indeed the two seemed, to a considerable extent, interchangeable and both have been mapped simply as ‘wood’ in the figure. Less commonly encountered was the word *gravam*, adapted from the Old English and literally meaning ‘grove’, with the Latin *silva* (meaning ‘wood’ or ‘timber’) being rarer still.⁴⁶³ Both of these have simply been mapped as references to ‘woodland’ more generally.

For heathland only one word was searched for or found to be used, that being *brueria*, which directly translates as ‘heath’.⁴⁶⁴ A grant of sheepfold or foldcourse was identified from the use of the Latin word *ovile*, or the latinised OE *falda*, or from any mention of the right to graze sheep (Lat. *ovis*).⁴⁶⁵ Reference to the temporary agriculture of Brecks was searched for under the term *brecha* – in this period meaning ‘breach’, ‘gap’ or ‘assart’ – while an assart itself was commonly referenced to in the texts as an *essart* – meaning ‘land cleared of trees’ or, simply, ‘clearing’.⁴⁶⁶ The Latin term *alnitum* is usually translated to mean ‘alder-wood’, and so it was here.⁴⁶⁷ Parks, meanwhile, in this period often wooded, were referred to using the Latin *parcus*, from which the modern English word derives.⁴⁶⁸ All occurrences of these words were mapped whether they were recorded as the land being granted, or as an abuttal to the same.

⁴⁶¹ Latham, Revised Medieval Latin Word-List p.54

⁴⁶² *Ibid.* p.312

⁴⁶³ *Ibid.* pp.216,440

⁴⁶⁴ *Ibid.* p.57

⁴⁶⁵ *Ibid.* pp.184,327

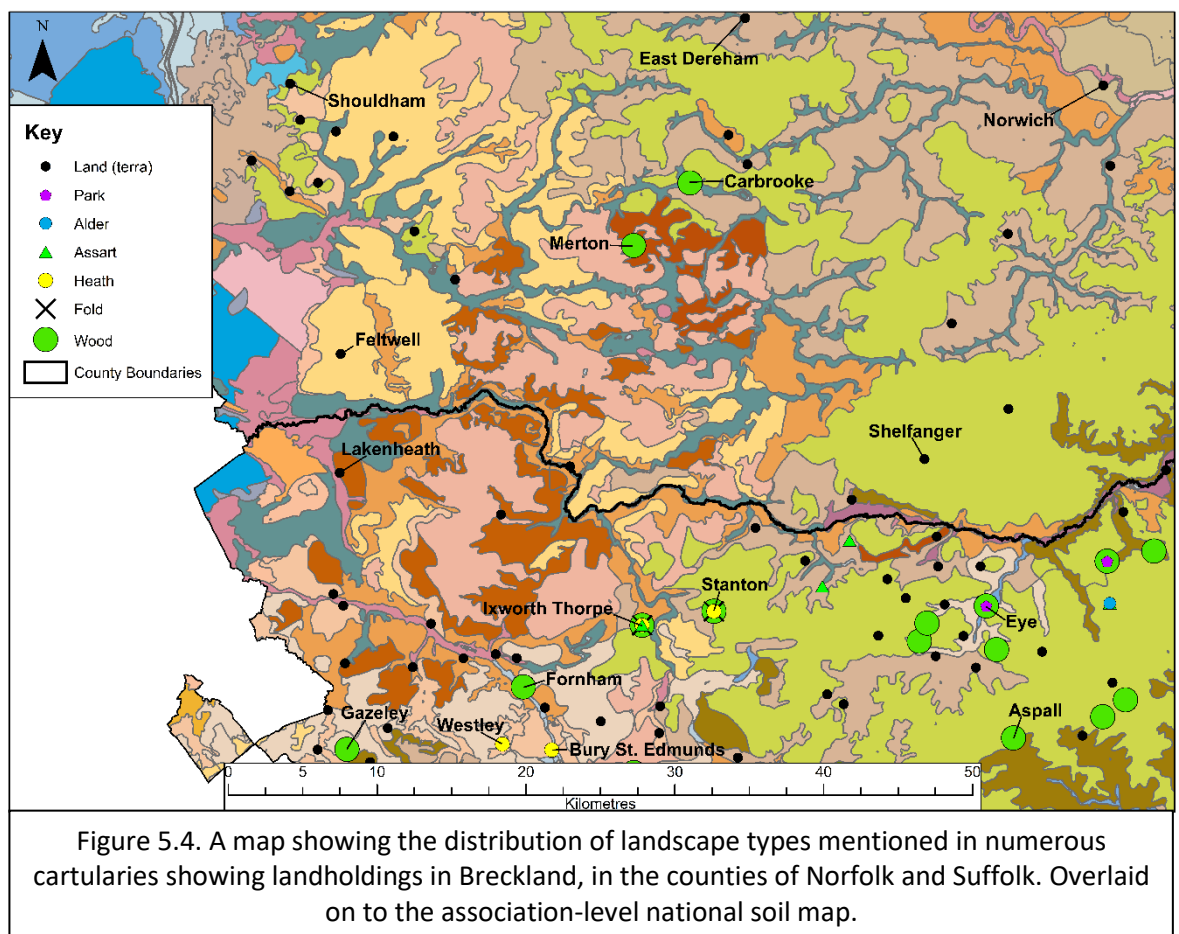
⁴⁶⁶ *Ibid.* pp.56,181

⁴⁶⁷ Fisher, A Medieval Farming Glossary p.2

⁴⁶⁸ Latham, Revised Medieval Latin Word-List p.332

Results: a sparsity of Breckland heaths

Heaths were only recorded in four places in the region – at Westley, Bury St. Edmunds, Ixworth Thorpe, and Stanton. All these are found on the southern edge of Suffolk’s Breckland. To an extent this echoes one result of the preceding exercise mapping data collected from Domesday Book – that open heathland was probably more common in the Suffolk Breckland than on the Norfolk side. A noticeable paucity of land grants in central-Breckland vills, however, means that any heathlands that might have existed there would not have been recorded in these cartularies. This might, to an extent, be because the historical record for medieval charters in this area is, in effect, incomplete. Thetford Priory, historically located in central Breckland, probably held numerous lands throughout the region but its cartulary was destroyed by fire in 1745.⁴⁶⁹ As a result the only substantial conclusion to be drawn from this map is that the southern border of Suffolk’s Breckland was a landscape of mixed heathland and woodland, sometimes within very close proximity.



⁴⁶⁹ Davis, G., Medieval Cartularies of Great Britain and Ireland: Revised by Claire Breay, Julian Harrison and David M. Smith (London, 2010) p.194

Breckland on late 18th-century county maps

Heaths and commons

Faden's map of Norfolk and Hodskinson's of Suffolk, published in the 1790s and 1780s respectively, show some similarities in the landscape character of Breckland both north and south of the county border. They also show numerous differences. Regarding similarities, both possessed extensive areas of heathland, though they were represented quite differently. In Norfolk all Breckland heaths were drawn as common land, mostly with clear borders between them and agricultural land or other commons not labelled 'heath'. Figure 5.5 illustrates this well. In Suffolk the majority of Breckland was not drawn as common land, but instead as a large unbounded area of sprawling roads with only occasional labels, including Livermere Heath shown in figure 5.6. Common heaths were drawn only towards the edges of the Suffolk Breckland. As mentioned in earlier chapters, this resulted in much of what was labelled as heathland in Breckland by Hodskinson not being included in measurements of common heaths already presented in this study.

Those Breckland-edge common heaths in Suffolk were often illustrated with scattered trees while very few standing trees were drawn in the heart of Breckland there, closer to the county border (see fig. 5.6). Neither were trees a feature of the majority of Norfolk's common heaths, though many were contiguous with clumps of private woodland, some of them internal to the heath as at Brettenham (see fig. 5.5). Tuddenham Heath, Ixworth Heath, Pakenham Heath, Bardwell Heath, and Barningham Heath, all in Suffolk, were all drawn with scattered trees. As such, a band of heathland characterised by dispersed woodland may well have formed a transition zone between the sheep-dependent, seemingly tree-less, heart of Suffolk's Breckland and the rest of the county to the east and south.

Warrens

A second similarity was the widespread presence of rabbit warrens. Since the mid-thirteenth century, commercial rabbit warrening had been employed across England as a method of making agriculturally unproductive regions of poor soils profitable, and Breckland was no exception.⁴⁷⁰ Originally native to the Mediterranean, the rabbit was permanently introduced to Britain after the Norman Conquest in the 11th century – the Old

⁴⁷⁰ Sheail, J., Rabbits and their History (Newton Abbott, 1972) p.17

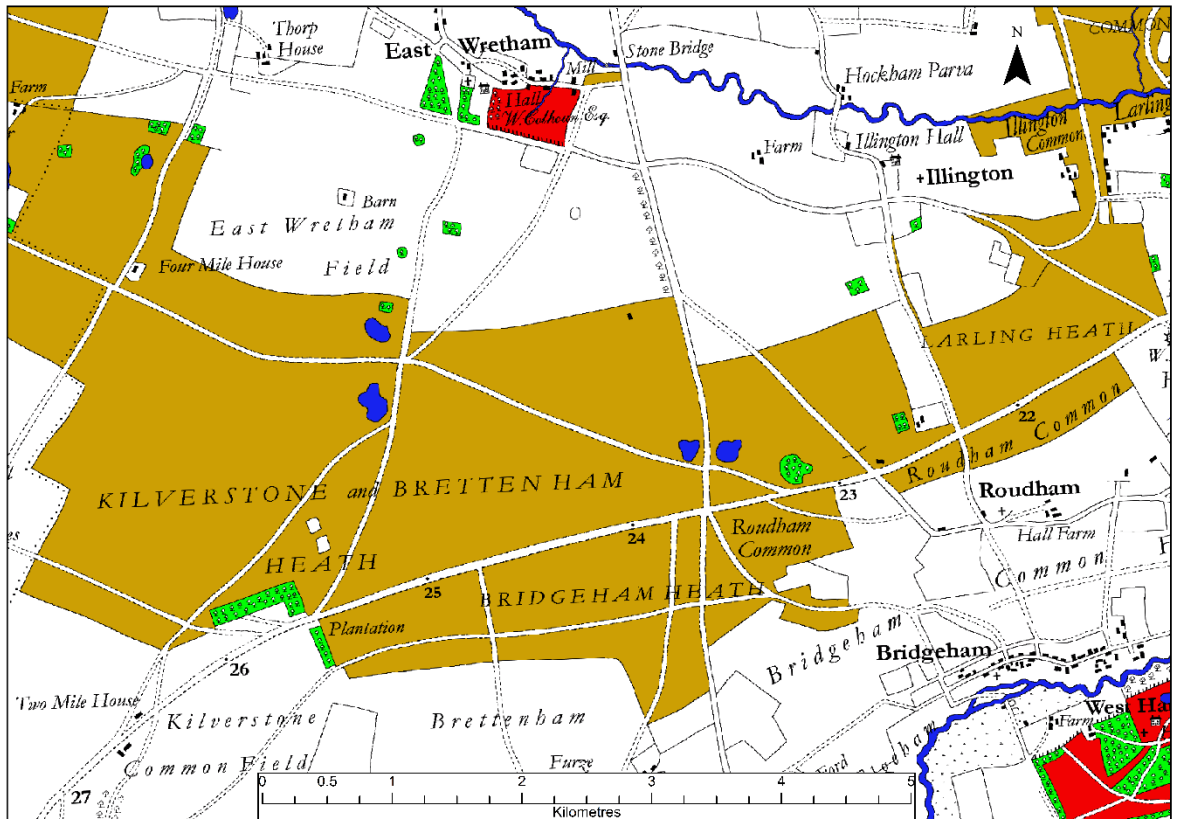


Figure 5.5. A map showing a group of heaths near East Wretham in Norfolk as they appear on Faden's map of that county, published 1797, and digitally redrawn by Andrew Macnair.

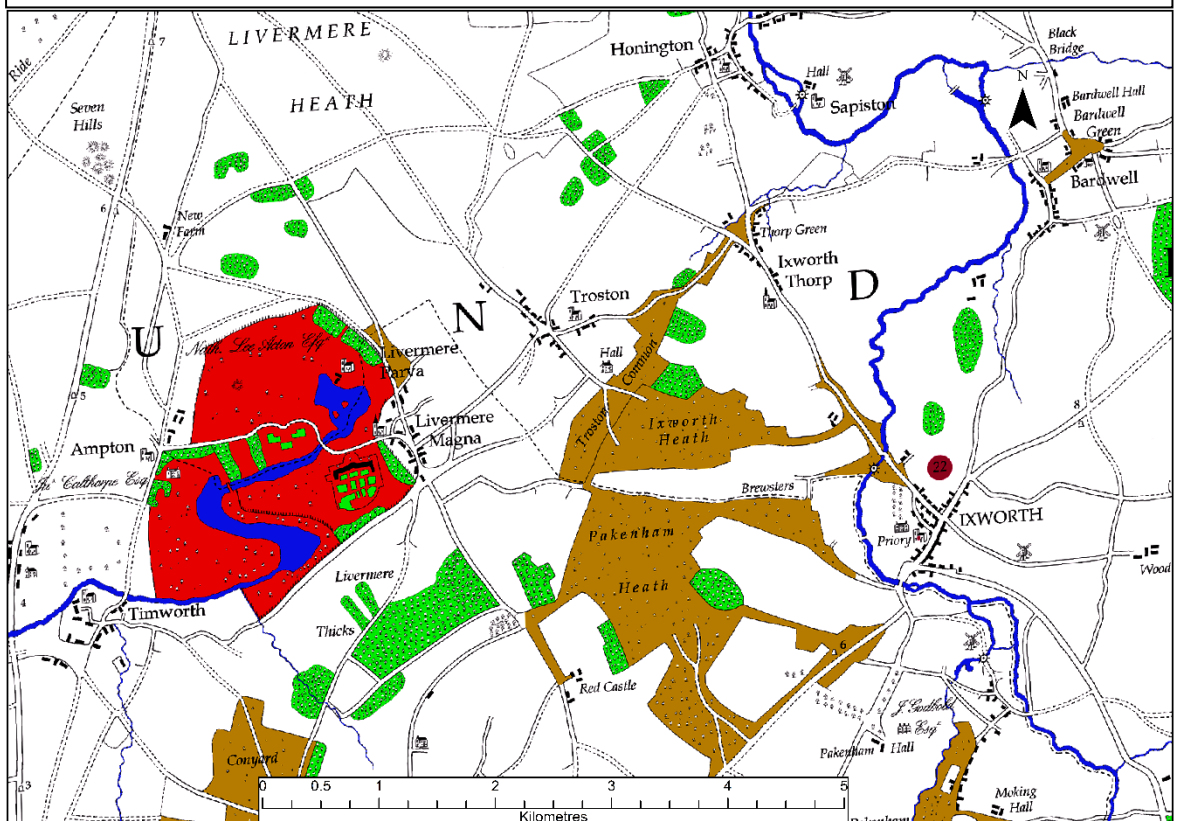


Figure 5.6. A map showing a group of heaths near Ixworth in Suffolk as they appear on Hodskinsons' map of that county, published 1783, and digitally redrawn by Andrew Macnair.

English language, indeed, possessed no word for the rabbit but only for the hare (*hara*). Julius Caesar, describing Britain and the Britons in his '*De Bello Gallico*' of c.58-49 BCE, also made no mention of rabbits (Lat. *cuniculus*), referring only to the hare (*lepus*).⁴⁷¹ Archaeological evidence, most notably from Lynford in Norfolk and Beddingham in Sussex, shows rabbits were imported to Britannia under Roman rule but most likely as a foodstuff and only in limited numbers, without, it seems, being released into the landscape, even under controlled circumstances.⁴⁷² Introduction on a commercial scale did not occur until after the establishment of Norman rule.

Faced with the harsher climate of Northern Europe the species did not, at first, thrive. To aid their survival, earthworks were erected into which purpose-built tunnel systems were dug, and into which the rabbits were then introduced. These structures are, in modern archaeological parlance, termed 'pillow mounds', due to their resemblance in shape to, now quite old-fashioned, 'bolster' type pillows.⁴⁷³ Historically, though, they were more commonly called 'coney burrows' – the now obsolete word 'coney' referring to the adults of the species, while the word 'rabbit' was reserved only for the young. To protect them as commercial assets, and to prevent escape, these mounds were usually surrounded by a bank or wall patrolled by a warrener – whose tools and gathered pelts were stored in a secure warren lodge.⁴⁷⁴ In total 26 warrens have been identified in Breckland, established between 1250 and 1800, on both sides of the border, and most of these were represented on the maps of Faden and Hodskinson.⁴⁷⁵

In Norfolk most Breckland warrens were shown as discrete holdings, with clearly-demarcated borders, and drawn as areas of common land, according to the map's key. They were often shown alongside or between other common lands labelled as heaths. In Suffolk no such borders were added but a total of 11 warren lodges were drawn and labelled within that extensive area of Breckland shown largely featureless – without any form of boundaries or borders except roads. In both counties warrens were situated on the same soil types as heaths and the vegetation found on them would likely have been 'heath-like'. Some, indeed, were introduced directly on to existing common heathland, sometimes to the detriment of commoners' rights and therefore the focus of their

⁴⁷¹ Sheail, *Rabbits and their History* p.17; Reynolds, A. (ed.), *G. Julii Caesaris, De Bello Gallico: Liber Quintus* (London, 1900) p.45

⁴⁷² Williamson, T., *Rabbits, Warrens & Archaeology* (Stroud, 2007) p.11

⁴⁷³ *Ibid.* p.31

⁴⁷⁴ *Ibid.* pp.65-66,82

⁴⁷⁵ Mason, A. and Parry, J., *The Warrens of Breckland: A Survey by The Breckland Society* (Thetford, 2010) pp.12-37

dissatisfaction. The warren in Mildenhall Heath, for example, was, in 1731, the scene of a riot. There 19 armed men entered into the warren, dug up 6 rods (roughly 30 metres) of the lord's soil, killed 'twelve coneyes of the Price of three shillings' and then 'Stoped up with earth and destroyed divers Coney Burrows' apparently in protest at the lord's use of the common heath.⁴⁷⁶

This example illustrates well a theme visible in numerous documents detailing historic Breckland heathland management – that of competition and overlap between different rights-holders, prioritising different outcomes and management techniques, vying for the use of the same heathland area and resources. As a result the dominant uses of heathlands, and areas within heaths, were often unstable and became altered over time. Pressures effecting the survival, number and species of flora and fauna found on them, then, were not necessarily constant nor regionally uniform.

Heathland management in the Norfolk and Suffolk Brecklands in the 17th and 18th centuries

A view of historical management

The past management of Breckland heaths is characterised by four chief forms of exploitation. One of these, after the 13th century, was the raising and farming of rabbits, already discussed with regards to warrens. A further two were the gathering of fuel for domestic fires and the temporary cultivation of parts of heaths in Brecks. The principle of 'Brecking' was to plough (or 'break') areas of poor soils and cultivate them to augment cereal production. Due to the limited fertility of the soil, though, doing so every year on all lands would cause the soils to become so nutrient poor they could not sustain another crop.⁴⁷⁷ For the most part, though, heathland management in Breckland was concerned, first and foremost, with the efficient management of sheep – usually as part of a foldcourse.

This was a customary system whereby a manorial lord possessed the right to annex his tenants' sheep into his flock either during certain months or sometimes at any time of year. He could then graze the whole amalgamated flock on both the heath (irrespective of

⁴⁷⁶ SROB E18/400/8

⁴⁷⁷ Bailey, M., "Sand into Gold: The Evolution of the Foldcourse System in West Suffolk, 1200-1600" The Agricultural History Review **38**, 1 (1990) p.49

other common rights) and all arable lands not under crop.⁴⁷⁸ This was not limited to demesne lands – the lands managed personally by the manorial lord or his lessee – but included all the tenants’ lands, even incorporating those of most freeholders. All the sheep would then be driven onto arable lands, one after the other, and kept in temporary enclosures made of hurdles to intensively dung (or ‘tathe’), the soil. This method would be used to maintain fertility not only on so-called ‘infields’, sown either every year or almost every year, but also on the ‘outfields’ which were regularly sown on a long rotation then left fallow in between times, and also the ‘brecks’ which were only sporadically cultivated.⁴⁷⁹ A 17th-century treatise describes the practice thus: ‘A foldcourse is a liberty to erect over a fold within a certain precinct of ground for ordering ye sheepe within ye same precinct att all seasons of the yeare as tyme out of mind hath bin accustomed’.⁴⁸⁰ This was the customary right of the lord of the manor and the order in which lands were tathed was decided by him, usually to his benefit.⁴⁸¹

The grazing of sheep, either as part of the lord’s fold or individually by tenants, would seem to be the primary use of some Breckland heaths. In Little Cressingham, in Norfolk, for example, in 1646, there was a ‘sheeps pasture or foldcourse ... called Waterend Heath [and] the said sheeps pasture ... will keep ... about 600 sheep’.⁴⁸² In some circumstances, the total number of animals pastured together at one time on a heath probably led to intensive damage of heathland flora. On the 1,000 acre Winfarthing or Banham Heath in Norfolk, for example, the tenants of one tenement alone had, in 1702, ‘Constantly Com[m]on’d their Comonable Cattle upon this heath and have had 3 and 400 sheepe in A Summer there without molestation for 50 yeares’.⁴⁸³

In Wretham near Thetford, other animals were grazed on heaths but sheep were the most important because agriculture within the manor depended on it. East Wretham Heath, for example, was grazed both by sheep and by rabbits, and was gradually broken up for temporary cultivation during the 1700s. One late 18th-century terrier (or ‘description of lands’) for the manor of East Wretham described both heaths there as ‘sheepwalk’.⁴⁸⁴ Of these one was open to common grazing from the 1st August to the 1st November every

⁴⁷⁸ Allison, K.J., “The Sheep-Corn Husbandry of Norfolk in the Sixteenth and Seventeenth Centuries” The Agricultural History Review 5, 1 (1957) pp.15-17

⁴⁷⁹ Postgate, M.R., “The Field Systems of Breckland” The Agricultural History Review 10, 2 (1962) p.91

⁴⁸⁰ *Ibid.* p.82

⁴⁸¹ Belcher, J., The Foldcourse and East Anglian Agriculture and Landscape, 1000-1900 (Woodbridge, 2020) p.68

⁴⁸² NRO DCN 52/10

⁴⁸³ NRO PD 552/44

⁴⁸⁴ NRO MS 10071, 34D1

year, and the other was open to great cattle (cows and horses) all year round.⁴⁸⁵ It also states that of two areas of breck, one was open for common grazing during the same period as the first heath, and the other all the year like the second heath, but that neither were accessible when under crop.⁴⁸⁶

A map of the same manor, drawn *c.*1740, shows both heaths (Lodge Heath in the north and Ringmere Heath in the south) and both areas of brecks, which at one time would have connected the two heaths to make one larger heathland area.⁴⁸⁷ The name ‘Lodge Heath’ would suggest a historic practice of warrening there not mentioned directly by the map or terrier. This is further alluded to by the name of ‘Coney Hill Brake’ which, at one time before enclosure, would have been internal to the heath in question.⁴⁸⁸ The heaths there are also shown bordered by meres, or broad lakes, which extend into both of them, and by that time one of them had lent its name to ‘Ringmere Heath’ in the south.⁴⁸⁹ As such, though most of both heaths are associated with dry sandy soils on modern soil maps, some parts of them would have been wetland or seasonally waterlogged.

The same map also shows a separate area, bordering Lodge Heath, labelled ‘Common Lands now divided into Inclosures and in part Cultivated’.⁴⁹⁰ Notes on the document suggest an ongoing and expanding practice of breaking up the heaths for temporary cultivation. One, written at the time of drawing, states that a tenant ‘last year broke up ffifty acres of the Lodge Heath’ while another, added in 1784, states that ‘a part of the Common of East Wretham ... was ploughed up some years back ... and is now in cultivation’.⁴⁹¹ No indication was given, either in the terrier or on the estate map, as to the length of cultivation or abandonment of brecks in East Wretham. Their productivity, however, depended on the foldcourse and this form of ‘infield-outfield’ system is recorded in more detail for the neighbouring manor of West Wretham.⁴⁹²

⁴⁸⁵ NRO MS 10071, 34D1

⁴⁸⁶ *Ibid.*

⁴⁸⁷ NRO MC 3180

⁴⁸⁸ *Ibid.*

⁴⁸⁹ *Ibid.*

⁴⁹⁰ *Ibid.*

⁴⁹¹ *Ibid.*

⁴⁹² Postgate, “The Field Systems of Breckland” p.91

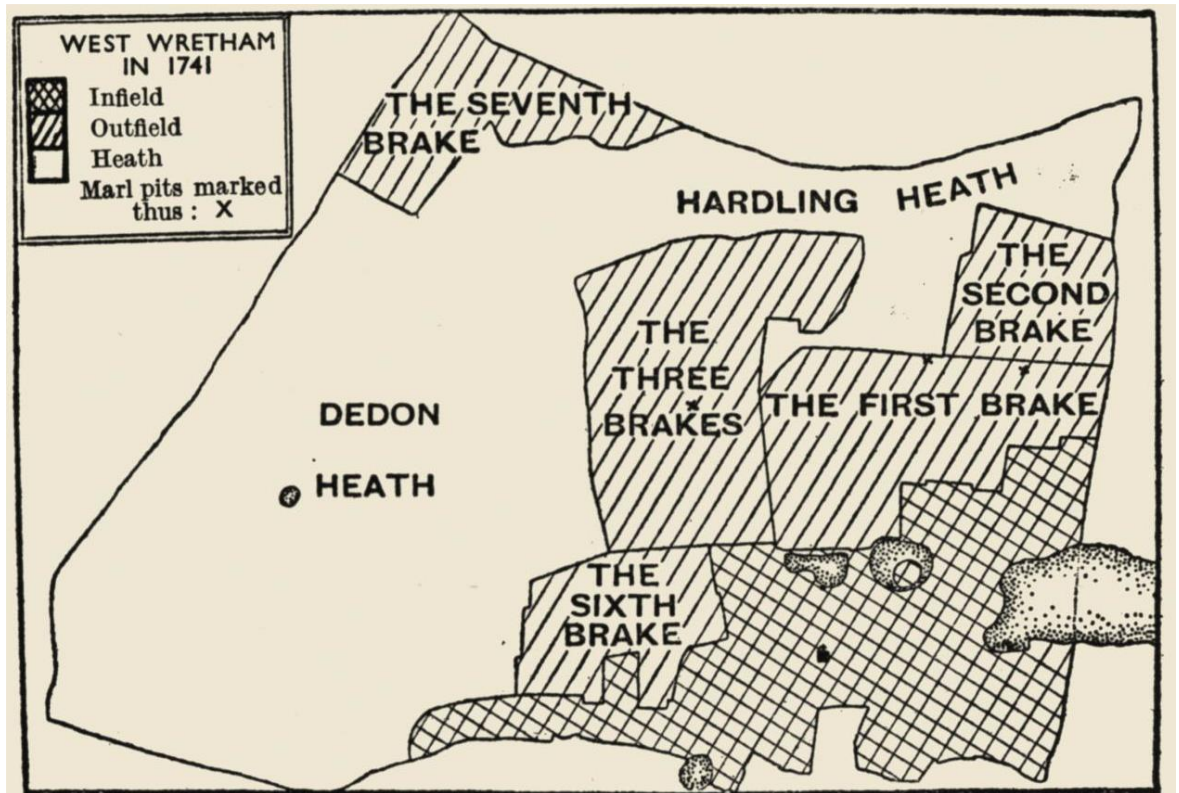


Figure 5.7. A 1740 map of West Wretham in Norfolk, redrawn by Saltmarsh and Darby, 1935.

From 1443 to 1820 this was the property of King's College, Cambridge and from 1485, saving 12 years under Queen Elizabeth, was leased by the Bacon family of Hesselton in Suffolk.⁴⁹³ A terrier survives for the manor from 1612, as well as a map of 1740. Figure 5.7 is a reconstruction of the 1740 map produced by Saltmarsh and Darby in 1935 and is given here as context for a description of the manor's agriculture.⁴⁹⁴ In 1612, the infield consisted of about 226 acres of arable, common pasture, and meadow.⁴⁹⁵ The map of 1740 shows an increased acreage for outfield compared to that recorded in the terrier.⁴⁹⁶ This likely shows further encroachment of the outfield into the two heaths over time, but the map remains a useful point of reference for 1612. At that point, in the outfields there were 'belonging to the said Lords of the Manor of Westwrotham seven Breks or Shifts of arable Lands called outfield Lands w^{ch} are folded in Course every year wth the Flock of Ewes there, and they contain in all about four Hundred Acres of Land'.⁴⁹⁷ Every breck, then, was

⁴⁹³ Saltmarsh, J. and Darby, H.C., "The Infield-Outfield System on a Norfolk Manor" *Economic History* 3, 10 (1935) pp.31-33

⁴⁹⁴ *Ibid.* p.34

⁴⁹⁵ *Ibid.* pp.34-35

⁴⁹⁶ *Ibid.* p.42

⁴⁹⁷ *Ibid.* p.36

folded with sheep once every seven years. Using data from comparable systems in Scotland, Saltmarsh and Darby suggest that each one was cropped for two to three years, and then left fallow until the next folding.⁴⁹⁸

Sheep were grazed on the two interconnected heaths, Dedon and Hardling, but also periodically on all the other lands as part of the foldcourse. The wording of the 1612 terrier shows that the lords of the manor possessed a near-complete monopoly over grazing rights. For clarity, the same Henry Bacon who leased the demesne lands from the lords of the manor (King's College), and therefore all their associated rights, was also the second largest landowner in West Wretham in his own right:

In all which Heaths and Arable Lands both outfield and infield... the Lords of the Manor of Westwrotham... have free sheepcourse and depasturing for so many Sheep at all times of the Year as hath been accustomed, now stored with the Number of about Seventeen Hundred and threescore Ewes and Hogges proper and peculiar to the said Lords of the Manor... for their own use and their Shepherd and cullet, Except one Trip or Liberty of two Hundred Ewes belonging to the said Henry Bacon..., and one other Trip or Liberty of threescore Ewes belonging to the Parson of Westwrotham..., which said number of two Hundred and threescore Ewes as aforesaid are part of the Number of the seventeen Hundred and threescore aforesaid, and are Continually... to have free Sheepswalk and feeding with the rest of the Ewes belonging to the Lords of the Manor... and to be kept by the afores^d Lords Shepherd continually at the Costs and Charges of the Lords... and in lieu thereof the foldage and Tathe of the afores^d two Hundred and threescore Ewes is to be bestowed every Year upon the Lands of the Lords afores^d only, at times of foldage accustomed, but the said Henry Bacon... and the said parson... are to Fodder always so often as need shall require their own Ewes at their own Costs and Charges, In which Heaths and Lands the inhabitants of the Town of Westwrotham have freedom of Common at all times of the Year with their great Cattel only, as they have had of Custom formerly.⁴⁹⁹

⁴⁹⁸ Saltmarsh and Darby, "The Infield-Outfield System on a Norfolk Manor" pp.36-37

⁴⁹⁹ *Ibid.* pp.38-39

The word ‘hogges’ was, in this context, another term for lambs rather than pigs.⁵⁰⁰ Tenants could pay to have their sheep included in the grazing regimes of the lord’s flock, and these were called ‘cullet’ sheep.⁵⁰¹ Alongside Mr Bacon and the parson, there were five minor freeholders and copyholders in the manor at the time who might have paid for cullets. A ‘trip’ of sheep meant ‘a few sheep’.⁵⁰²

The lord of the manor of West Wretham, then, maintained total control over the foldcourse and, therefore, the fertiliser necessary to maintain agricultural productivity there, especially in the outfields. Even the sheep not belonging to the lords of the manor were to be included in their flock and folded on his land. A renewal of Mr Bacon’s lease, also dated 1612, suggests this arrangement was widespread in the region. It states that:

the sayd Henry Bacon doth Covenant and graunt... that he... shall and will at the last yeare of the said terme fould as many sheep on the demayne Lands of the sayd Mannor as the sayd Lands may sustaine, and do commonly beare after the rate of the Country there And so shall continew the foldage therof all the last yeare at such times as is commonly used in those parts.⁵⁰³

Although these clauses have been added to ensure the tenant does not neglect the foldcourse in the final years of his lease, the wording of the final two are revealing for our purposes. The phrases ‘after the rate of the country there’ and ‘as is commonly used in those parts’ suggest this level of manorial control was locally widespread. The degree of control exercised by large landowners over common grazing lands in Breckland, including heaths like those at Wretham, should not therefore be underestimated.

The infield-outfield system is also visible in other Breckland manors. Sheep grazing and outfields are hinted at on a 1638 map of Little Saxham, in the Suffolk Brecklands, for example, on which the heath and warren there was described as ‘part sheep ground and part arable’.⁵⁰⁴ Text attached to an 18th-century map of Overy Heath in East Harling, Norfolk, meanwhile, detailed a similar (and at times confusing) practice of heathland management shared between grazing and temporary cultivation. It also included provision for the gathering of fuel. Customary rights there were defined as follows:

⁵⁰⁰ Coles, *An English Dictionary* section HO

⁵⁰¹ Allison, K.J., “Flock Management in the Sixteenth and Seventeenth Centuries” *The Economic History Review* **11**, 1 (1958) pp.109-110

⁵⁰² Coles, *An English Dictionary* section TR

⁵⁰³ Saltmarsh and Darby, “The Infield-Outfield System on a Norfolk Manor” p.44

⁵⁰⁴ SROB B1167/11

The Lands Coloured with Green are not subject to the Sheep Walk at any Time. That Part of Overy Heath within the Red Dotted Line, and on which the Words (Dunkirk, Common) are Wrote is Exempt from the Sheep Walk at all Times of the year (Except from Old Christmas to Old Lady day). All the Rest of Overy Heath is Subject to the Sheep Walk at all Times of the Year. And so is all the Rest of this Estate (Except the Breck Lands at such Times only as they are sown with Corn, And Except the said Lands coloured with Green which are never Subject to such Sheep Walk. And also Except that part of Overy Heath within the Red Dotted Line, whereon the Words (Dunkirk Common) are wrote, which is only Subject thereto from Christmas to Lady day Old Stile, as aforesaid). The Inhabitants of Eccles have a Right to Cut Turf and Furze on Overy Heath and Common.⁵⁰⁵

Old Christmas Day, or ‘Christmas Day old style’, mentioned here is the 5th January, while Lady Day is the 25th March in the Christian calendar. The word ‘turf’ refers to clods of earth and matted heather roots which were dug up and used for fuel.⁵⁰⁶ The word ‘Furze’ refers to gorse. Here again was a system of heathland management shared between several different forms of exploitation, but in which sheep grazing was particularly important.

Sheep grazing was of primary concern in each of these Breckland manors so far discussed, but the intensity of grazing, what other animals grazed alongside the sheep, times of year and areas where grazing was permitted, and what other rights were exercised on the heaths could all vary. The heaths here mentioned, then, would not have appeared the same with regards to the number or condition of either floral or faunal components present across a period of months or years, depending on the intensity and variability of use. Between manors, neither their management nor resultant character were constant or unchanging. Modern heathland conservation projects based on history, discussed in chapter one, tend to seek the stable representation of a single historical model. The historic heaths mentioned here, though, would probably have existed in a variable and continuously evolving state of regrowth, depending on flock sizes, grazing animal species composition, outfield rotation, and the cutting of new brecks.

In order to establish the effects such unstable management methods could have had

⁵⁰⁵ NRO MS 20315, 126x3

⁵⁰⁶ Fuller *et al*, “Human Activities and Biodiversity Opportunities” p.5; Warde, P. and Williamson, T., “Fuel Supply and Agriculture in Post-Medieval England” *The Agricultural History Review* **62**, 1 (2014) pp.61-82

on heaths in Breckland, two manors were selected for detailed case studies in which a similar mixed, or ‘shared’, form of heathland exploitation was employed. These two specifically were selected based on criteria mentioned in chapter one – detail and diversity.

In Norfolk, the study of Hilborough is mostly based on an extensive collection of documents relating to a legal agreement between the manorial lord there and his tenants in 1635. This generated a substantial amount of documentary evidence relevant to the case, including acreages of heath and fields, detailed descriptions of ploughing rotations, accurate numbers of sheep and great cattle present in the manor, where those could graze and when, and details of fuel gathering on Hilborough Heath. This not only allows for a reconstruction of the area and extent the heath, which has since been lost, but also of the amount of land under the plough in given years, the stocking density of sheep and great cattle on different areas throughout the course of the year, and, as a result, the likely effects this management had on the flora of the heath. While researching this thesis, no other surviving evidence was found concerning a different manor in the Norfolk Breckland which recorded the use of one particular heath in such detail.

In Suffolk, the second case study relates to Icklingham and is also mainly based on legal proceedings, this time from the 1760s. These concerned the illegal cutting of gorse on the several heaths there and likewise generated an extensive collection of documents used as evidence in the case. These include witness testimonies from commoners who knew and worked on the heaths as part of their everyday lives. No other surviving documentary evidence for another Suffolk Breckland manor was found while researching this thesis which recorded the management of specific heaths in comparable detail. The collected documents give detailed descriptions of common rights, grazing rights, and protections afforded to certain types of flora within defined areas of the heaths. As such, the landscape character of those heaths can be recreated with a degree of accuracy. The results show a variety of heathland landscapes within Icklingham, most of which were significantly different in use and floral composition to those of Hilborough. This reflects another reason for its selection as a case study, as mentioned in the first chapter: to illustrate diversity.

Hilborough, Norfolk: a case study

Hilborough Heath, in the parish of that name in Norfolk's Breckland, was selected for a case study based on the broad range of evidence that survives detailing its management, which varied across time. Figure 5.8 shows the location of Hilborough in Norfolk, while figure 5.9 shows the parish as it appears on Faden's map of 1797. Until its annulment in the 1630s, much of the heath was managed as a warren from at least the mid-13th century. Blomefield states that around the 34th-41st year of Henry III (1250-57) Osbert de Cailly rented the farm 'of the rabbits of the warren and heath' there for £2 13s. 6d..⁵⁰⁷ Between 1370 and 1379, manorial documents reveal that, on average, 348 rabbits were culled annually from the warren.⁵⁰⁸ As warreners were keen not to reduce their breeding stock, it can safely be assumed that the overall population was much larger at the time.⁵⁰⁹ Over the following century the population appears to have followed a general trend of expansion. The lease valuation of the warren rose from £2 13s. 6d. in 1250 to £8 in the year 1412-13, £12 in 1469-70, and peaked at £30 in 1471-72.⁵¹⁰ As the average value of a rabbit reduced by more than half during the period - from 3.58d. in 1250 to 1.76d. in 1469 - the number of coneyes required to warrant such high lease values must have been inversely correlated.⁵¹¹

Although the dominant fauna of the warren is obvious, what flora was dominant is less clear. If heather was naturally occurring, it is unlikely to have thrived within the bounds of the warren. Pickworth Farrow's detailed examination of heathland plant life in Breckland shows that intensive grazing by rabbits on *Calluna* heaths causes them to degenerate into grass heaths. On Cavenham Heath in the Suffolk Breckland, for example, the resulting plant life became dominated by Sheep's Fescue (*Festuca ovina*) and Common Bent (*Agrostis vulgaris*). Although rabbits preferred eating the grasses rather than the heather, the former seemed better able to survive biotic attack than the latter in the face of sustained grazing.

⁵⁰⁷ Blomefield, F., An Essay Towards a Topographical History of the County of Norfolk Vol. V, (London, 1806), p.116

⁵⁰⁸ Bailey, M, A Marginal Economy?: East Anglian Breckland in the Later Middle Ages (Cambridge, 1989) p.252

⁵⁰⁹ Bailey, M., "The Rabbit and the Medieval East Anglian Economy" Agricultural History Review **36** (1988) pp.5-6

⁵¹⁰ Armstrong, M., The History and Antiquities of the County of Norfolk (Norwich, 1781) p.34; Bailey, A Marginal Economy? p.297

⁵¹¹ Bailey, The Rabbit p.11

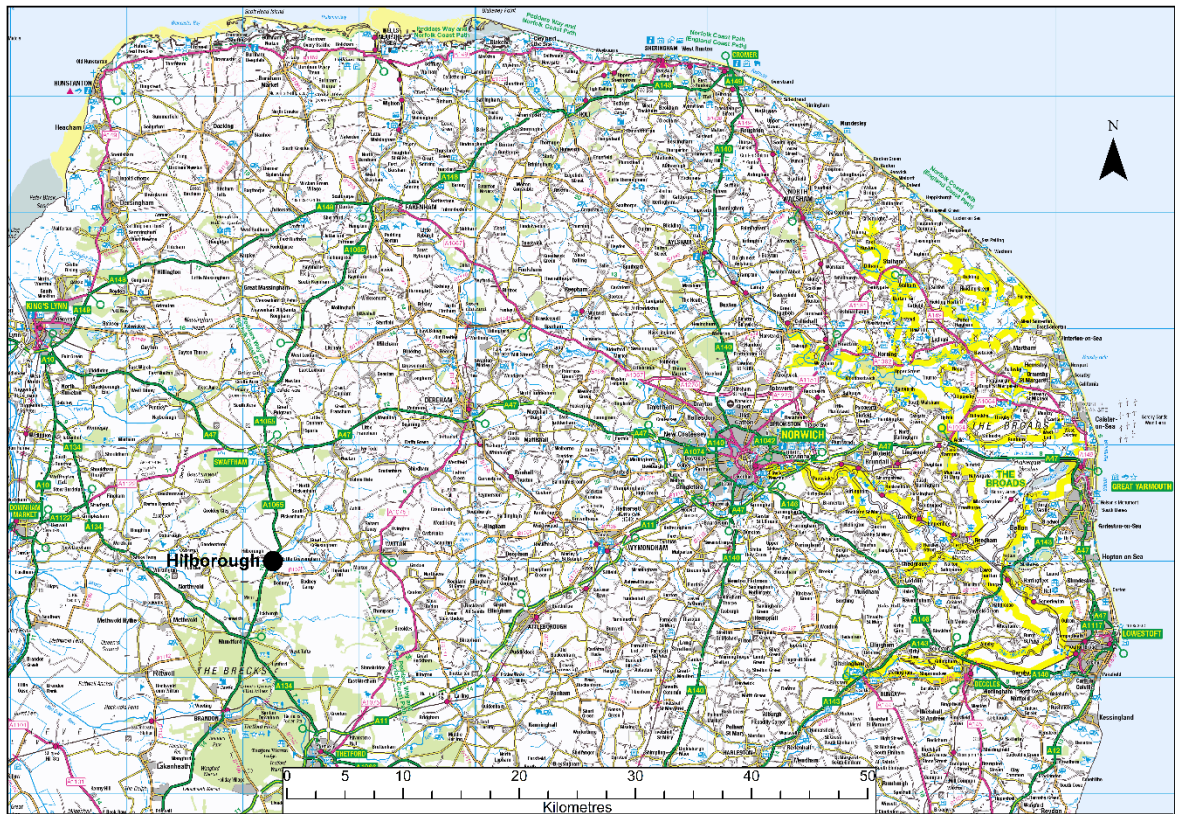


Figure 5.8. A map showing the location of Hilborough in Norfolk, overlaid on to a modern 1:250,000 Ordnance Survey map.

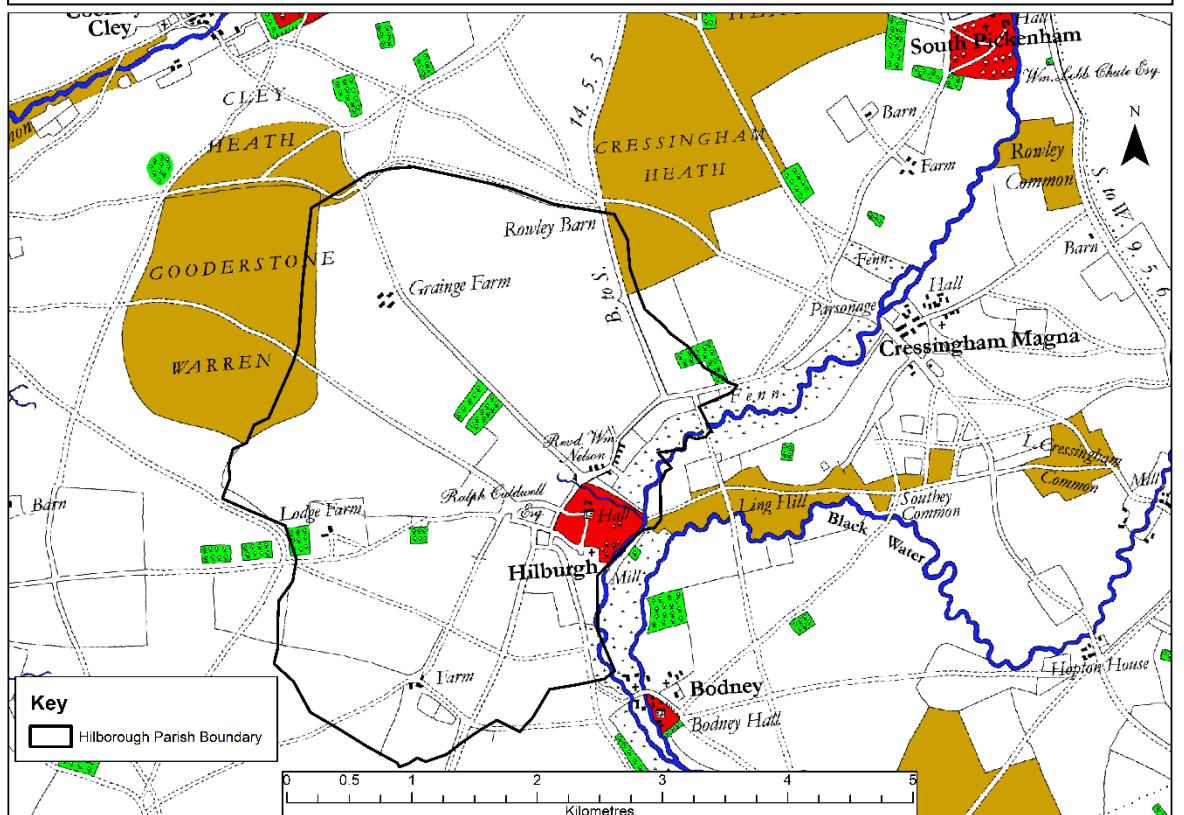


Figure 5.9. A map showing the parish of Hilborough in Norfolk as it appears on Faden's map of that county, published 1797, and digitally redrawn by Andrew Macnair.

He observed that as the branches of the *Calluna* bushes were stripped back by grazing rabbits, the previously subordinate layer of lichens was able to dominate and eventually smother the weakened heather plants.⁵¹² This layer was formed mostly of mosses of the *Cladoniaceae* family: *Cladonia diversa* (formerly *C. coccifera*), *Cladonia cervicornis*, and *Cladonia foliacea* (formerly *C. alcicornis*); as well as the bryophytes Large White-moss (*Leucobryum glaucum*), Red-stemmed Feather-moss (*Pleurozium schreberi* formerly *Hypnum schreberi*), and Broom Fork-moss (*Dicranum scoparium*).⁵¹³ The *Cladonia* especially seemed to thrive amongst the stripped-down branches and grew densely, causing a great deal of water retention. Under these conditions the *Calluna* branches rotted and broke off at the surface. Below ground the roots were protected and survived for some time, but fresh shoots were nibbled down by the rabbits and the roots, too, eventually died. Where the rabbits were removed before the roots had decayed, however, the heather regrew.

In the areas of Cavenham Heath without rabbits, Farrow remarked, the grass species were secondary to the heather, the latter growing taller and being more gregarious. In the absence of heather due to rabbit grazing, though, the grass encountered little competition for space or resources. Although rabbits preferred the grass species, eating them down 'very closely to the surface of the soil', they survived where the heather did not. Without dense branch structures the grasses were less susceptible to smothering by the *Cladonia* or associated mosses and bryophytes, so new shoots were still able to sprout, unopposed by the heather. The roots remained active, and the species spread. Conversely, by erecting rabbit-proof fences around areas of heather plants damaged, but not destroyed, by grazing, Pickworth Farrow showed that the heather was once more able to dominate the *Cladonia* attempting to smother it, causing it to degenerate back into a subordinate layer.⁵¹⁴ Having not been removed entirely, the heather also maintained dominance over the grasses. Where the *Calluna* roots had perished, however, the plant would need to regrow from buried seed beds or recolonise from elsewhere.

At Hilborough, then, the habitat within the warren is likely to have been short-cropped grass heath with a sub layer of lichens and mosses, as opposed to being dominated by heather. Considering the probably high number of rabbits kept there, especially by the

⁵¹² Pickworth-Farrow, E., *Plant Life on East Anglian Heaths* (Cambridge, 1925), pp.21-22

⁵¹³ Dobson, F., *Lichens: An Illustrated Guide to the British and Irish Species* 5th ed., (Aberystwyth, 2005), pp.129, 134, 138; Smith, A., *The Moss Flora of Britain and Ireland* 2nd ed., (Cambridge, 2004), pp.204, 239-40, 924-25, 950, 955, 957

⁵¹⁴ Pickworth Farrow, *Plant Life* pp.22, 28

late 15th century, though, overgrazing might have stripped areas of all plant life completely. As most of the parish lay over Worlington soils, the resultant landscape could have become barren sand vulnerable to erosion by strong winds – a not uncommon occurrence in Breckland more generally. Thomas Wright wrote in 1668, for example, of a 'sand flood' that erupted out of Lakenheath Warren, covering some 1,000 acres in sand by the time it had travelled four miles, and eventually blocking a tributary of the river Ouse.⁵¹⁵ A century earlier, in c.1550, the population of Freckenham, Suffolk resolved to destroy all their rabbits and their burrows to avoid further soil erosion.⁵¹⁶ No evidence exists to suggest a complete stripping of the flora from Hilborough Warren, but patches of barren ground, caused by over grazing by rabbits, amongst a short grass sward appear likely.

Indeed, the grasses of the warren alone were evidently not sufficient to sustain its occupants at all times, and crops were planted on at least two occasions to compensate for a lack of naturally-occurring fodder. Two manorial documents show that in 1376, and again a year later, six acres of oats were planted 'in the warren to sustain the rabbits there' and furze was sown to do the same.⁵¹⁷ The ecological character of the warren must, therefore, be expanded to include limited crops of oats and some deliberately introduced areas of gorse, at least at points in the late 14th century. Evidence for the practice of planting crops for the rabbits within a warren seems common in England generally, but less so in East Anglia. There, importing food from more productive arable areas was a more widespread practice. Sheail, for example, wrote that 'many keepers were forced to import food during the early spring when breeding commenced. On one Breckland warren, 12-15 tons of turnips were brought to the warren each week between mid February and late April'.⁵¹⁸ He also wrote of a 'convertible system' practised in the 17th century elsewhere in the country, as at Withcall in Lincolnshire, where the warren was subdivided and the rabbits excluded from certain parts which were then cultivated.⁵¹⁹ Though he wrote that such a system 'was not practised' in Norfolk, it is unclear how any crop of oats or furze could have been grown inside the warren at Hilborough without a scheme of temporary enclosure and exclusion of this sort.

Elsewhere on Hilborough Heath, the grazing of sheep (outside the warren) is

⁵¹⁵ Wright, T., "A Curious and Exact Relation of a Sand-Floud, Which Hath Lately Overwhelmed a Great Tract of Land in the County of Suffolk" *Philosophical Transactions (1665-1678)* 3 (1668), pp.722-25

⁵¹⁶ Sheail, *Rabbits and their History* p.55

⁵¹⁷ Bailey, *A Marginal Economy?* p.254

⁵¹⁸ Sheail, *Rabbits and their History* p.49

⁵¹⁹ *Ibid.*

evident from at least the 14th century. In October 1311, for example, one William Ferthing of Hilborough was amerced ('fined') in the manorial court for 'leaving his hogs in the common heath at night'.⁵²⁰ A 'hogg' here refers not to a pig but to a young sheep, usually under 18 months old. Also evident is direct manorial control of the foldcourse there from at least 1374. In that year one William Michel rented grazing land up to the 2nd February 'and not beyond because afterwards those sheep were placed in the lord's fold'.⁵²¹ The impact of intensive, albeit seasonal, grazing of the heath by the manorial sheepfold is likely to have periodically damaged the heathland sward there not already damaged by the rabbits. Some older plants, less able to regenerate afterwards, might well have been destroyed due to the intensity of grazing. These effects would also have intensified over time as the number of sheep in the manorial flock rose rapidly between c.1400 and 1420. During that time the decennial average of demesne sheep at Michaelmas (29th September) increased from 5 to 441 in the decade 1400-9, and sharply to 1,163 in 1410-19.⁵²²

According to Pickworth Farrow the effects of this increase on the habitat of the heath were probably similar to those of rabbit grazing. If heather was naturally occurring then sustained grazing by sheep would, likewise, have caused it to decline and be overtaken by grasses.⁵²³ Unlike under rabbit grazing, though, research undertaken in Breckland suggests the resultant grass sward would probably be longer with a greater diversity of species, though this is dependent on stocking density.⁵²⁴ Whereas part of the heath had, prior to the early 15th century, been protected from intense grazing (i.e. those parts outside the warren), the number and density of any population of heather or other shrubs surviving there by that time would likely have been severely damaged by intensified grazing by the sheepfold.

The expansion of grazing populations at Hilborough, first of the rabbits within the warren and then in the sheepfold outside it, suggest a degree of instability, of discontinuity, in heathland character and management during the post-medieval period. The intensity of use increased, so the composition and biodiversity of flora present probably changed, and on two occasions were deliberately altered by the planting of crops for the rabbits. This pattern of alteration and fluctuation, caused by the shifting desires and priorities of rights-

⁵²⁰ Bailey, *A Marginal Economy?* p.90

⁵²¹ *Ibid.* p.78

⁵²² *Ibid.* p.246

⁵²³ Pickworth Farrow, *Plant Life* p.89

⁵²⁴ Dolman, P. and Sutherland, W., "The Ecological Changes of Breckland Grass Heaths and the Consequences of Management" *Journal of Applied Ecology* **29** (1992), p.410

holders, continued at least into the 17th century. At that time, surviving documents reveal that a significant part of the heath was subject to a major conversion in land use.

Documents also survive describing both the size of the heath (very little of it having survived in the modern landscape) and the numerous pressures exerted upon its resources by the manorial lord and his tenants.

These documents were attached to a legal agreement of 1635 concerning rights of common which survives in its entirety. It concerns the disannulment of the existing warren and the division of common land between the use of the tenants and of the manorial lord. Within it is reference to a survey of 1627, in which 1,312 acres of the total 3,017 acres in the manor (or 44% of the total) was 'Heath or Warren'.⁵²⁵ A further 17a constituted three small commons. Of the remainder, 1,113a were the holdings of the tenants, and 574a the demesne of the lord. Using this information, and by mapping late-enclosed field boundaries visible on the tithe map of 1845, figures 5.10 and 5.11 highlight an area almost identical in size to the total of 'heath or warren' defined in 1627.⁵²⁶

Late-enclosed fields were identified by the characteristic straight-lined, rectilinear forms created by parliamentary enclosure, an act for which was passed for Hilborough in 1769.⁵²⁷ The mapped area also encompasses the likely location of the former rabbit warren lodge marked as 'Lodge Farm' on Faden's map. This area is contiguous with heaths and warrens on common ground to both the east and west, and corresponds with the pattern, visible on the map, of nearby common land generally coinciding with areas of Worlington association soils. In the agreement, lands in the heath were approached as three distinct entities - the tenants' share of warren or heath, the lord's share of warren or heath, and the outfields. These will be discussed in turn, followed by other provisions mentioned in the agreement.

⁵²⁵ NRO HIL 31/1/1

⁵²⁶ NRO DN/TA 865

⁵²⁷ Tate, W., A Domesday of English Enclosure Acts and Awards (Reading, 1978) p.178; Williamson, The Transformation of Rural England p.9; Yelling, J., Common Field and Enclosure in England 1450-1850 (London, 1977) p.131

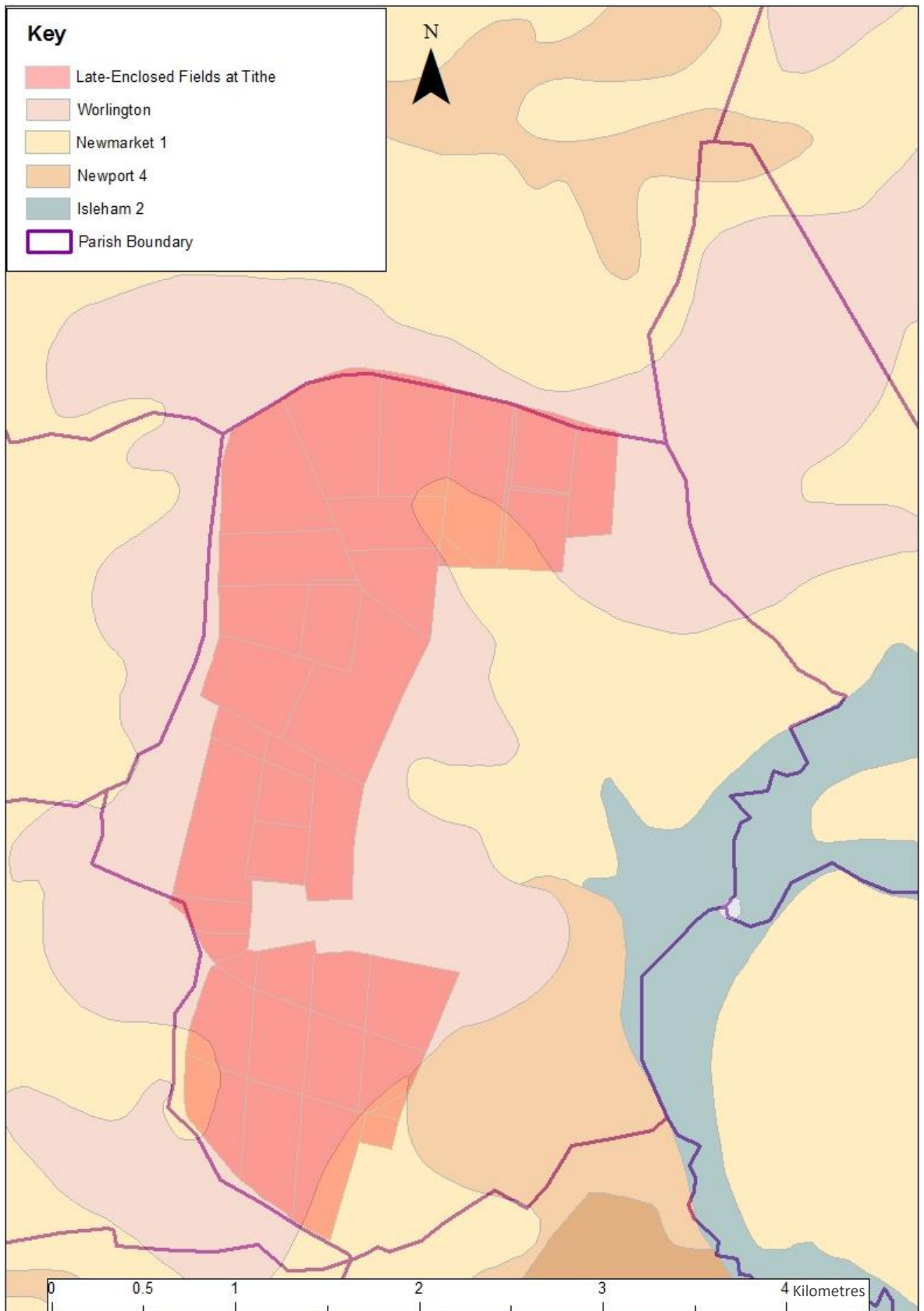


Figure 5.10. A map showing fields exhibiting post-1600 enclosure patterns visible on the 1845 Tithe map of Hilborough, Norfolk. Overlaid onto the association level National Soil Map.

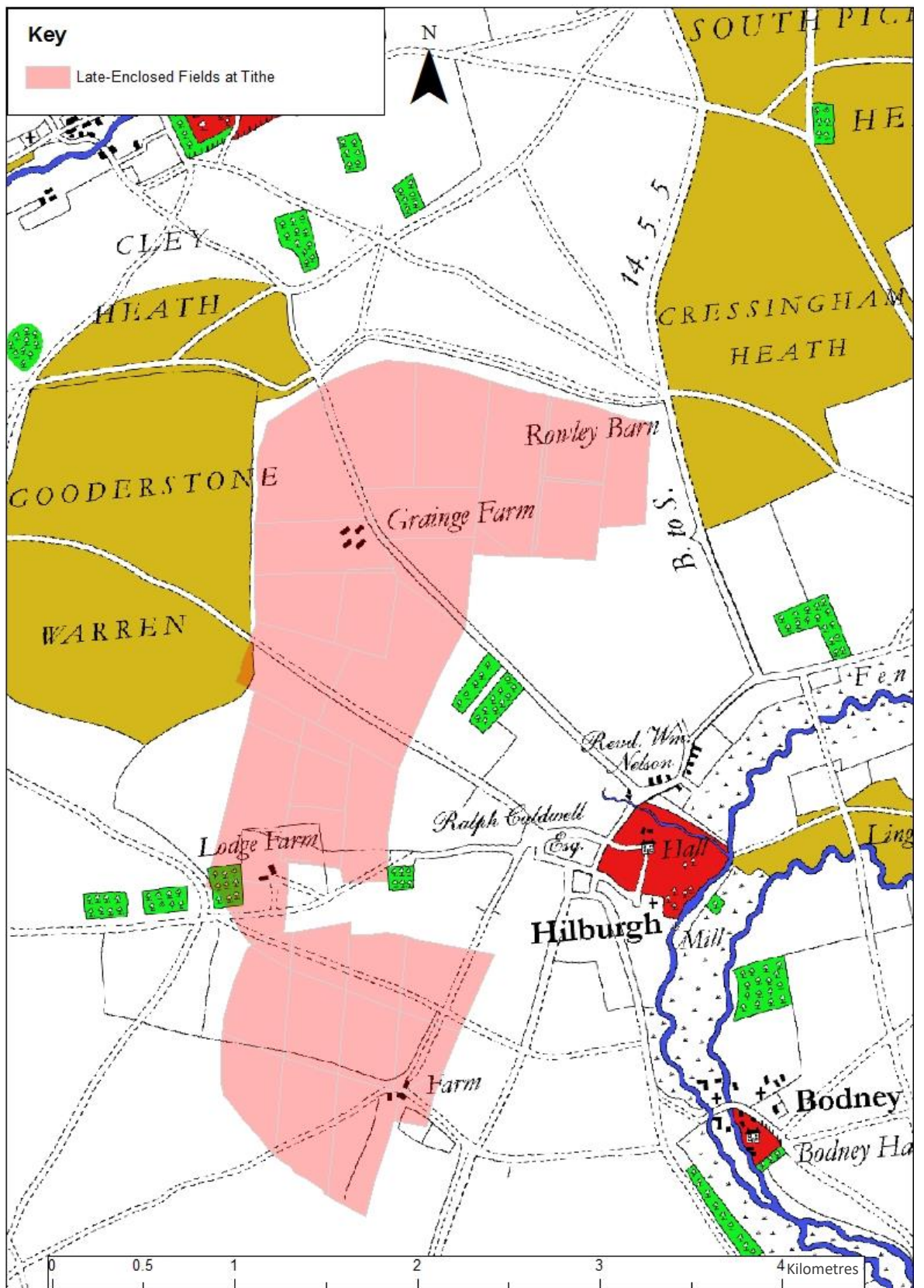


Figure 5.11. A map showing fields exhibiting post-1600 enclosure patterns visible on the 1845 Tithe map of Hilborough, Norfolk. Overlaid onto Faden's map of Norfolk, published in 1797, digitally redrawn by Andrew Macnair.

The tenants' share

For the tenants an area of warren or heath measuring 400 acres was allotted as summer pasture for their 'great cattle' at a rate of five score to every hundred acres, or one beast to an acre. The term 'great cattle' is unspecific and can refer to either cows, horses or oxen, though the predominance of the former two seems likely. Although an ox can pull a heavier load than a horse, the latter is better able to maintain speed over light soils. Bailey states that small plough horses, referred to by the general terms of 'stott' or 'affer', were more commonly used in East Anglian plough teams, and that at Hilborough the ox was almost entirely absent.⁵²⁸ The three small commons were also given over for the tenants' grazing. A stocking density of one horse or cow per acre of heath would have resulted in intense grazing, though these were not the only lands available for their grazing all year round.

The lord's share

The remaining 912 acres of warren or heath was allotted to the lord. Notably, the lord was required, by the terms of the agreement, to ensure his lands were 'fairly and yearly plowed broken up and laid in Shifts'.⁵²⁹ This form of cultivation, more commonly known today as a 'Breck' rather than a 'Shift' (literally meaning 'divide' or 'division'), was temporary in nature and well established by the 17th century.⁵³⁰ The Elizabethan manorial lord of West Rudham in Norfolk, for example, explained the practice and wrote how parts of his manor had 'been divided into several shifts or parts of which some have been used yearly and every year and in course have been sown with corn, and some yearly left fallow'.⁵³¹

A yearly cycle of ground disturbance at Hilborough would have prompted a continuous state of shoot regrowth, and likely changed the composition of the sward. Dolman and Sutherland have shown that regularly rotovated patches of grass heath contain far fewer caespitose grasses, such as Sheep's Fescue and Common Bent already mentioned, instead being characterised by lichens and perennial hemicryptophyte herbs such as the

⁵²⁸ Bailey, *A Marginal Economy*, p.94; Langdon, J., *Horses, Oxen and Technological Innovation* (Cambridge, 1986), pp.294,296

⁵²⁹ NRO HIL 31/1/1

⁵³⁰ Fisher, *A Medieval Farming Glossary* p.39; Williamson, T., *Shaping Medieval Landscapes: Settlement, Society, Environment* (Macclesfield, 2003) p.80

⁵³¹ Allison, "The Sheep-Corn Husbandry of Norfolk" p.20

Bugle (*Ajuga reptans*).⁵³²

The lord also agreed that he 'after the End and Expiration of the Term of six years ... next Ensuing [could] not sow or cause to be sown with corn in any one year above the Number of Three Hundred acres' – or one third.⁵³³ The fact that the inclusion of this clause was felt necessary suggests that, without it, the lord would have sown far more of his share annually than the agreement allowed for. In turn, this likely explains why the manorial lord entered into the agreement in the first place – to gain more of the heath to cultivate, free of common grazing while under crop.

Manorial 'wastes' were the property of the manorial lord, but law dictated that common rights held on them could not be infringed upon without facing legal consequences. By entering into this agreement, the lord likely sought to benefit financially from heathland he owned but which he could not otherwise cultivate. Like Coke at Holkham, discussed in the previous chapter, increased profits for the landowner were likely the incentive behind 'improvement' on Hilborough heath, to use a later term. Conversely, the capability to alter land use on the heath also rested with him – his tenants could not have changed the customary use of the heath without his consent, especially considering his overriding right of foldcourse, discussed on the following pages.

In practical terms, during the first six years after the agreement, it seems likely that all his 912a of allotted heath would have been dominated by grain crops, rather than by any types of grass or shrub, as he sought to capitalise on his new acquisition. Every year subsequently, one third of that area would have been similarly stripped of 'heathland' vegetation and planted with grain, while the remainder was only ploughed and then allowed to regrow.

The outfields

Outfields, as opposed to permanently-cultivated 'infields', were addressed separately in the agreement to 'shifts' on the newly-allotted heath and warren lands. The outfield system subsequently explained was, however, very similar, if not identical, to the shift system. Allison, indeed, implies that the term was a 'catch-all' phrase used to describe previous 'waste' land cultivated on a long rotation, while Postgate describes them simply as

⁵³² Dolman and Sutherland, "The Ecological Changes of Breckland" p.409; Hubbard, C., Grasses: A Guide to their Structure, Identification, Uses and Distribution in the British Isles (Reading, 1984), pp.129,299; Huggett, R., Fundamentals of Biogeography (Abingdon, 2004) p.78

⁵³³ NRO HIL 31/1/1

longstanding shifts.⁵³⁴ In Hilborough the 626a of outfield likely represent an earlier stage of expanding temporary agriculture on the heath, to which the newly-allotted lands were being added. By the terms of the agreement, the tenants were required to 'yearly to plow and break up their Outfield Lands into Shifts at Christmas or Candlemas in every year and to Take only two Crops Successively and then to keep such Shift unsown for Two Years'.⁵³⁵ Candlemas, mentioned here, falls on the 2nd February in the Christian calendar.

In a 'three course' system, as found elsewhere in Breckland during the post-medieval period (for example at Lakenheath in 1774), this form of outfield management would mirror the lord's ability to only cultivate one third of his new shifts in a single year.⁵³⁶ If two crops were taken from the first group in the first year, then the same taken from the second and third groups in subsequent years, by the fourth year the first group will have lain fallow for two consecutive years. The ploughing, or disturbance, of the whole outfield, though, took place every year whether those lands were then sown with crops or not, again resulting in a continuous, annual state of shoot regrowth.

Other provisions: grazing

The growth of those shoots, however, would have been checked by animals grazed in 'shack'. This was the act of common grazing over arable strips, including those in the outfields, which had either been left fallow or after any crop had been taken off – but only during the winter months. Marginalia on the document declare this period to span from Michaelmas (29th September) to the Feast of the Annunciation of the Blessed Virgin Mary, or 'Lady Day' (25th March). During this time the tenants' 400 great cattle had access to all aforementioned lands not under crop – that is to say, two-thirds of all the outfield and the same of the lord's new heathland shifts (not during the first 6 years in which his area of cultivation by shift was unlimited). As a result, the stubble left over from crops, as well as the shoots of any heather or grasses growing between them, would have been grazed back during the winter.

More important to the manorial lord, however, was his right of sheepfold for a flock which, in 1627, numbered 1,320 head. Indeed, in a manor for the most part overlying sandy Worlington soils the fertiliser they produced was essential to the continued cultivation of infield, outfield, and shifts alike. The importance of the sheep is evident

⁵³⁴ Allison, "The Sheep-Corn Husbandry of Norfolk" p.28; Postgate, "The Field Systems of Breckland" p.90

⁵³⁵ NRO HIL 31/1/1

⁵³⁶ Postgate, "The Field Systems of Breckland" pp.85,89

from the wording of a passage in the agreement meant to ensure their protection and pre-eminence. It reads:

Provided always that this Agreement or any part thereof or any Matter or thing therein contained Shall not in any wise be Prejudicial or Hurtful to the Lords Sheeppcourses within Hilborowe al[ia]s Hilborworth aforesaid But that the said Sheeppcourses with their due Number of Sheep shall and may be kept and Take their Feed as well upon the said Lands when they shall lye Fallow and unsown as upon all other Lands within the said Lordship in such course as hath been heretofore used and accustomed.⁵³⁷

The density of grazing by either great cattle or sheep is difficult to ascertain but by accounting for those remaining lands in the manor not mentioned in the agreement an approximate ratio between number of livestock and area can be achieved.

The management, number, or area of the ‘infields’ mentioned in the 1627 survey was not touched upon in the 1635 agreement. The total area of the manor not allotted as common or breck, or mentioned as outfield, though, comes to roughly 1,062a. A later parish summary produced for the House of Lords prior to parliamentary enclosure in 1769 detailed how the, not dissimilar, 1,034a of infield were used at that time.⁵³⁸ Of those, 186a were said to be ‘half year closes’, 237a ‘whole year closes’, 30a ‘lammas meadows’, and 581a simply ‘infields’.

Half year closes appear to have been piecemeal-enclosed areas of open field.⁵³⁹ An open field system is one in which tenants had a right to farm various strips of arable land, scattered within a wider field of dozens of strips. These were usually divided only by shallow furrows or low banks without hedges or fences between them, therefore the field would appear ‘open’. As a practical necessity for ploughing, all strips were required to be ploughed and planted with the same crop at the same time every year. In some circumstances, though, those strips could be exchanged or sold between tenants. Where a tenant had amassed ownership of several contiguous strips together they could, in systems such as that employed at Hilborough, enclose them ‘piecemeal’ and gain a degree of economic independence with regards to land use. They do not, however, seem to have

⁵³⁷ NRO HIL 31/1/1

⁵³⁸ NRO HIL 3/31/4, 879X2; NRO HIL 3/336/1-10, 883X7

⁵³⁹ Allison, “The Sheep-Corn Husbandry of Norfolk” p.26

been excused from the grazing of the foldcourse. Whole year closes, or 'long-standing enclosures', on the other hand, were specifically exempted from it. The 30a of Lammas Meadow were open to grazing from Lammas Day (1st August) until Candlemas (2nd February) for both the tenants' great cattle and the lord's foldcourse.

Assuming the management of infields had changed little between the date of the agreement and that of the summary, during winter shack in a typical year post-1635 the tenants' great cattle could graze upon 608a of the lord's 912a, as well as (assuming a three-group system) 417a of the outfields, 30a of Lammas meadows, and all 420a of commons. The average grazing density, therefore, would have been 1 great cattle per 3.7 acres. This does not include any great cattle owned by the manor, rather than the tenants, which were alluded to in the notes of the agreement but not numbered. At the same time, the foldcourse of 1,320 sheep could graze upon all of the same lands, plus 186a of half year closes, and (assuming a three-field system with only one open field ploughed in a year) 387a of infield not excluded as 'whole-year closes' under crop. This gives a density of 1 sheep per 1.6 acres. Stocking intensity guidelines for grazing heathland published online by Natural England in 2011 recommended 1 cow per 4.94-19.77 acres, depending on the productivity of the soil, 1 pony per 12.35-29.65 acres, or 1 ewe per 0.49-4.94 acres. As the Natural England guidelines were designed to ensure the survival of all flora present, the densities of 17th-century Hilborough would likely have resulted in very low, heavily grazed vegetation, dominated more by grasses than by heather, probably with some patches of bare ground.

Other provisions: fuel

Over and above the ecological impacts of annual ploughing and grazing on the heath, the gathering of fuel by tenants would have targeted many of the same elements of ground flora as cattle and sheep. The agreement allowed them to 'Take Hawme [later 'haume'] ... upon any of the said Lands after the Crop Taken off for their Convenient and necessary Firing'.⁵⁴⁰ The term 'haulm' has escaped most modern East Anglian dialect dictionaries except one which defines it as synonymous with Old English '*halm*' or '*healm*', meaning 'stubble'.⁵⁴¹ Numerous dictionaries of Old English support this claim – all agreeing upon a

⁵⁴⁰ NRO HIL 31/1/1

⁵⁴¹ Fisher, A Medieval Farming Glossary pp.21-22

reference to stubble left over from harvested crops, rather than to heather or gorse.⁵⁴² With a likely scarcity of ‘heathland’ shrubs due to intensive grazing and yearly ploughing, it would seem the tenants' firing was sourced from those remains of arable crops not eaten either by the great cattle or the sheep.

Hilborough case study: conclusions

Between the 14th and 17th centuries the heath at Hilborough was in a gradually (and, upon the disannulment of the warren, almost instantly) evolving state of flux. In the space of 300 years the population of rabbits, and the associated damage to flora, rose and fell; the sheepfold increased in number by a huge margin; and the area of heath and old warren under temporary cultivation (and annual disturbance) more than doubled. A reliance, and strong manorial interest, in the keeping of large numbers of sheep in a post-medieval Breckland manor such as Hilborough, described in these documents, is not surprising. The effect of their grazing alongside other pressures – including rabbit grazing, fuel gathering and the yearly ploughing of shifts – however, supports a greater consideration for the forms of ground disturbance and bare ground creation on similar Breckland heaths which Robertson, Hawkes, Dolman, and others have begun to introduce and discuss.⁵⁴³

It also calls into question a reliance on heather in heathland management and recreation throughout other parts of Breckland where similar pressures might well have been exerted in the past. Indeed, at Hilborough the heather-damaging effects of over-grazing, first by rabbits and then by great cattle and under the foldcourse – as well as the impact of sustained yearly disturbance – may well have persisted to the present day. Natural England’s citation for what little of the heath that survives, currently a Site of Special Scientific Interest (SSSI) categorised as ‘surviving lowland heathland’, makes no mention of either heather or gorse growing on the site. Instead, it lists only short-turf chalk grassland dominated by Red Fescue (*Festuca rubra*), Sweet Vernal Grass (*Anthoxanthum odoratum*), and Yorkshire Fog (*Holcus lanatus*).

From the surviving evidence for management at Hilborough, then, it was most likely a grass heath, rather than a *Calluna* heath, with significant areas of bare ground. This model was, however, variable depending on which historical model is chosen, either before

⁵⁴² Bosworth and Toller, An Anglo-Saxon Dictionary p.519; Clark Hall, J. and Meritt, H., A Concise Anglo-Saxon Dictionary 4th ed. (Cambridge, 1962) p.173; Jember, G., English-Old English, Old English-English Dictionary (Boulder, 1975), p.127 ('straw'); Sweet, H., The Student's Dictionary of Anglo-Saxon (Oxford, 1963) p.84

⁵⁴³ Dolman *et al*, “The biodiversity audit approach” p.991; Robertson and Hawkes, “Nature Conservation” p.6

the warren was disannulled, after then but before the agreement of 1635 was in place, or after that before enclosure by parliamentary act in 1769. This is a good example of an evolution in management on a single heath over time. If Hilborough Heath were to be restored today, based on a historical model, the question would have to be asked: which one?

Results from a second documentary case study, in this instance from the Suffolk Breckland, make for a worthwhile comparison between the probable landscape character of Hilborough Heath in the 17th and 18th centuries and elsewhere in Breckland in the same period, also managed to maintain a foldcourse, but which created a noticeably different landscape.

Icklingham, Suffolk: a second case study

Management in the 17th and early-18th centuries

The heaths of Icklingham were selected as the subjects of a second case study, in greater part because of the quantity of evidence which survives detailing their management. This evidence was found during a search of the catalogue of the Suffolk Archives. That search provided no other manors where a comparable amount of documentary evidence, specifically relating to the management of heathland, had survived. This area was also chosen because the management techniques adopted on Icklingham heaths, by the near contemporaries of the inhabitants of Hilborough, already mentioned, likely produced heathland landscapes very different in character to those discussed in the first case study.

A similar importance was attached to the maintenance and preservation of the lord's sheepfold in both manors, as might be expected on Breckland heaths. The management of other pressures on Icklingham's heathland flora, however, created a landscape largely, and very deliberately, devoid of bare ground or short-cropped grasses such as those probably found at Hilborough – the manorial lord instead preferring the dominance of shrubs. Figure 5.12 shows the location of Icklingham in Suffolk, while figure 5.13 shows the area as it appears on Hodskinsons' map of that county, published in 1783.

Historically divided into two parishes and numerous manors, at this time all under the ownership of the same lord, Icklingham St. James and Icklingham All Saints stand on the north bank of the river Lark, with their boundaries stretching north into that area of Breckland drawn by Hodkinson without borders or commons. The majority of both lie on

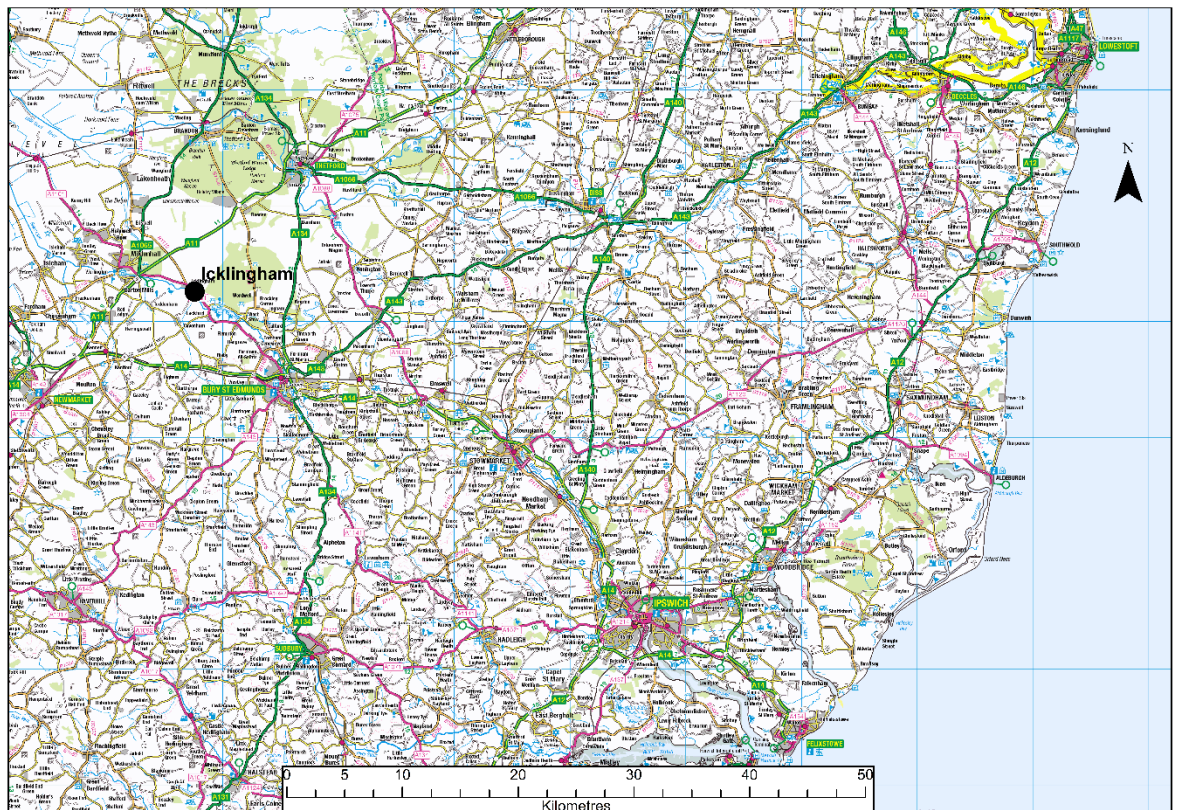


Figure 5.12. A map showing the location of Icklingham in Suffolk, overlaid on to a modern 1:250,000 Ordnance Survey map.

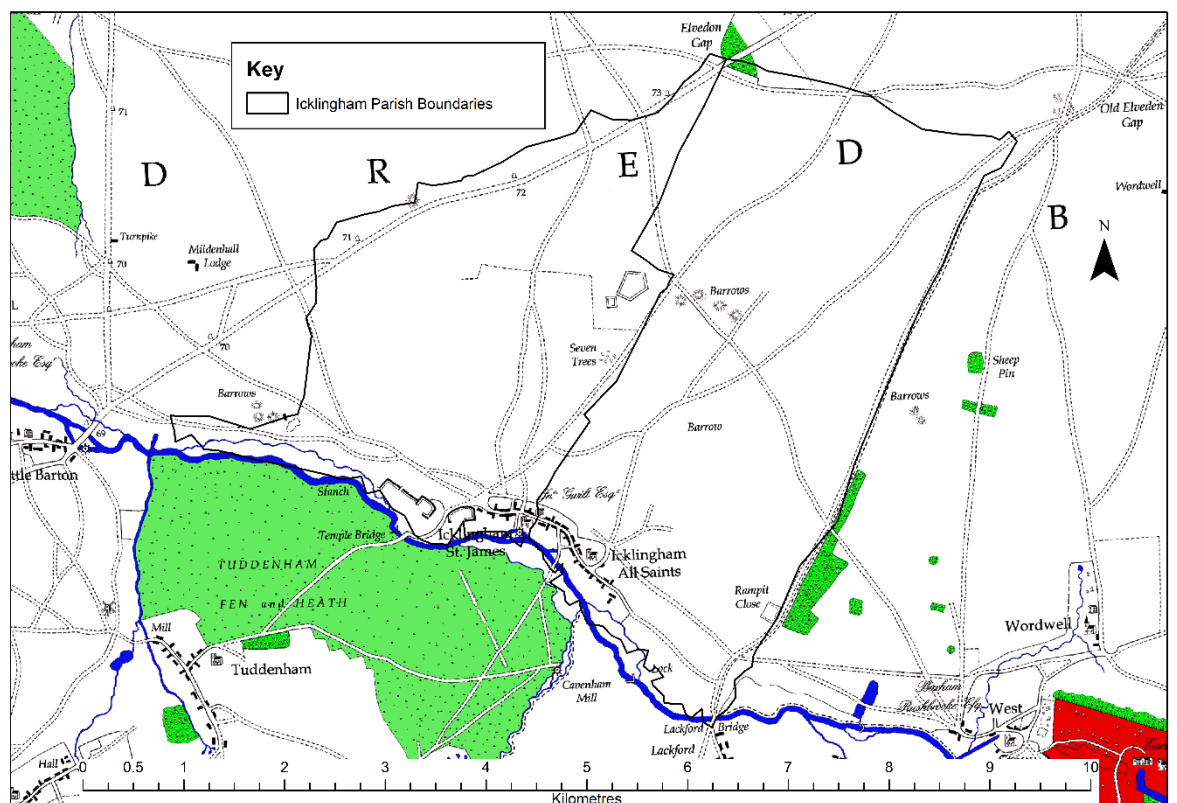


Figure 5.13. A map of the parishes of Icklingham St. James and Icklingham All Saints as drawn on Hodkinson's map of Suffolk, published 1783, and digitally redrawn by Andrew Macnair.

the same Worlington association soils as at Hilborough, with some deep, sandy Methwold and Newport 4 association soils in the south, close to the river and the conjoined settlements. Management on most of the several heaths there in the 17th and early 18th centuries, illustrated both in the legal documents mentioned and elsewhere, was concerned with the maintenance of dwarf shrubs including heather but, more importantly, gorse.

The cutting of fuel

The tenants' gathering of limited amounts of both heather and gorse for fuel, for example, was allowed only if it was used within the manor and was not permitted to be sold. Thus, in 1644 one man was amerced 3d. at the manorial court for 'Cutting takeing & Carrying away Ling growing upon the Com[m]on heathes of [th]e said town' without a right to do so, and two more were fined the same for selling heather cut from the heath 'ag[ains]t the Customs of [th]e said towne & Contrary to an order & bye Law for [tha]t p[ur]pose'.⁵⁴⁴ These laws were probably introduced, and enforced, to stop the destruction of heather and gorse stands on the heaths which might have occurred should commoners be permitted to profit from doing so.

Indeed, frequent courts regulated how much fuel each of those tenants who were commoners could take in any one year, specifically to 'preserve' the resources which could otherwise be depleted. A manorial court held in 1654, for example, ordered '[tha]t it should be Lawfull for ev[er]y Com[m]oning house of [th]e towne of Icklingham to have 3 Loads of Linge & j load of ffurzes to be taken in March ... & it was then further agreed that noe p[er]son should sell any part of his part of Linge or ffurzes on paine to forfeite to the Lord x s.'. ⁵⁴⁵ The scribe at the time intermixed the use of Arabic and Roman numerals, but the phrase 'j load' should be read as 'one load' while the fine to be forfeited was for ten shillings. Court minutes also make it clear that destroying the root beds of ling or gorse plants was unlawful, except on certain heaths or parts of heaths. Thus the court held in 1652 ruled that 'noe man should Stubb w[i]th any Mattocks or otherwise but where it had then bene used' on pain of paying ten shillings.⁵⁴⁶ The word 'stubb', used here, means 'to dig up by the roots' and is generally considered synonymous with the modern phrase 'grub up'.⁵⁴⁷

Furthermore, entries from courts held throughout later 17th and first decade of the

⁵⁴⁴ SROB E3/10/9.19

⁵⁴⁵ *Ibid.*

⁵⁴⁶ *Ibid.*

⁵⁴⁷ Fisher, A Medieval Farming Glossary p.42

18th centuries make it clear that common rights to gorse for fuel were dependent on the health of those plants growing on the heaths.⁵⁴⁸ One particular entry proclaims that extended periods of misuse or otherwise weakening of the gorse population would be met with a full suspension of rights to gather it until such time as the plants had recovered. Minutes from the court held in 1662 stated that:

it was then ord[er]ed & agreed w[i]th the Consent of [th]e Lord [tha]t noe p[er]son or p[er]sons whosoever should w[i]thin [th]e terme of 3 yeares then next ensuing Cutt or Stubb any of the ffurzes upon any of [th]e heathes belonging to the towne of Icklingham Except in a c[er]teine place called wranepitt where it should be Lawfull for any poor man to Cutt or Stubb ffurzes and Carry them home by bunches und[er] the penalty of x s. ... att the same Court it was ord[er]ed & agreed [tha]t upon [th]e 10th day of March after the ende of 3 yeares it should be Lawfull for ev[er]y In[ha]bitant w[i]thin the said towne being Com[m]oners to Cutt upon any of the heathes in [th]e said towne w[i]th stake & hatchet (except upon [th]e peake heath where they are to stubb w[i]th Mattocks) onely one dayes worke of j man & noe more und[er] [th]e penalty of x s..⁵⁴⁹

Declarations from ensuing courts restated a right to only one load of gorse and either three or four loads of heather per commoning household. The only regular exceptions were granted on Wrampit heath – under numerous spellings – where the gathering of ling, furze, or even stubbing up turves, as in East Harling (here called ‘flags’), was permitted for the poor’s firing.⁵⁵⁰ As a result that heath would likely have appeared more barren than others in Icklingham which were subject to stricter rules.

In order to avoid more heaths being over-used for the gathering of fuel, courts held in the later decades of the 17th century showed a visible trend of harshness towards indiscretions, and a greater emphasis on who in the manors was not permitted to cut fuel, rather than only stating who was. In 1675, for example, four people were fined for over-cutting, most of them only by a single load, and it was ordered that ‘noe und[er]sitters should have or take any ffurzes of the heathes’ once more on pain of paying ten

⁵⁴⁸ SROB E3/10/9.19

⁵⁴⁹ *Ibid.*

⁵⁵⁰ Coles, An English Dictionary section FL

shillings.⁵⁵¹ The word ‘undersitter’ here is equivalent to the modern term ‘subtenant’.⁵⁵² In 1695, too, it was ordered that ‘noe p[er]son or In[ha]bitant liveing in a Cottage should Cutt any furzes or Ling w[i]thout the Consent of the towne’ while minutes from courts held a year later, and again in 1698, repeated the order in almost exactly the same terms.⁵⁵³ Cottages, as opposed to tenements, were usually erected for the habitation of ‘poor impotent Persons’ and, by law, ‘Cottagers of new erected Cottages within the Memory of Man, ought not to have Common in the Lord’s Waste’.⁵⁵⁴ The wording of these minutes would suggest that this law was not being universally observed.

Clearly the issue persisted as a 1708 court expanded the detail of the order – stating comprehensively that ‘noe p[er]son liveinge in any Cottage should Cutt any ffurzes or Linge or take any benefitt of any of the Com[m]ons by keeping of any Cattle’.⁵⁵⁵ This would suggest that, like the cutting of fuel, cottagers had begun attempting to claim grazing rights. By extension, though, true commoners must have possessed some grazing rights in the manor, though this was the only time such rights were mentioned in court documents relating to Icklingham’s heaths between 1644 and 1708. In all of those documents, though, emphasis was placed firmly on restricting the gathering of fuel – with no mention made of rabbits, warrens, sheepfold, or temporary agriculture – of such great importance in Hilborough – of any kind.

With the exception of Wrampitt (and possibly Peake) heath, then, the heaths of Icklingham in the 17th century would have borne little resemblance to the contemporary heath at Hilborough in Norfolk’s Breckland. With no evidence of rabbit farming, shrubs would not have been subjected to the pressures of grazing found in Hilborough warren before its disannulment. With no mention of Brecks or shifts (or outfieldes of any kind) the yearly destruction of heathland species, or their replacement with cereal crops, seen in the first case study would have had no parallel in Icklingham. The gathering of heather and gorse for fuel was permitted there, as opposed to a restriction to stubble at Hilborough. Through the strict enforcement of limits on cutting, though, it seems likely that a mature population of both species covered much of the manor’s heathland – where Hilborough was populated by grasses and crops.

⁵⁵¹ SROB E3/10/9.19

⁵⁵² Coles, *An English Dictionary* sections IN, UN

⁵⁵³ SROB E3/10/9.19

⁵⁵⁴ Jacob, G., *A New Law Dictionary* (London, 1739) p.183

⁵⁵⁵ SROB E3/10/9.19

Management in the mid-18th century

Documents relating to a legal dispute in the 1760s show that much of Icklingham's heathland management objectives of the previous century persisted at that point. The methods of achieving them had in some cases, though, become more restrictive. Importantly, they also explain why manorial law was so concerned with the protection and preservation of heathland shrub. They also contain references both to species and to practices found on Icklingham's heaths at that time which were not mentioned in any court documents from 1644 to 1708.

Regarding management, rights to furze collected for fuel had, by the 1730s, been restricted to only two heaths in the manor. Whereas previous orders had limited each commoner to one load of furze from any heath, courts in 1738, '41, '42, and '43 all ordered that 'no Commoner shall have any furs but one the peacke and hearn heath'.⁵⁵⁶ As such the gorse plants found on those two heaths would likely have been harvested, or at least damaged during harvesting, while gorse on other heaths was permitted to grow – seemingly unimpeded by cutting.

The summary of an interview with one commoner, probably dating from the 1760s, though, suggests that access to furze for firing had become even more restricted by that point, and explains why. It reads: 'Mr Briggs remembers ling at 4 s. a Load Cutting, does not remember any Furze but kept for the preservation of the Sheep – he did not remember any Furze bro[ugh]t into Town to burn for 12 years, no flags but [th]e Shepards'.⁵⁵⁷ Gorse, then, had become a resource used only for the preservation of the lord's sheep, in areas referred to regularly at the time as 'sheeplayers'. Laws against the selling of heather had also, clearly, been lifted – probably with the effect that more of it was then collected to sell. Flags, in the preceding century reserved for the use of the poor, were still being collected, though presumably not in great number if only deemed accessible to shepherds.

The legal dispute, in pursuit of which these documents were first written, itself centred on the illegal cutting of the sheeplayers, and legal advice given on the matter referred regularly to their landscape character. One letter of 1765, for example, referred to the defendants 'Cutting Sheeplayers, or the High Furze preserv'd for Sheeplayers'.⁵⁵⁸ These areas, growing in both 'lines and patches', were formed of tall, mature gorse bushes – protected in law from cutting for fuel and instead deemed 'necessary for the preservation

⁵⁵⁶ SROB E3/10/9.19

⁵⁵⁷ *ibid.*

⁵⁵⁸ *ibid.*

of the sheep' though not solely as a foodstuff.⁵⁵⁹ One summary of the case from 1764 referred to the layers as 'the only Shelter for the Sheep in Stormy weather' without mentioning the grazing of them at all.⁵⁶⁰ While sheep will eat gorse they prefer a more varied diet. A 2007 study of heathland grazing habits in summer showed between 39% and 59% of a ewe's diet can be gorse on mixed gorse-heather-grassland heaths.⁵⁶¹ As such, although gorse may well have been dominant on the sheeplayers, other species of flora were almost certainly present in secondary layers to provide an alternative food source, if the gorse was to be protected from over grazing.

Gorse, however, was certainly the resource of priority for the lord and his flock. As such the unlimited cutting of it by the defendant was said, in the same case summary, to 'threaten to destroy the Sheep Walks' entirely – an outcome the lord was keen to avoid.⁵⁶² A letter of advice from January 1765 stated that 'an Unlimited Exercise of such a Right might by a wanton Abuse destroy the whole in One year'.⁵⁶³ Jurors were to be asked what state Hearn Heath – already mentioned as one of two from which commoners could regularly take their fuel – was then in 'as to Furz etc.' before considering their verdict.⁵⁶⁴ The implication, therefore, being that gorse on Hearn Heath was not considered to be in a healthy or sustainable state.

As well as sheeplayers, where fuel could not be cut, several references were made to 'old layers' where it could be. As the name suggests these seem to be areas of formerly mature sheeplayers which have, through lack of cutting or control, unavoidably deteriorated over time. One letter from the time, indeed, suggested asking the jurors 'whether Sheeplayers must not of Course decay from Age'.⁵⁶⁵ It was from these decayed layers that some tenants had a right to 'reasonable Estovers of Furze for Fuel'.⁵⁶⁶ As the whole of one layer would probably be of a single, or at least similar, age, and as old gorse cannot easily regenerate, the cutting of fuel likely resulted in the destruction of all the plants of an old layer. The soil there was, it seems, then allowed to regenerate with furze to form a future layer, protected from cutting by law. Although 'high furze' could only 'be

⁵⁵⁹ SROB E3/10/9.19

⁵⁶⁰ *Ibid.*

⁵⁶¹ Celaya, R., Oliván, M., Ferreira, L., Martínez, A., García, U. and Osoro, K., "Comparison of grazing behaviour, dietary overlap and performance in non-lactating domestic ruminants grazing on marginal heathland areas" *Livestock Science* **106** (2007) p.275

⁵⁶² SROB E3/10/9.19

⁵⁶³ *Ibid.*

⁵⁶⁴ *Ibid.*

⁵⁶⁵ *Ibid.*

⁵⁶⁶ *Ibid.*

renew'd in a great Course of Years' this would be the only system whereby the whole of Icklingham's heaths would not, eventually, become old layers.⁵⁶⁷

In the 1760s, then, almost all of Icklingham's heathlands were parts of a perpetually, if slowly, changing patchwork of regenerating gorse, protected (as much as possible) from harm by law; mature gorse, protected from cutting but in part eaten by the sheep; and old, decayed gorse cut for fuel. Heather was mentioned only as a fuel, with one witness to the cutting stating that 'only Ling & Heath & at best only small Furze called Cap Furze have been of late y[ea]rs permitted' to be cut.⁵⁶⁸ Due to a reference to their size, 'Cap Furze' were probably Dwarf Gorses, *Ulex minor*. By extension, though, the pressures of fuel gathering on heather in Icklingham in the 18th century was much greater than any pressure suffered by gorse plants not already decaying with age. As a result, the species was probably secondary in both importance and occurrence.

Although the management of sheeplayers was the focus of legal proceedings, some of the associated documents refer to other methods of management, as well as species present, which give a clearer overall picture of heathland in the two parishes. One letter addressed to the lord, for example, states that another defendant had 'Employed his men to Kill Rab[bi]ts on your Heath ... [set] Snares ... and Chased Rab[bi]ts on the warren with a Dog'.⁵⁶⁹ A Breckland Society survey has no entry for a warren in either parish of Icklingham, but records two at nearby Barton Mills and Mildenhall. As, in the letter, rabbits on the warren were mentioned separately to those on the heath, it is possible that at least one of the heaths possessed its own population of wild rabbits under the protection of the lord. Reference specifically to a warren remains obscure.

Other documents recorded the limited temporary cultivation of heathland, though on a scale incomparable to that seen at Hilborough, and for the most part begun much later in time. A second case summary of 1764, for example, states that parts of two heaths adjoining the open fields and south of the road from Icklingham to Lakenheath had been broken up for crops.⁵⁷⁰ On Shave Dale Heath, four 'breaks' had been made in the previous 50 years, totalling around 110 acres. On Berners Heath a total of 180 acres had been broken up in three parts, one so long ago that it had been 'Called the Break Lands for time immemorial'.⁵⁷¹ In similar fashion to those at Hilborough these were not planted annually

⁵⁶⁷ SROB E3/10/9.19

⁵⁶⁸ *Ibid.*

⁵⁶⁹ *Ibid.*

⁵⁷⁰ *Ibid.*

⁵⁷¹ *Ibid.*

but rather only ‘occasionally’ sown with either corn or, more commonly, turnips. These were then fed to the tenants’ sheep in spring when they were not deemed part of the lord’s fold.

In that south-western part of Icklingham St. James, identifiable from the position of the road mentioned in the text, then, attention to the preservation of the sheep layers had been set aside in favour of limited cultivation in brecks – albeit still for the benefit of the sheep through the production of turnips for fodder. Due to the calcareous pH and high fertility requirements of turnips, the brecks were either ploughed in lenses of higher quality soil not visible in the areas of Newport 4 and Newmarket 1 association soils present in that part of the parish on the national map, or would have required large amounts of fertiliser from the sheep, as well as calcerious marl, to produce worthwhile crops.

These 18th-century documents also contain information on grazing rights – not mentioned in the surviving court minutes from the 17th century. As for the sheep, and the tenants’ cattle, periods of grazing were not uniform across the several heaths and some, indeed, were not open for common grazing at all. These variable rights were neither simple nor straightforward but the second summary defines them as follows:

In the parish of Icklingham there are several Heaths, some of which are Seperate to the several Flocks of Sheep in the parish, for all the year, and others are not only open to the said Flocks at all Times of the year, but are Commonable also to the Herd or Great Cattle, belonging to the several Inhabitants of the parish, who have a Right of Common on such Heaths, only on particular Days or Times of the year Stated, according to the particular Customary Rights of the said parish, and which are Various and Different on Each particular Heath; the Heath Called Shove Dale Heath, is Common the said Herd or Great Cattle, One Day in Each week for 18 weeks from 5 weeks before Old [Chris]tmas Day, to Lady Day; The Heath Called Berners Heath is Common aforesaid for two Days in Each Week, for the same Time, And the weather Hill Heath is Com[m]on as aforesaid for Three Days in Each Week, for the same Time, and for the Rest of the year all the Heaths are open to the Respective Flocks of Sheep to which they Belong only; But the Commoners never turned their Cattle to feed for Time Immemorial on the Lower parts of the said Heaths on the South Side of the Road

Running Across the said Heaths Called Old Lakenheath Road, but only passes with their Cattle over the same.⁵⁷²

The period given for grazing differs from the time of ‘shack’ discussed in the first case study of Hilborough, beginning not on 29th September but on 1st December (Old Christmas Day being 5th January) but likewise finishing on Lady Day (25th March). The variability of access for common grazing – with some heaths open all the year, others closed entirely, one open one day a week during the relevant period, a second open two days a week and another open for three – probably resulted in a wide variability of grazing pressure. In turn the damage done to heathland flora in each case would have been equally variable. So too would much of it have ceased outside the dates of common grazing – allowing for a degree of natural regrowth before the next grazing period and creating, over the course of the year, every year, an unstable environment for heathland flora.

Finally, and, perhaps, unexpectedly for a Breckland manor, evidence survives for a degree of tree cover on at least one heath in Icklingham in the 18th century. A letter addressed to the lord, dated August 1764, referred to the lord having demised – or ‘leased’ – the heath on which the illegal cutting of furze had occurred. The terms of the lease included a clause which ‘reserv’d the ffurze as well as Timber’ to the owner, the tenant being only ‘Intitled to the Grass & Pasturage of the Sheepwalk’.⁵⁷³ As the word chosen was not ‘wood’, ‘pollards’, or even ‘trees’, the timber referred to is most likely to have been in the form of straight, uncut standard trees. This heath was, then, a form of wood pasture. What is clear is that the lord of the manors of Icklingham at the time was prepared to use legal means to protect his right of sheepwalk – presumably because of the profit it brought him. The profitability of the existing system must also have been recognised by his successors, because an act of parliamentary enclosure for Icklingham was not passed until 1813.⁵⁷⁴

Icklingham case study: conclusions

Though no indication was given in any documents relating to the case as to the size of the flock or flocks kept at Icklingham – or the tenants’ herd of great cattle – it is clear that grazing was both widespread and varied. As different heaths were subjected to common grazing and sheep grazing at different times, and for different durations, the effects of that

⁵⁷² SROB E3/10/9.19

⁵⁷³ *ibid.*

⁵⁷⁴ Tate, “A Handlist of Suffolk Enclosure Acts and Awards” p.256

grazing on the health of the flora would have been locally variable. Unlike at Hilborough, the damage done to heather or gorse would not have been uniform and the variable pressures of feeding and cutting on each heath would have made it, to a greater or lesser extent, unique in its surroundings.

The dominance of mature gorse bushes on most heaths there, through careful management and the restriction of rights if required, is clear. With the possible exception of Hearn heath, no heath in Icklingham is likely to have been as intensively exploited or as barren as the heath at Hilborough. Perhaps as a result, some also carried a degree of, probably scattered, timber tree cover. Although no trees were drawn by Hodskinson in those parts of either of the two Icklingham parishes characterised by heathland in the 1780s (see fig. 5.13), a degree of woodland cover on them would correspond with a general trend, as shown more broadly on his map, for Breckland-edge heaths in Suffolk to be partially wooded into the 18th century.

As a comparison to Hilborough, this case study goes some way to proving that Breckland, although similar in its soil types and a general reliance on large sheep flocks, was not, even by the 18th century, of only one homogenous character when it came to heathlands. Instead a degree of local variety – in stocking densities and grazing intensities, in the extent of temporary agriculture, in the extent of rights to fuel (and in the species selected for cutting therefor), and in the degree of tree cover – was present, at least from the mid-17th to the mid-18th centuries.

Breckland heaths – conclusions

Heaths in Breckland, though sited on similar, or even identical, soil types overlying the same parent geological materials and managed using broadly similar methods, provably displayed a diverse range of landscape characters during the 17th and 18th centuries. Although modern conservation projects often rely upon a dominance of heather to qualify a sward as ‘heathland flora’, the heaths of Icklingham were almost certainly instead dominated by gorse in the 17th and 18th centuries, while those of Hilborough – through intense grazing and regular annual disturbance – were probably populated more by grasses and lichens than by heather, when not locally dominated by cereal crops.

What binds these case studies, and the other evidence provided in this chapter, together is not a sense of common management but rather the opposite. Many of the heaths mentioned were managed in a way which prioritised sheep grazing and protected the manorial lord’s right of foldcourse. The degree to which other forms of heathland

exploitation were employed, however, could generate significantly different landscape characters on those heaths – raising important questions for modern conservationists to grapple with. A modern restoration project using Hilborough’s grasses and bare ground as a historical model would create something very different, in appearance and biodiversity, to one based on Icklingham’s sheeplayers or Wretham’s heathland meres.

Furthermore, heathland management in all three of those places changed over time. They were not managed to maintain a single enduring state in perpetuity, but instead in a succession of states defined by the deliberate destruction of resources as part of an evolving, perpetual system of regrowth, reuse, redefinition, and replacement. Within these parts of Breckland, a heath was not necessarily a single, definable landscape. Instead they were landscapes on broadly similar soils locally not preferred for permanent arable production and on which the local population cut, burned, grew, protected, and grazed whatever they deemed necessary – standpoints which themselves evolved over time.

This chapter, then, has questioned and, to an extent, contradicted some aspects and practices relied upon during modern heathland regeneration and recreation projects, discussed in chapter one, on historical grounds. It suggests instead that, where such projects are concerned with the recreation or recognition of historical heathland management in Breckland, a more varied, evidence-based approach might be considered, in which documents relating to specific localities are taken into account and a broader range of landscapes created. Where projects are not concerned with historical aspects of local heathland management but, instead, with biodiversity, a broader range of landscapes (perhaps based on historical precedents) might still be encouraged with an aim to support that purpose – landscape diversity breeds biodiversity.

6. The heaths of east Suffolk

This chapter, like the previous chapter, will use detailed documentary evidence to present a view of historic management on historic heathland in a particular locality. The region of focus will be the coastal zone of eastern Suffolk commonly referred to as the Sandlings – named for the widespread presence of sand in the soils found there. Figure 6.1 shows, outlined in black, the area of the Sandlings Area of Natural Beauty as defined by the Department for Environment, Food and Rural Affairs (Defra). Outlined in red is a larger area showing the region studied for this chapter. Regarding soils, this region is superficially similar in character to Breckland. Beyond edaphic similarities, however, the evidence presented here will show a variation in management methods historically employed there – compared to those mentioned in documents featured in the previous chapter. The results of certain exercises will also suggest a variation in management within the Sandlings itself. Furthermore, they will question an existing narrative of all open heaths having their origins in the prehistoric period, and present further evidence for a broader meaning (in the context of landscape character) for the word ‘heath’ in the historic period. As in the previous chapter, the current chapter begins with a brief discussion of geology – allowing for a comparison between the regions discussed in each part of this work.

Underlying geology and superficial deposits

Chalk is the dominant bedrock here, as in much of Suffolk, though it is rarely visible at the surface except in cliffs. Later depositions, especially in the south and east of the county, have served to bury it between 300 and 321 metres below the surface.⁵⁷⁵ In the south east of the county, between the Felixstowe peninsula and Sudbury, the chalk is overlaid with London Clay deposited in the Tertiary period, intermixed with other sands and clays of the same or similar date. In the east and north east, a re-submergence at the end of the Pliocene (5.3 and 2.6 million years ago) led to the accumulation of marine sands called Craggs, which continued to be deposited into the early Quaternary period before the earth

⁵⁷⁵ Woods, A., Mortimore, R. and Wood, C., “The Chalk of Suffolk” in Dixon, R. (ed.), A Celebration of Suffolk Geology: GeoSuffolk 10th Anniversary Volume (Ipswich, 2012) p.105

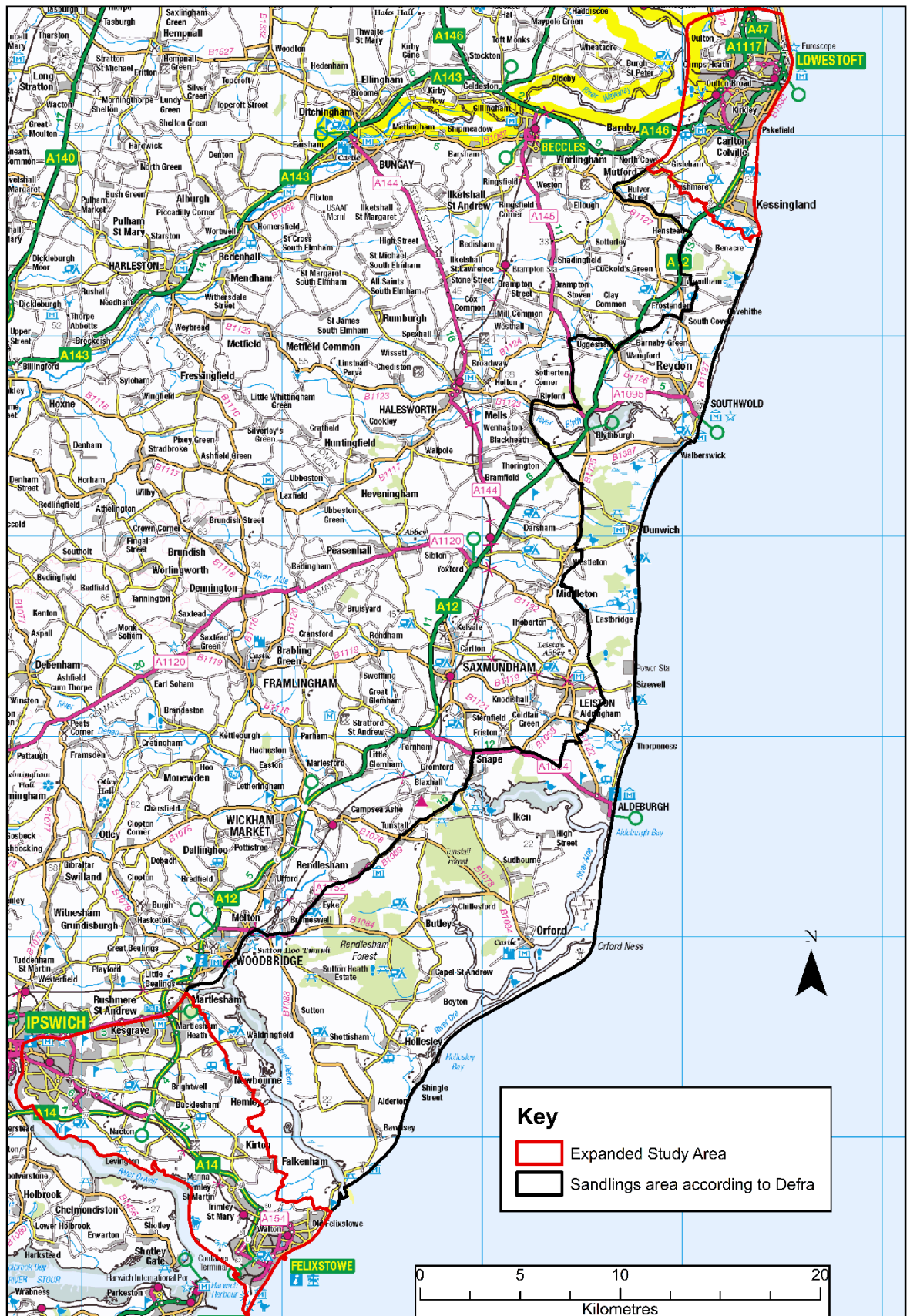


Figure 6.1. A map showing the area of the Sandlings Area of Natural Beauty as defined by the Department for Environment, Food and Rural Affairs and an expanded area showing the region studied in this chapter. Overlaid into a modern 1:250,000 Ordnance Survey map.

cooled and entered the Quaternary Glaciation.⁵⁷⁶

The surface is dominated by the glaciofluvial, acidic sandy soils of the Newport 4 and 2 associations. On the edge of the sea, thin strips of Sandwich dune sands line the coast in many places, with the seasonally waterlogged clays of Newchurch 2 and Mendham peat tracing the river systems in the north. In the south the similar clays of the Wallasea 1 association are more commonly found in the valley basins. On the interfluvium of the Felixstowe peninsula, overlying an area of chalk rather than crag, the loams of the Wick 3 association are locally dominant, with some Windsor clay at the mouth of the river Orwell. Upriver at Ipswich, and across it towards the Essex border, the London Clay is topped with the deep loams of Ludford and Tendring as opposed to the well-drained sandy soils found further north.

The Sandlings in pre- and early history

The earliest evidence of human activity in Suffolk dates to the Lower Palaeolithic period, c.700,000 and 250,000 BCE. As referenced in the previous chapter, a significant number of these finds have been made in Breckland, in the north west of the county, with some made in Hoxne just south of the Norfolk border.⁵⁷⁷ Until recently, only two major lower and earlier upper Palaeolithic sites had been identified in the east, both near modern Ipswich, with only scattered finds made across the remaining Sandlings.⁵⁷⁸ The advent of the Ancient Human Occupation of Britain project and the Aggregates Levy Sustainability Fund, however, has revealed a concentration of Palaeolithic material in the east of the county, including the internationally significant remains at Pakefield.⁵⁷⁹ It is not yet clear whether this cluster represents the only Palaeolithic occupation in Suffolk outside of Breckland. The distribution could simply correspond to areas which have been selected for modern mineral extraction – which targets the deep Quaternary sediments from which many Palaeolithic artefacts have been recovered.

Mesolithic finds from c.9,000-5,000 BCE are primarily represented by surface scatters and individual findspots, following a similar distribution to those of the

⁵⁷⁶ Wymer, J., "Solid Geology" in Dymond, D. and Martin, E. (eds.), *An Historical Atlas of Suffolk* 3rd Edition (Ipswich, 1999) p.16

⁵⁷⁷ Wymer, J., "The Lower Palaeolithic Site at Hoxne" *Proceedings of the Suffolk Institute of Archaeology* **35**, 3 (1983) pp.169-189

⁵⁷⁸ Wymer, J., "The Paleolithic" in Dymond, D. and Martin, E. (eds.) *Historical Atlas of Suffolk* 3rd Edition (Ipswich, 1999) pp.32-33

⁵⁷⁹ Parfitt, S., Barendregt, R., Breda, M., Candy, I., Collins, M., Coope, R., Durbidge, P., Field, M., Lee, J., Lister, A., Mutch, R., Penkman, K., Preece, R., Rose, J., Stringer, C., Symmons, R., Whittaker, J., Wymer, J., and Stuart, A., "The Earliest Record of Human Activity in Northern Europe" *Nature* **438** (2005) p.1008

Palaeolithic.⁵⁸⁰ A number of significant sites have been identified in the east of the county, two near the contemporary port of Lowestoft and another at Sproughton, near Ipswich.⁵⁸¹ As in other parts of the country, the distribution of Mesolithic occupation in the Sandlings shows a preference for marginal areas surrounding wetlands.⁵⁸² Unlike in Breckland, there is currently insufficient palaeoenvironmental evidence for woodland clearance via burning in the Sandlings.⁵⁸³ This might be as a result of the limited resources dedicated to Mesolithic research in Suffolk, rather than a lack of evidence for woodland clearance.⁵⁸⁴ Although the Sandlings were not wholly uninhabited in this period some clearance probably took place. The impermanent, nomadic nature of Mesolithic occupation would, however, suggest that landscape change enacted by these hunter-gathering peoples is likely to have been slight.

Few earthworks have survived from the Neolithic period (*c.*5,000-2,500 BCE). Recent investigations of aerial photographs as part of the National Mapping Programme (NMP) have identified 34 cropmarks of potentially Neolithic or Early Bronze Age date.⁵⁸⁵ The majority of these are in the south of the Sandlings on the Shottisham peninsula, where the light soils are most conducive to cropmark visibility.⁵⁸⁶ Most of these cropmarks represent barrows, of both round and oval types, although enclosures which may be hengiform monuments have been found at Hollesley, Ramsholt and Shottisham.⁵⁸⁷ The cropmarks at Home Whin Farm, south of Shottisham, are particularly extensive with two hengiform monuments associated with a barrow cemetery in addition to a later field system.⁵⁸⁸ Outside of the NMP project area few ring ditches, which might indicate ploughed-out long barrows similar to those found extant in Norfolk, have been identified from aerial photography.⁵⁸⁹ Neolithic finds are particularly common in the area between Hollesley and the river Orwell, in addition to a less concentrated spread centred on Lowestoft. Between the two areas, Neolithic finds are more dispersed with the possible

⁵⁸⁰ Geary *et al*, Down By the River p.321

⁵⁸¹ *Ibid.* p.321; Wymer, J., "Late Glacial and Mesolithic Hunters" in Dymond, D. and Martin, E. (eds.), An Historical Atlas of Suffolk 3rd Edition (Ipswich, 1999) pp.34-35

⁵⁸² Geary *et al*, Down By the River p.322

⁵⁸³ *Ibid.* p.322

⁵⁸⁴ Medlycott, M., "Research and Archaeology Revisited: A Revised Framework for the East of England" East Anglian Archaeology Occasional Paper No.24 (2011) pp.3-8

⁵⁸⁵ Horlock, S., Tremlett, S. and Ford, E., National Mapping Programme Project for the Suffolk Coast and Heaths AONB (Historic England, 2016) pp.24-27

⁵⁸⁶ *Ibid.* p.25

⁵⁸⁷ *Ibid.* pp.25-27

⁵⁸⁸ *Ibid.* pp.26-27

⁵⁸⁹ Martin, E., "The Neolithic" in Dymond, D. and Martin, E. (eds.), An Historical Atlas of Suffolk 3rd Edition (Ipswich, 1999) pp.36-37

exception of a small concentration between Snape and Sternfield. If the interpretation of these cropmarks as funerary monuments is correct, then one must consider their visibility.

The majority are positioned on higher ground near rivers. If they were built to be observed from the waterways, then some either partially or wholly cleared land would have been required between the monuments and nearby rivers.

Early Bronze-Age round barrows, dating especially from the period around 1,900 BCE, are present throughout the Sandlings and are particularly common on the high ground of the Felixstowe peninsula between the Orwell and the Deben rivers.⁵⁹⁰ Indeed, the density of earthwork remains, either extant or flattened, were they intended to be seen, would suggest an almost entirely tree-less landscape on the loam soils of the Wick 3 association found there at this time. Other clusters are visible on the interfluvies between most rivers in sandy-soiled areas. Though they consist only of eight to twelve barrows on each, compared to the dozens found on the Felixstowe peninsula, cleared land around them to allow visibility must still be considered likely.

The recent NMP study has highlighted numerous additional cropmarks of round barrows, and some previously unidentified earthworks, across the Sandlings which also conform to the observed preference for lighter soils near river valleys.⁵⁹¹ Although 60% of the Bronze Age sites recorded in the project area were round barrows or ring ditches, domestic sites were also identified, with a significant concentration in the southern Sandlings where 43% of sites were non-funerary.⁵⁹² These sites included field systems, enclosures and round houses.⁵⁹³ Permanent human habitation of these areas is evident throughout the Sandlings, though more sparsely than between Ipswich and Felixstowe where the largest concentration of cropmarks has been found.

The implications for cleared land between these sites and nearby waterways, however, remain the same. As referenced in the Breckland chapter, this clearance would correlate well with contemporary palaeoenvironmental evidence from the Netherlands. There a recent study found that all sampled barrows, ranging in date from the Neolithic to the Early Iron Age, were constructed on pre-established clearings of *Calluna* heathland within wooded areas.⁵⁹⁴ Some of these clearings had been established hundreds of years

⁵⁹⁰ Martin, E., "The Barrows of Suffolk" in Lawson, A., Martin, E. and Priddy, D., The Barrows of East Anglia East Anglian Archaeology Report No.12 (Gressenhall, 1981) p.75

⁵⁹¹ Horlock *et al*, National Mapping Programme Project for the Suffolk Coast pp.27-31

⁵⁹² *Ibid.* pp.30-31

⁵⁹³ *Ibid.*

⁵⁹⁴ Doorenbosch, Ancestral Heaths pp.237-238

prior to the construction of the first barrows, and it is suggested that the areas may have been used for grazing.⁵⁹⁵ If this is also true of east Suffolk, it would suggest that areas in which numerous early barrows have been found similarly possessed managed heathland, cleared from surrounding woodland, as early as the Neolithic period.

The distribution of Iron Age sites and findspots shows a clear divide between the northern and southern Sandlings.⁵⁹⁶ The Felixstowe peninsula, in particular, was once again densely occupied, as was the peninsula directly north of it, now the site of Sutton Hoo, Woodbridge, and Hollesley. North of that peninsula, though, both recorded sites and finds are almost entirely absent until Lowestoft, with only 20 sites recorded in this area by the National Mapping Programme – many of which, with the exception of Rendlesham, could possibly be attributed to earlier periods.⁵⁹⁷ Only four of these included evidence of permanent settlement, the remainder representing field systems, enclosures and trackways. The much larger number of settlements recorded in the south suggests significantly more open land cleared for agriculture or grazing in the Iron Age compared to the north, where there is an absence of surviving evidence for meaningful habitation in that period.

Human impact on the Sandlings landscape, then, increased considerably over the course of prehistory. Sporadic, seasonal occupation during the Quaternary and early Holocene periods likely saw minimal anthropogenic disturbance to the early, pre-human woodland landscape. A gradual intensification of small-scale woodland clearance has not yet been convincingly determined in the Sandlings during the Mesolithic period, however evidence from further afield strongly suggests this might have occurred there. The increasing adoption of permanent settlements, and the construction of monuments, in the Neolithic period required year-round exploitation of resources from a single area for the first time. This resulted in larger scale land adaptation to create the open areas required for early agriculture and to allow for those monuments to be viewed, probably from some distance away. As the population increased in the Bronze Age through to the Iron Age, and agriculture became the primary subsistence model, large tracts of the Sandlings were broken up into enclosures and field systems - thereby transforming the landscape into a much more open form.

⁵⁹⁵ Doorenbosch, *Ancestral Heaths* p.30

⁵⁹⁶ Horlock *et al*, *National Mapping Programme Project for the Suffolk Coast* p.31

⁵⁹⁷ *Ibid.*

The east Suffolk landscape during the Anglo-Saxon period – place-name evidence

Using data already presented in chapter three, this exercise will seek to infer a historic landscape character for parts of the Sandlings based on Old English place-name evidence recorded in Domesday Book. Particular emphasis will be placed on discussing the implications of woodland-indicating names having been found in areas later dominated by open heathland. Initially, though, the very few names found to reference heaths must briefly be discussed.

Of heathland-indicating place names there were only two examples found in any part of Suffolk in chapter three – Hadleigh and Boulge. Neither are associated with the Sandlings or, indeed, with associations dominated by sandy soils. The modern settlement of Hadleigh stands in an area of Ludford association loams 14km west of Ipswich. It is possible, or, indeed, probable, however, that the heathland referenced there stood on a lens of Newport series soils - which constitutes around 10% of the association. The modern settlement of Boulge stands near a border between the clay-rich Hanslope and Beccles 1 association soils, 2km from the southern Sandlings' western edge. The dominant soil types in both associations are naturally non-calcareous, but neither contain any outwardly sandy, or very acidic series.

In the Sandlings themselves no heathland-indicating place-names were found. There is, however, evidence of significant woodland cover there during the Anglo-Saxon period, inferable from place-names recorded in Domesday Book. In total, fourteen woodland-indicating place-names were found there – the modern settlements being situated either on, or closely associated with, acidic sandy soils. Of these, nine were recorded in the south where the sandy associations extend furthest in land (between 10km and 20km), to the south of Aldeburgh, Snape, and the river Alde. This concentration of woodland names – with no heathland-indicating place-names recorded nearby – suggests that open heathland was, locally, a rare landscape at the time. Indeed, a lack of references to open heaths might suggest that they did not exist there at all during the mid-Anglo-Saxon period when these names became fixed. Instead, woodland was far more common, but not dominant there – inferable from the number of non-woodland place-names also recorded at Domesday.

Figure 6.2, for example, shows an area in the south east of the county, on the peninsula at the end of which Felixstowe now stands, between the rivers Orwell in the south and west, and Deben in the east. Four woodland place-names (all considered

primary, and therefore reliable, indicators of contemporary woodland) were recorded on the peninsula itself. Of those, three contain the element OE *lēah* and one OE *feld*. Another woodland-indicating name (Woodbridge) was found not on the peninsula itself, but still associated with sandy soils very close by – immediately north of Martlesham Creek, which flows into the river Deben.

The two southernmost settlements, Trimley St. Martin and Trimley St. Mary, stand within an area of Wick 3 association soils, shown in grey. As mentioned in previous chapters, roughly 10% of that association is made up of Newport series soils and the woodland these names referred to might well have stood on those soils, infertile as they are, rather than the productive loams. The woodland might, alternatively, have stood on the intractable Windsor clay immediately to the south, shown in dark green, but seasonal waterlogging would probably have limited any trees growing there to Alder, if anything at all.

The modern settlement of Hemley, roughly central to the eastern side of the peninsula, also stands in a small area of Wick 3 association soils. The woodland referred to in that name likewise probably stood upon Newport series soils, either within that association or within the nearby Newport 2 or Newport 4 association soils, shown in orange, in which the series is dominant. The proximate woodland that the name Waldringfield, further north, suggests probably also stood on the Newport series soils that surround the modern settlement.

This cluster of names strongly suggests significant patches of woodland along the interfluvium of that peninsula during the Anglo-Saxon period. In the late 11th century, though, only two settlements on the peninsula claimed access to woodland in Domesday Book, and neither possessed a woodland-indicating place-name. Furthermore, the majority of vill names recorded on the peninsula did not contain woodland-indicating elements. Domesday vills not bearing place-names indicating woodland are shown in black in the figure. Eight Domesday vills occupy the same island of Wick 3 as the Trimleys, with a further four within half a kilometre, yet none of them possessed woodland-indicating elements in their place-names. The woodland with which the Trimleys were associated might well have represented a reduced core, present in that southern area of loam, left behind from earlier Saxon or pre-Saxon clearances, moving up from the valley bottoms to the east and west. By the surveying of Domesday Book, though, even that wooded core had disappeared from the landscape. By that time, across the whole peninsula, only Nacton and Stratton claimed very small amounts of woodland, having woods for just eight

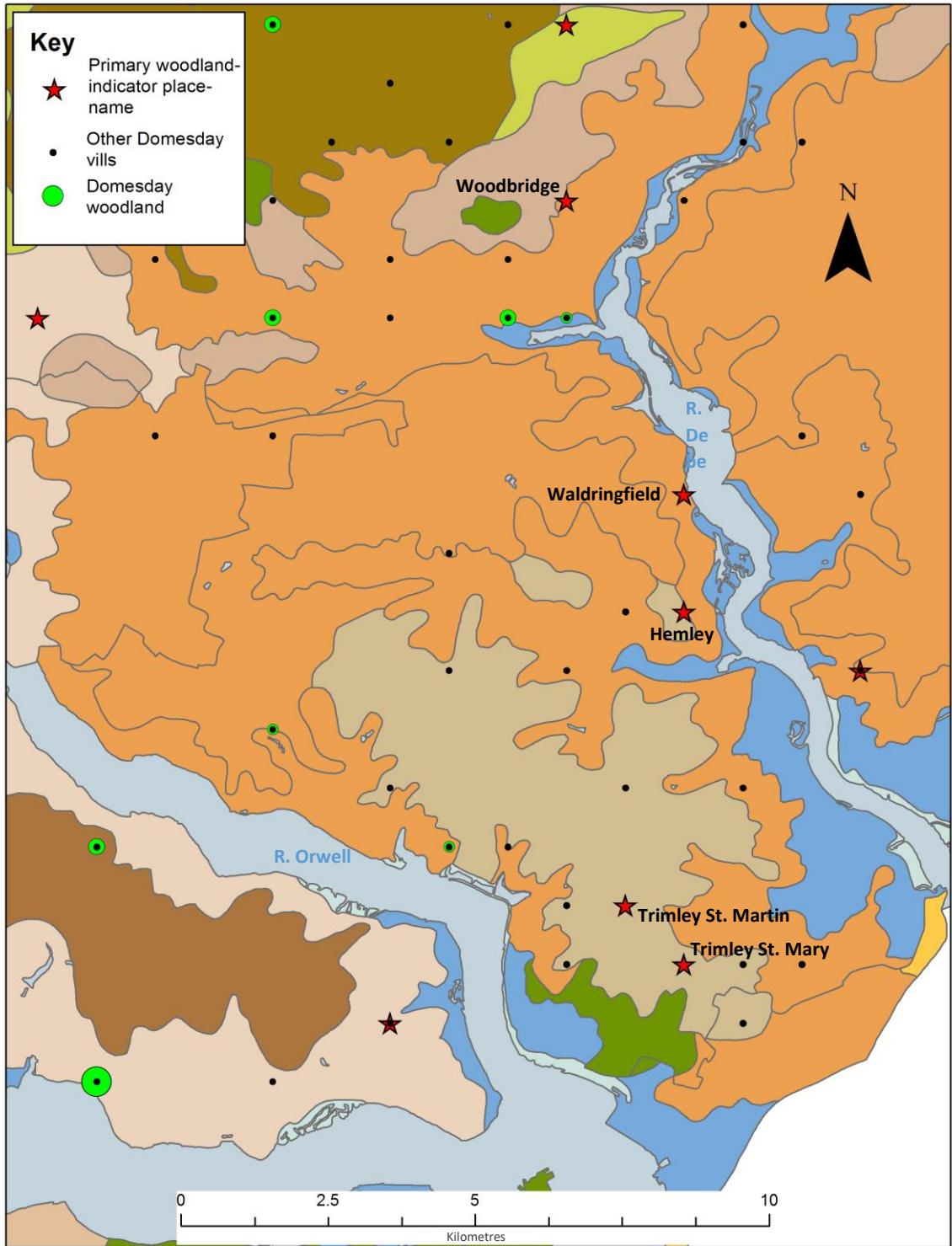


Figure 6.2. A map showing the distribution of woodland-indicating place-name elements recorded in the vill names of Domesday Book for Suffolk on the Felixstowe peninsula, as well as woodland recorded in the same place. Overlaid onto the association level National Soil Map.

and six swine respectively. Whatever sizeable woodland that had, in the past, existed nearby - producing four woodland-indicating place-names - had by that time vanished.

Figure 6.3 shows the peninsula immediately north (following the coast) of that shown in figure 6.2, between the rivers Butley in the north east, and Deben in the west. Today this interfluvium is dominated by RAF Woodbridge, the Forestry Commission's Rendlesham Forest, the long, straight Heath Road, and the village of Sutton Heath (not a Domesday vill). Of the three most reliable woodland-indicating place-names recorded there, the two northernmost contain OE *lēah* and the southernmost contains OE *holt*. All suggest significant woodland present in the landscapes surrounding each vill. The remaining, woodland-indicating place-name is Alderton, containing OE *alra* or *alor* meaning 'alder trees'. As such, it does not necessarily refer to either dense or scattered woodland, but might refer to a collection of multiple trees of a single species. Together, though, these four vill names suggest significant woodland in the north, and a band of woodland stretching from north to south, along the high-points of the interfluvium, in the south during the pre-Conquest period.

By the time of Domesday Book, though, only one vill on the peninsula recorded woodland. It did not possess a woodland-indicating name and the woodland claimed was quite insignificant in size. Staverton in the north east, south-west of the red star of Butley, recorded woodland for only 30 pigs. What woodland was present in the Anglo-Saxon period, then, like that previously occupying the Felixstowe peninsula, had been severely reduced to a small wooded core there by the 1080s.

The remainder of the Sandlings contains a further ten woodland-indicating place-names (but only nine Domesday vills, of which one later split into separate settlements). All of them are considered primary, reliable indicators and are either on or surrounded by soil associations dominated by acidic sandy series. Of these only three still claimed woodland in 1086 for between 76 and 300 pigs - Bramfield, on the edge of the northern Sandlings, having the most. Of the 71 remaining Domesday vills in the Sandlings, 33 (46.5%) claimed woodland for between 3 and 160 pigs with an average of 44 per claimant manor. As almost half of Sandlings vills recorded woods, wooded landscapes would still have been a common sight there during late 11th century. Most woodland was, however, recorded in parts of the region not closely associated with extensive pre-Conquest woodland inferable from place-names.

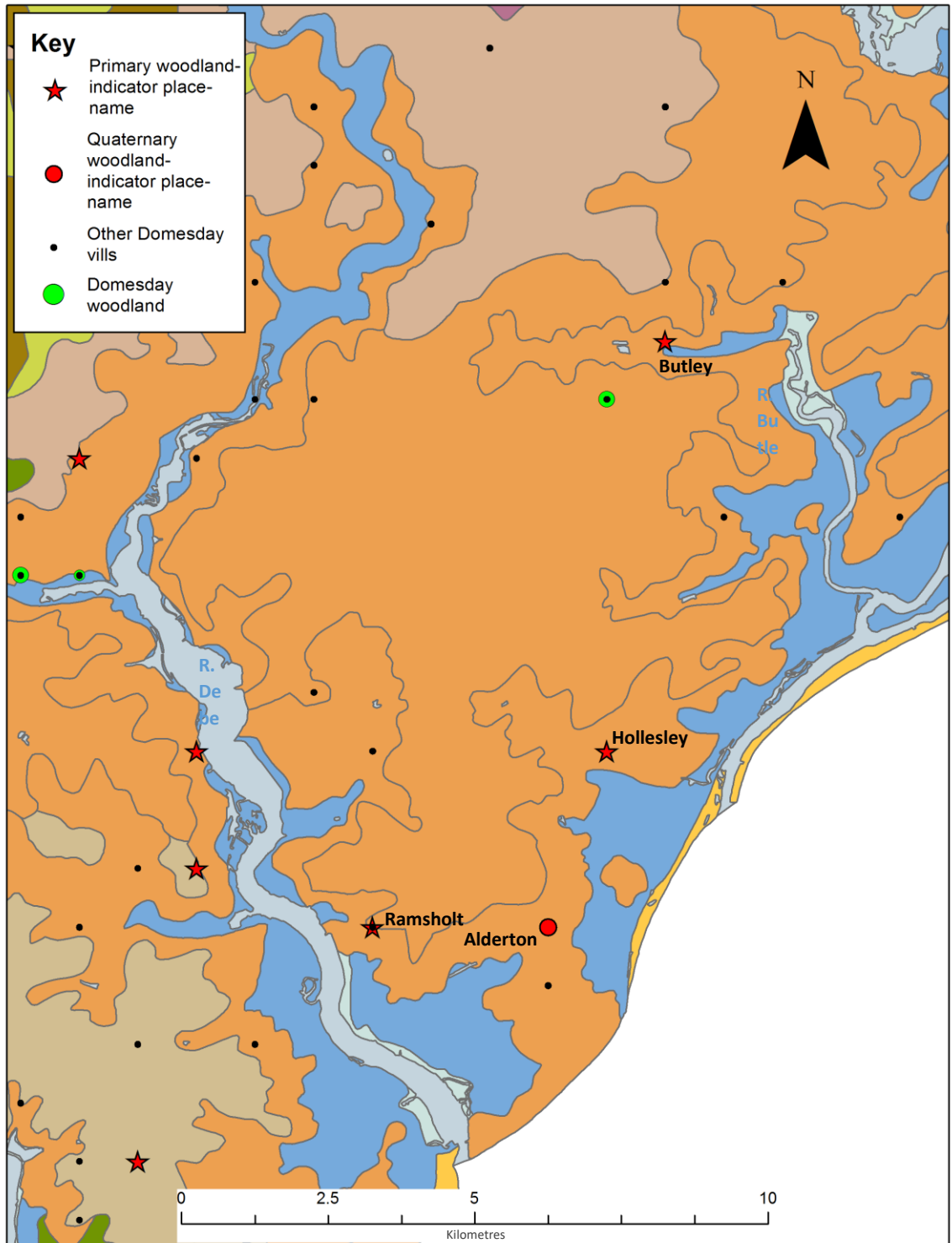


Figure 6.3. A map showing the distribution of woodland-indicating place-name elements recorded in the vill names of Domesday Book for Suffolk on the peninsula north of Felixstowe, as well as woodland recorded in the same place. Overlaid onto the association level National Soil Map.

Suffolk in Domesday: a comparison between the Sandlings and Breckland

Figure 6.4 shows the proportional distribution of woodland and sheep recorded in Domesday Book for all of Suffolk. It is identical to figure 5.3 shown in the previous chapter, repeated here for convenience. What is immediately clear to the observer is that, generally speaking, where more woodland was recorded fewer sheep could be found, and vice versa.

The inhabitants of clay land villis, in the north and north east of the county, for instance, were inclined more towards the management of woodland than the keeping of sheep. Their flocks were small, in most cases numbering between 20 and 60 head, though in some cases not present at all. At Mendlesham in central Suffolk, for example, where woodland for 800 swine was recorded (the largest in the county), not a single sheep was accounted for. At the neighbouring villis of Chippenhall (with woodland for 430 swine) and Whittingham (100 swine), in the eastern clay lands, no sheep were recorded either. Though not all clay land villis possessed woodland (there were nine in the heart of the north east clay lands which recorded neither woodland nor sheep), they seem more likely to have done so than settlements away from the Beccles clay plateau.

In those villis sheep were more common. The clearest examples shown in the figure are situated, unsurprisingly, in the Suffolk Breckland. There Icklingham, for instance, with a flock of 1,184 sheep (the largest in the county), was 9km away from the nearest vill which recorded woodland, and then for only 8 pigs. Mildenhall, with a flock of 779 sheep, was more distant still – standing 11km from the nearest wooded manor, which had woodland enough for only 20 pigs.

Outside of Breckland, though, the largest flocks in the county were not found in the Sandlings but were, in fact, recorded in the south west – in villis encompassing mostly clayey soils. Flocks of sheep recorded in the Sandlings were comparatively diminutive. Indeed, with regards to numbers of sheep or sizes of woodland recorded in Domesday, all villis associated with the sandy soils of the east coast resembled neither clay land villis nor Breckland villis. Instead, they recorded economies that were smaller, less intensive versions of the two extremes.

The comparatively small flocks of the southern Sandlings did, however, represent the largest concentration of sheep recorded outside of Breckland with no – or, at most, very little – woodland recorded alongside them. Though the numbers of sheep recorded in the Suffolk Breckland and in the Sandlings were vastly different, the distribution of

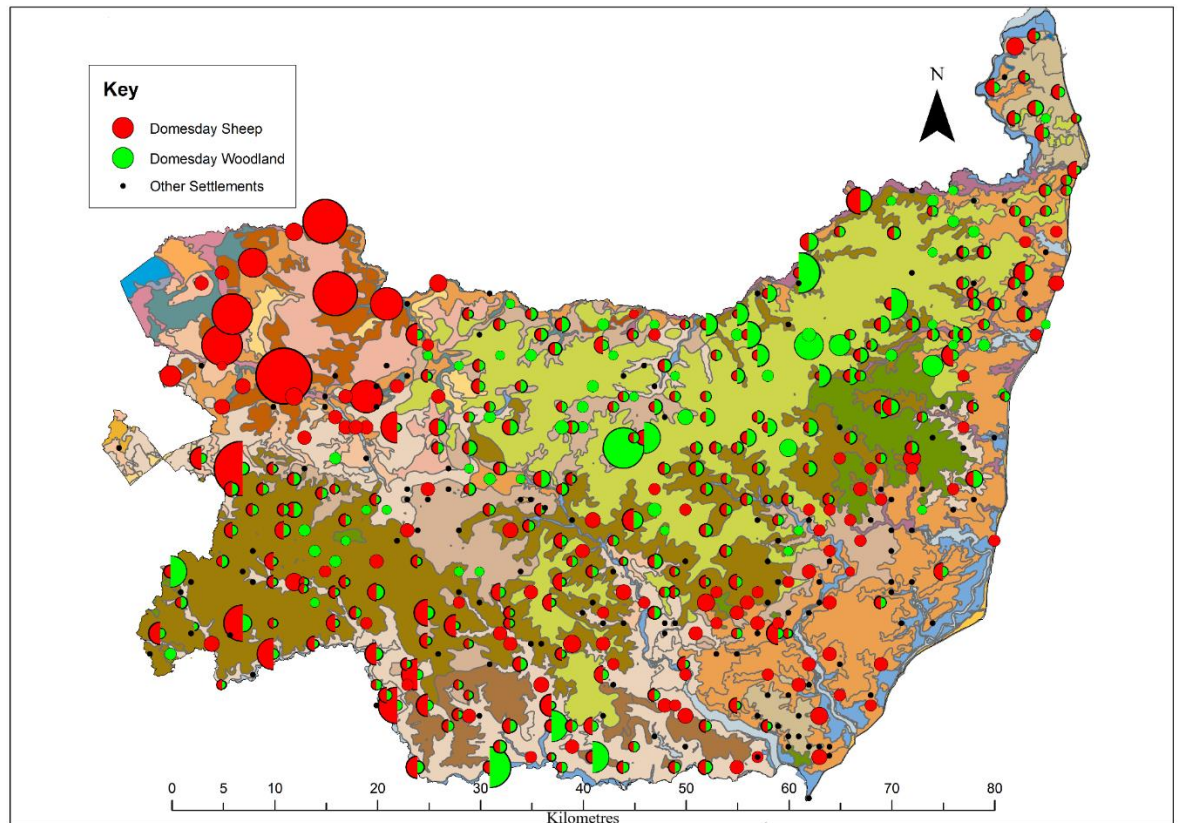


Figure 6.4. A map showing the distribution of woodland and sheep recorded in Domesday Book for the county of Suffolk. All overlaid onto the association level National Soil Map.

settlements, woodland, and sheep flocks in the southern Sandlings resembled parts of southern Breckland along the sandy interfluvial of the river Lark. Settlements were numerous and evenly spread across large areas dominated by acidic sandy soils, with little to no woodland recorded alongside sizeable flocks of sheep at Domesday. There were, however, a greater proportion of villas in the southern Sandlings that recorded no sheep whatsoever – probably due to a greater local availability of more productive soils. Around the Wick 3 loams of the Felixstowe peninsula, for example, six manors recorded flocks, totalling 557 sheep, yet for each villa there were two neighbouring villas that claimed no sheep at all. Those villas that encompassed more of the loamy soils (presumably, therefore, having greater access to the more fertile soil series that make up the Wick 3 association) had little need for the fertiliser that sheep produce to maintain arable productivity. As a result, no sheep were kept. In the south, then, grazing flocks would have been a common sight, but stocking densities, and related ecological effects, would not have resembled those of Breckland villas.

Much of the woodland recorded in the Sandlings was concentrated in the north.

This presents a negative correlation with the locations of woodland place-names there, the majority of which are found to the south. This might reflect patterns of earlier, pre-Conquest settlement, in turn informed by the limitations of technology available in England during the early and mid-Anglo-Saxon periods. Before the introduction of the heavy, or ‘mouldboard’, plough in the 10th century – with a metal board angled to turn the soil as it is tilled – Anglo-Saxon cultivators were limited to the use of the ‘ard’. This was a light plough with only a wooden head or ‘share’ with which to cut into the soil.⁵⁹⁸ Though some authors of the 20th century suggested the heavy plough was introduced by the Anglo-Saxons as they moved from the continent to the province of Brittainia – by then abandoned by the Romans – in the fifth century, this theory has been largely discredited by most modern works.⁵⁹⁹ As Fowler remarked, ‘before AD 900, the ard ... and not the ‘heavy plough’ ... should be regarded as the principal cultivating implement of the Anglo-Saxons’.⁶⁰⁰ As a result, heavy or hard soils were difficult to cultivate.

Earlier Saxon cultivators in the Sandlings appear, then, to have preferred the large expanses of tractable sandy soils (and lenses of loam) in the south for their agricultural land. Although the dominant Newport soils there are – and probably were at the time – of limited productivity compared to numerous other soils in the county, they are light and easily cultivated with basic equipment. The incremental clearance of woodland standing there, referred to in the several woodland-indicating vill names invented at the time, then, appears to have begun at an earlier date when compared to clearances in the north. As a result, those southern lands were comparatively more open by the time of Domesday Book – bearing a resemblance to southern Breckland.

The resources recorded by vills in the northern Sandlings, however, more closely resembled the northern or Norfolk Breckland. Settlements were as numerous as in the south, but sheep flocks were generally smaller, while the woodlands recorded at Domesday were far more significant – both in number and extent. Though it was, in later centuries, dominated by heaths and sheep walks, the northern Sandlings were certainly not unwooded in the late 11th century.

⁵⁹⁸ Fussell, G., “Ploughs and Ploughing before 1800” *Agricultural History* **40**, 3 (1966) p.177

⁵⁹⁹ Banham, D. and Faith, R., *Anglo-Saxon Farms and Farming* (Oxford, 2014) p.46; Hamerow, H., *Rural Settlements and Society in Anglo-Saxon England* (Oxford, 2012) p.148; Higham, N. and Ryan, M., *The Anglo-Saxon World* (New Haven, 2013) pp.325-326; Oosthuizen, S., *Tradition and Transformation in Anglo-Saxon England* (London, 2013) p.65; Williamson, T., *Environment, Society and Landscape in Early Medieval England: Time and Topography* (Woodbridge, 2013) pp.17-18

⁶⁰⁰ Fowler, P., *Farming in the First Millenium AD: British Agriculture Between Julius Caesar and William the Conqueror* (Cambridge, 2002) pp.203-204

Differences between the north and south are also clear from the distribution of grazing animals other than sheep, also recorded in Domesday Book – specifically cattle and goats. For comparison, vills in the Suffolk Breckland, where huge sheep flocks were maintained, recorded almost no goats whatsoever but kept average numbers of cattle, compared to herds recorded across the county. Conversely, vills in the Suffolk clay lands recorded roughly equal numbers of both cattle and goats, spread evenly across the whole area. This pattern continued unchanged into the northern Sandlings, specifically between the river Waveney in the north, and the Minsmere river in the south.

Further south, though, goats were recorded in only one remaining Sandlings vill, with cattle recorded in several – more closely resembling a ‘Breckland’ distribution. Coupled with a greater number of sheep kept in the south, the species composition of grazing stock evidently varied between the two halves of the Sandlings. If all were grazed on heath-like areas, the resulting diversity of flora would also have been different in each zone - as sheep prefer to eat grass with heather and only a little gorse, goats prefer gorse over heather, and cattle prefer a diet almost entirely of grass with only limited heather and no gorse at all.⁶⁰¹ Travelling between Ipswich and Lowestoft in the late 11th century, the Sandlings landscape south of the Alde and north of the Blyth would have appeared very different to each other.

The Sandlings in the 12th and 13th centuries

By the late 12th century, monastic houses at Blythburgh, Butley, Leiston, and Sibton (all in eastern Suffolk) had been established. Each had numerous holdings in the east of the county and their respective cartularies contain some evidence for the distribution of heathland and woodland landscapes in the Sandlings, as well as some evidence for contemporary landscape change and management practices. The vocabulary searched for was the same as that defined in the previous chapter. As in that exercise, the data was compiled from reading modern, printed copies of the four monastic cartularies in full.⁶⁰² The results are displayed in figure 6.5.

Where holdings were mentioned by name, those names were usually in Middle

⁶⁰¹ Celeya, R., Olivían, M., Ferreira, L., Martinez, A., García, U., and Osoro, K., “Comparison of grazing behaviour, dietary overlap and performance in non-lactating domestic ruminants grazing on marginal heathland areas” *Livestock Science* **106**, 2-3 (2007) pp.271-281

⁶⁰² Harper-Bill, C. (ed.), *Blythburgh Priory Cartulary* parts I and II (Woodbridge, 1980 and 1981); Mortimer, R. (ed.), *Leiston Abbey Cartulary and Butley Priory Charters* (Ipswich, 1979); Brown, P. (ed.), *Sibton Abbey Cartularies and Charters* parts I-IV (Woodbridge, 1985, 1986, 1987, and 1988)

English, or had survived in the pre-Conquest Old English language. Some elements within those names were found to regularly be associated with certain landscape types and so were recorded as separate indicators of those landscapes, even when the Latin terms for them were not given. The English element *-heg*, for example – directly meaning ‘hedge’ or ‘enclosure in a forest’ – was regularly used in the names of woodlands referred to as *boscus* or *nemus* in the texts, and so was mapped as a woodland-indicating element in the figure.⁶⁰³ The English word *brecc* was often found attached to the names of land probably enclosed directly from waste, inferred from the contexts in which it was used, so was tentatively mapped as a possible indicator of either enclosed heathland or, at least, cleared woodland or scrub in the figure.⁶⁰⁴

Results: the Sandlings as a variety of landscapes

The concentration of both woodland and heathland grants in the north of the Sandlings is clear. As in Domesday, the pattern of wooded landscapes on the heavy Ragdale association clays, to the west of much of the northern Sandlings (shown in green in figure 6.5) continued uninterrupted eastwards towards the coast. To the north and south of that area, however, although grants of land were still regularly recorded, very few of the texts specifically mentioned woodlands, nor suggested their presence in English names. It is worth noting, at this point, that such a pattern of standing woodland is not mirrored in surviving areas of ancient woodland. Indeed, in that area, there is only one woodland surviving from before *c.*1600, that being Greyfriar’s Wood directly south of Dunwich, measuring just 2.7 hectares. The rest of this area is, and, indeed, was by the time of Hodskinson’s map being produced, mostly open common lands and sheep walks with only scattered trees and little dense woodland (see figure 6.6).

In the 12th and 13th centuries, though, these areas would appear to have been characterised both by woodlands and heaths, either separately as discrete landscapes, or, to a degree, intermixed as wood pastures. Indeed, to the east of the Ragdale clays between the Yox and Blyth rivers, grants of both woodland and heathland were commonly made in the same manors during the same decades. Of the six locations where this occurred, all relevant settlements sat on the edges of soil associations dominated by acidic sandy soils, with no grants at all recorded on lands deeper into the Newport association soils. Although

⁶⁰³ Latham, Revised Medieval Latin Word-List p.220; Fisher, A Medieval Farming Glossary p.22; Mawer, The Chief Elements p.35

⁶⁰⁴ Kuhn, Middle English Dictionary, part D pp.1118-9; Mawer, The Chief Elements p.8

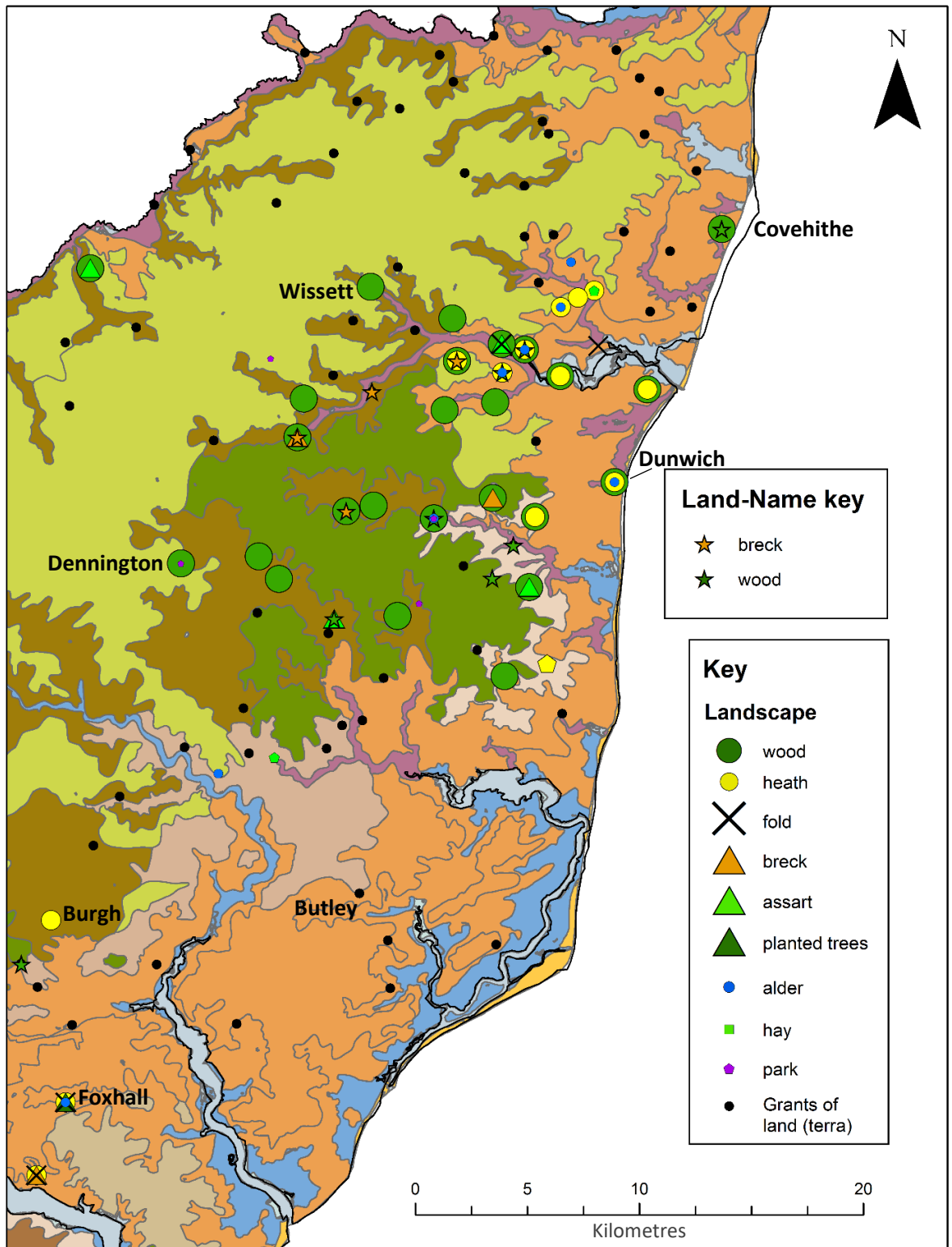


Figure 6.5. A map showing the distribution of landscape types mentioned in the cartularies of Butley Priory, Blythburgh Priory, Leiston Abbey, and Sibton Abbey, all in Suffolk, in the east of the same county. All overlaid onto the association level National soil map.

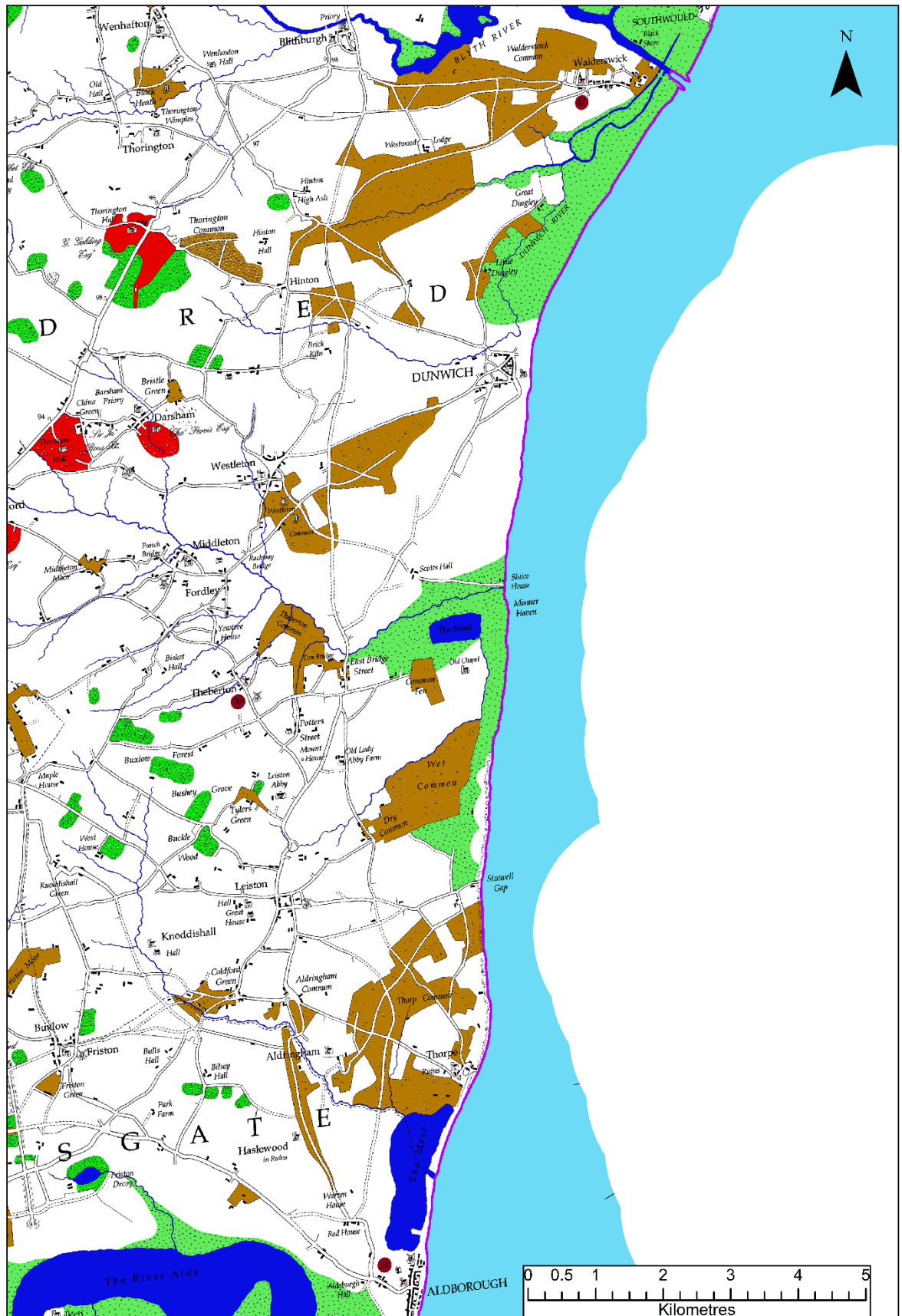


Figure 6.6. A map showing the area around Dunwich in Suffolk as it appears on Hodskinsons' map of that county, published in 1783, and digitally redrawn by Andrew Macnair. Areas near bodies of water shown in green, with white dots instead of trees, illustrate marshland and not woodland.

this might suggest an absence of heathland in those landscapes, it probably rather suggests a lack of permanent, or at least significant, settlement. Indeed, the lack of Domesday villis recorded deeper into the Newport soils here, as well as the absence of any grants in those areas recorded in these cartularies, and no obvious surviving settlements there visible on modern maps, suggests that there was no settlement there in the medieval period either.

In manors featured in the charter evidence for the central and northern Sandlings, though, the mixture of wooded landscapes and grazing land suggested in Domesday Book, and shown in figure 6.4, appears to have persisted there at least until c.1300. Between then and now, however, the vast majority of those woodlands have been lost - to be replaced with heathland.

One possible reason for this loss, recorded soon after many of these grants were made, was for the repayment of debts. The cartulary for Sibton Abbey, for example, contains a copy of an inspection, sealed on the 4th January 1356, in which the financial fallout from the Black Death (which had swept across England in the previous decade) was said to have led to arrears of more than £45. The remains of the abbey still stand near Yoxford, just to the west of that part of the Sandlings in which most of the woodland grants seen in figure 6.5 were made. In the letters patent preceding the inspection, dated to December 1355, it was said of the monks that ‘their woods and groves have mostly already been felled and so cannot be sold to relieve their wants as has been the custom’.⁶⁰⁵ The inspectors themselves concluded that ‘their woods and groves have been felled to the full’.⁶⁰⁶ The felling of woodland owned by the monastery, then, was not only ongoing but was already, by that time, a longstanding custom when faced with financial difficulty. Furthermore, the stripping of woods there had, seemingly in all cases, been wholly completed – with all saleable wood or timber already having been removed by the middle of the 1350s. These same documents suggest that the loss of tenants’ rents – through death and a ‘retreat from the margins’ (where tenants elected to rent plots on more fertile soils recently made available through population decline) – and a loss of sufficient labour to care for livestock, reduced monastic incomes to unsustainably low levels in the short term. As a result, woodlands were used as a cash crop.

Another cause of felling is suggested by the distribution of lands either referred to, or named as, ‘breck’. Of the seven references made to *brecha* in all of these cartularies, five were in settlements bordering Ragdale association soils, either in the Blyth or Yox

⁶⁰⁵ Brown, P. (ed.), *Sibton Abbey Cartularies and Charters, Part Four* (Woodbridge, 1988) pp.87-88

⁶⁰⁶ *Ibid.* pp.87-88

valleys. Though the term is often applied to enclosure from heathland, the wooded nature of this area would make the presence of open heaths unlikely. Either heathlands were intermixed with woodland on heavy clay soils or the term ‘breck’ was used to describe enclosure from ‘wasteland’ wood as well. Several dictionaries of Latin maintain that *brecha* can translate either into ‘clearing’ or ‘assart’ and here likely means the latter.⁶⁰⁷ The latter term was, indeed, used independently from *brecha* in the charter evidence but almost universally in the same circumstances. All three *essarta* mentioned were also associated with settlements bordering the Ragdale clay, with two in the same valleys as the *brecha*. Brecks in the northern Sandlings, then, were, in the 12th and 13th centuries, probably ploughed in areas of cleared woodland rather than on heaths, but still represent the creation of open, treeless spaces which later came to dominate the region in the post-medieval period.

To the south of this mixed area of woods and heathlands, grants made in the southern Sandlings, but north of the Felixstowe peninsula, contained only the word *terra* when referring to land. Data gathered from Domesday Book (fig. 6.4) has already shown that this area possessed very little woodland and only limited numbers of sheep in the late 11th century. It also contained a number of villas which recorded neither sheep nor any livestock (or, therefore, pasture), nor woodland. The absence of references to either woods or heaths in these 12th and 13th century documents would seem to support a lack of both in this area. Although an absence of evidence is not necessarily evidence of an absence, if sheepwalks or heathlands were common in this area, heaths, at least, would feature in the abutments of one of the many charters which originated from manors in this area. As it happens they do not, and neither does woodland.

Further south still, heathland at the western extreme of the Wick 3 association soils of the Felixstowe peninsula (mentioned earlier in this chapter) is evident from charters concerning Foxhall and Nacton. In the former, as well as an alder-wood and some marshland on the banks of the Mill river, reference was made to the monks of Sibton’s sheepfold, as well as to heathland that they owned within the manor.⁶⁰⁸ Foxhall Heath is shown on numerous Ordnance Survey maps surviving into the 1950s, when it was, for the most part, turned over to plantations. The deliberate planting of trees in the vicinity was, however, recorded nearby as early as c.1245. In the abutments of one charter, mention was

⁶⁰⁷ Latham, R. and Howlett, D. (eds.), Dictionary of Medieval Latin from British Sources: Volume I., A-L (Oxford, 1997) p.215

⁶⁰⁸ Brown, P. (ed.), Sibton Abbey Cartularies and Charters, Part Two (Woodbridge, 1986) pp.187-188, 189-190

made of ‘planted trees which the said monks once planted between my messuage and the aforesaid marsh, so that all of the said trees are on the land of the aforesaid monks’.⁶⁰⁹ The word ‘messuage’, used here, is a now obsolete term for a residential property.⁶¹⁰ As the heathland that the monks’ possessed also stood near the marsh mentioned in this passage, the land planted up with trees could conceivably have been the same heath.

In Nacton a grant dated to c.1230-60 was made specifically for the pasturing of 240 sheep and seven cattle on the heath there.⁶¹¹ The numbers and species of livestock show a degree of continuity with data recorded in Domesday, where both sheep and cattle were recorded in the vill there but no other livestock. The dietary preferences of both, with no evident goat population, likely lead to any grass on the heath being heavily grazed with heather also grazed upon but gorse plants hardly being touched.⁶¹² The same charter also establishes a point by which parts of the heath were being enclosed for arable production. The pasturing rights were granted on the heath ‘excepting land newly broken into cultivation or afterwards converted’ – which shows both an existing practice of heathland cultivation and the intention to expand upon it.⁶¹³

As the lands in question had, up to that point, been managed as a heath, they probably stood on the Newport series soils of the Newport or Wick 3 associations found on the peninsula. As a result, in similar fashion to brecks or shifts recorded in Breckland and discussed in the previous chapter, cultivation would probably have been restricted to a long or temporary rotation. Thus, over time, a shifting patchwork of ploughland, devoid of any ‘usual’ heathland species, would have been characteristic here, as it was, for example, in Hilborough.

The impact or existence of common rights on the heath are impossible to establish, but might well have been restricted or not in place at all, the heath probably being private. After all, when granting the pasture rights, the grantor did not do so on ‘the heath of Nacton’ but on ‘my heath of Nacton’.⁶¹⁴ Whether the heaths mentioned in any of the four cartularies were common land was not qualified in any of the texts except one, but the legal status of some others can be established from passages in the relevant charters. If a

⁶⁰⁹ *“arbores plantatas quas dicti monachi olim plantaverunt inter mesuagium meum et predictum mariscum, ita quod omnes dicte arbores sint super terram dictorum monachorum”* Brown, Sibton Abbey Cartularies II pp.183-184

⁶¹⁰ Fisher, A Medieval Farming Glossary p.29

⁶¹¹ Brown, Sibton Abbey Cartularies II p.191

⁶¹² Celeya *et al*, “Comparison of Grazing Behaviour” pp.271-281

⁶¹³ *“exceptis terris frussuris ad culturam redactis vel in posterum redigendis”* Brown, Sibton Abbey Cartularies II p.191

⁶¹⁴ *“bruariam meam de Naketon”* *Ibid.* p.191

large proportion of Sandlings heaths were probably private land, without common rights attached to them, in the 13th century, this could explain why the number of common heaths recorded there on Hodskinson's map of the 18th century were so few in number when compared, for example, to the Norfolk Breckland.

Common land or private enterprise? Sandlings heathland ownership in the 13th century

Of the 27 entries found referencing heathland in the Sandlings, either being granted or as abutments, 22 were attributed to single owners, rather than to manors, while only one was explicitly referred to as 'common' land. The legal status of the remaining four was ambiguous. Between Henham and Wangford in the northern Sandlings, for example, the monks of Blythburgh granted all their heath (*totum brueriam nostrum*) called 'Grethall' early in the 13th century.⁶¹⁵ It is not suggested in the text that the Prior of Blythburgh was the lord of the manor there, but instead that they owned the heath in their own right – and so were able to transfer complete ownership of the same to another. In Bulcamp, too, a piece of arable land was said to 'abut upon the heath of William of Kerdiston' in c.1209-43.⁶¹⁶ The heath, then, was not common waste but the property of one person.

Furthermore, larger manorial heaths were clearly sometimes divided into individual plots, presumably at the will of the manorial lord, and rented or sold to individuals for their private use. In Walberswick, for instance, William de Chesney granted a piece of heath called 'Hulsatum' held of him by another man.⁶¹⁷ That man, then, was a tenant of that piece of heath itself, rather than the holder of a separate tenement with only a right of common on the heath in general. In Wenhaston, similarly, John of Creeting granted a piece of heath abutting upon another owned by the brothers of Sibton c.1230.⁶¹⁸ The two holdings were clearly parts of the same larger heathland but were owned by separate private freeholders. Indeed, charters from the manor of Westleton, in the central Sandlings, in particular paint a picture of heathland divided into strips (similar to the scelions of an open field system) then occupied privately by individuals. One charter in particular details two 'pieces of heath' with other heathlands to each side, and their 'heads' abutting on others' lands. The translation reads:

⁶¹⁵ Harper-Bill, Blythburgh Priory Cartulary II p.171

⁶¹⁶ "*abuttat super brueram Willelmi de Kerdistone*" Harper-Bill, Blythburgh Priory Cartulary I pp.66-67

⁶¹⁷ "*brueriam de Hulsato quam Burchardus de Weniston tenuit*" *Ibid.* p.46

⁶¹⁸ Brown, Sibton Abbey Cartularies II pp.236-237

Two pieces of heath in the vill of Westleton, of which one piece lies on Stonehill between the heath of the said monks of Sibton to the east and the heath of Augustine son of John to the west and one head abuts on the marsh of William Huntman to the south and the other head abuts on the marsh of Walter son of Hog' to the north, the other piece however lies on Calfhill between the heath of Reginald Pulleco to the north and the heath of Thomas Huntman to the south and one head abuts on the marsh of Reginald Brethm' and Alexander Brethm' to the west and the other head abuts on the land of Luke the Scot to the east.⁶¹⁹

What the author described were doles – areas of heath open to common grazing most of the year, but from which the holder had an exclusive right to extract resources for their use.⁶²⁰ The numerous mentions of marshland alongside heathland in Westleton suggests areas of wetland within wider heathland landscapes, as at East Wretham in the Norfolk Breckland.

The single identifiable common heath (*communem bruerum*) mentioned in the cartularies was given as an abuttal. It was associated with a manor in Wenhaston, in the northern Sandlings, where two demonstrably single-occupation heaths, already cited, were mentioned c.1230.⁶²¹ It is possibly alluded to again as 'the heath' in the abuttals of a charter concerning the same area dated to the 1280s.⁶²² A single manor having both common and private heath was not unique to Wenhaston, though. An *inquisition ad quod domnum* (in effect an 'inquiry into the cost of damages') of Wade Hall, probably in Leiston in the central Sandlings, written in 1345, listed holdings in two sections – those 'held by the manor itself' and other lands held. As part of the first section, 60 acres of heath were valued at 1½d per acre, whereas in the second section a further 70 acres of heath were valued at just ½d an acre 'and no more, as it is common'.⁶²³ As the former was valued more highly, and common rights were not mentioned, it was likely private.

⁶¹⁹ "duas pecias bruarie in villa de Westleueton', quarum una pecia iacet super Stonhil inter bruerium dictorum monachorum de Sybetun' ex parte orientali et bruerium Augustini filii Johannis ex parte occidentali et unum caput abuttat super mariscum Willelmi Hunteman versus austrum et aliud caput abuttat super mariscum Walteri filii Hog' versus aquilonem, alia vero pecia iacet super Kalvehil inter brueriam Reginaldi Pulleco ex parte aquilonali et brueriam Thome Hunteman ex parte australi et unum caput abuttat super mariscum Reginaldi Brethm' et Alexandri Brethm' versus occidentem at aliud caput abuttat super terram Luce le Scot versus orientem" Brown, *Sibton Abbey Cartularies II* p.83

⁶²⁰ Barnes, G., Dallas, P., Thompson, H., Whyte, N. and Williamson, T., "Heathland and Wood Pasture in Norfolk: Ecology and Landscape History" *British Wildlife* 18, 6 (2007) p.398

⁶²¹ Brown, *Sibton Abbey Cartularies II* pp.243-244

⁶²² Brown, P. (ed.), *Sibton Abbey Cartularies and Charters, part three* (Woodbridge, 1987) p.221

⁶²³ Mortimer, *Leiston and Butley Charters* pp.125-126

As in Leiston and Wenhaston, the custom of having both common and private heaths attached to one manor probably existed elsewhere in the Sandlings. Those that were common are not represented well in the cartularies as, by nature of their common usage, they seem not to have been granted as private property was. They are apparent to us only through their proximity to other lands that were granted. That there must have been common heaths where private ones are shown here is evident from their inclusion on later maps – Hodskinson’s for example.

What is more interesting is that where, in the 1780s, common heaths were shown, we find no contemporary private heaths as represented in the medieval cartularies. In both the northern and southern Sandlings, Hodskinson showed only common heaths where private ones were granted in the 12th or 13th centuries. Often these common heaths appear to once have been parts of a larger, homogenous heathland which has, at some point, fragmented, creating gaps between them – as at Foxhall, Brightwell, and Bucklesham on the Felixstowe peninsula, for example. I suggest that these gaps were once medieval private heaths which, free from common rights, were slowly enclosed in a piecemeal fashion and converted to arable or private pasture at an earlier date than those around them, which were subject to common rights. For this to be possible, manorial lords must have relinquished ownership of some pieces, as to the many owners named in charters, and could not have had a vested interest in maintaining absolute control over all heathland in a manor. As every manor in which this appears to have happened had access to more productive soils than those of the Newport series to manage as arable, a large sheepfold, dominated by the lord’s flock and directed for his profit (as in much of the Suffolk Breckland), was not always necessary.

The Shottisham peninsula, however, where no heaths were granted by charter to any of the four monasteries mentioned here, represents the single largest concentration of Newport soils in the Sandlings. With no access to more productive soils, a dependency on sheep for fertiliser – as in Breckland – would probably have been a greater requirement to grow crops and turn a profit. Thus, manorial lords would seem to have had an interest in maintaining these heaths in their own private ownership, rather than alienating them to other owners or to monastic houses. Indeed, a reliance on the pasturing of sheep on heaths there is evident from their being labelled specifically as ‘sheepwalks’, with no indication of common rights existing there, as late as the 1780s.

In the 12th and 13th centuries, then, neither the distribution, legal status, or landscape character of Sandlings heaths were uniform across the whole region. Evidence

collated from charter material suggests the northern Sandlings were a landscape of mixed woodland and heathland, either separately or combined into wider landscapes of wooded heaths. Charters relating to the south-central Sandlings, around the Shottisham peninsula, on the other hand, mentioned no woodland, heathland, or sheepfolds being granted or as abutments to land that was. This was probably a landscape of open pasture. The southern Sandlings were probably also a landscape of open heaths, on Newport series soils, grazed by sheep. Grants of sheepfold as well as heaths in Foxhall and Nacton appear to confirm this. Across the whole region, though, where they were mentioned in these documents, heaths were probably of mixed legal status within close proximity to each other – with some subject to common rights and others subject only to the will of a single owner, allowing many of the latter to be enclosed at an earlier date in the later- or post-medieval periods.

Sandlings warrens in the medieval and post-medieval periods

No comprehensive study of Sandlings warrens, like that compiled for Breckland – and referenced in the previous chapter – has been attempted to date. As such the size or correct distribution of warrens in this area is difficult to accurately determine. Figure 6.7 shows an incomplete map of warrens in the Sandlings, dating from the 1990s, which, at least, demonstrates that rabbits could be found in all parts of the Sandlings before c.1650.⁶²⁴ More recent works, however, have identified many more sites. Williamson, for example, lists warrens in at least 23 locations across the Sandlings, mentioned in documentary or place-name evidence between the late 13th and 17th centuries.⁶²⁵ As he has written, ‘evidently, in late medieval and post-medieval times warrening was a significant industry in the area, and large areas of heathland were occupied by rabbits’.⁶²⁶

Some, indeed, were grazed both by rabbits and by sheep. At Benacre, in the northern Sandlings, for example, about 80ha of the lord’s warren was said to have been ‘replenished’ with both sheep and coneyes in 1576.⁶²⁷ Effects on heathland flora would have been very similar here to those recorded by Pickworth-Farrow in Breckland – and

⁶²⁴ Hoppitt, R., “Rabbit Warrens” in Dymond, D. and Martin, E. (eds.), An Historical Atlas of Suffolk (Lavenham, 1999) p.69

⁶²⁵ Williamson, T., The Suffolk Sandlings: A Report on the Historic Landscape Centre of East Anglian Studies (Norwich, 2002) pp.59-60

⁶²⁶ *Ibid.* p.60

⁶²⁷ Armstrong, P., “Changes in the Land Use of the Suffolk Sandlings: A Study of the Disintegration of an Ecosystem” Geography **58** (1973) p.3

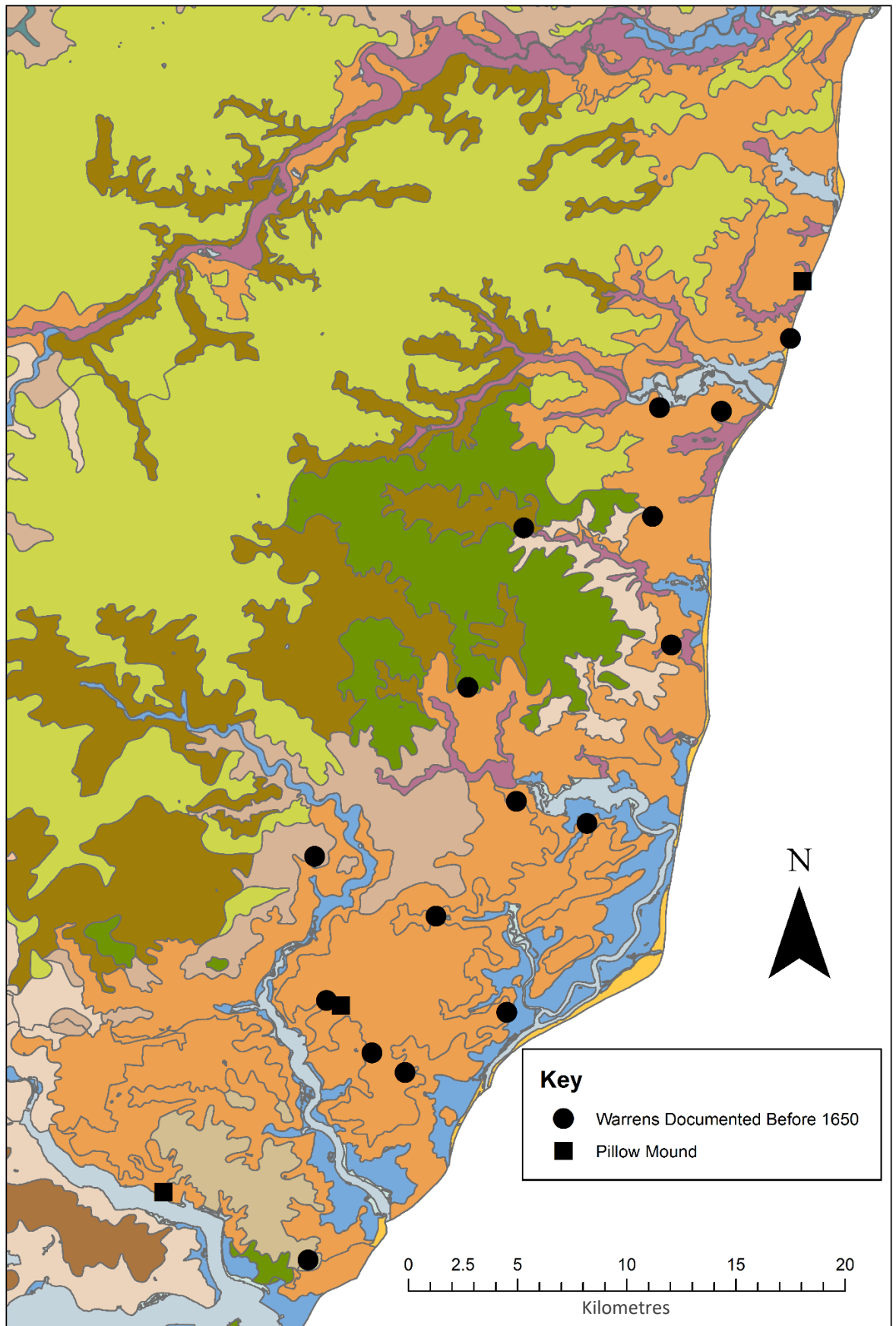


Figure 6.7. A map showing some rabbit warrens and pillow mounds recorded in the Sandlings, east Suffolk, before c.1650. Overlaid onto the association level National Soil Map.

discussed in chapter five – but fieldwork undertaken for this study suggests results might not have been identical in all cases.

Rabbits, moss, and open spaces: fieldwork in the Suffolk Sandlings

Several surviving heaths in the Suffolk Sandlings were selected for fieldwork investigation and all displayed the same characteristics, explained later in this current section. Sandlings heaths specifically were selected for the fieldwork component of this thesis for two reasons. Most importantly, as Pickworth Farrow had already undertaken some research into the effects of rabbit grazing on heather stands in Breckland, sites outside of either the Norfolk or Suffolk Breckland were deemed preferable – to test the validity or accuracy of his observations in a different region. A second consideration was distance. Sites chosen for fieldwork needed to be accessible from Norwich by car without the need for overnight stay. The locations also needed to be near enough that travel time did not reduce the amount of daylight remaining for fieldwork to be undertaken so much as to make the trip valueless. As such, numerous heaths in the Sandlings were selected, but surviving heaths in Breckland, Essex, and Hertfordshire were discounted.

As in Breckland, stands of *Calluna* on heaths in the Sandlings, to this day, become susceptible to smothering by moss after sustained grazing by rabbits. The species of moss most commonly responsible for attacking damaged heather in east Suffolk (in the 21st century, at least) is, however, different to that which Pickworth-Farrow recorded during his investigations. Whereas he observed what is today called Reindeer Lichen (*Cladonia portentosa*) smothering heather in Breckland, fieldwork done for this study has shown that species to be very rare in the Sandlings. Indeed, on six different heaths across the region, *C. portentosa* was spotted on very few occasions, and on some heaths was not found to be present at all. Instead, the dominant sub-story flora, and that seemingly responsible for the death of heather stands in every case where it was observed, was Red-Stemmed Feather Moss (*Pleurozium schreberi*).

That species – the fronds of which often appear yellow in colour rather than red – was found on all heaths visited. It was also observed in every stage of smothering heather: alongside, but subordinate to, recently grazed but otherwise healthy heather stands; covering and climbing up the stems of heather plants heavily damaged by rabbit grazing; and in thick clumps in the centre of dead heather bushes, the branches of which had turned brittle and white. It was often absent, however, from areas where all nearby heather plants had recently died off, as in the north-western part of Snape Warren where a significant area

(roughly 20m²) was found to contain only dead *Calluna* bushes during spring 2016.

In all six heaths the same pattern was observed which connected *P. schreberi* actively smothering grazed heather with small open spaces, between denser stands, which were devoid of any flora except short-cropped grasses. From the presence of rabbit pellets, scrape marks, and, occasionally, rabbits themselves in almost all of these open spaces – as well as the degraded condition of heather stands surrounding them – the species seems to favour such areas for grazing.

It is in these circumstances that the lowest, most heavily-damaged *Calluna* plants were found during fieldwork, having been subjected to the most grazing pressure. It was also where the largest and most numerous patches of feather moss were observed beginning to take hold on the damaged shrubs, as shown in figures 6.8 and 6.9. In those circumstances where the bushes immediately adjacent to a clearing had already died, the moss was observed to have spread to the next closest plants, which had, in every case where this situation was encountered, already begun to be grazed by rabbits. It is presumably this process that led to the death of all heather plants in a part of Snape Warren measuring several metres square, where *P. schreberi* was found in abundance nearby, and where the current author knows of no recent conservation practice involving the application of herbicides to heather stands being employed.

On Sandlings heaths extant after the 13th century (both those that possessed warrens and, due to the presence of escaped populations, some of those that did not), then, probably exhibited some areas dominated by moss, rather than heather. In the Sandlings, at least, that moss would most likely have been *P. schreberi*. The creation and abandonment of open spaces should, perhaps, with this research in mind, be viewed as the establishment of micro-habitats in which moss could become locally dominant. The desertion of temporary brecks, stripping small areas of heather for fuel, sites of over-grazing, resource extraction sites, the death of fern stands, or the death or felling of trees (of which there were still numerous on heaths by the time Hodskinsons' map was surveyed, for example around Foxhall – see fig. 6.10) would all have created open patches for rabbits to graze in.

If the rabbit population was large enough to severely damage nearby stands, those bushes would then have been susceptible to smothering. As areas of *Calluna* bushes died, these fieldwork results suggest that the moss that caused that death, and the rabbits that had enabled it, would have moved elsewhere. As a result, areas of open ground devoid of the moss, or of rabbits, would have been created in which new heather plants could seed – unless grazing intensity was high enough to suppress all new growth, in which case grasses



Figure 6.8. Red-Stemmed Feather Moss (*Pleurozium schreberi*), in yellow, spreading outward from a patch of open ground with evidence of rabbit activity, and smothering Heather (*Calluna vulgaris*). Blaxhall Heath, Suffolk, April 2016. Photograph by A. Stone.



Figure 6.9. Red-Stemmed Feather Moss (*P. schreberi*), in yellow, spreading from open short grassland into stands of Heather (*C. vulgaris*). Blaxhall Heath, Suffolk, April 2016. Photograph by A. Stone.

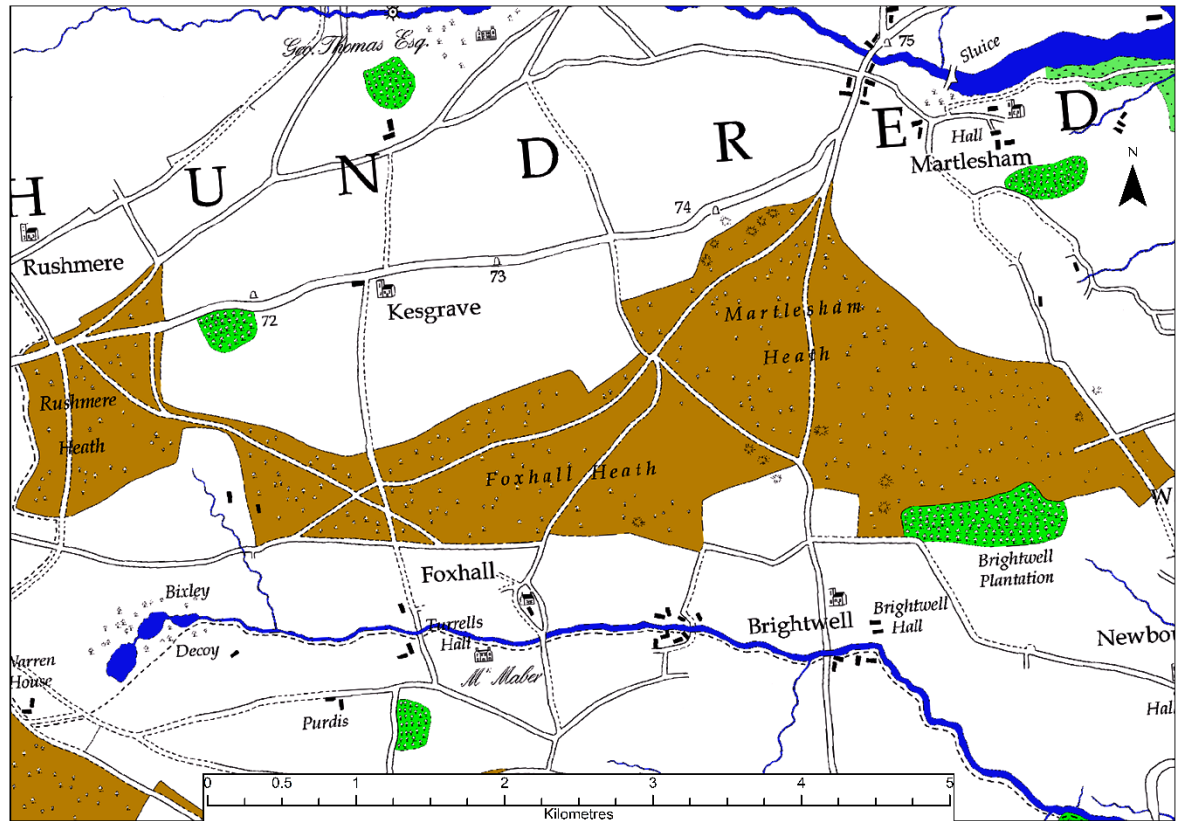


Figure 6.10. A map showing heathlands with scattered trees near the village of Foxhall in Suffolk as they appear on Hodskinsons' map of that county, published in 1783, and digitally redrawn by Andrew Macnair.

would probably have become locally dominant.⁶²⁸ In this, theoretical, system, a slowly shifting patchwork of moss, dead heather, and young heather bushes would be characteristic of Sandlings heaths with significant rabbit populations. Upon observation, though, it would seem that gorse is less susceptible to smothering by sub-story moss species than heather is, and so is less susceptible to death as a result of rabbit grazing.

⁶²⁸ Pickworth Farrow, *Plant Life* p.89

Sandlings heaths in the 17th century

In the 17th century, many Sandlings heaths were dominated by sheep flocks, organised in a foldcourse system similar to that found in Breckland. In Blythburgh and Walberswick, both in the northern Sandlings near Southwold, for example, documents written in 1642 described two foldcourses ‘upon the sheepwalk or heath there’ containing 500 acres.⁶²⁹ Some large flocks were recorded as at Friston (on the edge of the southern Sandlings) where over a thousand sheep were recorded in the 1690s.⁶³⁰ So too were 1,000 sheep accounted for at Westwood, near Blythburgh, in 1646.⁶³¹ In what would seem, from medieval evidence already discussed, to be a longstanding tradition in the Sandlings, many of these heaths were privately owned. A map of Sutton on the Shottisham peninsula from 1631, for instance, shows most heathland in the parish managed as sheepwalks controlled independently by the owners of several large farms in the parish, with only a small area set aside as common land.⁶³² Figure 6.11 shows part of this map in detail.

The practice of privately owning heaths was also subject to some expansion, especially by large landowners seeking to capitalise on profits from their right to foldcourse. A map of the extensive Stanhope estates from c.1600, for example, shows one area of sheepwalk enclosed from adjoining common heathland by ‘the ditch of the new inclosure’.⁶³³ Elsewhere on the map a large area of heath is labelled as ‘Late Common’.⁶³⁴ This was to maximise profits from tathing, as in Hilborough discussed earlier. In part, though, it might have been inspired by an evolution in the foldcourse system noted by Bailey in west Suffolk, ongoing since the 14th century. He argues that the nature of the fold changed from one focussed on producing manure to one focussed on the sheep themselves as a product, resulting in a ‘progressive amalgamation and engrossment of holdings, and the growth of seignorial sheep farming at the expense of the peasantry’ of which the expansion of private sheepwalk at Stanhope would be an example.⁶³⁵

The prevalence or impact of rights to fuel gathering during this century are rarely mentioned and difficult to determine. Although there are records of both heather and bracken being sold as fuel in some places, how common this practice was across the region

⁶²⁹ SROL 823/A/1/18

⁶³⁰ Armstrong, P., “The Heathlands of the East Suffolk Sandlings” Suffolk Natural History 15, 5 (1970) p.419

⁶³¹ Armstrong, “Changes in the Land Use” p.2

⁶³² SROI HA24:50/19/1/11; Williamson, The Suffolk Sandlings p.55

⁶³³ Williamson, Sandlands p.54

⁶³⁴ *Ibid.*

⁶³⁵ Bailey, “Sand into Gold” pp.41

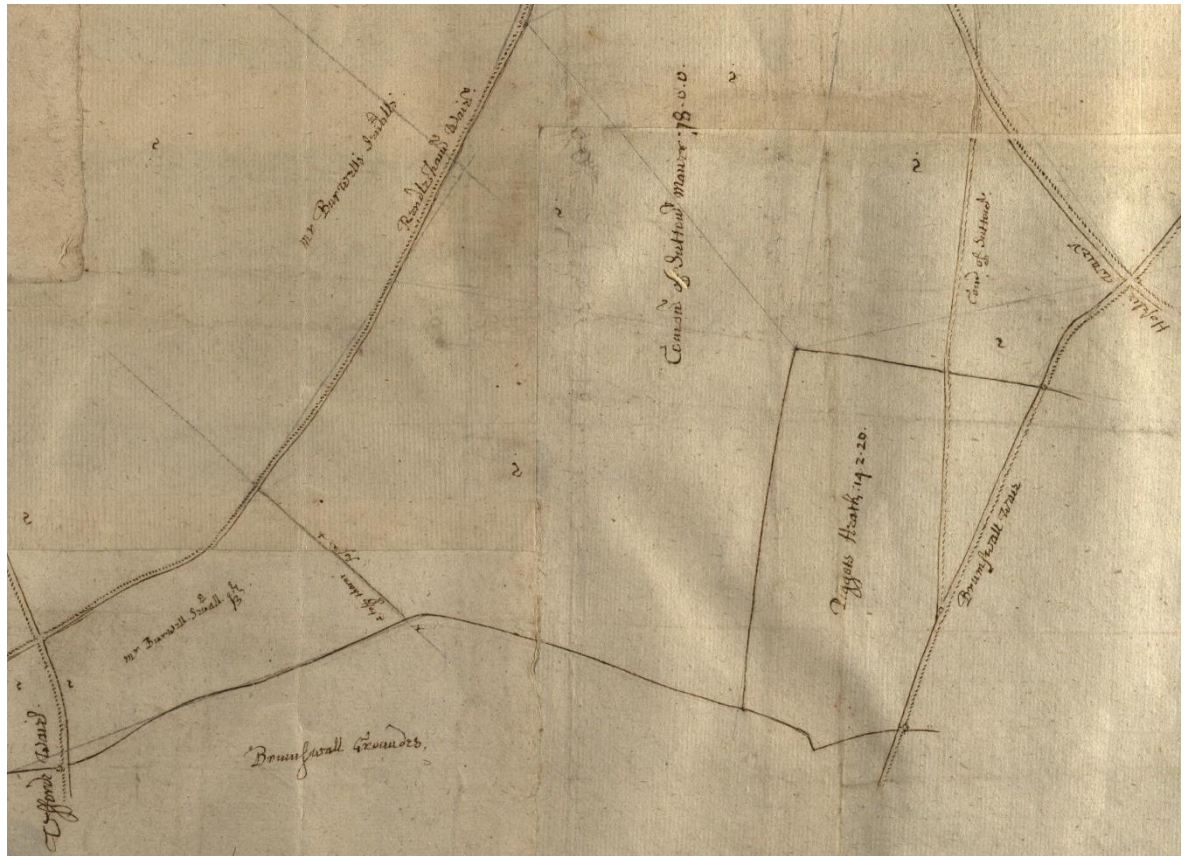


Figure 6.11. Detail of a map of Sutton near Shottisham in Suffolk, dated 1631, showing individual sheepwalks labelled with the names of their owners, as well as the common Piggets Heath.

is unclear.⁶³⁶ What is clear, however, is that the effects of gathering gorse for fuel would have been negligible, if it was practiced at all. The agriculturalist and cartographer John Norden, writing in his ‘Surveyor’s Dialogue’ of 1618, gives a generally negative view of gorse – for the most part describing it as a useless weed in need of destruction. He does, however, mention a single ‘useful’ type of gorse gathered for fuel elsewhere in the country, but which was not collected in the same way in the Sandlings. The passage reads:

But there is a kind of Furze worth the preservation, if it grow in a Country barren of wood. And of that kind there grows much in the West part of Devonshire, and in some parts of Cornwall, where they call them French Furze: they grow very high, and the stalk great, whereof the people make faggots, and vent them in neighbour Towns, especially in Exeter ... And this kind of Furze groweth also upon the Sea coast of Suffolk, but that the people make not that use of them, as in Devonshire

⁶³⁶ Williamson, *The Suffolk Sandlings* p.55

and Cornwall, for they suffer their Sheep and Cattle to browse and crop them when they be young, and so they grow [to] scrubbed and low tufts, seldom to that perfection that they might.⁶³⁷

This type of gorse, now simply referred to as Common Gorse (*Ulex europaeus*), then, was – as at Icklingham in the Suffolk Breckland – protected against gathering in favour of being kept for the preservation of the flock. Given the general terms employed by Norden, it would seem this was, at least to his knowledge, a common practice across the Sandlings region.

Also relatively common, as it was in numerous Breckland manors, was the temporary cultivation of parts of heathlands. Although references made to brecks or assarts in 12th and 13th century cartularies, discussed earlier, could have referred to the cultivation of cleared woodland, rather than ploughed heathland, several 17th century references specifically mention the practice taking place on heaths. The lords of the manors of Blythburgh and Walberswick, for example, were said to:

Have used to plow such parte of the ... walke or heath as they would; and where any parte thereof was sowed with corne, the inhabitants of Walberswick did not put their cattle upon such places soe sowed untill the corne was reaped; but if their cattle did stray and come to the corne, they were impounded. And that it appears by the riggs and furrowes on most parte of the heath, that the same have usually byn ploughed.⁶³⁸

As in some Breckland manors, then, for example Hilborough, these shifts were periodically ploughed on the heath to the exclusion of common grazing livestock. The mention of extant but, at that point, seemingly abandoned ridge and furrow earthworks – left over from past cultivation attempts – shows the practice was longstanding even in the 17th century. As in Breckland, the regular ploughing and planting of parts of heaths in the northern Sandlings would probably have favoured the regeneration of grass rather than of heather in the short term.⁶³⁹ Unlike in Breckland, or, indeed, in many parts of the southern and central Sandlings, however, some heaths in the far north of the region were maintained

⁶³⁷ Netzloff, M. (ed.), *John Norden's The Surveyor's Dialogue (1618): A Critical Edition* (Abingdon, 2016) p.187

⁶³⁸ Williamson, *The Suffolk Sandlings* p.58

⁶³⁹ Kerridge, E, *The Agricultural Revolution* (London, 1967) p.79

on clearly wet or waterlogged soils, probably resulting in a very different heathland flora altogether.

The wet and dry heaths of the Lowestoft area in the 17th century

Figure 6.12 shows a digitally redrawn map of the parish of Lowestoft in the northern Sandlings in 1618, derived from the manor rolls of that year.⁶⁴⁰ The parish for the most part overlies Wick 3 loam at association level, with Sandwich dune sands on the coast and Mendham Peat on the banks of Lake Lothing. On the map, two heaths are shown – Skamacre Heath and Drakes Heath. The former stood roughly 700 metres from the water’s edge and extended into the neighbouring parish of Oulton, to the west. Indeed, the shape of the parish boundary, extending to encompass roughly half of the heath but none of the surrounding arable land, suggests it was specifically designed to allow dual access to the heathland. It had, in parts, been divided into doles, or possibly shifts, as heaths elsewhere in the Sandlings had been in centuries previous. Manorial documents concerning Oulton, indeed, show doles being created on Skamacre heath since at least 1555.⁶⁴¹ A later map of the parish shows areas of doles on the heath there as late as 1733.⁶⁴²

The same 16th-century documents also describe Skamacre as one of several commons which ‘hath always been fed by the Inhabitants’ – that is to say, used to feed the inhabitants’ livestock.⁶⁴³ Thus doling and common grazing had taken place on the same heathland there, either simultaneously or at different times of the year, for ‘time immemorial’ by the time the 1618 rolls had been written. Although enclosure, even of a temporary nature, would not have been required to mark each division, boundary markers of some kind would presumably have been common sights in this landscape – whether they be earthworks or simple poles.

The other heath, called ‘Drakes’, did not stand on a lens of sandy soils as Skamacre did but along the water’s edge, adjacent to an area labelled ‘Smithmarsh’ on the 1618 map. The soil there, as the use of the term ‘marsh’ would suggest, is seasonally waterlogged and locally dominated by impermeable peat. As such, the soils of Drakes heath were almost certainly periodically flooded by the tidal waters of Lake Lothing - labelled ‘The Fresh Water’ on the map. They did not, therefore, resemble in any way the podsollic sandy soils found beneath many other heaths further south in the Sandlings, or in much of Breckland.

⁶⁴⁰ SROL 194/1/10/73

⁶⁴¹ “on Skamacre Heath ... divers persons had doles etc.” SROL 193/3/5

⁶⁴² SROL 61/1

⁶⁴³ SROL 193/3/5

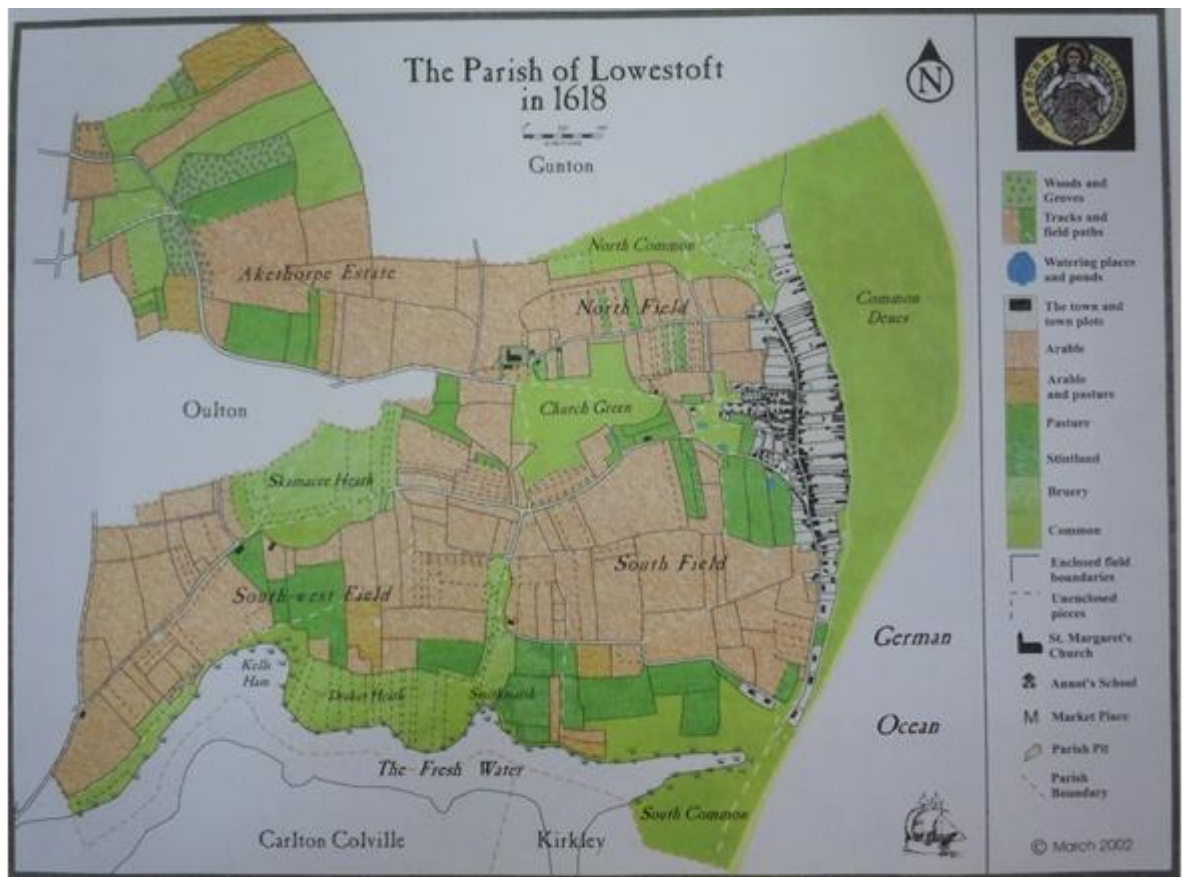


Figure 6.12. A digitally redrawn map of the parish of Lowestoft, in north east Suffolk, derived from the Lowestoft manor rolls of 1618.

Like Skamacre heath, though, Drakes was divided into doles. Unlike the former, however, where the central area of the heath appears to have remained undivided in 1618, all of the latter is illustrated with the dotted lines which probably signify individual plots.

Beyond grazing, the specific uses of these two heaths were not recorded in these or any other documents known to the current author. Contemporary manorial documents from Carlton Colville, on the other side of Lake Lothing to the south, however, gave detailed accounts of common rights held on a heath in that parish, which stood directly opposite Drakes Heath. There 'Eastheath' extended from Mutford Bridge in the west, which once stood where the modern bridge separating Oulton Broad and Lake Lothing does today, to the parish of Kirkley, the boundary of which is visible to the south east in figure 6.12. In 1614 the heath was described as follows:

upon w[hi]ch some ten[a]ntes have certayne severall p[ar]cells of bruerie to grave flagg[es] upon for there fying but af[ter] common feed And upon the residue

the ten[ant]es doe grave flagg[es] for there fyringe and doe feade there ea~~ll~~ cattell
a~~ll~~ there all the year w[hi]ch conteyne by estimacion CC acr[es].⁶⁴⁴

The Roman numerals CC translate to an area of 200 acres in Arabic numerals. Common grazing, then, was permitted on some parts of the heath all year round, but on doles was permitted only during a specific period of ‘common feed’. After that the tenants of the doles held the right to ‘grave flagges’, as at Icklingham, on their lands for their firing. The word ‘grave’ comes from the ME *graven* meaning ‘dig’.⁶⁴⁵ The pattern of management for Drakes Heath, situated on the same soils and also divided into doles, was probably similar.

The soils of both Drakes Heath and Eastheath, though, show that, in this northern extreme of the Sandlings at least, what constituted a heath depended not necessarily on soil type, but rather on methods of management employed there. Both wet and dry heaths near Lowestoft were used for common grazing, and both a private and common source of fuel. In this sense both Skamacre and Drakes Heath were described using the same terms but represented landscapes characterised by very different soils. Furthermore, the term ‘heath’ was evidently sometimes used interchangeably with other words used in the names of separate common lands in the surrounding area.

In Carlton Colville, for instance, another common was recorded in 1614 as ‘Whytton grene al[ia]s whytton heathe against w[hi]ch many Ten[ant]es doe dwell w[hi]ch the ten[ant]es doe feade w[ith] there cattall all the years And it conteyneth by estimacion C acres’.⁶⁴⁶ Though the gathering of fuel was not mentioned there, and grazing appears to have been year-long, it was labelled as a heath just as Eastheath, and the two in Lowestoft, were. With an area measuring 100 acres, Whytten was not a small common, as many areas labelled ‘green’ across the study often were, when compared to the sizes of areas labelled ‘heath’. Characteristic of landscapes given the name ‘green’, however, was the presence of numerous dwellings adjacent to them, and in that sense Whytten was no exception. As areas labelled ‘heath’ generally did not possess significant nearby settlement, I suggest that ‘green’ was the most recent of the two names employed at Carlton – introduced to describe a heathland landscape after the introduction of numerous abutting homesteads.

⁶⁴⁴ SROL 194/3/10/6

⁶⁴⁵ Stratmann, *A Middle English Dictionary* p.306

⁶⁴⁶ SROL 194/3/10/6

Sandlings heaths in the 18th century

Upon studying Hodskinson's map two points become clear with regards to heaths. First, that some landscapes described as heaths in the past were, at that point, known by different names or simply as 'common'; and secondly that the majority of lands labelled as 'heaths' still had trees on them at that time. Near Lowestoft, for example, all heaths previously mentioned were still extant, though under different names (see figure 6.13). Skamacre and Drakes Heaths were drawn but were not named. Eastheath was by then known as 'Kirkley Heath' and Whitton Heath had by that point permanently become known as Whitton Green, complete with many surrounding homesteads where other nearby heaths had few or none at all. All of these heaths were shown with scattered trees. As some commons were drawn with more or less dense tree cover, and some with none at all, this would seem not to be a template used irrespective of the reality. Thorington Common, for example, was shown as a veritable woodland while nearby Black and Wenhaston Heaths were drawn with only two trees each (see figure 6.14). All seven named heaths on the Felixstowe peninsula, at the southern extreme of the Sandlings, were similarly drawn with scattered, but not evenly spaced, trees. Figure 6.15 shows this area in detail. Unless the drawing of trees was done at random, we must accept that dispersed tree cover was probably a feature of most Sandlings heaths in the late 18th century.

Indeed, parts of some heathland sheepwalks found there had only recently lost their trees, as at Staverton, for example. John Norden's map of the manor there, drawn in 1601, showed almost all of the park wooded, either densely or more sparsely.⁶⁴⁷ A map of parts of the same area, drawn in 1779 by Isaac Johnson, however, showed that an eastern section of the park (previously wooded) had become clear and was then called 'Little Staverton Sheepwalk', while a section in the west (also previously wooded) had also been cleared – and on Hodskinson's map was shown as part of another open sheepwalk.⁶⁴⁸

Furthermore, in his survey of Norfolk, published the decade after Hodskinsons', Faden drew the Suffolk hundred of Lothingland, including the area around Lowestoft, in much the same way. All heaths and commons, though, were drawn without trees. Figure 6.16 shows Corton Heath in Lothingland as an example, first on Hodskinsons' map of 1783 and then on Faden's map of 1797. Indeed, only a handful of heaths or commons in any part of Faden's map of Norfolk were shown with any trees at all, even large ones. If

⁶⁴⁷ SROI V5/22/1

⁶⁴⁸ SROI HD 11/475

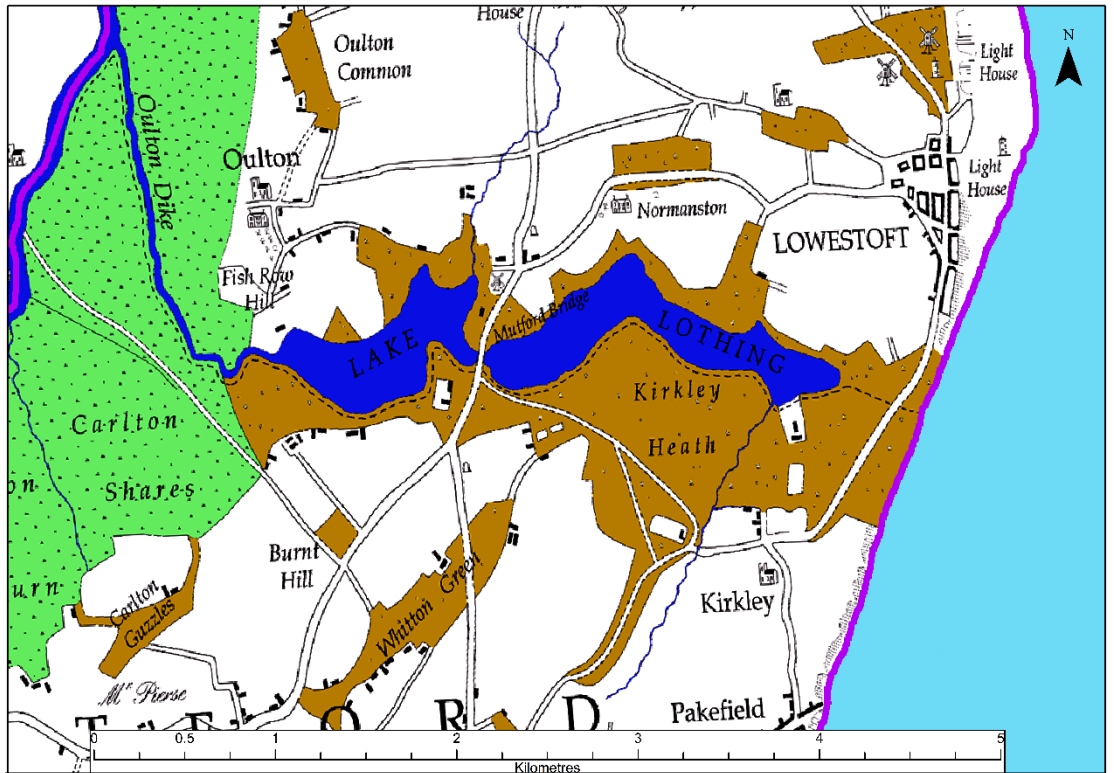
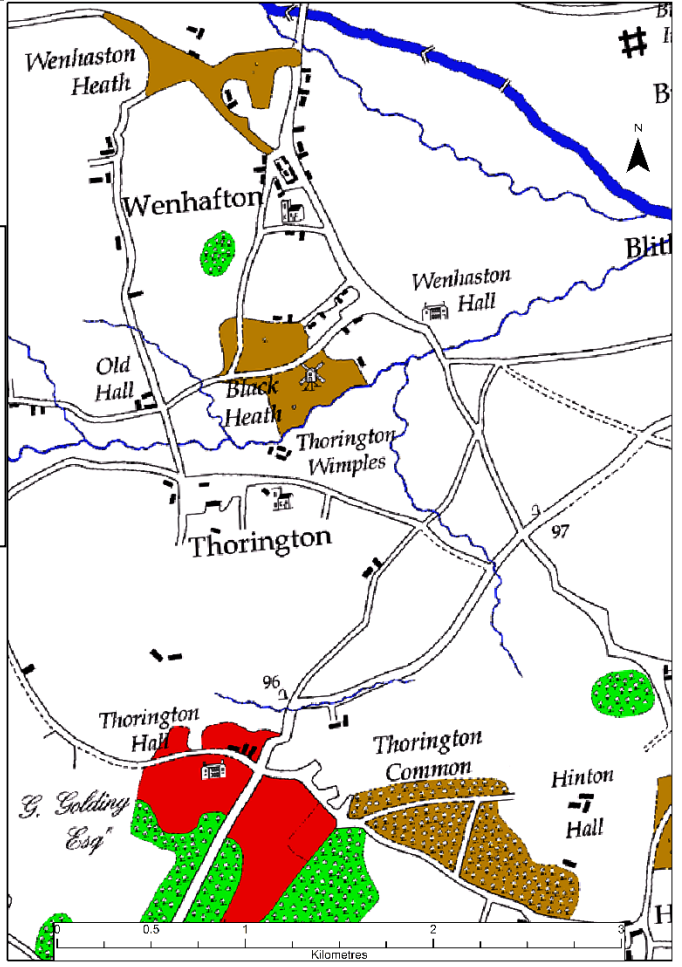


Figure 6.13. A map showing the area near Lowestoft in Suffolk as it appears on Hodskinsons' map of that county, published in 1783, and digitally redrawn by Andrew Macnair.

Figure 6.14. A map showing Wenhahton Heath, Black Heath, and Thorington Common - all near Thorington in Suffolk - as they appear on Hodskinsons' map of that county, published in 1783, and digitally redrawn by Andrew Macnair.



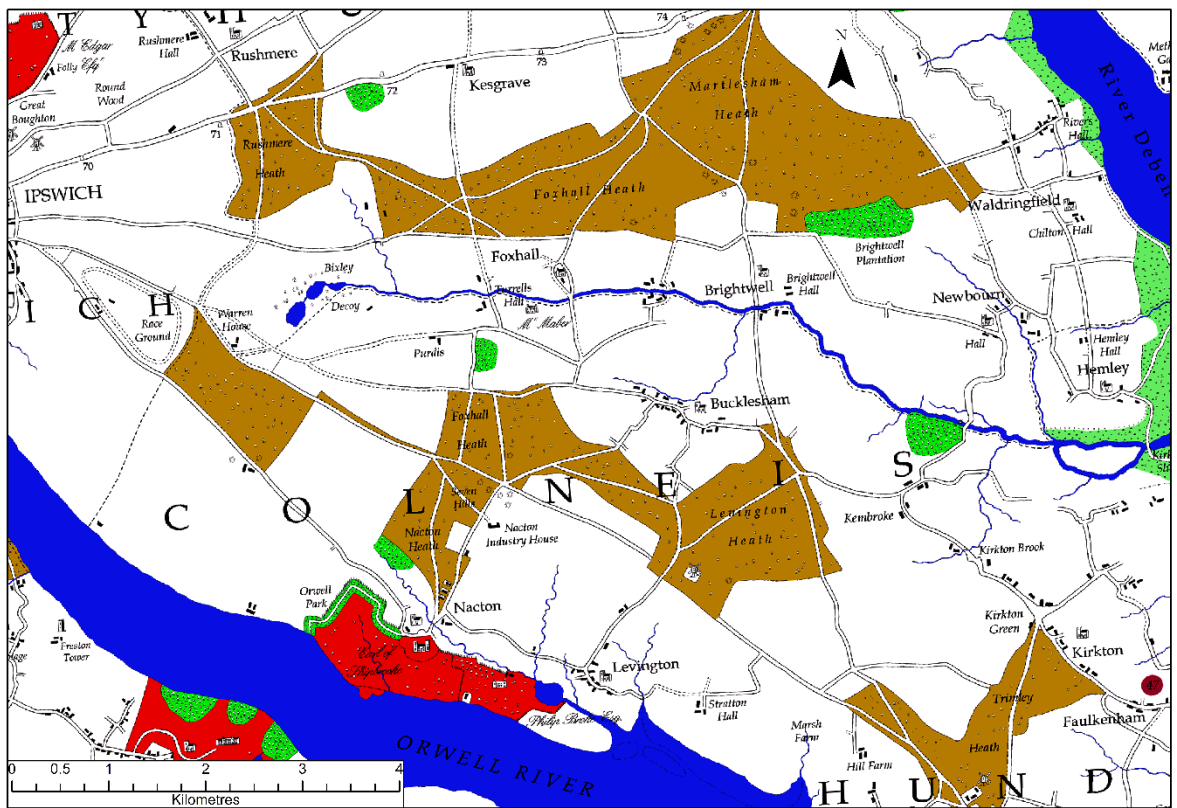


Figure 6.15. A map showing heathlands on the Felixstowe peninsula in south-east Suffolk as they appear on Hodskinsons' map of that county, published in 1783, and digitally redrawn by Andrew Macnair.

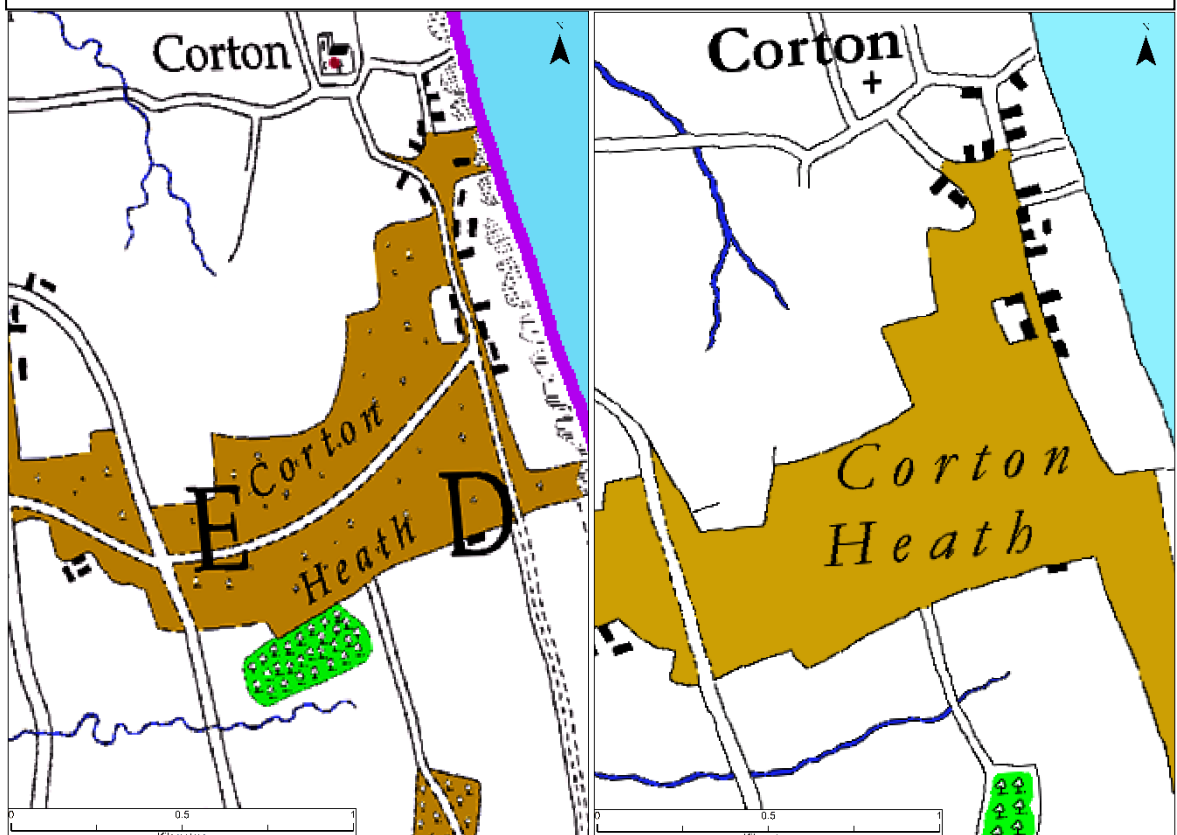


Figure 6.16. Corton Heath in Suffolk as it appears first on Hodskinsons' map of that county, published in 1783, and then on Faden's map of Norfolk, published 1797. Both digitally redrawn by Andrew Macnair.

Hodskinsons' map is accurate, then, or representative of the reality in any way with regards to trees, it is possible that heaths in Norfolk also regularly possessed scattered trees which Faden neglected to include in his map. Recent research by Barnes *et al*, indeed, strongly supports this argument and argues that many heaths in northern Norfolk possessed at least scattered tree cover into the 18th century – yet Faden ignored most of it.⁶⁴⁹

The amount of heath and sheepwalk shown unenclosed on Hodskinson's map is also worthy of note. Williamson has drawn attention to the fact that heathland reclamation for agriculture in the Sandlings was not as advanced in the late 18th century as might be expected, considering the fashionable (and profitable) drive towards the 'improvement' of heathland soils.⁶⁵⁰ This is likely because of the combined reasons of soil infertility and, as a result, the vested interests of large landowners and estates to maintain sizeable areas of grazing.⁶⁵¹ Regarding the soil, even Young recognised that in some areas of very poor sandy soils, cereal crops would not take and large flocks were necessary to maintain agricultural productivity. In 1795 he wrote that:

I believe the error in cultivating these waste soils, to be the same in every part of the kingdom; the same corn is always made the object; but corn should rarely be sown on soils that will not assure the farmer a very strong probability of a good crop. These dry heaths are to be profitably managed only by sheep being made the principal object; and all the tillage of the farm absolutely subservient to them. The farmer admits it to be an excellent sheepwalk, because the ling is of a good growth. To plough 600 acres of such land is insanity!⁶⁵²

Improvement, then, did not necessarily mean ploughing up all available heath in the sandlings. Some were only 'profitably managed' through grazing, and this was not lost on those landowners who traditionally enjoyed rights of foldcourse. So at Westwood, mentioned earlier, where there was a flock of 1,000 sheep in 1646, there was still an enlarged flock of 1,600 in 1795.⁶⁵³ A lease for the same farm, also from the 1790s, made it clear that folding was still a necessary part of maintaining profitability for the owner at that time. It directs the tenant to 'keep at least 800 sheep and to fold them at all reasonable

⁶⁴⁹ Barnes *et al*, "Heathland and Wood Pasture in Norfolk" pp.399-403

⁶⁵⁰ Williamson, *Sandlands* p.65

⁶⁵¹ *Ibid.*

⁶⁵² Young, *Annals of Agriculture, and Other Useful Arts* Vol. XXIII (Bury St. Edmunds, 1795) p.36

⁶⁵³ Armstrong, "Changes in the Land Use" p.1

times in the year with the usual number of hurdles upon some part of the farm most likely to be benefitted thereby'.⁶⁵⁴ Indeed, the expansion of arable land was sometimes criticised for want of heathland sheepwalk because it was recognised to be of such great use. Thus, an early 18th century survey for a farm near Ipswich reads:

The absence of heath prevents the most being made of the arable, which is extremely light, poor and uncertain land. The more sheep an occupation can keep the better as the land is more adapted to them than corn. If 50-100 acres of heath could be added to this farm, I would consider it very desirable!⁶⁵⁵

Maintaining heathland sheepwalk, then, was the intention of improvers in those parts of east Suffolk where the sandy soils were too acidic or unfertile to be of other agricultural use. A determination to maintain the sheepwalks (rather than simply to plant more grain), and therefore maintain the profits of large landowners, is probably why so much of the Sandlings remained unenclosed on Hodskinson's map. As Williamson has said, 'large landowners were not simply interested in producing more grain... they were interested in making money, and this often involved forms of estate management which did not maximise food production at all, but served instead to preserve the long-term value of their land'.⁶⁵⁶ This decision to avoid, or at least delay, ploughing much of the Sandlings is also almost certainly why so much open heathland survives there in the present day.

Sandlings heaths - conclusion

Since at least the 11th century, landscapes in that part of eastern Suffolk we now called the Sandlings have varied in character, especially between the north and the south. At the time Domesday Book was surveyed in the 1080s, the north remained partially wooded while the south had become a more open landscape dominated by grazing sheep flocks. That this southern area was also once heavily wooded is clear from woodland-indicating elements surviving in mid-to-late-Anglo-Saxon place-names. Though mostly open, these southern Sandling landscapes would only have vaguely resembled the very open, heavily-grazed areas of Suffolk's Breckland in the 11th century – flock sizes being significantly smaller in the former.

More woodland was also recorded for the northern Sandlings in monastic

⁶⁵⁴ Armstrong, "Changes in the Land Use" p.1

⁶⁵⁵ Williamson, Sandlands pp.65-66

⁶⁵⁶ Williamson, The Transformation of Rural England p.19

cartularies of the 12th to 13th centuries, though heathland had become commonplace there, too. Heaths across the sandlings were divided between private land upon which no common rights persisted, and others where they did. It is likely that, in some place, closed private heaths were enclosed earlier than their common counterparts. If wooded heaths existed in the northern sandlings at this point, both woods and heaths having been granted in the same manors at the same times there, many of them might have become less or unwooded in the 14th century – trees there being felled to pay debts incurred by monastic houses (and perhaps other major landowners) during the Black Death.

After the introduction of rabbits into the landscape after the 12th century, Sandlings heaths with large rabbit populations likely resembled a shifting patchwork of young heather, dead and dying heather stands, gorse stands, grasses, and bare ground as a result first of grazing by the rabbits, and then the aggressive expansion of a previously subordinate layer of moss.

Private heathland was common in the Sandlings in the medieval and post-medieval periods and this likely explains the comparative paucity of bounded common heaths visible on Hodkinson's map of 1783. The survival of extensive areas of former heathland sheepwalk, much of it privately owned, in the Sandlings into the modern period is almost certainly due to the combined justifications of poor soil fertility and, therefore, the need to keep large flocks of sheep to maintain agricultural profits into the early 19th century.

The term 'heath' was historically applied, at least near Lowestoft, to landscapes on both sandy and waterlogged soils while grazing, fuel gathering, and periodic temporary cultivation took place on heaths there as it did on heaths in Breckland. Unlike in Breckland, though, most Sandlings heaths surviving in the late 18th century were drawn with scattered trees. Although modern conservation efforts tend to target tree cover as a matter of course (and large tracts of Suffolk Breckland heaths have likely been tree-less since at least the 11th century), many Sandlings heaths were regularly wooded into the 18th century.

7. The heaths of Essex

Unlike in Breckland or the Sandlings, heathlands surviving in Essex, either in the late 18th century or in the modern day, were not and are not restricted to only a limited number of sandy soils – their distribution being more edaphically varied. A particular concentration of heathland near Colchester is apparent from at least the medieval period, and surviving documentary evidence concerning these were found to best fulfil the selection criteria given in chapter one – that of detail and diversity – and these are focussed on for discussion.

Archival evidence will, again, be relied upon to give a historic landscape character to those heaths, both individually and where general trends become apparent. It is worth noting, though, that there is a scarcity of printed secondary material available which discusses Essex heaths, compared to those of either Norfolk or Suffolk. Britnell, referenced at relevant points later in this chapter, produced some works on field patterns in the 1970s and 1980s containing limited archival references to heaths, but no significant contributions have been found in works published since then. Such is the paucity of published material that most archival references made in this work which are not my own were found in an unpublished PhD thesis from 1950 by Hull, referenced later.

Some references were found to historical protests against the curtailment of common rights in Hunt, but these were informed by Hull's work.⁶⁵⁷ Morant's 1768 *History and Antiquities of Essex* contains some useful references to heaths and these have been cited at relevant points. Cromwell's 1825 *History and Description of Colchester* was consulted, as well as Wright's 1831 *History and Topography of Essex*, but relevant heathland references made within them both borrow heavily from Morant.⁶⁵⁸

This paucity is, perhaps, explained by the subjects most often debated surrounding heathland in Breckland or the Sandlings – sheep, sand, and parliamentary enclosure – being not so well-evidenced in Essex. Of sand, the county has no great areas of note. Of sheep, as will be discussed later in the chapter, they were of little consequence on heathland there in the historic period. Of parliamentary enclosure, only 3.1% of the county was enclosed by those means between 1761 and 1870.⁶⁵⁹ As Young said, 'Essex has for ages

⁶⁵⁷ Hunt, W., *The Puritan Movement: The Coming of Revolution in an English County* (London, 1983) p.35

⁶⁵⁸ Cromwell, T., *History and Description of the Ancient Town and Borough of Colchester in Essex* Vol. I (London, 1825) p.71; Wright, T., *The History and Topography of the County of Essex* Vol.I (London, 1831) pp.252-253

⁶⁵⁹ Arnos, S.W., *Social Discontent and Agrarian Disturbance in Essex, 1795-1850* Unpublished PhD Thesis (Durham University, 1971) pp.59-60

been an enclosed country, so that there was no field here for the great parliamentary exertions which have been made in so many other counties.⁶⁶⁰ The amount of heathland surviving in Essex today is also tiny compared to that still found in Norfolk (26 times more than Essex) or Suffolk (40 times more, see pp.116-117). Under these circumstances, students of heathland history appear to have favoured other counties for their research over one which carries so little of it. The results of this research, however, shows a long history of wooded heathland management in Essex, examples of which display significant differences in management techniques and typical heathland species when compared to the management of heaths in Breckland of the Sandlings.

Solid geology

The older sedimentary bedrock deposits in Essex are found in the far south and far north west of the county, with those between being deposited later. In the south, on the banks of the Thames, between Purfleet in the west and Coalhouse Fort, south of East Tilbury, in the east Seaford and Newhaven Chalks dominate below the surface. The former was deposited during the Coniacian and Santonian ages of the later Cretaceous period, approximately 83.6 to 89.8 million years ago, and is firm with both nodular and tabular flint seams throughout. The latter was laid down during the Santonian and following Campanian ages, c.72.1-86.3m years ago, and is softer also containing numerous flints. Between them they mark the northern extreme of a field stretching from Kent in the south, under the Thames itself. Formed under warm seas, between 40 and 90 *per cent* of the chalk consists of the calcareous remains of microscopic plankton, with the rest made up of fossils, shells, and flint.⁶⁶¹ The flint, either nodular or tabular, is most abundantly found in the upper chalk.⁶⁶² Also present, often in the lower chalk but infrequently throughout, are deposits of marcasite or iron sulphide (FeS₂).⁶⁶³ Chemically identical to iron pyrite it is crystallographically distinct having an orthorhombic rather than a cubic crystalline structure.⁶⁶⁴ On the surface oxidation of the iron produces patches of acidic brown rust around exposed nodules.⁶⁶⁵

To the north this is bordered first by fine Thanet Formation sands laid down during the Thanetian Palaeocene c.56-59m years ago, then the intermixed sands, silts, and clays of

⁶⁶⁰ Young, General View of Essex Vol. I p.164

⁶⁶¹ Sherlock, R., British Regional Geology: London and Thames Valley, HMSO (London, 1960) p.20

⁶⁶² *Ibid.*

⁶⁶³ *Ibid.* p.21

⁶⁶⁴ Chambers, W. and Chambers, R., Chambers's Mineralogical Dictionary (London, 1966) pp.26, 30

⁶⁶⁵ Sherlock, London and Thames Valley p.21

the Lambeth Group deposited throughout the Palaeocene (c.56-66m years ago). Together forming a band just 700m wide at the western county boundary this widens to almost 4.5km level with Orsett, and 7km level with Stanford-le-Hope before disappearing beneath the Thames between there and Coryton. A thin band of Harwich Formation sands and gravels between just 15 and 250m wide separates these from the Thames Group bedrock which underlies the majority of the county further north.

Approximately 81% of Essex is underlain by Thames Group bedrock, the most widespread sub unit of which is the London Clay Formation. Deposited under deep seas during the Ypresian Eocene, c.47.8-56m years ago, these consist mainly of silty clays with some stratigraphic partitions or pockets of fine sand. The clay itself is slightly calcareous and commonly contains layers of similarly calcareous calcilutite as well as dispersed particles of iron pyrite (FeS_2).⁶⁶⁶ At the surface the iron element of the latter oxidises to produce acidic rust, as with marcasite, but can effect a wider area, the mineral being disseminated rather than restricted to large nodules. Thin deposits of flint gravel occur infrequently with some glauconite in the sands which weathers easily and also contains some iron.⁶⁶⁷

In the north-west corner of the county another border of Thanet sand 0.2-2.1km wide separates the clay from another field of chalk. Here the same Seaford and Newhaven Formations as in the south are intermixed with Lewes Nodular and Culver Chalk Formations with some small lenses of Crag sands. Lewes Nodular chalk, deposited during the Turonian and Coniacian ages in the late Cretaceous period (c.86.3-96.9m years ago), is hard and compacted with some iron staining. Culver chalk, laid down during the Campanian late Cretaceous (c.72.1-82.6m years ago), on the other hand, is soft with large flints. The Crag sands, deposited under shallow water during the Pliocene and Pleistocene, just 0.01-5.3m years ago, contain glauconite and, where exposed, weather to create haematite, or iron oxide (Fe_2O_3), iron pans.

⁶⁶⁶ Geller, E. (ed.), Dictionary of Geology and Mineralogy (London, 2003) p.58

⁶⁶⁷ Chambers, Mineralogical Dictionary p.22

Superficial deposits

On the surface the conditions of Essex soils are markedly different to any in Breckland or the Sandlings – with much of the county covered by clay or deep loams. In the north and north west, between the Stour and the Hertfordshire border, deep Hanslope clay dominates, part of a band 16 miles wide arcing south west from Bury St. Edmunds in Suffolk to Stevenage in Hertfordshire. These soils are clayey to the surface with the Hanslope series, constituting roughly half the association, having a calcareous subsurface horizon 20-60cm deep and chalk stones below 60cm.⁶⁶⁸ In central Essex it stretches up to 27 miles south, almost touching the alluvial soils of the northern Roding and Chelmer river valleys, except where interrupted by deep, calcareous Stretham clays of a similar character around Hatfield Broad Oak, Great Chicknall, and Shelley.⁶⁶⁹

In the south of the county, from the Lea in the west to the North Sea, deep clays of the Windsor association are most common. These non-calcareous pelo-stagnogleyic soils are seasonally waterlogged during winter and are prone to crack in long periods of warm weather, but respond well enough to underdrainage to support good cereal crops.⁶⁷⁰ In the south west they are interspersed with lenses of Wickham 3, Wickham 4, Beccles 3, Essendon, and Hucklesbrook clays and loams near what was historically Waltham (now Epping) and Hainult forests. Indeed, it is upon those soils that the former survived into the late 18th century as far south as Stratford, before the rapid eastward expansion of London in the following century.

In the far south the river Thames is edged with seasonally waterlogged, non-calcareous clays of the Wallasea 1 association and was for the most part marshland into the 20th century and still is in parts today.⁶⁷¹ Between Stratford and South Okenden these soils are separated from the Windsor by a band of Hurst and Shabbington loams. The main series of the former is coarse, sandy loam over gravel often disturbed by cryoturbation producing localised variation in gravel depth.⁶⁷² That of the latter is an argillic gley; sandy loam with a clay-enriched subsoil.⁶⁷³ Fine loamy clays of the Waterstock association occur here in a lens around Becontree upon which a heath survived, at least in name, into the 1960s. Further east down the Thames, between Purfleet and Fobbing, this buffer-zone is

⁶⁶⁸ Hodge *et al*, Soils and their use pp.209-212

⁶⁶⁹ *Ibid.* pp.313-314, 141

⁶⁷⁰ *Ibid.* pp.358-361

⁶⁷¹ *Ibid.* pp.336-338

⁶⁷² *Ibid.*, pp.227-228

⁶⁷³ *Ibid.* pp.309-310, 174

made up of Hucklesbrook, Fyfield 4, and Ratsborough loams. The first of these contains permeable, non-calcareous coarse loamy and sandy soils over gravel, with some stone up to 30cm deep and significant deposits below that.⁶⁷⁴ It is upon these gravelly soils which two further heaths survive into the 20th century and another into the late 19th.

East and north of there, between the Thames and the Blackwater, Ratsborough and Hamble 2's deep silt separate the Windsor from the sea-edge wet silts and clays. Further north along the coast, though, in Wenstree and Thurstable hundreds between the Blackwater and Roman rivers, west of Mersea Island, a lens of Windsor clays reaches all the way to the intertidal zone. West and north of there, between Springfield and Little Horsley on the Suffolk border, the Windsor and Hanslope clays are divided by Oak 2 and Hornbeam 3 deep loam to clays upon which no heaths survive into the 19th century. In the very north east of the county, between Great Horsley and Bergholt at the one end, and Great Bentley and Wickes at the other, however, the interfluves are dominated by deep Tendring loams. These naturally acidic soils developed in silty and fine sandy drift over coarser glaciofluvial deposits, where the drift is usually thick enough to give stoneless soils to ploughing depth.⁶⁷⁵ Associated Horseley and Maxted series soils occur where the drift is thinner or not present at all, with siliceous stones present sometimes to the surface.⁶⁷⁶ It is upon these soils that sources describe an unusually high number of late-surviving wooded heaths.

Essex in prehistory

Evidence for Palaeolithic occupation in Essex has, historically, been limited in comparison to nearby counties.⁶⁷⁷ When *The Archaeology of Essex* was published in 1980, aside from Clacton-on-Sea, there were few recognised sites of this period as the majority of artefacts had been discovered out of context.⁶⁷⁸ More recently excavations have revealed *in situ* evidence for Lower and Middle Palaeolithic occupation, most notably in Southend, Purfleet, Aveley, and West Thurrock.⁶⁷⁹ Existing data shows that Palaeolithic occupation was distributed almost exclusively along the major river valleys of the county showing a

⁶⁷⁴ Hodge *et al*, Soils and their use pp.224-225, 427

⁶⁷⁵ *Ibid.* pp.322-328

⁶⁷⁶ *Ibid.* pp.323, 427, 430

⁶⁷⁷ Wymer, J., 'The Palaeolithic of Essex' in Buckley, D. (ed), Archaeology in Essex to AD 1500 Council for British Archaeology Research Report No 34 (London, 1980) p.8

⁶⁷⁸ *Ibid.*

⁶⁷⁹ Medlycott, "Research and Archaeology Revisited" p.5

preference for lighter soils.⁶⁸⁰ As with the other counties in the study area this may be a result of biases in preservation and recovery. The scouring of existing water courses and distribution of boulder clay across the north-west of the county by the Anglian ice sheets is likely to have destroyed or masked much important evidence.⁶⁸¹ In addition, many of these sites have been located through schemes such as the Medway Valley Palaeolithic Project and the Thames Estuary Aggregate Levy Sustainability Fund.⁶⁸² Should similar levels of funding be targeted at other landscape types it is possible that more Palaeolithic activity will be discovered. Despite extensive borehole surveys along the coastline, no evidence of anthropogenic landscape change has been noted from this period.⁶⁸³ The density of occupation evidence for the Mesolithic period is slightly greater, however it shows a similar distribution to that of the Palaeolithic period - in that it is almost entirely along the river valleys.⁶⁸⁴ Again, the pollen record suggests that there was no anthropogenic woodland clearance during this period.⁶⁸⁵

At the beginning of the Neolithic period, archaeological evidence suggests there was a significant increase in human activity in Essex.⁶⁸⁶ The majority of extant sites have been interpreted as ritual or mortuary monuments, with concentrations along the major river valleys, the Dengie peninsula, and in Thurrock.⁶⁸⁷ Significant occupation sites have been excavated at Orsett, and in the intertidal zones along the Crouch and the Blackwater rivers, and near Purfleet.⁶⁸⁸ Pollen records show a significant decline in elm population and an increase in grasses associated with cereal farming in this period, concurrent with the first incidence of cereal grain impressions in pottery sherds.⁶⁸⁹ The extent of landscape modification in Essex at this time is debated. Excavations at Hullbridge and Purfleet have indicated that woodland exploitation occurred in a canopied landscape, with only small clearings for settlements and cereal planting.⁶⁹⁰ Conversely, investigations at Stansted

⁶⁸⁰ Wymer, "The Palaeolithic of Essex" p.10

⁶⁸¹ *Ibid.* p.8

⁶⁸² Medlycott, "Research and Archaeology Revisited" p.4

⁶⁸³ Wilkinson, T., "Archaeology and Environment in South Essex: Rescue Archaeology Along the Grays By-Pass, 1979/80" *East Anglian Archaeology* **42** (1988) p.125

⁶⁸⁴ Jacobi, R., 'The Mesolithic of Essex' in Buckley, D. (ed), *Archaeology in Essex to AD 1500* Council for British Archaeology Research Report No 34 (London, 1980) p.15

⁶⁸⁵ Wilkinson, "Archaeology and Environment in South Essex" p.125

⁶⁸⁶ *Ibid.* p.129

⁶⁸⁷ Ingle, C., and Saunders, H., "Aerial Archaeology in Essex: The Role of the National Mapping Programme in Interpreting the Landscape" *East Anglian Archaeology* **136** (2011) p.4

⁶⁸⁸ Wilkinson, T. and Murphy, P., "The Archaeology of the Essex Coast, Volume I: The Hullbridge Survey" *East Anglian Archaeology* **71** (1995) p.72

⁶⁸⁹ Wilkinson, "Archaeology and Environment in South Essex" p.125

⁶⁹⁰ Wilkinson and Murphy, "The Archaeology of the Essex Coast, Volume I" p.216

airport revealed large scale woodland clearance in the form of tree throws containing evidence of burning alongside flint tools.⁶⁹¹ Sources agree that there was a period of reforestation in estuarine and coastal areas in the later Neolithic period, probably due to communities being forced inland by the subsidence of the coastline and significant sea level rise.⁶⁹² This sea level change caused a remarkable level of preservation in Neolithic estuarine and coastal sites under layers of silt and peat, which may account for the perceived clustering of sites in these areas, inland sites being less well preserved.⁶⁹³

A combination of excavation and aerial photographic survey has shown a significant increase in human activity in Essex during the Bronze Age.⁶⁹⁴ As with Neolithic activity, this has mostly been identified through ritual and mortuary monuments, primarily comprising circular enclosures and ring ditches.⁶⁹⁵ Twelve circular enclosures have been identified, although not all are definitively from the Bronze Age. All are on lighter soils with a notable concentration in the Thames Valley, however this may be due to the heavier clays being less responsive to cropmark formation.⁶⁹⁶ Several of these enclosures occupy high ground close to the rivers and so are presumably meant to be seen from the water - which would require cleared ground to be maintained in between.⁶⁹⁷ Ring ditches occur throughout Essex, and over a hundred presumed barrow cemeteries have been mapped in the county to date.⁶⁹⁸ These are concentrated on the lighter soils of the major river valleys, and also throughout the Tendring district in the north-east of Essex.⁶⁹⁹ In fact, 28% of prehistoric sites recorded in the Essex Historic Environment Record in 2011 were from the Tendring district alone.⁷⁰⁰ This concentration of probable barrow sites, and the prehistoric cleared land around them, correlates with an area of dense historic heathland in that part of the county, near Colchester, surviving through the medieval period into the 18th century, discussed later in this chapter. In southern Essex, pollen analysis has indicated a decrease in dense woodland throughout this period and plant macrofossils have shown the area around the Lofts Farm settlement, near modern Heybridge, to be comprised

⁶⁹¹ Medlycott, "Research and Archaeology Revisited" p.9

⁶⁹² Wilkinson, "Archaeology and Environment in South Essex" p.125

⁶⁹³ Wilkinson, T., Murphy, P., Brown, N. and Heppell, E., "The Archaeology of the Essex Coast, Volume II: Excavations at the Prehistoric Site of the Stumble" *East Anglian Archaeology* **144** (2012) p.125

⁶⁹⁴ Ingle and Saunders, "Aerial Archaeology in Essex" p.62

⁶⁹⁵ *Ibid.*

⁶⁹⁶ *Ibid.*

⁶⁹⁷ *Ibid.*

⁶⁹⁸ *Ibid.*

⁶⁹⁹ Lawson, A., Martin, E. and Priddy, D., "The Barrows of East Anglia" *East Anglian Archaeology* **12** (1981) p.99

⁷⁰⁰ Ingle and Saunders, "Aerial Archaeology in Essex" p.18

of open grassland and arable farmland.⁷⁰¹

Settlement density in the Iron Age increased rapidly, primarily along the river terraces and estuaries, but excavation shows significant expansion into the London Clays in the south of the county.⁷⁰² Large scale funerary monuments are less common in this period, having been replaced by smaller shrines and temples.⁷⁰³ There is, however, evidence of twelve hillforts, predominantly in the south of the county, all of which are sited on prominent parts of the landscape and, like large funerary monuments, were likely intended to be seen from a distance.⁷⁰⁴ Pollen analysis of a palaeosoil undertaken at Asheldham Camp, near the modern settlement of that name in eastern Essex, supports assumptions of open ground there - showing that the ramparts were constructed on an already open and cultivated landscape.⁷⁰⁵ Indeed, in this period there was a general trend towards the creation extensive field systems, larger nucleated settlements, and a corresponding decline in tree pollen and increase in herbs and cereals recorded - particularly in the region of the Blackwater estuary, but recorded at some scale throughout the county.⁷⁰⁶

Essex in the 11th century

Figure 7.1 shows data taken from Domesday Book relating to woodland and sheep recorded for Essex. The economy was generally mixed, with almost all villis recording both woodland and sheep in some measure. A complete dependence on grazing land for sheep, at the expense of woodland, is only apparent on the central east coast of the county, but not to the extent seen elsewhere in the study area, for example in the Suffolk Breckland. Less woodland was recorded in coastal villis in the east and south east more generally, with sheep flocks remaining roughly constant when compared to inland villis. This likely reflects the frequently waterlogged nature of the numerous salt marshes found in that part of the county, in figure 7.1 shown in a darker shade of blue, and historically often used for grazing. Rackham, for example, notes the importance of saltmarsh for grazing in both Essex and Kent during the Anglo-Saxon period, while accounts from

⁷⁰¹ Ingle and Saunders, "Aerial Archaeology in Essex" p.62; Wilkinson, "The Archaeology of the Essex Coast, Volume I" p.219

⁷⁰² Drury, P., "The Early and Middle Phases of the Iron Age in Essex" in Buckley, D. (ed), Archaeology in Essex to AD 1500 Council for British Archaeology Research Report No 34 (London, 1980) p.8

⁷⁰³ Ingle and Saunders, "Aerial Archaeology in Essex" p.63

⁷⁰⁴ *Ibid.* p.69

⁷⁰⁵ Glazebrook, J. (ed), "Research and Archaeology: A Framework for the Eastern Counties, 1. Resource Assessment" East Anglian Archaeology Occasional Paper No.3 (1997) p.30

⁷⁰⁶ Medlycott, "Research and Archaeology Revisited" p.22

Langenhoe (near Mersea Island on the east Essex coast) record the construction of bridges and hurdles to control stock, and raised causeways specifically for sheep to avoid flooding on the marshes there in the 13th century.⁷⁰⁷

Large woodlands were commonplace – occurring with far more regularity than in either Norfolk or Suffolk in most of the county. The most woodland in the county was recorded in the south west - where the medieval royal forests of Waltham and Hainault were situated. Elsewhere, in the central and northern parts of the county, woodland was common while sheep flocks were relatively small. As a result, open landscapes would likely not have been commonplace. If heaths existed in those areas in the early medieval period (as they did in later centuries) they probably carried a degree of tree cover. The area with the most balanced ratio of woodland and sheep was found in the north east, around modern-day Colchester. Although heaths survived across much of Essex into the late 18th century, this north-eastern region contained many of the largest to be recorded in the centuries after Domesday Book was compiled.

Essex landscapes in cartularies of the 12th to 14th centuries

As in previous chapters, medieval charters contained in cartularies were searched for references to specific landscape types. All cartularies found to mention land in Essex were compiled by religious houses and pertained to a period between the late-12th and mid-14th centuries. The relevant cartularies included all of those related to religious houses listed in chapter six (p.192) as well as the cartularies for Dodnash Priory and St. Bartholomew's Priory in Sudbury.⁷⁰⁸ The vocabulary searched for was the same as in previous chapters, and the results are displayed in figure 7.2.

Heathlands were found in charters relating to four villis – Wivenhoe, Elmstead, St. Osyth, and Tolleshunt Knights – all in north-east Essex near Colchester. It is worth noting that no woodland was mentioned in any surviving charters for those villis or, for three of the four, in any adjacent villis. The exception was the southernmost of those four, Tolleshunt, where woodland was recorded in the neighbouring vill of Tolleshunt d'Arcy. In isolation, this might suggest that the heaths in that area were likely open and treeless – the woodland recorded at Domesday having been (either mostly or entirely) removed.

⁷⁰⁷ Rackham, History of the Countryside p.386; Smith, J., Foulness: A History of an Essex Island Parish (Chelmsford, 1970) p.25; Rippon, S., 'Exploitation and Modification: Changing Patterns in the Use of Coastal Resources in Southern Britain During the Roman and Medieval Periods' in Aberg, A. and Lewis, C. (eds.) The Rising Tide: Archaeology and Coastal Landscapes (Oxford, 2000) p.71

⁷⁰⁸ Harper-Bill, C. (ed.), Dodnash Priory Charters (Woodbridge, 1998); Mortimer, R. (ed.), Charters of St. Bartholomew's Priory, Sudbury (Woodbridge, 1996)

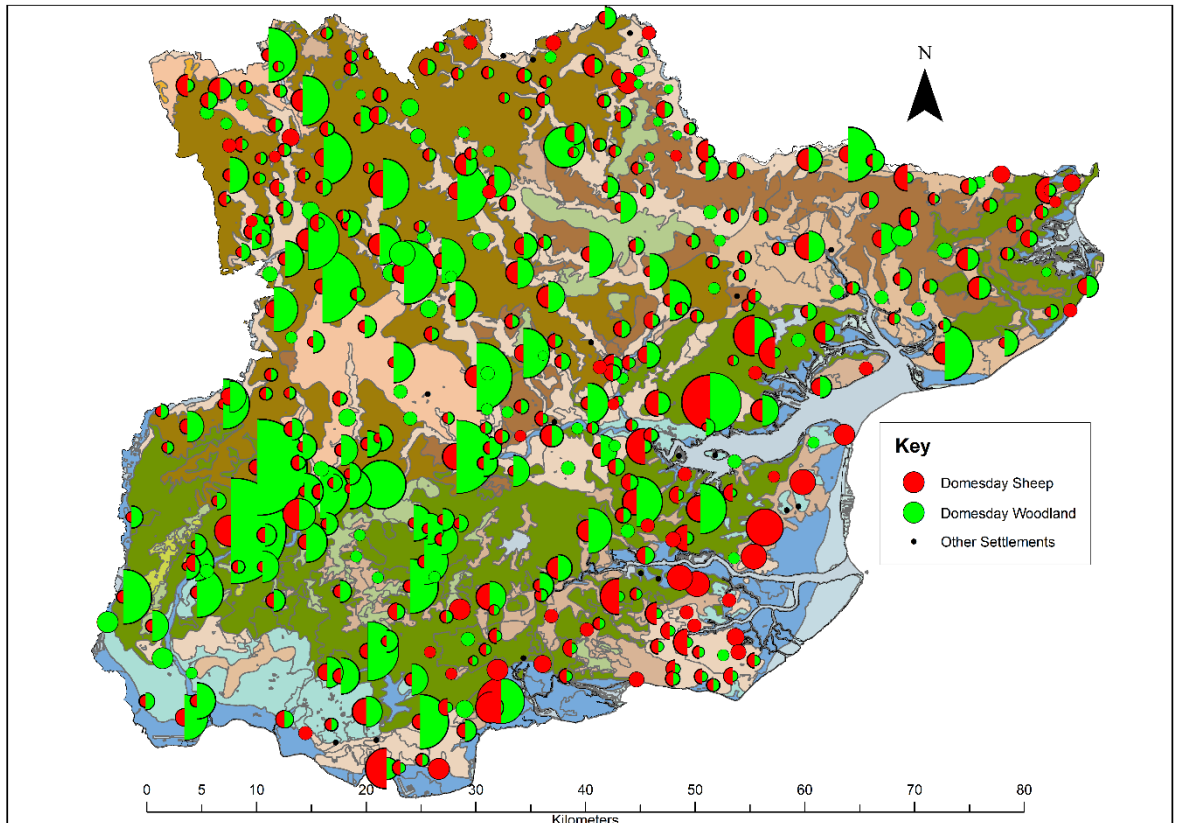


Figure 7.1. A map showing the distribution of woodland and sheep recorded in Domesday Book for the county of Essex. All overlaid onto the association level National Soil Map.

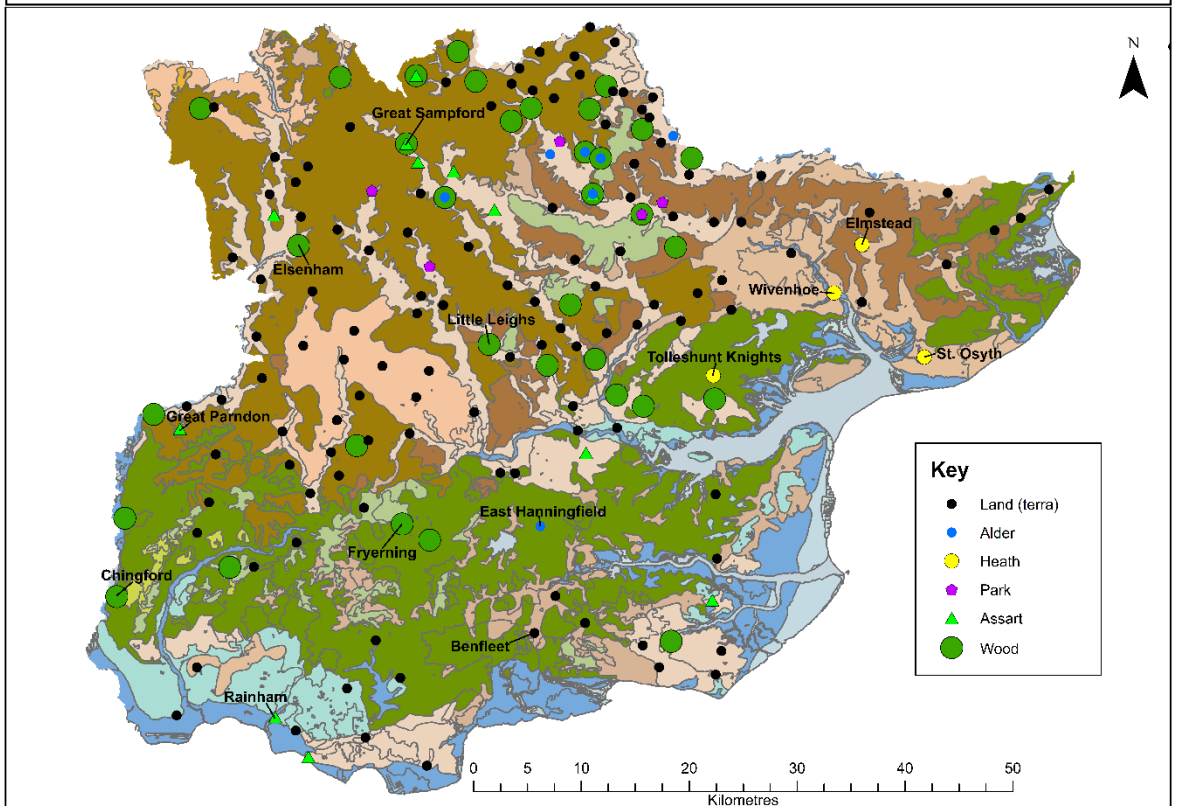


Figure 7.2. A map showing the distribution of landscape types mentioned in numerous cartularies showing landholdings in the county of Essex. Overlaid on to the association level National Soil Map.

Evidence from later centuries, yet to be discussed, though, suggests that heaths in this region, conversely, were areas of wood pasture containing many trees.

Wood-pasture heaths in north-east Essex, 1500-1777

Of the 32 heaths so named in north-east Essex on Chapman and André's 1777 map, 24 were drawn with scattered trees. Figure 7.3 shows an excerpt of that map near Colchester showing numerous heaths illustrated with dispersed trees. That some were drawn without suggests that adding trees was not an exercise in decoration, but an attempt to reflect reality. The trees were not drawn as densely as those in enclosed woodland and so likely do not signify a similar landscape. Their dispersed nature suggests these heaths maintained a wood-pasture, rather than a dense 'woodland', landscape of mixed grazing and wood or timber production at least until the surveying of the map. These heaths were selected for particular study based on the two chief selection criteria given in chapter one. In terms of diversity, these heaths display a wooded nature quite unlike any heaths in Norfolk or Suffolk already discussed. In terms of detail, the landscape characters of Tiptree and Great Bromley Heaths in particular, as well as the systems of common rights which maintained those characters, were specifically described at points in the post-medieval period – in both instances in connection with legal disputes.

The presence of grazing livestock alongside the trees drawn by Chapam and André on these heaths is clear from some earlier documents. A map of Cooper's Farm abutting Lexden Heath, west of Colchester, of 1736, for example, includes a memorandum that 'There is belonging to this Estate a Right of Commonage on Stanway & Lexden Heaths for any sort & Number of Cattle'.⁷⁰⁹ If many rights held there were similarly unspecific, the pressure of common grazing on the two heaths would have been heavy indeed. Despite this, wood-pasture grazing on Stanway Heath, at least, was longstanding. In 1254-5 a nearby freehold tenant established in court his right 'to common with any sort of beasts in 400 acres of heath and woodland in Stanway'.⁷¹⁰ By 1777, then, wood pasture grazing had been undertaken on the heath for at least 500 years without it becoming treeless. Attempts to resist private enclosure of the heath are shown in a court case from 1567, when a man was indicted for 'enclosing with hedges and ditches as his severalty, a great part of the common called 'le Shrebbey' at Stanway, to wit, thirty acres of wood and

⁷⁰⁹ ERO D/DPa P1

⁷¹⁰ Britnell, R.H., "The Fields and Pastures of Colchester, 1280-1350" Essex Archaeology and History 19 (1988) p.162

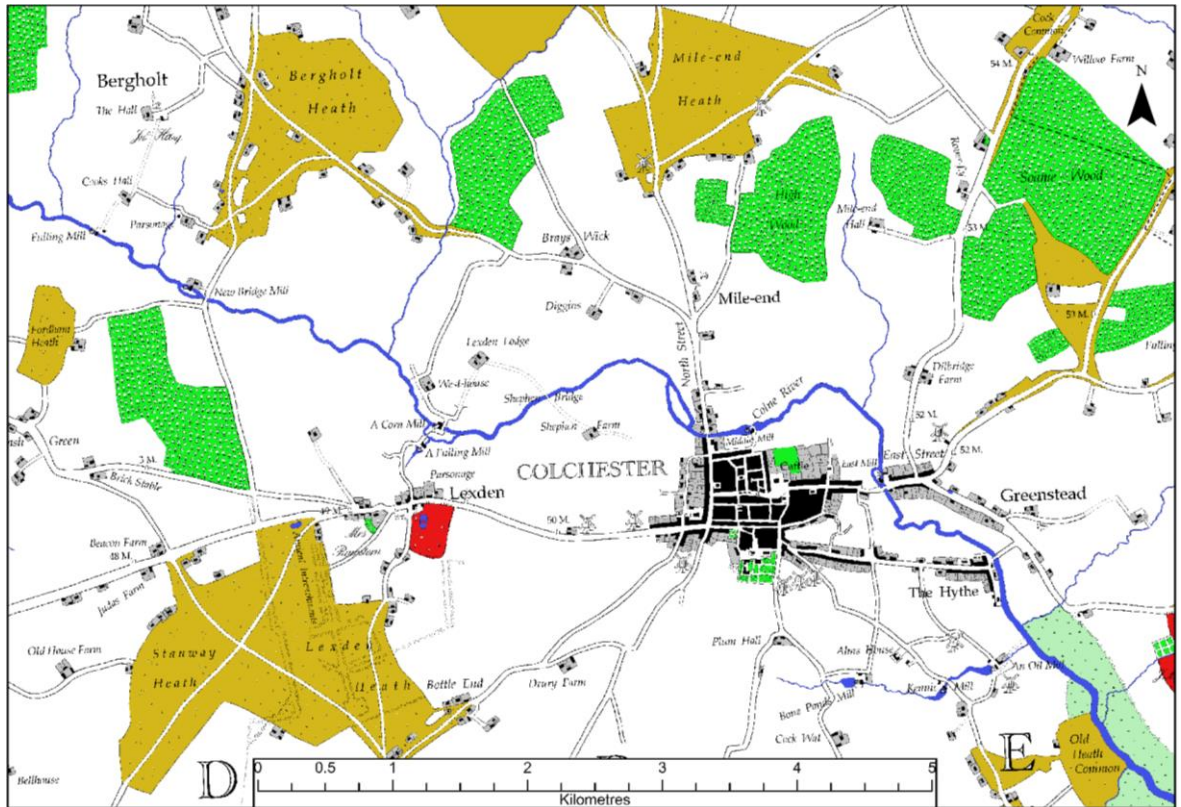


Figure 7.3. Excerpt from Chapman and André's map of Essex, published 1777, illustrating the locations of heaths in the north east of the county surrounding Colchester, most drawn with scattered trees. Digitally redrawn by Andrew Macnair.

underwood'.⁷¹¹ Another heath in nearby Greenstead had survived longstanding enclosure without becoming either treeless or totally lost. A lease of 1323 concerns a plot 'on a heath called Innome' there.⁷¹² This is probably the common shown unlabelled north of the village in 1777 with an enclosure in its centre, visible in fig.7.3. Indeed, the name 'Innome' stems from OE *innam* meaning 'intake' or 'enclosure'.⁷¹³ The maintenance of wood-pasture landscapes on heaths against overgrazing or deforestation would seem to have been a longstanding custom in this part of Essex. Roden noticed this trend from as early as the 13th century when 'the rising value of private woodland and growing pressure to conserve dwindling areas of common waste brought an end to the large-scale clearing of forest and heath that had continued in this region throughout the Middle Ages'.⁷¹⁴

Tiptree Heath, further south, also evidently maintained a wood pasture landscape.

⁷¹¹ Hull, F., *Agricultural and Rural Society in Essex, 1560-1640* Vol. I Unpublished PhD Thesis (University of London, 1950) p.62

⁷¹² Fisher, J.L., "The Leger Book of St. Johns Abbey, Colchester" *Transactions of the Essex Archaeology Society* **24** (1951) p.95

⁷¹³ Fisher, *A Medieval Farming Glossary* p.24

⁷¹⁴ Roden, D., "Field Systems of the Chiltern Hills and Environs" in Baker, A.R.H. and Butlin, R.A. (eds.), *Studies of Field Systems in the British Isles* (London, 1973) p.326

Not only did Chapman and André illustrate it as such (figure 7.4), a map of a detached part of Tollesbury from c.1760 shows the southern tip of the heath topped with dispersed trees (figure 7.5).⁷¹⁵ Although an adjoining common is called ‘Wiseman Shrubs’ some trees are drawn casting long shadows, showing both that they were tall enough to do so (unlike most heathland shrubs) and that enough space existed between each tree for a shadow to be observed. Other features of the heath included both cottages and common grazing recorded there in the 17th century. In 1624, for example, the manorial lord of Tolleshunt Major, who was also an overseer of the poor, allowed two ‘old, lame and impotent persons’ to erect a cottage on Tiptree Heath.⁷¹⁶ This practice was clearly widespread as, a year earlier, King James I had declared an intention to improve the state of the heath because:

the cheife benefitt of the said common is taken either by such persons as have noe right at all therein, or by such persons as doe overcharge the same, with their Cattle and beasts contrarie both to the Lawe, and customs in all places. And also that in the said waste soyle divers persons are harboured and suffered to inhabit in Cottages of late years erected, who doe not labor in anie lawfull callinge, or qualitie, but doe spend all their time in filching and stealinge, and in other kind of leud and unlawfull practices to the great offence of all our honest and well affected subjects⁷¹⁷

Nothing came of the King’s intervention, but his letter shows common grazing was clearly maintained on Tiptree Heath, as well as both attempts at overgrazing and attempts to stop such behaviour. Grazing on the heath is also alluded to both before and after 1623 in local court rolls. In 1589, for example, a Kelvedon butcher was indicted for stealing five sheep from off the heath, while in 1655 another man was indicted for taking a cow and a bullock.⁷¹⁸

The landscape character and common rights of Tiptree Heath in the 16th century are detailed in documents relating to a legal case persued under Henry VIII (reigned 1509-1547). The documents are undated but probably date from the latter half of his reign.⁷¹⁹ The case revolved around the obstruction of common rights and illegal removal of trees

⁷¹⁵ ERO D/DU 19/10 – erroneously labelled as a map of Tolleshunt Knights

⁷¹⁶ Hull, Agricultural and Rural Society in Essex Vol. I p.61

⁷¹⁷ *Ibid.*

⁷¹⁸ ERO T/A 428/1/77; Q/SR 364/28

⁷¹⁹ Hull, Agricultural and Rural Society in Essex Vol. I p.266

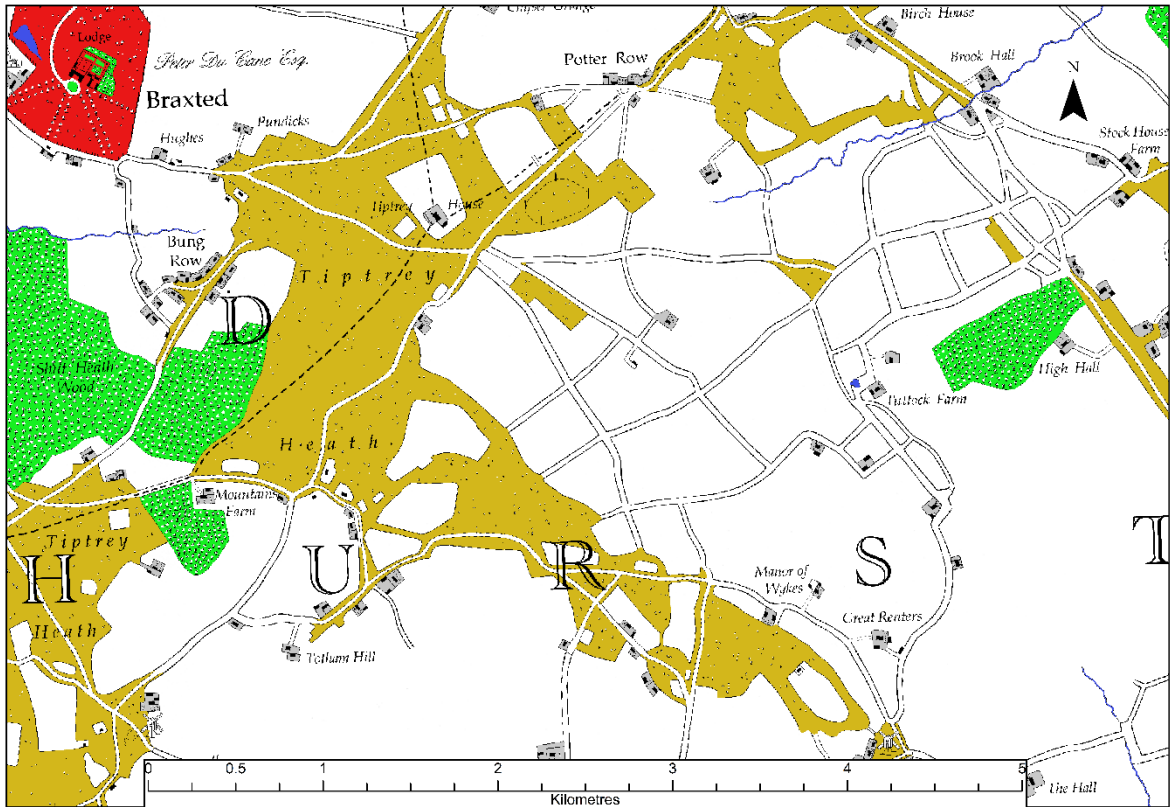


Figure 7.4. A map of part of Tiptree heath in Essex as it appears on Chapman and André's map of that county, published in 1777, and digitally redrawn by Andrew Macnair.



Figure 7.5. Excerpt from a map of a detached part of Tolleshunt parish within the parish of Tolleshunt Knights c.1760, including the southern tip of Tiptree Heath. Though here the land is labelled simply as 'Heath' it is undoubtedly the southern end of Tiptree Heath as named by Chapman and André.

from the heath by the manorial lord of Tolleshunt Tregoze, Thomas Darcy. Only the case presented by the tenants survives, which states that:

ther is a greate wast grounde or hethe in the Countie of Essex called Typtre Heathe common conteyninge by estimacon abowte five thowsand acres and which was somtyme the kinges forest and hathe bene alwaye reported, and comonlie taken to be the soyle and inheritance of the kinges Majestie; whereof the place mencyoned in the said bille wheare the said woode was taken was and is parcell, and that the said defendantes ... are Freholders ... and sayen that thei ... tyme owt of mynde have had, and used to have, aswell Common of Estovers in all the woodes within the said great wast... for them and their tenants and fermors ... and by all the said tyme have had fre libertie to entre into ... the heathe of Typtre ... to cutte downe, take and carrye awaye at their pleasure at tymes seasonable tymbre and woode sufficyente for the same ... freholdes, as also have had Comen of pasture for all maner of bestes without nombre within the said heathe and the woodes of the same at all tymes of the yeare ... [Thomas Darcy] myndinge to encroche and take the said woode ... and to converte the same to his owne use ... hath of late cutt downe of greate nombre of acres of Tymbre woode and underwoode... and made parte Sale of the same to thentent the said defendantes and other poore freholders... should not have the same.⁷²⁰

The right of ‘estovers’ is the right to take dead and dry wood.⁷²¹ In other documents, the tenants also claimed the rights of housebote (taking wood or timber for house repairs), cartebote (the same for repairing carts), firebote (taking firewood), hedgebote (wood for repairing hedges or fences) and ploughbote (the same for repairing ploughs).⁷²² Both maps in figs. 7.4 and 7.5 from the 18th century show scattered trees surviving on Tiptree Heath over 200 years after these documents were submitted to the Star Chamber. As such, like at Stanway Heath, the wood-pasture landscape of Tiptree was maintained over many centuries, despite unlimited grazing by freeholders and comprehensive gathering rights.

⁷²⁰ Hull, *Agricultural and Rural Society in Essex* Vol. I p.266

⁷²¹ Fisher, *A Medieval Farming Glossary* p.15

⁷²² Hull, *Agricultural and Rural Society in Essex* Vol. I p.267; Fisher, *A Medieval Farming Glossary* pp.8,17,22, 23; Jacob, *A New Law Dictionary* p.569

The trees being dispersed and not easily protected from grazing livestock discounts the possibility that they were managed as coppice but rather either as timber standards or, more likely, pollards. On commons the pressures of grazing and a perceived inability to erect temporary fencing has led to the conclusion that most were tree-less by the end of the medieval period.⁷²³ Even if trees were pollarded beyond the reach of grazing animals, older trees would still be lost through natural wastage. New ones planted to replace them would require fences to protect them, which would close that area to grazing and therefore controvert other commoners' rights. Thus, it has been assumed that commoners were either unable or unwilling to maintain a wood pasture landscape on common grazing land. On some commons, including heaths, however, there seems to have been organised and effective maintenance of these wood pasture commons into the post-medieval period, and in some cases into the 19th century.

This has not been adequately researched in Essex, but Patsy Dallas has written of the practice on wood-pasture commons in Norfolk. On numerous commons in that county, commoners whose land abutted them had rights to gather from, and replace as needed, those trees and bushes standing by their gates or near the edges of their holdings. In Pulham, south east Norfolk, in 1600 for example, the High Sheriff remarked that 'it appeareth also unto us upon our examinacion that the tenantes of the said manor have used to make benefit of the trees growing upon the common near their houses which were planted by themselves and their predecessors'.⁷²⁴ As late as 1736 Francis Blomefield wrote about the right of 'outruns' in Fersfield where 'the tenants have liberty ... to plant and cut down all manner of wood and timber, on all the commons and wastes against their own lands'.⁷²⁵ A century later John Chambers was still attributing the same rights to, among others, the residents of Fersfield, Bressingham and Diss.⁷²⁶

Specifically on those commons bordering parkland, Blomefield wrote of a right of 'freebord' (or 'freeboard') which was for the sole enjoyment of the lord. This gave park owners the right to 'plant whatever bushes and trees they would against the parks, which the inhabitants could not cut, (as they do and always have done, all other trees, bushes, &c. on the commons in these manors), but were to belong to the lord for the game-keepers to

⁷²³ Rackham, *History of the Countryside* p.121; Dallas, P., "Sustainable environments: common wood pastures in Norfolk" *Landscape History* **31** (2010) p.23

⁷²⁴ Dallas, "Sustainable environments" p.26

⁷²⁵ Blomefield, F., *An essay towards a topographical history of the county of Norfolk* Vol. I (London, 1805) p.92

⁷²⁶ Chambers, J., *A general history of the county of Norfolk* Vol. I (London, 1829) pp.118-119, 124

kill their game from, and for to hinder escapes from the park'.⁷²⁷ In effect this extended the park owner's covered hunting ground onto the unenclosed common land in such a way that commoners could not interfere.

Rights to plant on commons, claimed by tenants and owners alike in Norfolk, show that common wood pastures were not necessarily unstable landscapes. As long as plantings were both undertaken and successful, any loss of wood could be replaced. In Norfolk it is unclear whether this was undertaken at specific moments or *ad hoc*. Dallas cites a copyhold lease from Gressenhall, in central Norfolk, which allows the tenant 'two plantings and the liberty to erect twenty two hurdles' upon the common there but does not say when the plantings must take place.⁷²⁸ That fencing of some kind would have been required to allow the sapling to reach maturity is self-evident, otherwise it would simply be eaten. Reference to hurdles, as in Gressenhall, especially in such numbers, usually refers to the controlled tathing under a foldcourse. If it was understood that temporary enclosure by just one of a common's users was required for that user to exercise his rights regarding the fold, so too must a commoner have been allowed to fence his saplings. Indeed, there is no other way such a planting could reach a size to be of use.

That these plantings continued through the post-medieval period is evident from the readiness of right-holders to defend them when needed. If the practice had stopped there would be no need to retain the right. The High Sherrif's comments in Pulham were only required because the tenants saw a need to defend their rights against a new manorial lord who threatened to enclose the commons. In Marsham in 1583, too, the residents took up legal action against their lord, the Queen's own tenant, as he 'felleth downe woode growing upon the common contrarye to the custome of the mannor'.⁷²⁹ This was done despite his claims that the lease apparently entitling him to do so was taken from the monarch herself. Some residents were still claiming such rights near their holdings by the time of widespread parliamentary enclosure in the first half of the 1800s.⁷³⁰ A dedication to the continuation of these rights among the tenantry likely explains how, in some cases, the wood pasture landscapes they preserved persisted into the 18th and 19th centuries. This dedication was, it seems from Tiptree and other examples, mirrored in Essex – though with greater success than in Norfolk in the long term.

⁷²⁷ Blomefield, Topographical History of Norfolk Vol. I p.95

⁷²⁸ Dallas, "Sustainable environments" p.27

⁷²⁹ Hassell Smith, A. and Baker, G. (eds.), The Papers of Nathaniel Bacon of Stiffkey: Volume II, 1578-1585 (Norwich, 1983) p.243

⁷³⁰ Dallas, "Sustainable environments" pp.28-29

This is especially clear in the area around Colchester, as at Mile-End, north of the city. Mile-End Heath, as it was in 1777 (fig. 7.3), was once called ‘Kingswood Heath’ as it was, until the time of Henry VIII, part of the royal forest of Essex.⁷³¹ The existence of the heath is evident from 1167-8 when the burgesses of Colchester lost the lease for it, the land returning instead to the demesne of King Henry II.⁷³² It seems they did not, however, lose all grazing rights on it as from 1278-81 royal accounts show numerous payments of *communis preda* (common herd) for pasturing on the heath.⁷³³ At some point after the annulment of the forest, the burgesses purchased it outright. In 1576, Queen Elizabeth I sent letters ‘requesting but in effect commmanding’ the magistrates of the town to lease the heath to Thomas Heneage. After a short while, the borough council entry book for 13th July 1576 noted that:

Att this Assembly it is ordered that the bailiff[es] shall call Richard webb woodward before them before Lamas day next, and take A Compt of him that trees and wood hath bene p[o]lla[r]d[ed] upon King[es] wood heath synce the Lease was graunted to Mr heneage.⁷³⁴

The act of pollarding trees on the heath was, it seems, contrary to the terms of the lease. As such we must assume the management of the heath was intended to maintain a stock of timber for the benefit of the borough. The presence of a woodward was a legacy of the forest. That the scale of managed woodland on the heath was considerable is attested by the appointment of four woodwards during the same council meeting. Thus, the minutes dictated that:

henc[e] forthe there shalbe yerely apointed iiij of the Council to be woodward[es] to have the oversight of the wood[es] and trees ... And that no tres shalbe felled nor Lopped nor the ver shalbe felled but by their costs & there to accompt for the same yerely.⁷³⁵

‘Ver’ was another legacy of the forest. From OF *vert*, meaning ‘foliage’ or ‘greenery’, it

⁷³¹ Fisher, W., *The Forest of Essex* (London, 1887) p.17

⁷³² Morant, P., *The History of the County of Essex* Vol. I (London, 1768) p.46

⁷³³ Britnell, “The Fields and Pastures of Colchester p.162

⁷³⁴ ERO D/B 5 R7 fo.278

⁷³⁵ *Ibid.*

refers to any tree or bush with a green leaf that could provide food or shelter for game.⁷³⁶ In practice this could extend to most deciduous species including all fruit and nut trees, but especially ‘thick coverts’ of oak, beech, ash, poplar, maple, alder, hawthorn, and blackthorn, as well as bushes like gorse and heather.⁷³⁷ It is these conditions, of game cover alongside a stock of uncut timber trees (the term ‘to lop’ meant to pollard), that the borough assembly was keen to protect from damage.⁷³⁸

In the 16th century, then, Mile-End Heath was a landscape of standard trees intermixed with ‘coverts’ of multiple species within which deer and other game could hide.⁷³⁹ Heather, now the dominant heathland species, was likely present but only as part of a broad spectrum of shrubs and trees, of which the upstanding trees were the most important constituent part. Attempts to protect them for posterity appear to an extent successful as a lease of 1722 includes provision for carrying away ‘all the Timber and trees Bushes and Underwood’ then standing on Kingswood Heath.⁷⁴⁰ By 1777 the heath is shown with only scattered trees, similar to those nearby on which common grazing was undertaken within a wood-pasture landscape. At least partly enclosed in 1813 alongside the neighbouring parish of Great Horkesley (and Rivers Hall manor in Boxstead), by the time the OS 6” map was surveyed in 1875-6, the whole had been divided and enclosed with only hedgerow trees visible.⁷⁴¹

The intention at Mile-End was to ensure long-term sustainability of a woodland resource on a heath. The assembly members’ comments, as lessors of the land, only came about because the lessee’s actions threatened that sustainability and, therefore, the potential future economic benefit for the other party. The same was true of freeholders’ actions in Boxstead, north of Kingswood Heath, in 1678 (see fig.7.6). There the manorial lord was compelled by them to sign a written obligation in which he agreed:

‘not to ffell Lopp or Cutt down Any of the wood that now is or herafter shall be Growing Or being upon the Common Cald boxstead heath nor Con vert the same to his own use or Advantage nor to sell of or Cause to be sold Conveyed or inbezled Any ffurses or other wood or fuil from the s[ai]d heath to any other

⁷³⁶ Hindley, A., Langley, F. and Levy, B., Old French-English Dictionary (Cambridge, 2006) p.608; Corèdon, C., A Dictionary of Medieval Terms and Phrases (Cambridge, 2007) pp.169,289

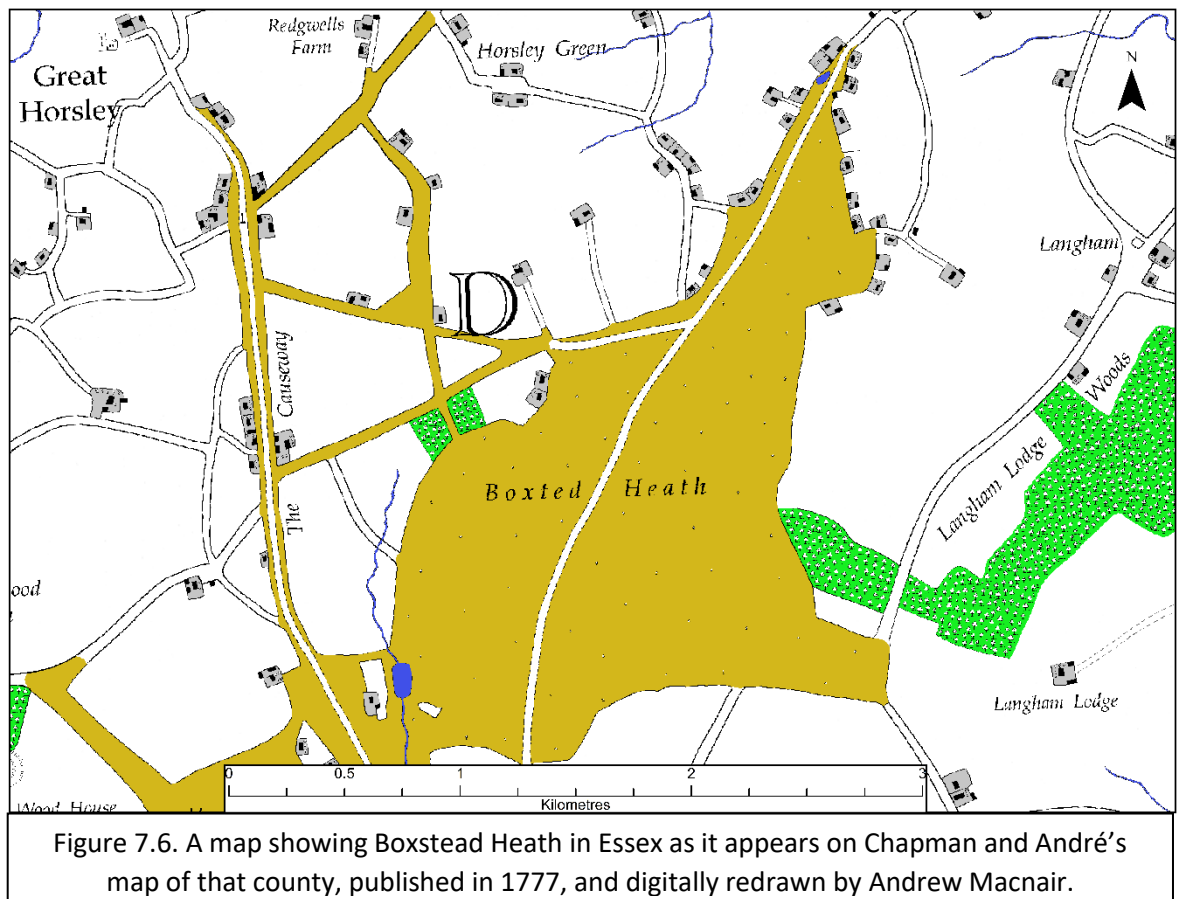
⁷³⁷ Jacob, A New Law Dictionary p.754

⁷³⁸ Rackham, O., Trees and Woodland in the British Landscape (London, 1983) p.8

⁷³⁹ A rental grant of the Kingswood (including the heath) from Henry II to the burgesses of Colchester, for example, lists hunting rights for ‘the fox, the hare, and the polecat’. Fisher, The Forest of Essex p.17

⁷⁴⁰ ERO D/DC 5/18

⁷⁴¹ Tate, A Domesday of English Enclosure Acts p.111



p[ar]ish or p[ar]ishes ... Contrary to the tenur Rights priviledges & Customs of the freeholders of & belonging to the mannor of boxstead hall & Rivers hall in boxstead'.⁷⁴²

The reference to 'ffurses' (or 'furze') shows that tree cover must have been dispersed – the species being intolerant of shade. Such a landscape must either have been maintained through felling or, given the purpose of this document was to restrict such activities, more likely grazing. As a result, a system of wood replenishment similar to that in use on some Norfolk commons must have been employed. The survival of wood pasture on the heath is attested to on Chapman and André's map, which shows trees scattered throughout the heath a century after this document was written (fig. 7.6). Though referred to as a 'heath', heather was not mentioned by name, perhaps only in unspecific terms with 'other fuel'. Gorse, being the only shrub referred to, presumably constituted the chief element of the understorey. Specific provision against selling wood and other fuel outside of the parish conforms with a system of localised rights suggested by Dallas, in Norfolk restricted to the immediate surrounds of a holding, and in Boxstead to the freeholders of two manors.

⁷⁴² ERO D/DEI E16

The actions of the manorial lord implied at Boxstead, as well as those of Mr Heneage in Kingswood Heath and Mr Darcy in Tiptree Heath, indicate ways in which common wood stocks could be devalued, dwindle or be depleted. If one party with access to a heath's trees converted them from timber to wood production, their value or use to that party might increase but decrease to all others. If one party felled more wood than could be practically replenished, tree cover would necessarily diminish. An increase in the number of commoners claiming rights to cut wood might also affect a reduction in tree numbers. Boxstead, for example, was one of the most densely-occupied common heaths in Essex in 1777, with 28 individual buildings shown on, abutting, or within 100m of the common ground (not including mills) compared to a county average of 16. Perhaps as a result, of those heaths shown with trees by Chapman and André, Boxstead's were one of the most dispersed examples shown.

That a heath's wood pasture landscape could be lost in just a few years, whatever the cause, is illustrated by the example of Whitmore Heath in Wivenhoe, south east of Colchester. That tenants' rights to heathland trees could be infringed upon by manorial lords, legitimising their readiness to defend against any breach of custom in court, is demonstrated by the imparkment of part of the neighbouring Wivenhoe Heath.

Figure 7.7 shows part of a 1734 map of that parish, including both Wivenhoe and Whitmore heaths, on which both were clearly wooded.⁷⁴³ The trees drawn on the heaths (detail in figure 7.8) are tall and thin, with trunks visible below some, and do not resemble any heathland shrubs or other low bushes. Neither do they resemble the trees drawn, in greater detail, in what are clearly enclosed woodlands to the south of Wivenhoe Heath. What species they are meant to represent is unclear, but their presence is noteworthy. So too is the cartographer's efforts to show the two roads crossing the larger heath without trees – i.e. that this was not a continuous dense woodland but instead had open areas within it. Though the spacing between each tree is too regular to accurately reflect reality, what it likely signifies is wood pasture. In 1777, Whitmore Heath was drawn without trees yet in 1734 was equally as wooded as its larger neighbour, which was, suggesting these trees were lost from it only in the intervening 43 years.

That Wivenhoe Heath itself, and thus its common wood pasture landscape, was once larger in extent is clear. On the 1734 map, encroachments of enclosed land upon the heath can be identified from boundary shapes, leaving the 'funnelled entrances' leading to

⁷⁴³ ERO D/DU 27/1

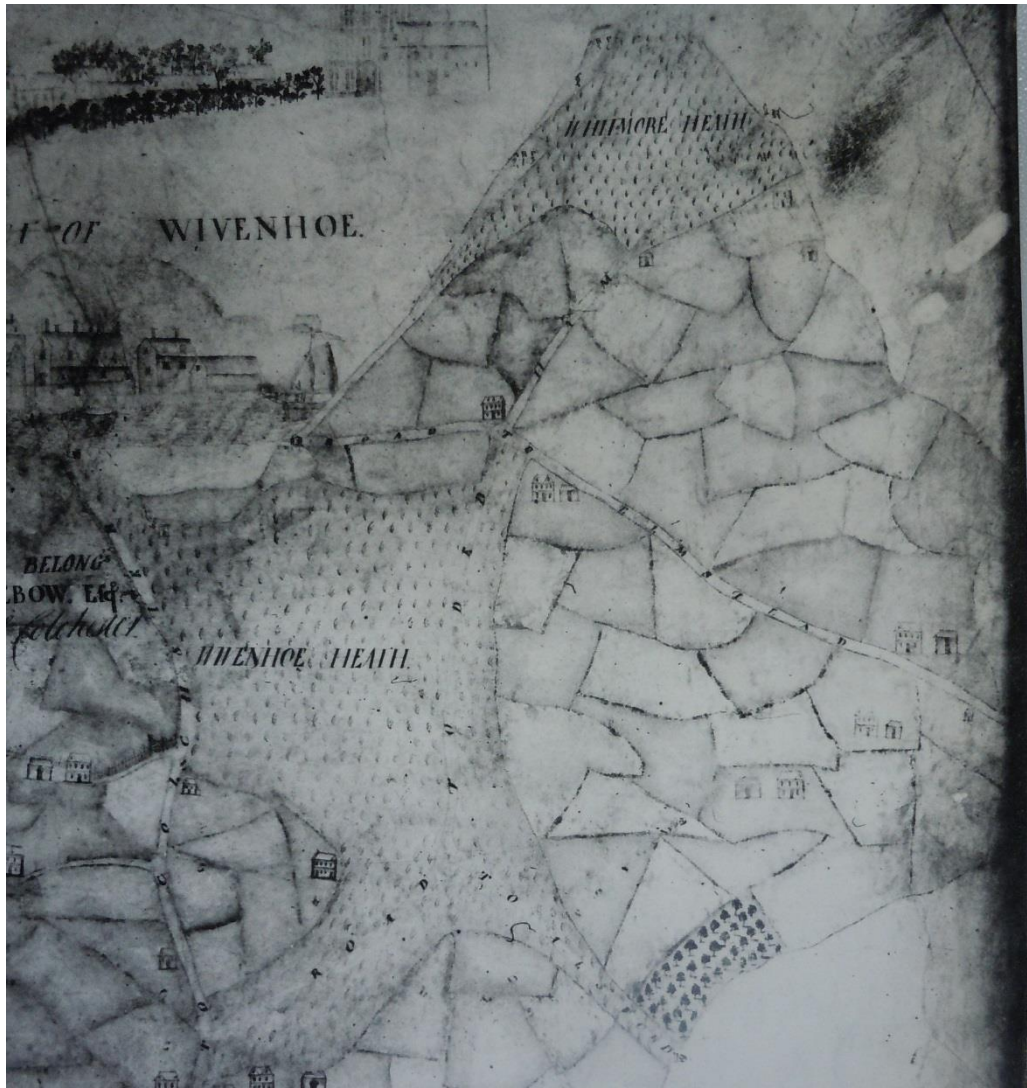


Figure 7.7. A section of a photocopied map of Wivenhoe in Essex, the original being unfit for production, specifically showing Wivenhoe and Whitmore heaths.

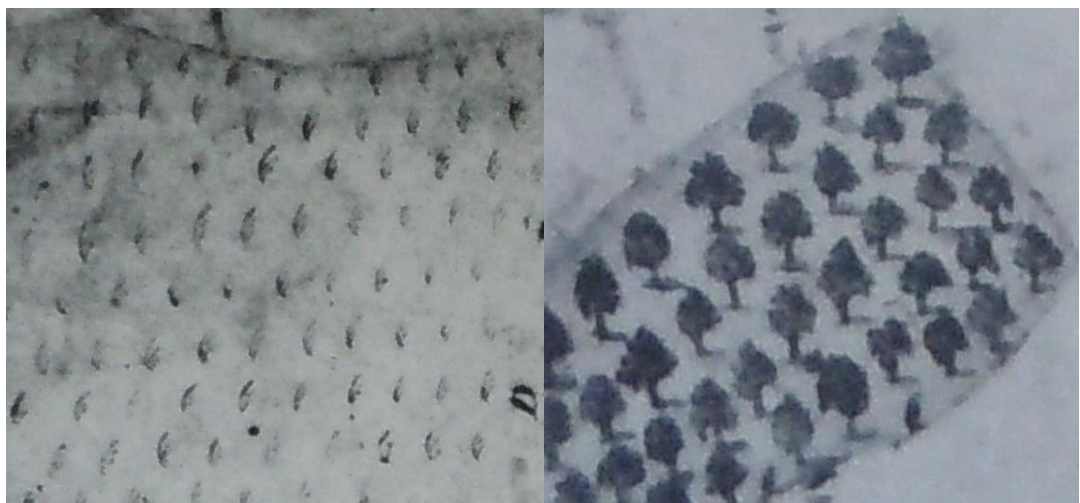


Figure 7.8. Detail of a map of Wivenhoe in figure 7.7 showing trees as drawn in the north west of Wivenhoe Heath, where the ink has survived best, (left) and in woodlands to the south of the same heath (right).

and from roads that are characteristic of shrunken heaths and other common lands.⁷⁴⁴ Furthermore a deed of 1664 defines a ‘piece of grove or woodground’ as lying ‘between the highway from Elmstead Market to Colchester, north, and Wivenhoe Heath south, and abutting on the heath east and west, through which a brook runs, dividing Wivenhoe from Greenstead’.⁷⁴⁵ On Chapman and André’s map, however, that same brook runs through Wivenhoe Park. Thus, at least some of the emparked lands must once have been part of the heath. Indeed, the park boundaries were drawn exactly in line with those of the heath on the other side of the road in both the north and the east. Before the park was laid out, then, the common heath likely extended further west than either the 1734 or 1777 maps suggest.

To ensure no major loss of heathland trees, interested parties in both Boxstead and Kingswood Heaths set out to define forms of management that would perpetuate a supply of wood or timber. Nowhere is a strict form of heath-wood management recorded more clearly, though, than in Bromley. After ‘divers & sundry variances questions & suits in lawe’ between the manorial lord on the one hand and his copyholders and customary tenants on the other, an indenture of 1623 sought to codify the rights of each party to the trees and other resources on the heath there.⁷⁴⁶ Appendix three is a transcription of the agreement.

Provision for the tenants’ hedgeboote, sometimes elsewhere called ‘haybote’ - the right to gather material for hedging – begins at the end of line eight.⁷⁴⁷ The meaning of ‘ffurres’ as gorse has already been discussed but that of ‘hulls’ is ambiguous. It is probably a shortened variant of the word ME *hulver* (or sometimes *huller*) meaning ‘holly’ – *Ilex aquifolium*.⁷⁴⁸ Gepp, in his dictionary of Essex dialect, gives ‘hull’ four separate definitions one of which is ‘holly’, but describes it as ‘a rare word, whose etymological affinity is undetermined’.⁷⁴⁹ An alternative definition is that of ME *huls* meaning ‘the shell or husk of peas, beans, or corn, the calyx or receptacle of fruit’.⁷⁵⁰ Stratmann gives two foreign equivalents for ME *huls*: *hulse* in Middle Dutch, and *hulsa* in Old High German, both used either as a noun denoting a ‘pod’ or the verb ‘to gather pods’.⁷⁵¹ Otherwise the

⁷⁴⁴ Rackham, History of the Countryside pp.141-2

⁷⁴⁵ ERO D/DB 31

⁷⁴⁶ ERO D/DU 40/96

⁷⁴⁷ Corèdon, A Dictionary of Medieval Terms p.151; Jacob, A New Law Dictionary p.356

⁷⁴⁸ Kuhn, Middle English Dictionary, part H.5 p.1023

⁷⁴⁹ Gepp, E., An Essex Dialect Dictionary (Wakefield, 1969) p.63

⁷⁵⁰ *ibid.*

⁷⁵¹ Stratmann, A Middle-English Dictionary p.353

root might be ME *hullen*, ‘to peel’, perhaps in the sense of bast or bark.⁷⁵² The usefulness of either material to hedge-making is unclear. As such a reference to the holly bush seems most likely. The requirement that hedging be used in ‘the said Mannor & not elsewhere’ conforms to a system of localised heath-wood rights as well as the common restriction on selling heathland material outside the parish, as included in the Boxstead agreement of 1678 already discussed.

Provision for fireboote – the right to gather fuel for firing – from line 14 adds ‘underwood’ to the stated flora of the heath.⁷⁵³ From stipulations later in the document this would appear to be heathland coppice. First, it is mentioned separately to both gorse and other shrubs and likely constitutes a more substantial material. Second, the tenants were required to take their firing from only one area on the heath at a time ‘for the better preservacion of the spring’. Here the noun ‘spring’ refers to the spring-time growth from coppice-stools.⁷⁵⁴ Furthermore, the harvesting of one area of coppice poles for wood-fuel while another regrows nearby would very closely resemble the compartmentalised, staggered management practices employed in enclosed coppiced woodland. Third, the fuel taken could not come from the other usual source of ‘underwood’ – pollards.⁷⁵⁵ The text on line 23 expressly states that the term ‘underwood’ did not extend to any ‘pollinger’ (pollard) or ‘bowleing’ (often spelled ‘bolling’ meaning the permanent base of a pollarded tree).⁷⁵⁶ Finally the tenants could not cut wood which was greater than eight inches in diameter, including the bark, three feet off the ground (lines 24 and 25). This restricted cutting either to the poles of coppiced trees or young trees which, when cut, unless grubbed up or grazed (there is no mention made of grazing rights whatsoever), would over time become coppice stools.⁷⁵⁷

The presence of pollards has already been alluded to. That they were, for the most part, of Oak (genus *Quercus*), Elm (*Ulmus*), Ash (*Fraxinus excelsior*), or Aspen (*Populus tremula*) is also clear. These were reserved for the benefit of the manorial lord as well as all timber trees, most likely of the same four species. Standard trees of varying ages, often

⁷⁵² Stratmann, *A Middle-English Dictionary* p.353

⁷⁵³ Jacob, *A New Law Dictionary* p.311

⁷⁵⁴ Muir, R., *Ancient Trees Living Landscapes* (Stroud, 2005) pp.18-19; Rackham, *Trees and Woodland* p.8

⁷⁵⁵ Rackham, *Trees and Woodland* p.10

⁷⁵⁶ Nall, J., *Nall's Glossary of East Anglian Dialect* (Fakenham, 2006) p.143; Rackham, *Trees and Woodland* pp.8-9

⁷⁵⁷ Though unusual this would not be the only example of common coppice in Essex. A 1591 map of Moulsham, south of Chelmsford, for example, shows both a 45-acre ‘Greate Copsed Springe’ and 37-acre ‘Copsed springe nexte Widforde gate’ as common land, protected from grazing by gated hedges. ERO D/DM P2

being left for 80-100 years before felling, were likely numerous due to the constant supply of new ones allowed for in the document. At every felling of underwood tenants were required to leave young trees for 'staddles' which must then be left untouched during future fellings (lines 19-23). Rooted in the OE *stapol* ('base' or 'trunk') this meant young trees left unfelled to grow.⁷⁵⁸ This document, then, allows for gorse, shrubs, coppiced trees, pollarded trees, and timber standards to all be growing upon Bromley Heath with no mention made of grazing animals or the rights to keep them. In short, in 1623 around 220 acres of Great Bromley was coppice-with-standards heath.

Moreover this landscape, or one similar, survived there into the 19th century. A deed of 1689 leased 200 acres of wood called Bromley Heath for a year while the same was sold in August 1694.⁷⁵⁹ A conveyance of 1704 transferred 'that parcell of Woodground called or knowne by the name of Bromley Heath containing by Estimacion Two hundred acres be the same more or lesse And All Timber and Timber Trees Standing and growing thereupon'.⁷⁶⁰ The register of papists' estates from 1717, 1726, and 1738 consistently listed Bromley Heath as woodground 'with timber thereon', while the recitation of a marriage agreement dated 1756 required the owner to leave, upon his death, timber on the heath worth £1,200.⁷⁶¹

Several of these documents located the heath in both Much (or Great) Bromley and Frating, a neighbouring parish to the south. The densely-wooded common called 'Bromley Thicket' on Chapman and André's map crossed into both of these parishes and is of the correct size (see fig. 7.9). Thus, it is almost certainly Bromley Heath listed under an alias. The trees there were drawn almost as densely as those in nearby enclosed woodland, thinning only towards the two contiguous greens. The Ordnance Survey draughtsman's map of 1796 shows the same 'Bromley Thicks' as densely wooded while a railway plan of 1836 shows the heath still extant.⁷⁶² The heath was finally enclosed by parliamentary act in 1846, with 'The Thicks' listed among those lands which were subject to enclosure.⁷⁶³ On the OS 6" map of 1874, the whole had been divided and enclosed into open arable/pasture land with only hedgerow trees still upstanding. For almost 200 years, then, and likely much longer into the medieval period before then, Bromley Heath was densely

⁷⁵⁸ Nall, *Nall's Glossary* p.183; Bosworth & Toller, *Anglo-Saxon Dictionary* p.912

⁷⁵⁹ ERO D/DU 40/106; D/DU 40/105

⁷⁶⁰ ERO D/DU 40/31

⁷⁶¹ ERO Q/RRp 1/38; Q/RRp 2/10; Q/RRp 3/11; D/DU 40/109

⁷⁶² ERO Q/Rum 1/62

⁷⁶³ ERO D/P 103/26/1

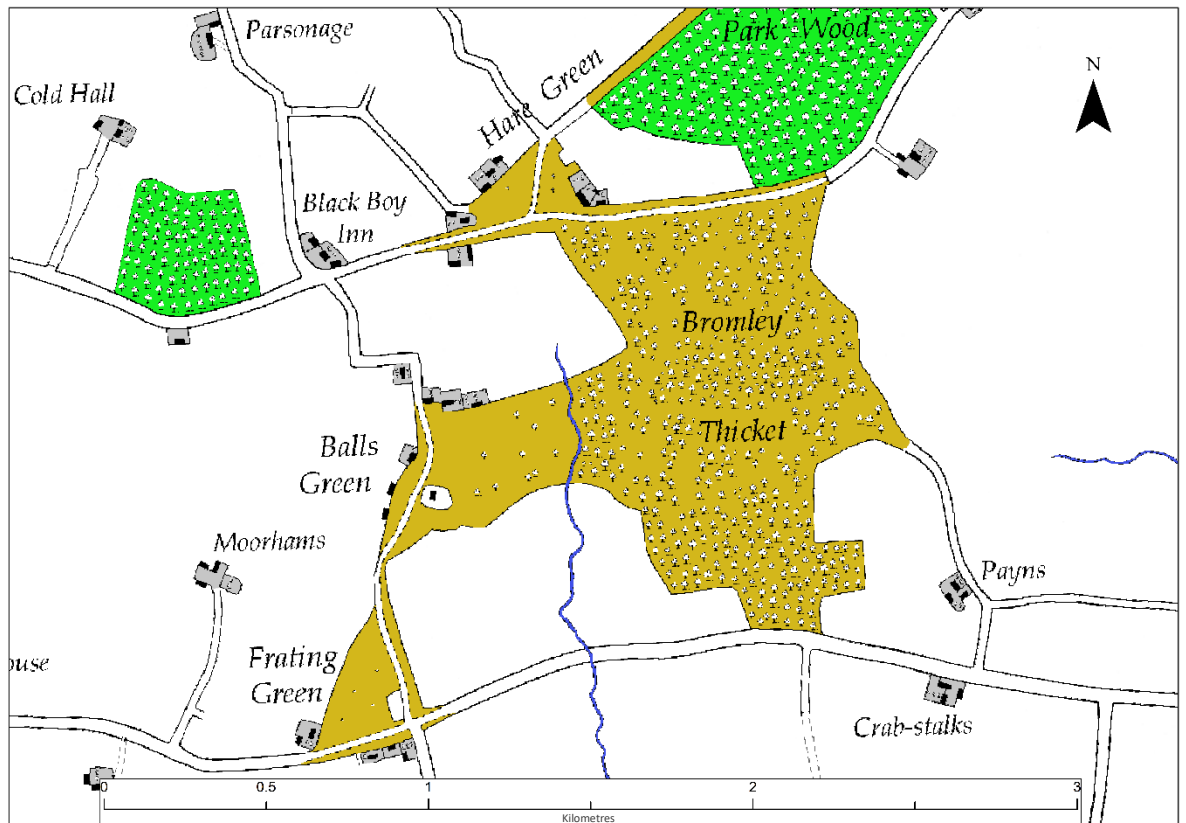


Figure 7.9. Bromley Heath, *alias* Thicket, and surrounds, including Hare Green, Balls Green, and Frating Green as shown on Chapman and André’s map of Essex, published in 1777, and digitally redrawn by Andrew Macnair.

wooded with a particular emphasis on the sustainable management of timber trees, with no evidence of grazing, yet still referred to by those who used it as a heath.

Shrunken heaths and settled greens

Species composition did not historically define a heath – both Hilborough and Great Bromley possessed heaths but with vastly different species growing on them. Neither were all heaths on a particular group of soil types, but rather occurred on soil deemed undesirable when compared to others in the vicinity. Nor were heaths, as a rule, either settled at their edges or unsettled. Of those commons named ‘heath’ on late 18th-century county maps for all four counties, 73% had edge settlement, compared to 80% of those simply named ‘common’. Although heaths possessed a slightly greater average number of buildings on, abutting, or within 100m of their boundaries than commons (15.2 compared to 14.1) they were often larger in size. What is clear, though, is that, as they reduced in size, heaths could cease to be, in the eyes of those naming them, ‘heaths’ and instead sometimes become ‘greens’. The defining features of greens, visible on the four county

maps, were twofold: size and occupation. Of those common greens drawn on the county maps, 97% had edge settlement and, although the average number of buildings present was only 10.4, they were often diminutive in overall size when compared to either ‘commons’ or ‘heaths’. What constituted a heath might be partly explained by what a heath was not, and what a heath certainly was not was a green. Essex contains several good examples of this.

In Great Bromley, for example, Chapman and André’s map shows that parts of what had been Bromley Heath had, by 1777, been altered enough to be re-designated. Figure 7.6 illustrates this in detail. Balls Green and Hare Green sat at the end of ‘funnelled entrances’ of common ground created by encroachments onto a once larger Bromley Heath. Both were at this point assuming the shapes of triangles or ‘corridors’ centred on roads or crossroads which were highly characteristic of greens. So too were they both not only settled but densely so, with little or no gap between holdings on multiple sides. The management of heath-wood had halted on both, with trees noticeably fewer or absent near the holdings. Although some greens were illustrated with thinly scattered trees many were open. In Bromley, tree removal appears to have emanated out from those areas of greens most densely occupied.

Protection of heathland resources against such destruction, and the restriction of their use to those already in possession of rights, could explain the illegality of *ad hoc* heathland settlement revealed in court papers. Essex session rolls for Easter 1608, for example, show a man fined 9s. 6d. for building a cottage on Tiptree Heath.⁷⁶⁴ Similarly, at Michaelmas the previous year, a man of Tollesbury petitioned against his presentment for setting up a cottage on the same heath to avoid the sickness present in the house adjoining his usual dwelling.⁷⁶⁵ Most revealing of all, perhaps, is the presentment of two men of Inworth in 1669 for erecting a cottage on Tiptree Heath ‘without the consent of the lord of the manor and the freeholders’.⁷⁶⁶ As the parties most interested in preserving heathland resources, existing rights-holders seem to have been keen to defend against those who might damage their ability to benefit from them, as they did against each other in agreements already mentioned. Thus, increased settlement density on and around a heath were likely understood to have a negative impact on its resources, as evidenced in Bromley, and so was illegal.

⁷⁶⁴ ERO Q/SR 183/18

⁷⁶⁵ ERO Q/SR 181/107

⁷⁶⁶ ERO Q/SR 419/1A

So too does it seem to have been improper and given immoral connotations, like those mentioned by James I in his letter concerning Tiptree Heath. In 1661, for example, one George Sherman was presented to the court for ‘erecting a cottage on Chadwell Heath in Dagenham, not having 4 acres of land, being a dangerous place to harbour rogues as likewise for keeping an unlicensed alehouse’.⁷⁶⁷ Seven years earlier, in 1654 at Boxted, a man was presented for ‘erecting a cottage on the heath and there living very suspiciously and doth not attend any order of divine worship neither private nor public, and will not suffer his wife to live with him’.⁷⁶⁸ That such presentments were often made in the context of moral wrongdoing (or at least the suspicion of it) is reminiscent of some arguments made later in the 18th and 19th-centuries, to justify enclosure, that those living on heaths were lazy and untrustworthy people. A note in Young’s *General View of the County of Lincoln*, for example, asserts that ‘the men who usually reside near a common, are the depredators of the neighbourhood: smugglers, sheep-stealers, horse-jockies, and jobbers of every denomination, here find their abode’.⁷⁶⁹

Despite the destructive nature of dense settlement on parts of heaths, the greens which resulted are sometimes the only references left in the modern landscape to the locations of once extensive heathlands. After the comprehensive enclosure of Bromley Heath in 1846, for example, Balls Green and Hare Green were the only remnants of old heathland to survive – eventually only in the names of successor settlements on the same spots, after all common land there had gone.

Similarly, the triangular Frating Green, adjoining Bromley Heath in the south in 1777, was once Frating Heath. An estate map of 1772 named it as such and displays it significantly larger in extent than Chapman and André just five years later, showing rapid decline.⁷⁷⁰ As part of that decline it had, to those who lived and worked there, ceased to be a heath. Some of the holdings in which they lived sprang up during that time along the new boundary of shrunken common land, showing again a pattern of multi-sided, dense settlement of heaths recently reduced in size. This creeping enclosure by occupation, rather than by fencing or hedging, likely accelerated the destruction of common resources and, eventually, the common land itself. Indeed by 1874 all that remained of the green was its name, attached to dozens of individual properties on what was once the green, mostly tightly packed along what was previously its southern and northern edges. Likewise, the

⁷⁶⁷ ERO Q/SR 389/35

⁷⁶⁸ ERO Q/SR 360/28

⁷⁶⁹ Young, *General View of the County of Lincoln* pp.146-147

⁷⁷⁰ ERO D/DEI P66

only part of the once extensive Stanway Heath, west of Colchester, to survive enclosure and conversion to arable was a tiny, densely-settled part in the south subsequently called Stanway Green. Greens, then, can sometimes be the shrunken remnants of heaths which, through a reduction in size or the increased density of settlement (or both) had become something else.

Essex heaths - conclusion

At the time of Domesday Book, Essex, as a whole, was far more wooded than either Breckland or the Sandlings. Very few areas were recorded to have been dependent on the grazing of sheep to the total exclusion of woodland – as seen in both the previous two chapters. Those vills that, in 1086, recorded sheep but no woodland possessed flocks incomparable in size compared to those in the Suffolk Breckland, and only marginally larger than those recorded in the Sandlings. Vills in that part of Essex that possessed the most heathland in later centuries, namely in the north-east, recorded roughly equal amounts of both sheep and woodland. As a result, if those heaths were extant in the early medieval period, they were unlikely to have been as open or tree-less as those in southern Breckland, or the southern Sandlings.

The term ‘heath’, rather than having a uniform meaning, seems to have had a rather unspecific one. Though equally intensively managed, the land uses of heathlands in north east Essex and those of Breckland in the 16th to 19th centuries, for example, were markedly different. Similarly strict customary organisation, and robust defence of manorial rights to certain materials, produced two almost incomparable heathland landscapes. In Breckland they produced vast tree-less expanses intensively grazed by sheep and routinely ploughed as ‘breck’ to supplement crop production, as in Hilborough and Icklingham. In Essex it produced several areas of grazed wood pasture which survived in a wooded state for hundreds of years, and an un-grazed coppice-with-standards heath at Bromley with only patches of low shrubs cut for firing. Heaths in both regions stood on areas of soil not preferred for arable production, compared to other soil types found nearby. The differing natures of those preferred soils, in different regions, however, helped define how nearby heaths were used.

In Breckland most arable fields overlaid soils that were less acidic and more productive than those under heathland. Their productivity, however, depended on regular tathing from huge flocks of sheep folded on the heaths. As a result, manorial lords seeking to profit from their holdings ensured the majority of heathland resources in their manors

were consumed by their flocks. A similar system was used in the Sandlings heaths. Although the resulting fertiliser improved cereal production, output was low enough for staggered temporary ploughing of heath-sands to be profitable – hence the custom of heathland ‘brecks’. In north-east Essex the local Tendring soils surrounding historical heathlands were of good quality for arable production. Fertiliser was not required in huge quantities to ensure a profitable harvest, so very large flocks were not needed.

The pressure of grazing sheep on heaths was, as a result, much lower than in Breckland or, as at Bromley, seemingly non-existent. Heathlands there were instead managed to produce other materials of use and value. Chiefly these were underwood – from pollards and coppice – as better-quality fuel for firing than heather or gorse was, and timber for building and for manorial lords to profit from. In Breckland and the Sandlings, heaths were mainly used to ensure a good income from surrounding farmland, while in Essex they were often used to produce a source of income over and above that produced in the surrounding fields, or resources which arable fields could not produce. Heathland character as a result of management, then, was defined not only by the quality of soils underlying the heaths directly, but equally by the quality of surrounding soils.

Furthermore, a landscape previously considered to be heathland could cease to be so without the need for total enclosure. Examples have been given, in this chapter, of heaths becoming too small and too densely settled at their edges to remain ‘heaths’, instead becoming ‘greens’ to those who knew and named them. This pattern of shrinkage, settlement, and eventual redesignation was not restricted to the county of Essex but was found to have occurred across the study area.

8. Hertfordshire heaths

What little heathland survives in Hertfordshire in the present day is scattered throughout the county. Heathland visible on Andrew Dury and John Andrews's 1766 map of the county was also scattered, although comparatively more survived at that time compared to today. As such, no single heathland 'district' within the county was chosen for particular research in this chapter, like Breckland, the Sandlings, or north-east Essex were before. Instead, examples have been taken from heaths across the county. As in the previous chapter, archival research shows that some Hertfordshire Heaths displayed a wooded character significantly different to that of most Brecklands or Sandlings heaths.

It is worth noting at this point that the amount of archival research and interpretation of medieval sources presented here is reduced compared to that found in earlier chapters, particularly compared to chapters five and six. The reasons for this are threefold. First, although the county contained three heathland-indicating place-names at Domesday, tracking the development of those heaths through the medieval period using data from cartularies cannot be done in the same way as in Norfolk, Suffolk, or Essex. The accessibility and availability of cartularies which survive for the area is extremely limited, as discussed later in the chapter on pp.256-257. As a result, however, a comparative study of charter data from the 12th-14th centuries cannot be attempted here.

Second, the county appears to have maintained far fewer heathland landscapes labelled as such into the post-medieval period compared to the other three counties. In the late 18th century, Hertfordshire contained heaths equalling only 3% of the total area of common heathland mapped in Norfolk, 12% of that mapped in Suffolk (not including vast areas of private heaths already discussed), and 17.5% of that mapped in Essex (see pp.108-109). Research undertaken for this thesis has uncovered documents concerning the management or landscape character of heaths in the county, some of them in great detail, and these are presented and discussed. As a smaller range of heathlands survived here into periods from which documentary evidence survives in quantity, though, a limited number of detailed accounts was found when compared to the other three counties.

Third, Hertford is the furthest county town from Norwich within the study area. Just as distance, time, and cost were factors dictating the limits of fieldwork undertaken for this thesis (see p.204), so too were they limiting factors on access to the Hertfordshire Archives. Travel and overnight stay are costly, and funding secured to support this research was exhausted to the full finding the documents presented in this and other

chapters.

Unlike in Essex, Hertfordshire and its landscapes, including some of its heaths, have been researched at length by others, for example see Pevsner, and Rowe and Williamson, though not to the same extent as Norfolk or Suffolk.⁷⁷¹ This is likely for similar reasons to those explaining a paucity of secondary material available for Essex heaths discussed on pp.220-221. The archival research presented in this chapter contributes original and detailed evidence to this existing body of research not found in other printed materials. It also draws attention to the varied nature of heathland landscapes in the county and compares them to those found in the other counties of the study area in a way that has not been done before. It is for that purpose that documents and examples discussed here were chosen for research, especially those regarding Colney Heath at Tyttenhanger, and to fulfil the selection criteria given in chapter one – detail and diversity within the study area.

Solid geology

The sedimentary bedrock underlying much of Hertfordshire is a continuation of that underlying Essex to the east. In the south, between Rush Green in the east and South Oxhey in the west, the same London Clay Formation dominates beneath the surface up to a depth of 61 metres.⁷⁷² Further north a band of Paleocene- and Eocene-Epoch Lambeth Group clays, silts, and sands between 0.3 and 3.3km wide separates the clay from the Lewes Nodular and Seaford chalk formations which underlie most of the county. In some areas, as at Hemel Hempstead, High Wycombe, and Berkhamsted, for example, slightly earlier Holywell Nodular and New Pit Formation chalks from the Cenomanian and Turonian Late Cretaceous Period (89.8-100.5 million years ago) have been exposed in river beds. Like the other chalks already mentioned, these developed from the calcareous remains of microscopic plankton deposited in warm shallow seas. It is only in the far north of the county that rock types not occurring in Essex, and therefore already described in this work, can be found.

Between Ashwell, Hitchin, and Pirton, and again between Wilstone and Tring further west, the West Melbury Marly and Zig Zag chalk formations are locally dominant below the surface. These form part of a band more than 300km long arcing south west from Hunstanton in Norfolk to Maiden Newton near Dorchester in Dorset. Both were

⁷⁷¹ Pevsner, N., Hertfordshire (Harmondsworth, 1977); Rowe and Williamson, Hertfordshire: A Landscape History

⁷⁷² Sherlock, R. and Pocock, R., The Geology of the Country around Hertford HMSO (London, 1924) p.24

deposited during the Cenomanian Cretaceous, 93.9-100.5 million years ago, and contain significant layers of Marl intermixed with those of chalk. The latter, Zig Zag, also displays regular bands of limestone. In just 2 localities, between Holwell and Ickleford, and again around Hinxworth, Gault Formation clay and mudstone represent the earliest sedimentary bedrock in Hertfordshire. Deposited during the Albian Age in the Early Cretaceous Period (100.5-113 million years ago) this bedrock is sandy towards the base and, like the London Clay further south, contains irregular deposits of Iron Pyrite which oxidises when exposed at the surface to produce acidic rust. Finally in the very north west of the county, north of Puttenham and Long Marston, the Gault Formation is intermixed with Upper Greensand Formation silt, sand, and sandstone. Laid down between the Albian and Cenomanian Ages in the Cretaceous period the sandy sediments within are often fine-grained with some silt and irregular glauconitic deposits.

Surface geology

On the surface, as below it, many of Hertfordshire's soils belong to the same associations as those of its eastern neighbour. In the north east of the county, between the Essex border and Stevenage, the same band of deep Hanslope clay in north west Essex dominates and reaches its end. Clayey to the surface these slow-draining, calcareous soils cover the interfluvial areas of nearly a third of the county. Cut into it are the river valleys of the Ash, Quin, Rib, and Beane each characterised by Melford association loams over clay. The Melford and Weasenham series', constituting roughly half the association, are deep, well-drained luvisols with chalk stones to the surface, increasing in number below 60-70cm depths.⁷⁷³ On some valley sides the fine loams or silts over clay of the Wickham 4 and Bursledon associations are locally dominant. These naturally acidic stagnogleys are slowly permeable and seasonally waterlogged.⁷⁷⁴ To the north and north west, stretching out from the Bedfordshire and Cambridgeshire borders, fields of well-drained silts and loams of the Upton 1 and Swaffham Prior associations respectively sit atop the chalk there. Both are well drained and calcareous with chalk stone or rubble often reaching to ploughing depth.⁷⁷⁵ Very little common land, including heaths, survived into the 18th century in this northern part of Hertfordshire.

To the south west, between Stevenage and the Buckinghamshire border north of

⁷⁷³ Hodge *et al*, Soils and their use pp.245-246

⁷⁷⁴ *Ibid.* pp.138-139, 354-355

⁷⁷⁵ *Ibid.* pp.316-317, 333-334

Flaunden, Hornbeam 2, Hornbeam 3, and Batcombe soils dominate the interfluves between the Mimram, Lea, Ver, Gade, and Bulbourne valleys. All three are slightly acidic fine loams and silts over clay-enriched subsoils which cause some seasonal waterlogging.⁷⁷⁶ The loamy drift of Hornbeam 3 is especially variable and in some places absent, leaving clay soils present to the surface. This local variability might explain why, between the Beane and Mimram rivers, near Knebworth, five heaths were recorded in 1766. The soils there include large detached lenses of Hornbeam 3 within a wider field of the more homogenous Hornbeam 2. The association's subsoils also vary with localised areas of calcareous subsoils within 80cm of the surface, and around St Albans the loam is thin over a layer of gravel not clay.

Soils to the south east, in the Colne, southern Gade, and lower Lea valleys, are in the southern part dominated by the Marlow and Sonning 1 associations, and in the northern part by Hamble 2. The former are both well-drained, naturally acidic loams and sands associated with gravel. Whereas Marlow loams rest atop a layer of clay, in turn overlying gravel tracing an earlier route of the Thames, Sonning 1 soils rest directly on the gravel.⁷⁷⁷ There the subsoil has often been disturbed by cryoturbation producing localised variation in gravel depth. The latter comprises similarly well-drained slightly acidic silty soils over sand or gravel, with local calcareous subsoils.⁷⁷⁸ Along the route of the Colne there are three large lenses of Gresham association soils: one between Garston and Frogmer, one by Tyttenhanger, and another around Harpsfield Hall, west of Hatfield. Unlike in Norfolk or Suffolk where the Gresham series constitutes a majority of the association, in Hertfordshire it is replaced by the Prolleymoor series.⁷⁷⁹ This stony loam rests upon a thin clay subsoil over siliceous gravel, and it is upon those soils that the partially wooded Colney Heath near Tyttenhanger survived into the 18th century, discussed in detail later in this chapter.

On the other side of the Colne river, stretching east and north east to Hertford and the Essex border, the same seasonally wet, deep Windsor clay that dominates southern Essex dominates here, too. Essendon and Beccles 3 loams over clays cap some ridges, especially in the north near Essendon and Hertford Heath. Hamble 2 soils continue to follow the Lea and here traces its western bank as it heads south to join the Thames.

⁷⁷⁶ Hodge *et al*, Soils and their use pp.111-113, 220-222

⁷⁷⁷ *Ibid.* pp.243-244, 312

⁷⁷⁸ *Ibid.* pp.207-208

⁷⁷⁹ *Ibid.* p.204

Hertfordshire in prehistory

In comparison to the other counties in the study area evidence for Palaeolithic occupation in Hertfordshire is sparse.⁷⁸⁰ The majority of finds from this period are from surface flint scatters with fewer than 10 excavated *in situ* sites, most notably in Gaddesden, Rickmansworth, Hitchin and Broxbourne.⁷⁸¹ The distribution of finds demonstrates a very clear preference for the deep loam soils and river valleys between the Chilterns and the heavy clay escarpment in the south of the county.⁷⁸²

Nationally significant Mesolithic sites have been discovered at Dobb's Weir and Rickof's Pit, both in Broxbourne, and at the Tyttenhanger gravel quarry.⁷⁸³ Settlement mostly focussed on the river valleys of the Colne, Misbourne, Chess, Ver and Lea rivers.⁷⁸⁴ Excavation shows a trend towards more upland settlements in the Later Mesolithic, with earlier lowland sites being abandoned. This is potentially due to a rise in the water table during this period.⁷⁸⁵ While Mesolithic settlements appear to make use of a wider range of landscapes than those of the Palaeolithic, the heavier clays of north-east Hertfordshire were still largely avoided.⁷⁸⁶

Recorded Neolithic activity is concentrated on the uplands of Hertfordshire, in the Chiltern Hills and Anglian Heights.⁷⁸⁷ Long barrows have been located at Therfield Heath, Offley, Ashwell, and Hitchin; cursus monuments at Sawbridgeworth, Hemel Hempstead, and Baldock; and a causewayed enclosure at Sawbridgeworth.⁷⁸⁸ Few Early Neolithic domestic sites have been found in Hertfordshire. Those that are known to exist are all found in the uplands.⁷⁸⁹ A greater number of settlements have been found from the Later Neolithic and these appear in the major river valleys in addition to the uplands.⁷⁹⁰ While this distribution bears some similarities to other counties in the study area, it seems likely that a lack of cropmark response in the waterlogged soils of south Hertfordshire has

⁷⁸⁰ Glazebrook, Research and Archaeology p.6

⁷⁸¹ Bryant, S., "Palaeolithic Settlements" in Short, D. (ed.), An Historical Atlas of Hertfordshire (Hatfield, 2011) p.62

⁷⁸² *Ibid.*, p.63

⁷⁸³ Bryant, S., "Mesolithic Settlements" in Short, D., (ed.), An Historical Atlas of Hertfordshire, (Hatfield, 2011) p.64; Medlycott, Research and Archaeology Revisited p.6

⁷⁸⁴ Bryant, "Mesolithic Settlements" p.64

⁷⁸⁵ *Ibid.*

⁷⁸⁶ *Ibid.* p.65

⁷⁸⁷ Fenner, V., Cropmarks in Hertfordshire: A Report for the National Mapping Programme (Swindon, 1992) p.32

⁷⁸⁸ Bryant, S., "Neolithic Settlements" in Short, D. (ed.), An Historical Atlas of Hertfordshire (Hatfield, 2011) p.66

⁷⁸⁹ *Ibid.*

⁷⁹⁰ *Ibid.*

affected the recognition of sites in that part of the county.⁷⁹¹

Neolithic pits in Baldock have provided evidence of snails which dwell in woodland and scrub environments, suggesting the area was at least partially wooded at the time.⁷⁹² Beyond this, however, an unusually small amount of evidence for Early Bronze Age settlement in Hertfordshire exists, compared to that from the Neolithic.⁷⁹³ The majority of evidence for activity of this date comes from round barrows, of which there are over 500 recorded examples in the county.⁷⁹⁴ As with earlier periods, most of these are found in the Chiltern Hills and the East Anglian Heights, although there are also concentrations along the major river valleys - particularly the river Beane.⁷⁹⁵ Therfield Heath, near Royston, has a particularly impressive cluster of over a dozen surviving barrows.⁷⁹⁶ As in other parts of the study area, already discussed, it is generally assumed that these barrows were intended to be viewed - perhaps from some distance. As a result, the areas around them were likely maintained as relatively open spaces.

Hertfordshire boasts only a small number of hillforts in the northern uplands, most notably at Wilbury Hill in Letchworth, and Arbury Banks in Ashwell.⁷⁹⁷ Settlement evidence is, for the most part, restricted to the Late Bronze Age and is most common along river valleys, especially the rivers Lea and Gade - although roundhouses have been found in every area of the county except for on the London Clays.⁷⁹⁸ Extensive settlements and evidence of field systems, which would have required widespread woodland clearance, have been found at Foxholes, Hertford, Hatfield Aerodrome, Cole Green Bypass, and Old Parkbury in St. Albans.⁷⁹⁹

Early Iron Age occupation appears to have continued in the same vein as that of the Late Bronze Age, in that it was limited, and concentrated on the Chiltern Hills and major river valleys.⁸⁰⁰ Transitional sites have been located at Letchworth, Baldock, Whiteley Hill, Wilbury Hill, and Gadebridge as well as in the Bulbourne and Lea river valleys.⁸⁰¹ In

⁷⁹¹ Fenner, Cropmarks in Hertfordshire p.3

⁷⁹² Glazebrook, Research and Archaeology p.14

⁷⁹³ Bryant, S., "Bronze Age Settlements" in Short, D. (ed.), An Historical Atlas of Hertfordshire (Hatfield, 2011) p.68

⁷⁹⁴ *Ibid.*

⁷⁹⁵ *Ibid.*

⁷⁹⁶ *Ibid.*

⁷⁹⁷ *Ibid.*

⁷⁹⁸ *Ibid.*

⁷⁹⁹ *Ibid.*; Medlycott, Research and Archaeology Revisited p.17

⁸⁰⁰ Bryant, S., "Iron Age Settlements" in Short, D. (ed.), An Historical Atlas of Hertfordshire (Hatfield, 2011) p.70

⁸⁰¹ Glazebrook, Research and Archaeology pp.23-25

contrast, the Late Iron Age sees a marked increase in occupation sites particularly along the rivers Ver, Lea, Mimram, Rib, and Bulbourne.⁸⁰² Large nucleated settlements have been found at St. Albans, Baldock, Braughing, Welwyn, and Ashridge, many of which have produced evidence of high status goods and burials.⁸⁰³ This dramatic increase in wealthy settlements is likely due to an increase in Roman influence in the area, indicating a large influx of people and goods from the continent.⁸⁰⁴

As large scale pollen and macrofossil analysis of prehistoric sites has not been carried out in Hertfordshire to date, it is difficult to assess the level of impact these settlements may have had on the landscape. It seems likely, though, that from at least the Bronze Age large open areas must have existed to accommodate the laying out of large field systems.

Hertfordshire landscapes in medieval cartularies

None of the cartularies for the fifteen religious houses (or religious orders) so far referenced in previous chapters contained charters relating to Hertfordshire. While most of those houses held lands in Norfolk, Suffolk, and Essex between the 12th and 14th centuries, land holdings for all of them ceased at the Essex-Hertfordshire border. Although the cartularies of numerous religious houses based in Hertfordshire itself survive, very few have been transcribed into accessible, printed formats. The cartularies of Flamstead Priory, Rowney Priory, Royston Priory, and St. Mary-De-Pre Hospital in St. Albans exist only in original manuscript form.⁸⁰⁵ The time required to transcribe them all was beyond the scope of this work. Elsewhere the cartularies of both Markyate and Ware Priors have been lost.⁸⁰⁶

Some post-Conquest charters have been published from St. Albans Priory, but the work in which they are contained is concerned primarily with the lives and achievements of the priors there, rather than comprehensively collecting evidence of land grants.⁸⁰⁷ It is also printed entirely in Latin and, as such, adequately translating it into English was also beyond the scope of this work. Many pre-Conquest, Anglo-Saxon charters from St. Albans have been published but all cartularies examined to this point, in previous chapters, pertain

⁸⁰² Bryant, "Iron Age Settlements" p.70

⁸⁰³ *Ibid.*

⁸⁰⁴ *Ibid.*

⁸⁰⁵ Davis, Medieval Cartularies of Great Britain and Ireland pp.82, 166-7, 172

⁸⁰⁶ *Ibid.* pp.131, 202

⁸⁰⁷ Riley, T., Gesta Abbatum Monasterii Sancti Albani a Thoma Walsingham, Regnante Ricardo Secundo, Eiusdem Ecclesiae Praecentore, Compilata Vols I-III (London, 1867 and 1869)

roughly to the period 1100-1400 and so a comparison with non-contemporary data would be inappropriate.⁸⁰⁸ As such, worthwhile examination of medieval charter material for Hertfordshire was deemed unfeasible.

Hertfordshire heaths in the medieval and post-medieval periods

Figure 8.1 is a map showing the distribution of woodland recorded in Domesday Book for Hertfordshire in 1086. Two broadly distinct districts can be observed. In the north east of the county, north of the Mimram valley, woodland had been locally either partly or totally cleared by that point. Of the thirteen villis bearing primary woodland-indicating names there, see fig.3.5 on p.98, three recorded no woodland at Domesday. Half of those remaining, situated on Swaffham Prior or Melford association Loams, or the calcareous Hanslope clay, possessed woodland for fewer than fifty swine each. The other half, lying on or next to acidic Hornbeam clays, claimed more - with woodland for 100-300 swine each. With numerous villis further south claiming woodland for a thousand swine or more, though, these woods were relatively insignificant on a county level.

Between Lilley and Wakeley, eight villis with the elements OE *lēah* or *feld* formed a southern border to an area stripped of most of its woodland by the time of the Domesday survey. This suggests they were merely an earlier stage of woodland clearance and settlement which continued up to and after the Conquest, emanating out from river valleys and areas of lighter soils. This agricultural expansion is no doubt the cause of little woodland, and no heathland, surviving on the Hanslope clay on maps surveyed in later centuries, including Dury and Andrews'.

South of the Mimram, especially near the Windsor clay, significant woodland remained at the time of Domesday. Management there appears to have maintained tree cover rather than removed it. As the clay there was, in the 11th century, agriculturally unviable, more woodland survived here compared to in villis based on the more tractable soils of the north east. Indeed, this slower rate of agricultural expansion allowed for much more woodland and more common land, including heaths, in the south to survive into the post-medieval period. The distribution of grazing flocks on these landscapes during the 11th century, however, could not be mapped as they were in the other three counties of the study area. Hertfordshire was surveyed as part of Great Domesday Book, as opposed to Little Domesday Book in which Norfolk, Suffolk, and Essex can be found. For whatever reason, there were no entries made for livestock in that volume and so no distribution map

⁸⁰⁸ Crick, J. (ed.), Charters of St. Albans (Oxford, 2007)

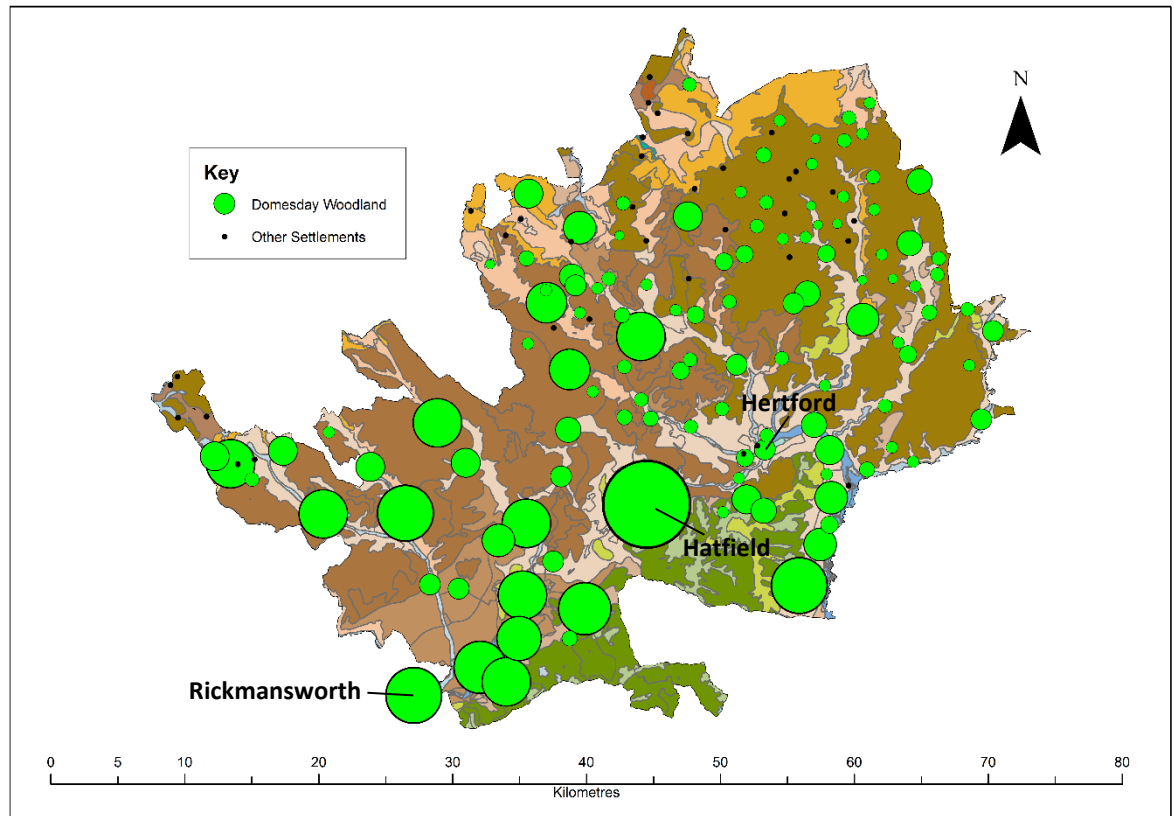


Figure 8.1. Distribution of woodland recorded in Domesday Book for Hertfordshire, overlaid onto the national soil map.

of sheep comparable to those already featured in the preceding chapters could be attempted. The entries for woodland shown here, though, are directly comparable to those shown on previous maps, having been once more surveyed in terms of swine.

Curiously, animals do appear to have been recorded for Hertfordshire when surveys were first undertaken, but that data was then omitted at publication. They emerge only in entries copied into the *Inquisitio Eliensis (I.E.)*.⁸⁰⁹ This was a compilation of Domesday data relating to lands held by the Abbey of Ely in six counties, including Hertfordshire. In Hatfield, for example, the *I.E.* shows wood for 2,000 swine, as Domesday Book does, but also records 26 cattle, 360 sheep, and 60 pigs.⁸¹⁰ Only two other vills in Hertfordshire were mentioned in the *I.E.*, though - those being Hadham and Kelshall - so a county-wide distribution map of *I.E.* data would be insufficient to draw any worthwhile conclusions. The woodland data that was published in Domesday Book, however, suggests a dichotomy of agricultural practice within Hertfordshire.

⁸⁰⁹ Campbell, E., "Hertfordshire" in Darby, H. (ed.), *The Domesday Geography of South-East England* (London, 1962) p.48

⁸¹⁰ Hamilton, N., *Inquisitio Comitatus Cantabrigiensis* (London, 1876) p.125

A county of two halves

The northern half

The distribution of woodland shown in figure 8.1 in effect mirrors the limitations and extent of medieval agriculture in the county. In the north east, where heavy soils are intermixed with lighter, more calcareous ones, Domesday vills were numerous. Woodland there was limited and, especially near river valleys and lighter soils further north, non-existent. It is in this northern half of the county that very few heaths or large commons survived into the post-medieval period. Those heaths that did survive were clustered in the far north east, on the lightest soils near the route of the Ickniel Way.

John Norden, in his 1593-1603 survey of Barley, for example, mentions just two heaths in that area – Le Heath in the parish of Barley itself and Newsellbury Heath in neighbouring Barkway.⁸¹¹ Both sat on shallow Upton 1 association soils. Each lay towards one end of long, rectangular parishes stretching northwards in a manner often seen where neighbouring vills intercommoned on shared wastes before boundaries became fixed.⁸¹² By the turn of the 17th century, though, both were suffering from agricultural encroachment. Le Heath was by that point small enough to be indiscernible on a map attached to Norden's survey. It had also already been divided, if not enclosed, into smaller parcels or doles, with several tenants claiming plots there of half an acre each.⁸¹³ In Barkway, Hores manor claimed three acres of demesne in 'the furlong on Newsellbury Heath', and another furlong of Barley manor which directly abutted the heath along the parish boundary.⁸¹⁴ To have been divided into 'furlongs' suggests these lands were being cultivated. The drive to plough up such otherwise undesirable soils was likely fuelled by markets in London. Norden, in his description of Hertfordshire of 1598, wrote of the vale of Ringdale, extending between Cambridgeshire and Hertfordshire, which 'affordeth no small store of wheat and malte towards the provision of London'.⁸¹⁵

Neither Le Heath or Newsellbury Heath survived on the OS First Edition 6" map, with the latter represented only by the solitary 'Heath Farm', and the former simply lost. Whether they survived, at least in part, on Dury and Andrews' map, however, is unclear. A large swathe in that area of the county stretching between 2.5km and 6.8km south of

⁸¹¹ Wilkerson, J. (ed.), John Norden's Survey of Barley, Hertfordshire, 1593-1603 Cambridge Antiquarian Records Society (Cambridge, 1974) pp.50, 59

⁸¹² Rackham, History of the Countryside p.355

⁸¹³ Wilkerson, John Norden's Survey of Barley pp.50, 56

⁸¹⁴ *Ibid.* pp.47, 59

⁸¹⁵ Norden, J., Speculi Britanniae: The Description of Hartfordshire, 1598 (New York, 1971) pp.1-2

Icknield Way, following the Upton 1 association and similar soils, was drawn unenclosed with frequent scattered trees and few labels. These two heaths might well have been parts of a much larger heathland landscape encroached upon only from the south during the 16th and 17th centuries but still unenclosed to the north. Unfortunately, this is not discernible from Dury and Andrews' map

Therfield Heath, in a nearby parish of the same name and abutting east on Royston, was similarly drawn unbounded on Dury and Andrews map, and illustrates this pattern of enclosure well. In 1766 the wood-pasture heathland (as I presume it to have been from the names of those parts that are recorded) began at the edge of Therfield vill and simply kept going north (fig. 8.2). Apart from roads and a solitary farmhouse, named 'The Thrift', only scattered trees were drawn. Earlier records indicate that tournaments were banned here by the king in 1234 and 1331 which implies the presence of some open ground on which to hold them.⁸¹⁶ By the early 17th century, though, wood pasture was still dominant as James I is known to have favoured the heath as a hunting ground.⁸¹⁷ Reversion to denser woodland must have been avoided either through regular fellings or through grazing, or, more likely, a mixture of the two. By the 1880s northward enclosure had engulfed this landscape to within 500m of Icknield Way at the heath's widest point. The only trees remaining grew within neatly managed plantations, with the heath itself the location only of tumuli and a rifle range, both presumably sited there due to its openness.

In 1766, though, trees were still common. In the late 16th century, they were likely even more so. On pastures and meadows Norden, in 1598, wrote:

This Shire at this day is, and more hath bene heretofore, much repleat with parkes woodes and rivers. But for deepe feedings or large sheepe pastures, I could take notice of fewe, and they especially about Knebworth the best sheepe gates within the Shire. Meadows here and there, are dispersed upon the rivers sides: But many of them colde and mossye, especially about Rickmansworth. The Lea challengeth the commendation for the best meadowes, the North parte of the Shire is much unfurnished.⁸¹⁸

Thus, open pastured were not found in the north of the county at all, and the only noticeably open grazing lands worthy of comment were, at that time, some 20km south

⁸¹⁶ Page, W., "Parishes: Royston" in Page, W. (ed.), A History of the County of Hertford Vol. 3 (London, 1912) p.253

⁸¹⁷ *ibid.*

⁸¹⁸ Norden, Speculi Britanniae p.2

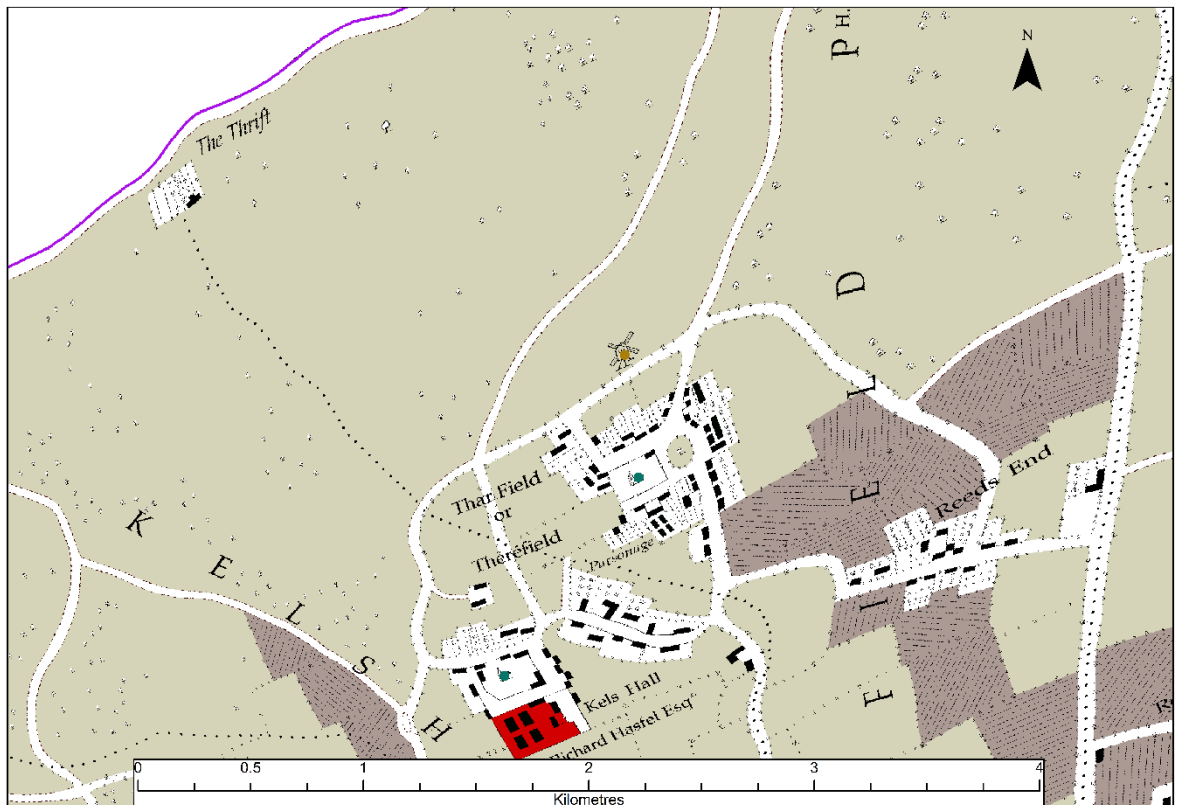


Figure 8.2. Wood pasture heathland near Therfield in Hertfordshire as it appears on Dury and Andrews' map of that county, published in 1766, and digitally redrawn by Andrew Macnair.

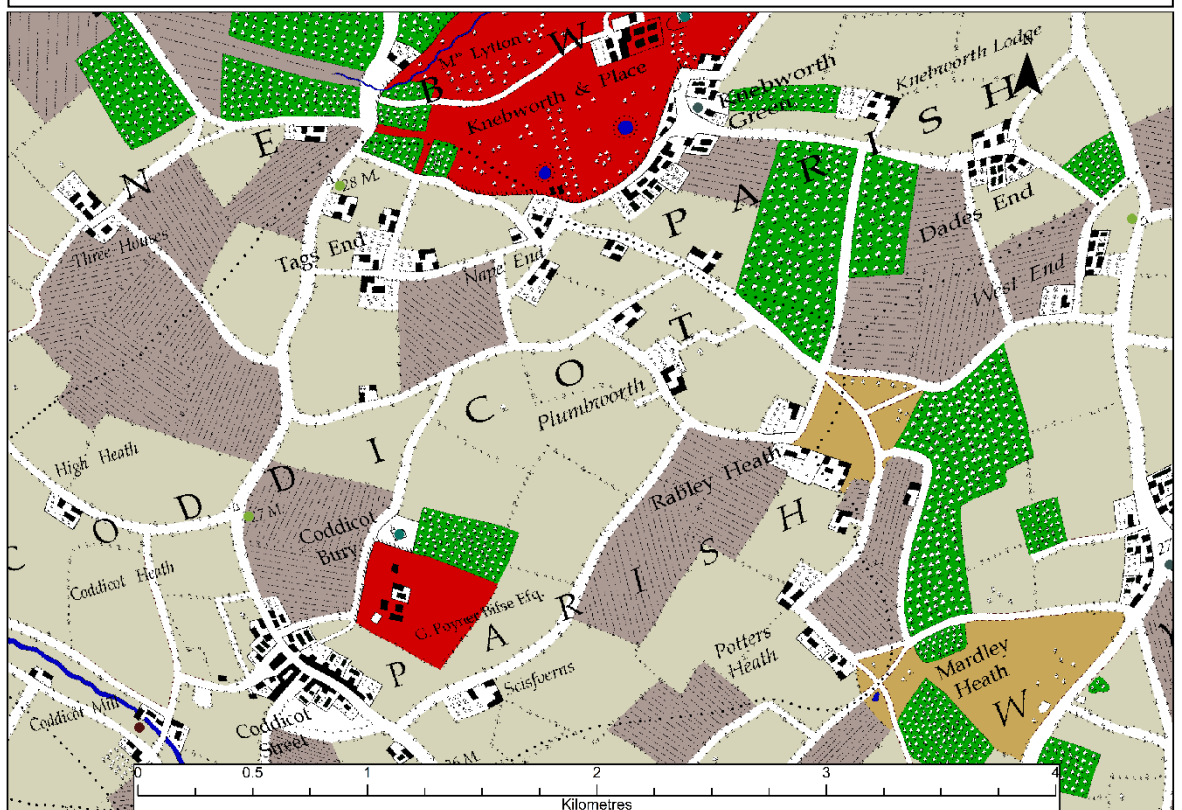


Figure 8.3. Heaths near Knebworth in Hertfordshire as they appear on Dury and Andrews' map of that county, published in 1766, and digitally redrawn by Andrew Macnair. The labels 'High Heath' and 'Coddicot Heath' are visible in the west, while 'Potters Heath' is labelled in the south east, and Rabley and Mardley Heaths are drawn bounded in yellow.

west of Therfield and Barley.

There, on the peninsula between the Beane and Mimram rivers, the landscape was unique in Hertfordshire – resembling neither north nor south. Five heaths were marked within 3km of Knebworth in 1766, detailed in Figure 8.3. Of those, three appear enclosed and private, given over either to permanent pasture with only hedgerow trees still standing, or to arable cultivation. The two that remained common, Rabley Heath and Mardley Heath lay at the highest point on the interfluvium, furthest from the fertile valley soils. Both retained patches of tree cover as late as Dury and Andrews' map, and both abutted on large private woods. Even the most open part of the county, according to Norden, then, still contained wood pasture heaths alongside dense enclosed woodland 170 years after he was writing.

The southern half

In the south and west of the county, Domesday villages were fewer in number compared to the north east – restricted to river valleys between fields of acidic clay upon which larger woodlands grew. In the far south of the county, on the heaviest clays (shown in green in fig. 8.1), no villages were recorded at all. Those settlements sited on the edge of the clay claimed the largest woodlands, presumably growing on the agriculturally undesirable heavy Windsor clay where no villages were found. It is in this part of the county that the largest heaths survived into the post-medieval period, including Bushey, and Hertford heaths.

The name 'Bushey', or 'Bissei' in Domesday Book, combined OE *bysc*, meaning 'bush' or 'thicket', with OE *hæg* meaning 'enclosure'.⁸¹⁹ Thus, woodland of some form is evidenced from the late Saxon period. By the completion of Domesday Book in 1086, the vill still claimed woodland large enough for 1,000 swine. By Norden's time, though, the area was more closely associated with bushes or shrubs. In 1598 he wrote that it was 'aptly named de Dumis of the Bushes, and woodes there, heretofore abounding'.⁸²⁰ The Latin phrase *de Dumis* means 'the bushes', while his use of the word 'heretofore' suggests that the area was not as wooded as it once was. Indeed, a few years earlier in 1594 an *inquisition post mortem* regarding the death of Henry Hickman lists that of his 3,700 acres in the parish of Bushey 600 were furze and heath and only 300 acres were wood.⁸²¹ The

⁸¹⁹ Gover *et al*, Place-Names of Hertfordshire p.64

⁸²⁰ Norden, Description of Hertfordshire p.14

⁸²¹ Rowe and Williamson, Hertfordshire: A Landscape History p.135

trees were not the only vegetation in decline, however, as evidenced by the stringent rules and fines applied by the manor court. Selling furze to those outside the manor was forbidden in 1600 and fines of 20d. were recorded for anyone cutting furze between May Day and Michaelmas in 1707.⁸²²

Bushey Heath itself first appears in documentary sources as ‘Bissheyheth’ in the Feet of Fines for Hertfordshire in 1354.⁸²³ Little evidence of it survives from much of the post-medieval period but Dury and Andrews’ map shows little indication of the thicket after which the vill was named (see fig. 8.4). By then the heath had been partly enclosed, or at least compartmentalised, by hedges with very few standing trees visible on the map. The handful that still stood were restricted to two locations. At the western end some stood before the common-edge houses by Little Bushey and on the roadsides there. At the eastern end a relatively dense stand of trees survived in front of common-edge houses outside the neighbouring village of Elstree.

In his description of Elstree, also sometimes called ‘Eaglestree’, Norden reveals some idea of what he thought a heath was conceptually – namely that it was open. Calling it by a Latin name meaning ‘wood of the eagles’ he wrote:

Nemus aquilinum: place wher it may be thought Eagles bredd in time past, for though it be nowe hilly and heathy it hath beene replenished with stately trees, fit for such fowle to breede and harbour in.⁸²⁴

Thus, to him the planting of ‘stately trees’ would alter the ‘heathy’ nature that it had acquired before planting began. Probably the only place in the parish where he could have seen trees and treeless ‘heathy’ ground together was the large common Dury and Andrews called ‘Barham Wood’. Figure 8.5 shows the area in detail. By the surveying of their map, the trees, though still numerous, had been restricted to about half of the common. Having been called a wood since at least 1188, what we see in 1766 is likely the result of a slow decline.⁸²⁵ Norden’s etymology of Elstree’s name, incidentally, was incorrect – having nothing to do with eagles at all. First recorded very early as ‘Tiðulfes treow’ (pers. name Tidwulf + tree) in 785 it then simplified first into ‘Tidulvestre’ then ‘Idulfestre’, ‘Idelstre’, ‘Illestre’ and finally ‘Elstre’.⁸²⁶

⁸²² Rowe and Williamson, *Hertfordshire: A Landscape History* p.137

⁸²³ Gover *et al*, *Place-Names of Hertfordshire* p.65

⁸²⁴ Norden, *Description of Hartfordshire* p.15

⁸²⁵ Gover *et al*, *Place-Names of Hertfordshire* p.74

⁸²⁶ *Ibid.*

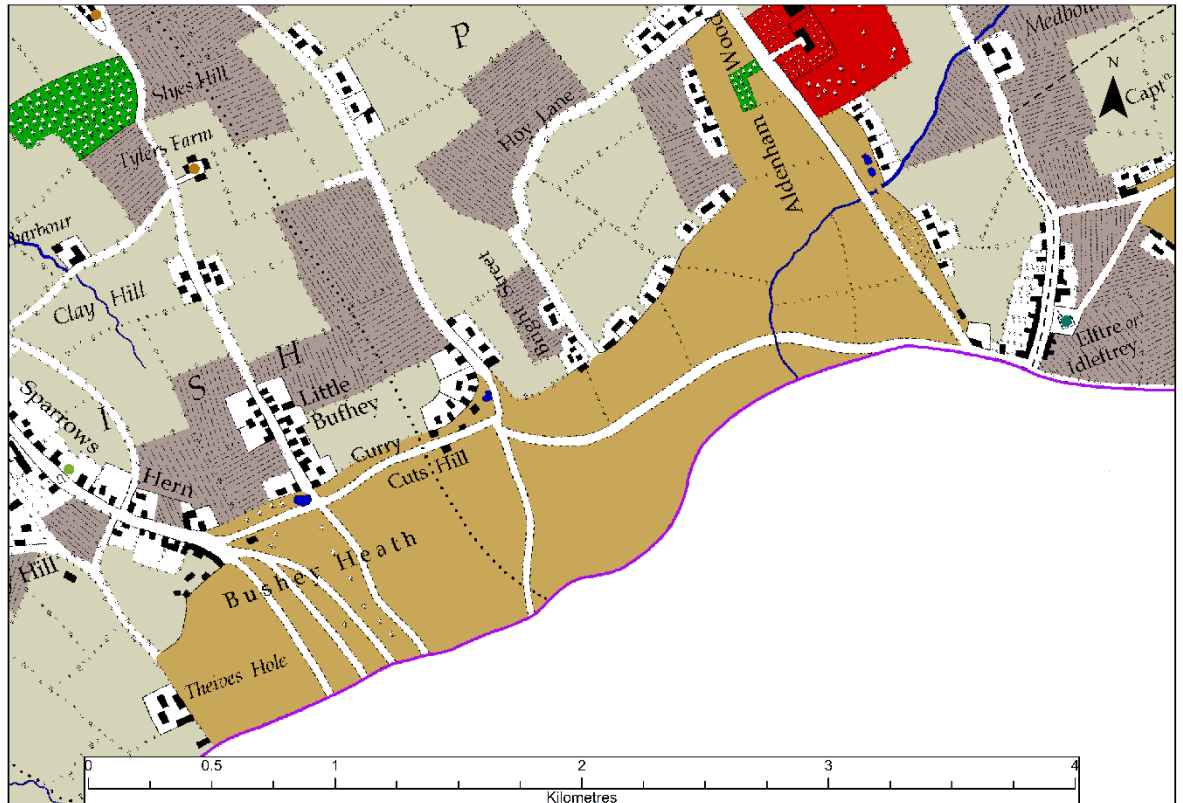


Figure 8.4. Bushey Heath, near Little Bushy and Elstree in Hertfordshire, as it appears on Dury and Andrews' map of that county, published in 1766, and digitally redrawn by Andrew Macnair.

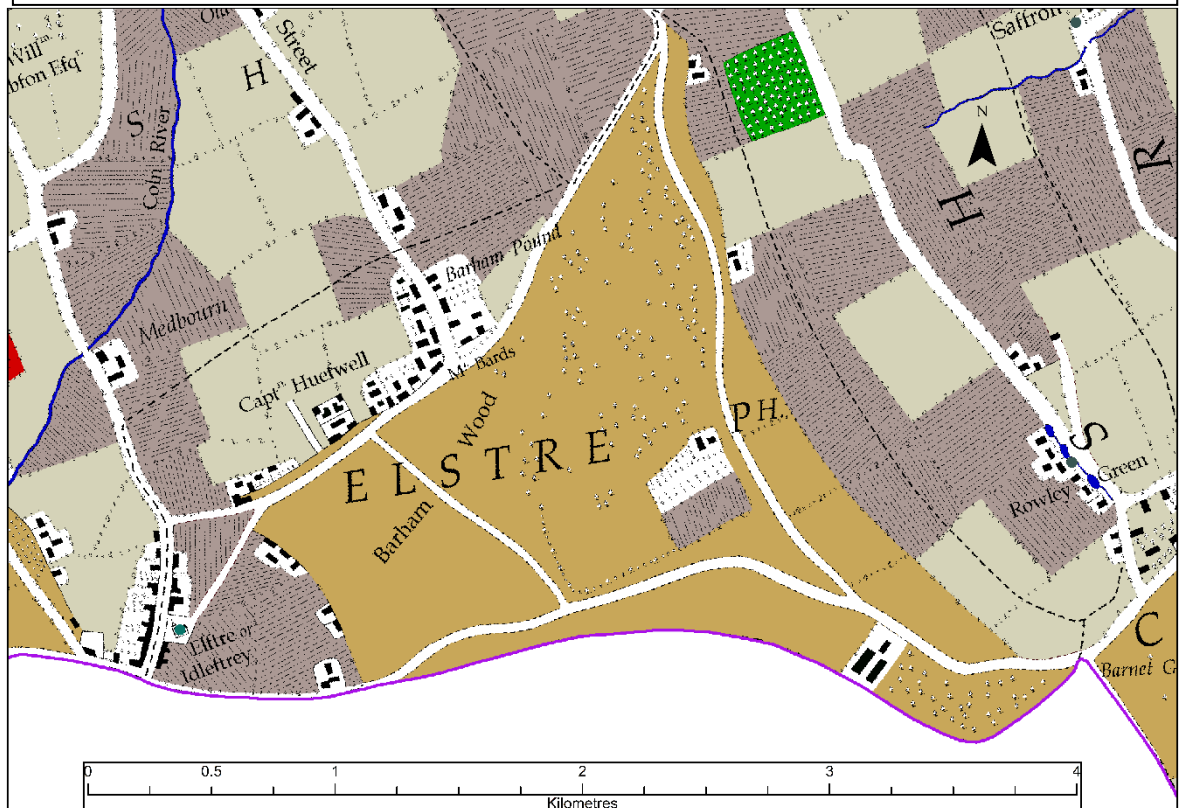


Figure 8.5. Barham Wood, near Elstree in Hertfordshire, as it appears on Dury and Andrews' map of that county, published in 1766, and digitally redrawn by Andrew Macnair.

The only other large heath to survive in that part of the county into the post-medieval period was associated with the county town, Hertford. The name ‘Hertford’ combined OE *heorot*, meaning a ‘hart’ or ‘stag’, with OE *ford* the meaning of which has not changed.⁸²⁷ Hertford Heath itself occupies the interfluvium within a bend in the river Lea between that place and Hailey, containing OE *lēah* suggesting surrounding woodland. Combined with the presence of harts, whose natural habitat is the edges of woods, and the large amounts of woodland recorded at Domesday, this suggests significant woodland on the interfluvium between the two villas in the late Saxon period. Hertford Heath itself does not appear in documentary evidence until a deed of the 16th century, where it is called ‘Hertfordhethē’.⁸²⁸ Significant dense woodland still stood on the heath as late as 1766, being visible on Dury and Andrews’ map. Figure 8.6 shows the heath and its surrounds at that time.

Deforestation, advancing from the heathland edge towards the centre, is evident in the north and east, moving inward towards a wooded core. Not including enclosed private woodlands, which probably weren’t part of the common, 18% of the heath was made up of a densely wooded centre, with a further 32% of the whole covered in scattered trees. Only 50% of the total area of common heath was drawn open and treeless in 1766. Furthermore, the pattern of enclosed woodland within and abutting the heath strongly suggests the latter was once part of the larger woodland, before partial deforestation. As at Tiptree and Kingswood heaths in Essex, then, Hertford Heath was maintained as a wood pasture landscape into the 18th century. The soil here is heavy Windsor clay and entirely different in character to the acid sands more commonly associated with heaths in Breckland and the Sandlings. The wooded, clayland Hertford Heath, however, was labelled as such for over 500 years. As a cultural concept, then, heathland was not dependent on soil type.

Near Cheshunt, 7 miles south of Hertford, another, much larger, wooded heath is visible on Dury and Andrews’ map, albeit differently labelled. Pehr Kalm, a Finnish traveller who visited Hertfordshire in 1748, labelled the contiguous North Hall and Cheshunt Commons (as they are labelled on the county map) a ‘heath’. Figure 8.7 shows the area in detail. Though he did not call the commons by those names, the vast heath he described was four miles long and laid between Cheshunt and Bell Barr, with Goff’s Oak

⁸²⁷ Gover *et al*, Place-Names of Hertfordshire p.225

⁸²⁸ *Ibid.* p.213

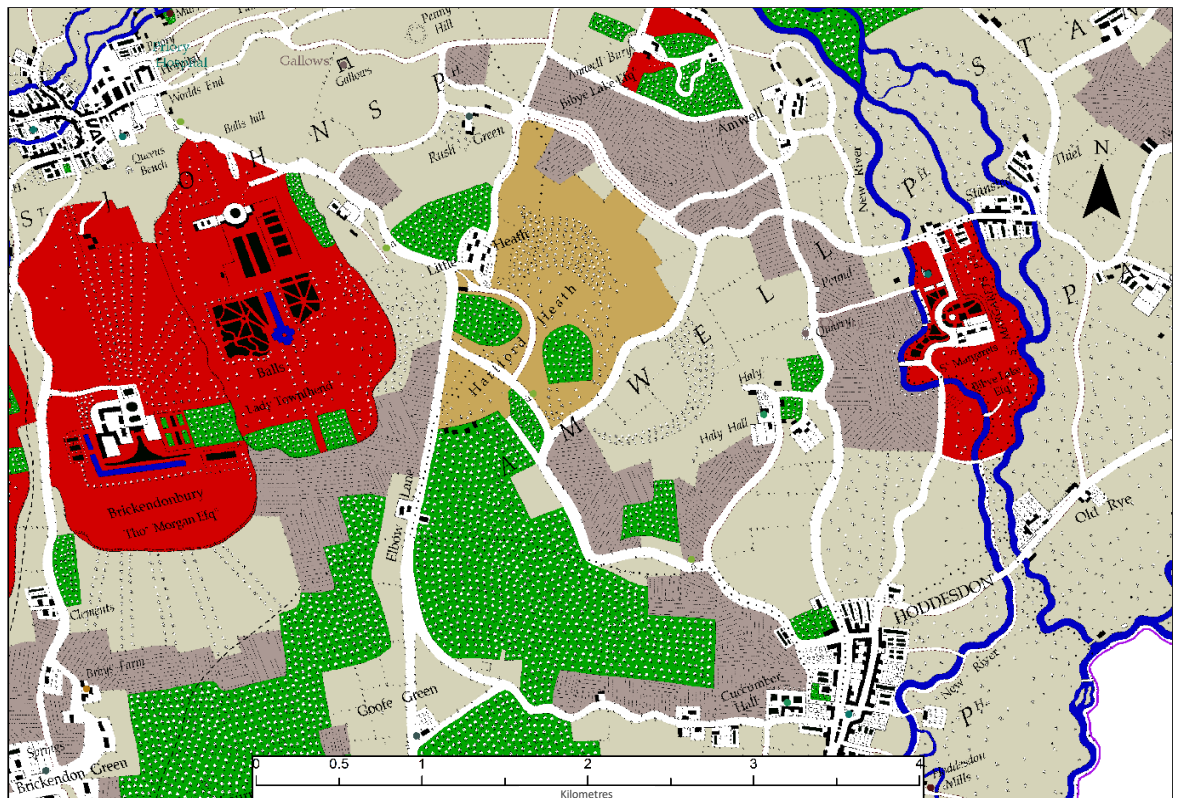


Figure 8.6. Hertford Heath and the surrounding area, including the settlements of Hertford (here Hartford) and Hailey (Haly) as shown on Dury and Andrews' map of Hertfordshire, published 1766, and digitally redrawn by Andrew Macnair.

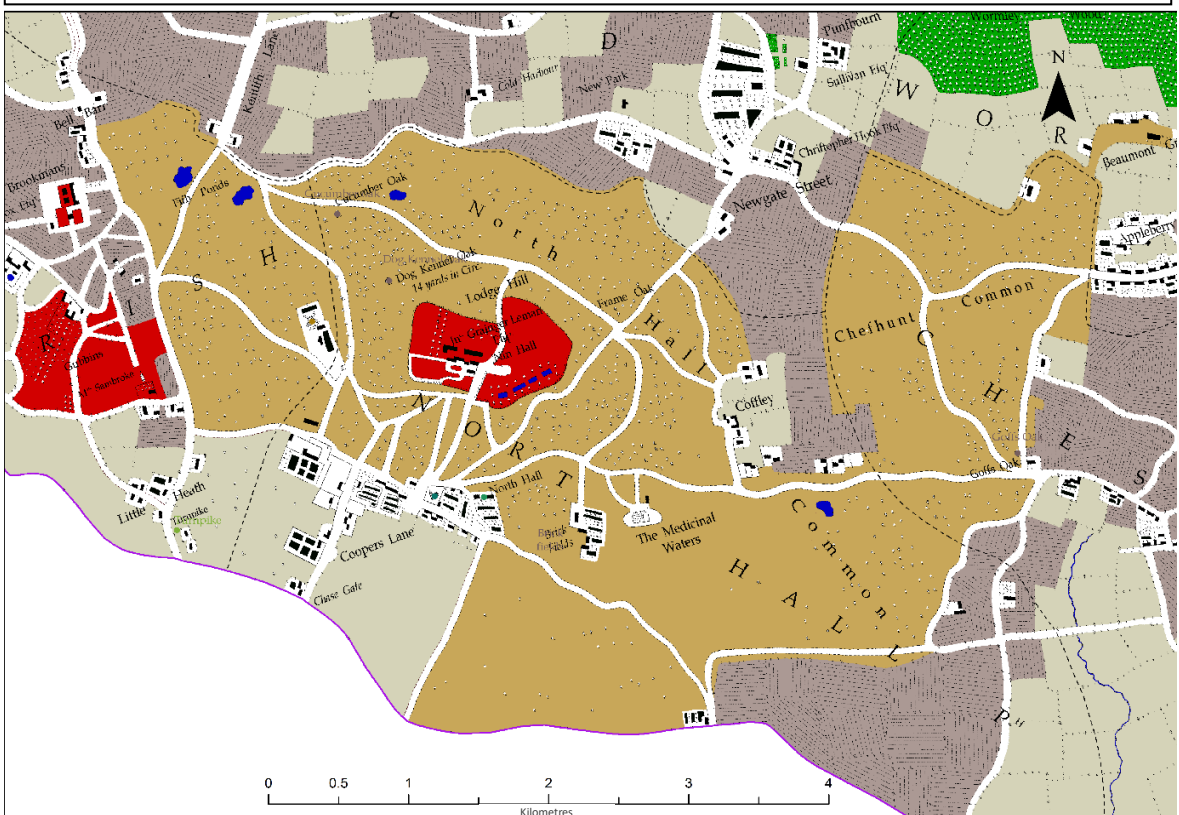


Figure 8.7. North Hall and Cheshunt Commons, described by Pehr Kalm as a 'heath' in 1748, as shown on Dury and Andrews' map of Hertfordshire published in 1766, and digitally redrawn by Andrew Macnair. Showing Bell Barr in the north west and Goff's Oak in the East.

mentioned as a local landmark. The combined length of the commons on Dury and Andrews' map between Goff's Oak in the east and the crossroads outside Bell Barr in the west is exactly 4 miles.

The 1766 map shows almost all the heath, as Kalm labelled it, covered in densely scattered trees. In his diary, Kalm identified the species he saw there. He wrote that '*Carpinus* (hornbeam) grew fairly densely to a height of six feet, and the tops of it were cut for fuel'.⁸²⁹ Hornbeam pollards, then, stood on most of the heath, alongside some oak trees if the four named examples of that species on the map are any indicator. The understory was of heather (*Calluna*) with bracken (*Pteridium*) but little grass and no Gorse (*Ulex*) was mentioned at all. Kalm wrote that 'common ling grew on it abundantly. It was covered with tufts of ling, between which bracken flourished ... but there was scarcely any grass'.⁸³⁰ He went on to write of both sheep and rabbits, the latter in abundance, grazing on the heath. North Hall and Cheshunt Commons, like Hertford Heath, were dense wood-pasture heathland given a different label by Dury and Andrews. Significant tree cover did not disqualify it as a heath even within an international context, as Kalm wrote that it was 'little better than our ling heaths in Sweden'.⁸³¹ Elsewhere in his diary, though, he suggests that the heaths of his homeland possessed heather as a matter of course, and more closely resembled those of Breckland or the Sandlings. Upon visiting Ivinghoe in Buckinghamshire, he wrote of:

A very extensive piece of open country and commons which in appearance seemed somewhat to resemble our dry and sterile heathlands in Sweden. Yet it differed in that no ling was found here, while the terrain here was not flat but rose and fell gently. For the most part it was overgrown with *Genista spinosa*.

Genista (or *Genesta*) *spinosa* used here is an old name for Common Gorse now called *Ulex europaeus*.⁸³² Kalm refrained from using the term 'heath' to describe the common there because it had no heather and the ground was undulating, but North Hall and Cheshunt Commons were heaths in his eyes regardless of tree cover.

At Berkhamsted, 30 miles to the west, the decline in tree cover occurred much earlier than at Cheshunt, at least in the southern part of the heath. A map of 1638 marks

⁸²⁹ Mead, W., Pehr Kalm: A Finnish Visitor to the Chilterns in 1748 (Aston Clinton, 2003) pp.43-44

⁸³⁰ *Ibid.* p.43

⁸³¹ *Ibid.*

⁸³² Gerard, The Herball p.1138

this area of Berkhamsted Frith as ‘Barkhamsted Heathe with out trees’.⁸³³ For this to be noted on the map implies that wooded heath was not uncommon at this time and indeed could indicate that tree cover was more usual than open heath in the area. Like at Bushey Heath, exploitation of heathland vegetation cut for fuel was limited by law. In the late 17th and early 18th centuries, court rolls for the manor describe fines for selling furze to outsiders and even go so far as to limit the type of tool which could be used to cut furze on The Frith. Bills with double blades were not allowed and nor were those with handles over 12 inches long, unless the person was exempted by age or infirmity.⁸³⁴ This was presumably to protect the underlying root systems.

Burnt Heath in St. Stephens parish, just south of St. Albans was another example of a wooded heath, but which had disappeared by the time of Dury and Andrews’ map. Figure 8.8 shows the heath on an undated 17th-century map. In short, it shows 35 acres of wood. No part of it was open and the trees were, like on Wivenhoe Heath in Essex mentioned in the previous chapter, drawn tall and thin. Its name suggests, in no uncertain terms, an area cleared by burning. It was, however, for much of the 17th century, densely wooded. A will of 1636 bequeathed ‘All that my wood called Burnt heath scitua lyeinge & beinge in the p[a]rish of St Stephens ... conteyninge by estimac[i]on Thirty and Sixe Acres’.⁸³⁵ A grant of 1647 refers to ‘All that Wood Underwood and Woodground called Burnt Heath’ and estimated it to be 35 acres in area.⁸³⁶ A mortgage of 1652, meanwhile, gave the first indication of management techniques employed there, leasing the heath ‘with all timber and timber trees bodies of pollards and all other trees whatsoever now groweing or being in and upon the said woodground’.⁸³⁷ At that point, then, both pollards managed for wood, and standard trees managed for timber were present on the heath. By 1656, though, part of it had been cleared, but not by or for grazing animals. A sale of that year assigned the heath, with all timber, timber trees and bodies of pollards, ‘parte whereof is lately converted into arrable’.⁸³⁸

As by that point it had been sold, bequeathed and mortgaged, the heath would seem to have been private, rather than common land. As such, clear felling part of it for arable would not have faced opposition, as felling on Tiptee Heath did in Essex. After that point,

⁸³³ Rowe and Williamson, *Hertfordshire: A Landscape History* p.102

⁸³⁴ *Ibid.*

⁸³⁵ HALS DE/Am/T20

⁸³⁶ *Ibid.*

⁸³⁷ *Ibid.*

⁸³⁸ *Ibid.*

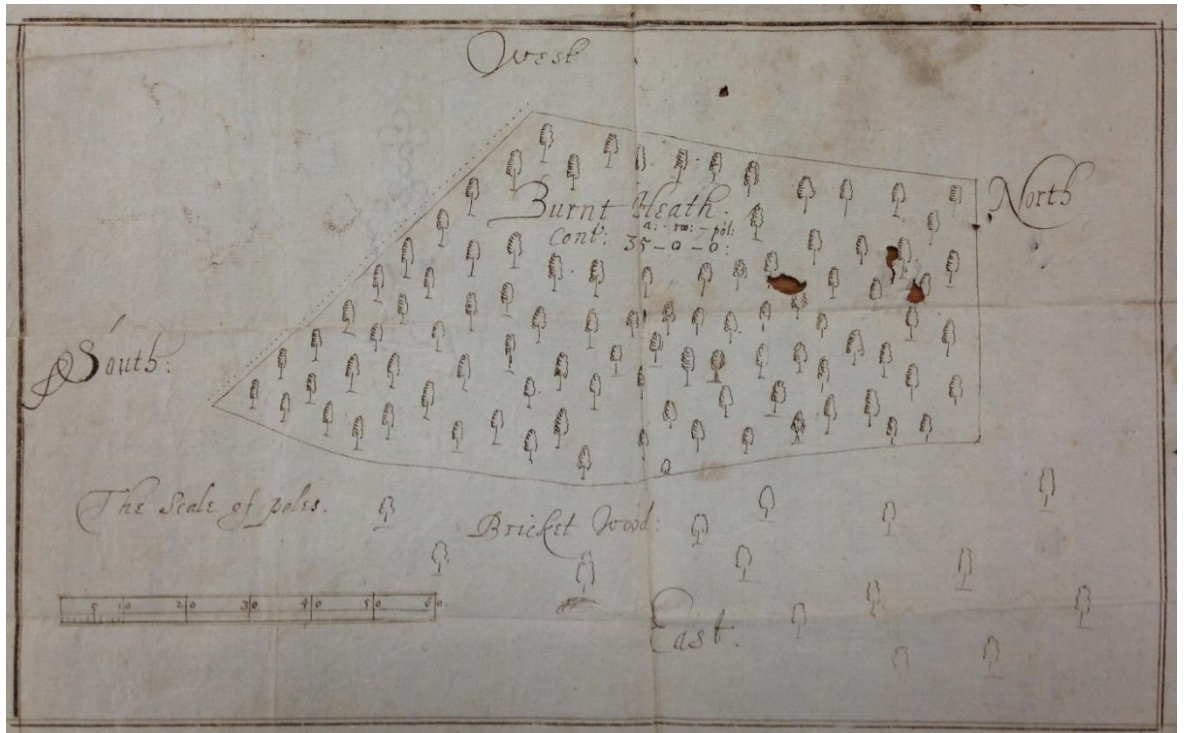


Figure 8.8. An undated 17th-century surveyed plan of Burnt Heath in St. Peters, Hertfordshire at the Hertfordshire Archives and Local Studies centre, reference number DE/Am/P16.

into the 1680s, the land retained the name Burnt Heath but was referred to as a farm rather than a wood with barns, 6 acres of woodland, and 30 acres of arable in 3 closes ‘heretofore wood ground’.⁸³⁹ By the time Dury and Andrews’ map was surveyed in 1766, the name Burnt Heath had disappeared. As such, the whereabouts of the former heath has been lost.

Colney Heath, Hertfordshire: A case study

Colney Heath in Ridge and North Mymms parishes, east of St. Albans, was selected for a case study based on the two selection criteria given in the first chapter. In terms of detail, the heath was the subject of two legal disputes over manorial rights, one in 1555 and the other in 1738. Both have left behind a wealth of information detailing its management. In terms of diversity, documents from the two cases show a shift in management practices employed on the heath over time, and the landscape character of the heath which they illustrate is significantly different to those of heaths featured in case studies for the Brecklands or the Sandlings, most closely resembling some heaths in north east Essex such as Tiptree Heath. Still extant in 1766, but by then called ‘Cony Heath’, figure 8.9 shows

⁸³⁹ HALS DE/Am/T20

the heath and its surrounds in detail.

From the earlier of the two cases, several letters and 26 written depositions, taken from current and former commoners, have survived. One letter from the Abbot of St. Albans estimated its area to be 416 acres - almost four times larger than Dury and Andrews' depiction, which measures just 113 acres.⁸⁴⁰ Curiously, throughout the bundle, the heath was sometimes referred to as a 'marsh', but the name 'heath' always appeared first in each document, with 'marsh' only ever mentioned as an alias. As the river Colne flowed through the common, some waterlogged ground would have been present. As on Ringmere Heath in the Breckland manor of East Wretham and Drakes Heath in Lowestoft in the northern Sandlings, then, a partly waterlogged landscape could still be a heath to those who worked it. Together, the following documents describe a wood-pasture heath grazed by numerous species, not only by sheep, and exploited for a range of resources.

First, a letter to the manorial lord in 1555, from his son-in-law, referred to it as yo[u]r woodde & comen of Colney heythe'.⁸⁴¹ It is clear from other documents in the bundle that the farmer of the demesne of Tyttenhanger manor, to the west of the heath, could take wood and bushes from it for fuel. Several commoners reported seeing the farmer 'many tymes lopp trees & ffell busshes & wood[es]... for the fuell or ffyerwod spent at his house'.⁸⁴² Like some other documents codifying fuel rights on heaths in Essex already discussed, for example at Great Bromley, almost all of those commoners who mentioned them in Colney Heath specified that they must be spent within the manor. For the manorial lord or demesne tenant this meant either at the manor house or in the tile kiln attached. One commoner, for example, said he 'hath knowen wood[es] dyv[er]s tymes fallen by the [farmer] who brought the same to the Tyle Kylne of Tyttenhanger & spent the same there'.⁸⁴³

Although most depositions from 1555 say only that the wood was removed from the heath for fuel, two older commoners remembered the practice of charcoal making taking place on the heath itself. One, for example, was 's[er]vaunt to Charles late duke of Suffolk at such tyme as the said duke lay at Tyttenhanger, and felled and lopped the trees in Colney heath on both sid[es] the water there, and coled the same, in the said Comen called Colney heth, and carrye the Coles to the howse of Tyttenhanger w[hi]ch were spent

⁸⁴⁰ HALS DE/B2067B/L8

⁸⁴¹ *Ibid.*

⁸⁴² *Ibid.*

⁸⁴³ *Ibid.*



Figure 8.9. Colney Heath, here labelled ‘Cony Heath’, and the surrounding area as shown on Dury and Andrews’ map of Hertfordshire, published 1766, and digitally redrawn by Andrew Macnair. The river flowing past the heath is elsewhere labelled ‘Coln River’.

there in the said duk[es] howse’.⁸⁴⁴ Although the 1766 map in figure 8.9 shows the heath extant only on the western side of the Colne river, as this passage suggests, the heath clearly once extended to the eastern side further into North Mymms parish. The farmer of the demesne there did ‘ffall wood & loppe trees on his p[ar]t of the sayd Co[m]jen belonging to northmym[m]es’.⁸⁴⁵ Both sides of the heath, then, were at least partly wooded.

As reference to the practice of ‘lopping’ would suggest, at least some of the trees on the heath were pollards. More explicitly, one commoner stated that he had ‘lopped trees & fallen old pollard[es]’ on the heath, which the demesne farmer then used for fuel.⁸⁴⁶ Management of the heathland trees, however, was not purely for the production of wood fuel, but also for timber. Earlier in the 16th century, the demesne tenant ‘dyd oftentimes take his Cartbot and plowghboote uppon the said Comen called Colney heath

⁸⁴⁴ HALS DE/B2067B/L8

⁸⁴⁵ *ibid.*

⁸⁴⁶ *ibid.*

& also ffelled Tymber there for rep[ar]ac[i]on of his howse at Tyttenhanger'.⁸⁴⁷ As mentioned in the previous chapter, cartbote and ploughbote were the rights to take wood or timber for repairing carts and ploughs respectively. The tenant also had rights to 'tymber for rep[ar]ac[i]ons of [th]e p[ar]ke pales' which surrounded Tyttenhanger deer park near the house to the west of the heath.⁸⁴⁸ Although the trunks of younger pollards could be used for timber, reference to 'old pollards' suggests they were allowed to age beyond the point where they would be useful for building – the trunk instead becoming hollow with age. As such, the timber mentioned likely came from standard trees growing alongside pollards on the heath. The maintenance of pollards for wood production, rather than allowing them to grow straight for timber, likely came from greater demand for fuel than for building material.

Separate to demands for fuel, the wood from pollards, as well as bushes growing on Colney heath, were sometimes used for making and hedging-in rabbit burrows. The manor house of Tyttenhanger had a warren attached, enclosed from the heath in the early 15th century, in which materials from the heath were used, but so too were they used to enclose burrows on the heath itself.⁸⁴⁹ One commoner remembered two demesne tenants 'take wood[es] & lopp trees for making stak[es] & laying ther Conyes borowes aswell w[i]thin the said Comen as in Tyttenhanger warren'.⁸⁵⁰ Another stated of the tenant that 'from tyme to tyme he ffelled bushes and wood to lay his borowes there uppon that p[ar]t of the comen belonging to Tyttenhanger'.⁸⁵¹ 'Conye burrows', or 'pillow mounds' in modern terminology, were purpose-built underground tunnel systems into which domesticated rabbits were introduced. Other commoners also spoke of wood and bushes being used to make hedges and fences to enclose these burrows from the rest of the heath.

The sustainable exploitation of wood and timber, and of rabbits, on the heath was maintained through the customs of the manor - no one but the demesne tenant had a right to any of them. One commoner stated that 'the comen[er]s w[i]thin the said Comen called Colney heath never felled eny bushes or Wood[es] or kyllled any Conyes ther but they were always am[er]sed for the same' and almost all other depositions mention the same

⁸⁴⁷ HALS DE/B2067B/L8

⁸⁴⁸ *Ibid.*

⁸⁴⁹ Page, W., "Parishes: Ridge" in Page, W. (ed.), A History of the County of Hertford Vol. 2 (London, 1908) p.387

⁸⁵⁰ HALS DE/B2067B/L8

⁸⁵¹ *Ibid.*

arrangement.⁸⁵² Transgressors were punished by the manorial court, sometimes severely. One man, caught killing rabbits on the common, was put in the stocks and stayed there until the Abbot of St. Albans personally ordered his release.⁸⁵³

Another recurring cause for punishment by the court reveals a further species grazing on the heath. One man knew ‘the said Comen[er]s dyv[er]s tymes am[er]sed and payned at the Cort of Tyttenhanger for having ther hogg[es] unrynged in the Comen of Colney heath’.⁸⁵⁴ Another man stated he had often been on the jury when such fines had been handed down in the manorial court, frequently alongside punishment for illegally felling trees or bushes. ‘Hogges’ here, from context, must refer to pigs and hog rings, inserted through the cartilage in the nose, were historically used to lead the animal. In these instances, it appears the punishments were dealt out for allowing swine to roam freely on the common heath. This suggests either that pigs were not permitted on some parts of it, and their owners should have kept them from those parts, or that they were only supposed to feed on the common for certain periods rather than at all times. What the hogs grazed on gives the only direct evidence of a tree species present on the heath in 1555. One deposition states simply that the demesne tenant ‘had mast for his hogg[es] there’.⁸⁵⁵ ‘Mast’ usually refers to the grazing of acorns.⁸⁵⁶

Grazing by other animals owned by the commoners was managed within yearly ‘drifts’, or ‘drives’, but the manorial tenant was not bound by the same rules. He ‘might at his pleasure from tyme to tyme have put in his Cattell there’ on the heath with no limit on numbers, instead having a right to ‘put asmoch Cattell ther as he wold’.⁸⁵⁷ The drifts for commoners’ cattle were organised on a three-year rotation. Two consecutive years’ drifts belonged to Tyttenhanger manor, while the third belonged to North Mymms. This system was already by this point longstanding, having been first agreed between the two manors in 1427-8.⁸⁵⁸ During each drift the cattle belonging to the other manor’s commoners (or to outsiders) were not permitted on the heath, with transgressors fined depending on their circumstances. The beasts in question were also impounded. Most depositions, for example, state that ‘the Tenaunt[es] of Northmymes p[ai]d at ev[er]y dryfte of the said comen w[hi]ch was dryven for Tyttenhanger ev[er]y one of them iiijd for all his Cattell

⁸⁵² HALS DE/B2067B/L8

⁸⁵³ *Ibid.*

⁸⁵⁴ *Ibid.*

⁸⁵⁵ *Ibid.*

⁸⁵⁶ Jacob, *A New Law Dictionary* p.473

⁸⁵⁷ HALS DE/B2067B/L8

⁸⁵⁸ Page, “Parishes: Ridge” p.387

taken there, and ev[er]y forener p[ai]d four pence for ev[er]y hed of Cattell although the same were put into the comen the same day they were taken'.⁸⁵⁹ The heaviest fines, then, were reserved for 'foreigners', sometimes called 'strangers', or rather anyone who was not a commoner in either of the manors which had rights over the heath. Such persons had to pay four pence per impounded animal to release them, whereas a commoner from the 'other' manor paid only four pence to release all their cattle impounded during the other manor's drift.

The term 'cattle' would suggest that only cows were grazed during these drifts, but other species were also mentioned. One man recalled how 'his father had an horse taken on the said Comen at the said dryfte for Tyttenhanger and yimpownd at Tyttenhanger w[hi]ch horse he hym self feched at that said pound and paid iiijd for him bycause his father was a fforen[er]'.⁸⁶⁰ The wife of another former commoner stated that 'the vicar of Ridge had the tyth of all the Calves lambes & pygg[es] w[hi]ch fell on that side the water next Tyttenhanger p[ar]ke on the said Comen' - placing sheep on the heath as well as cows and the pigs already mentioned.⁸⁶¹ As for the cows, at least one tenant of the demesneof Tyttenhanger kept them for dairying. One Alice Chapman recalled how the tenant 'had xl melch kyue goeing uppon the said Comen called Colney heath, & that she often tymes dyd help to mylke the same melch kyue'.⁸⁶² The word 'kyue' here is a curious spelling of the modern word 'cow' more closely resembling OE 'cú'.⁸⁶³

Common rights on the heath were held not through tenancy, or even freehold residency, within the manor but in return for 'an yerly rent'.⁸⁶⁴ The Lady Clyfford, for example, paid four pence *per annum* in rent for her common rights there, and another four pence for her 'suyt fyne' in Tyttenhanger court, but was resident at the farm of Coursers outside the manor.⁸⁶⁵ Indeed it would appear that none of those with rights over Colney Heath lived in Tyttenhanger except the tenant of the demesne. One commoner stated that '[not] eny of the said Comen[er]s next before named had eny lond[es] w[i]thin the lordshipp of Tyttenhanger nor fined to the Cort[es] of Tyttenhanger for eny thing other then for ther said Comen w[hi]ch they held in Colney heath of the said Lordship of

⁸⁵⁹ HALS DE/B2067B/L8

⁸⁶⁰ *Ibid.*

⁸⁶¹ *Ibid.*

⁸⁶² *Ibid.*

⁸⁶³ Bosworth & Toller, Anglo-Saxon Dictionary p.172

⁸⁶⁴ HALS DE/B2067B/L8

⁸⁶⁵ *Ibid.*

Tyttenhanger'.⁸⁶⁶ Nevertheless, their interest in the proper management of the heath and its resources was clear. Suites in court against transgressing commoners were presided over by a jury of other commoners, and punishments were sometimes harsh. The manorial lord of North Mymms himself, for example, was once presented at Tyttenhanger court 'for ov[er]charging the said Comen for [tha]t his p[ar]te of the same was scant a quarter so moch as Tyttenhanger Comen was'.⁸⁶⁷

The value of common rights over the heath is clear from the number of manorial disputes over them. As well as the one which produced these depositions, started by the neighbouring manor of Parkebury claiming rights over the heath, another between Tyttenhanger and North Mymms erupted some 50 years previous. One witness, in her later deposition, recalled that the men of both manors met on the common to agree the boundary, which seemed not to have a marker.⁸⁶⁸ One man of Mymms stood beside an old oak tree on the Tyttenhanger side and claimed that he would swear on a bible that he stood on the land of North Mymms. Having packed his shoes with earth from his side of the common, however, so that no matter where he stood that oath would be true, his scheme was discovered, and he retracted his claim. After that, a large stone was sunk into the ground on the border so that no man could question where it lay.⁸⁶⁹ Parkebury's manorial lord failed to successfully claim rights over Colney heath in 1555, but it was another claim made by a successor of his which produced the second collection of depositions featured here, taken almost two centuries later in 1738.⁸⁷⁰

By that time the manorial lord of Tyttenhanger retained ownership of all wood cut on the heath, but there was no mention of his using it for fuel. Neither the house at Tyttenhanger nor the tile kiln were mentioned, and the latter does not appear on later maps. Instead, the wood was sold. The wife of the former park-keeper of Tyttenhanger recalled that 'there were four Trees growing near [th]e said High-way which Trees James Kilby of Smallford Stock'd up & they were Sold to her Husband Philip Smith by S[i]r Thomas Pope Blounts Steward Ralph Briscoe'.⁸⁷¹ The Pope-Blount family had owned the manor of Tyttenhanger for at least three generations by this point. The trees themselves were pollards. Another commoner, recalling the same event, referred to them as such, but the

⁸⁶⁶ HALS DE/B2067B/L8

⁸⁶⁷ *Ibid.*

⁸⁶⁸ *Ibid.*

⁸⁶⁹ *Ibid.*

⁸⁷⁰ HALS DE/B2067B/L9

⁸⁷¹ *Ibid.*

practice of managing them for wood-fuel had ended nearly 40 years previously. The aforementioned James Kilby, in his own deposition, recalled the trees which he ‘help’d to cleave cut ... he says this was 38 or 39 years ago & [th]e holes of [th]e Trees are still to be seen’.⁸⁷² Rather than lopped, the pollards were felled, sold, and the stumps removed.

Apart from reference to this one event, made several times by numerous commoners in 1738, trees were barely mentioned. One commoner spoke of the same highway ‘where 3 Elm Trees now stand upon [th]e Heath by [th]e High way side there’, showing that some scant tree cover remained, and that Elm (probably the English Elm, *Ulmus minor* ‘*Atinia*’) was growing on the heath at that time. As Dury and Andrews’ map, published just 28 years later, suggests, however, most trees had disappeared from the landscape. The only 1738 deposition to mention more significant tree cover was that of the oldest interviewee. Aged over 88 years old, hers reads: ‘she remembers several Trees growing on [th]e said Heath between [th]e High way aforesaid & [th]e River which trees she always heard belong’d to [th]e Blounts’ – all written in the past tense.⁸⁷³ Colney Heath had all but lost its woodland. It had, however, gained an orchard.

One commoner was said to have been a churchwarden in neighbouring St. Peters parish for eleven years and had ‘often gone [th]e Bounds of [th]e said Parish, that in their Bounds they usd to take in [th]e Houses & Gardens that were then at Colny Heath ... but that part of [th]e Orchard which now makes a mark us’d to be left out being in Ridge parish’.⁸⁷⁴ The mark referred to was made on a holly tree within the orchard. The houses he mentioned are shown in figure 8.9 on the southern side of the road between the river and Roestock, though no orchard has been drawn there. Numerous parishioners from Ridge complained in their depositions that the procession of St. Peters had started leaving the highway, straying into their parish, and marking the bridge on Colney Heath. That boundary appears to have become accepted by the time Dury and Andrews’ map was surveyed.

Excluding those (presumably longstanding) buildings mentioned in passing in these depositions, some other buildings more recently raised at the edge of the heath were considered encroachments. One in particular, that strayed too far into the heath (all of which was once in Ridge parish) was ‘Pull’d down by [th]e said Parish as an Incroachment on Tittenhanger waste’ and so that the owner ‘might not become a Parishioner of

⁸⁷² HALS DE/B2067B/L9

⁸⁷³ *ibid.*

⁸⁷⁴ *ibid.*

Ridge'.⁸⁷⁵ Despite these efforts to avoid intrusion, though, as with some other heaths in Essex (for example on Frating Heath), eventually the successful encroachment of these buildings led to the reduction of the common land. On Dury and Andrews' map, published within thirty years of these depositions being taken, the enclosed lands near buildings to the north and north east of the heath stretched all the way to the river's edge.

Rabbits were still present on the heath in 1738, and still protected by the rights of the manorial lord. One commoner wrote that 'no body does meddle with [th]e Rabbets upon [th]e said Heath ... which Rabbets belong'd to [th]e Blounts'.⁸⁷⁶ Another commoner, whose husband once rented the demesne lands of Tyttenhanger, supported that claim, and proved that recent encroachment onto the heath had only occurred within her adult lifetime. She recalled that '[th]e Rabbets upon [th]e said Heath were Equally [th]e Property of her Husband on both sides [th]e River as far as the Highway aforesaid, & that [th]e Ground on St Peters side of [th]e Heath was as much her Husbands as any other part'.⁸⁷⁷ The situation shown in 1766, then, where the heath only stood to the western side of the Colne River, had only recently become a reality.

Grazing by pigs and sheep was not mentioned in any of these 18th-century depositions. The grazing of cattle, though, took place within the same three-year rotation as in 1555 – two years' drift belonging to Tyttenhanger and one to North Mymms. The only animal mentioned at that time which was not mentioned in 1555 was referenced only in passing. One commoner recalled that the late vicar of St. Peters parish 'never took any Tythe Geese off [th]e said Common'.⁸⁷⁸

In contrast to the earlier 16th-century depositions, all 18th-century depositions focussed not on rights to gather fuel or the organisation of drifts on the heath, but instead on rights of fishery in the river there, which were not mentioned at all in 1555. The motivation behind the lordship of Parkebury's suit in 1738 was less concerned with gaining access to grazing rights or fuel, but rather to fishing stocks for the purpose of recreation. The products of the heath itself, it seems, were of no interest to him.

Colney Heath, then, was managed as a wood-pasture heath in the 16th century, with both pollarded and standard timber trees mentioned on the heath as well bushes or underwoods. These were protected from damage by designation as the property of the manorial lord (or his lessee) only, and these rights were defended in court when necessary.

⁸⁷⁵ HALS DE/B2067B/L9

⁸⁷⁶ *ibid.*

⁸⁷⁷ *ibid.*

⁸⁷⁸ *ibid.*

In this instance, the landscape character of most of Colney Heath probably resembled that of Tiptree or Kingswood Heaths in Essex but will have born little resemblance to Hilborough Heath in Norfolk or Skamacre Heath in Lowestoft, Suffolk in the same period. Rabbits were also grazed within enclosures on the heath and protected through similar means. The floral character of the heath within these enclosures would likely have resembled the short grasses and bare ground landscapes found at Icklingham in the Suffolk Breckland, discussed in that chapter.

Animals, including cows, horses, sheep, and pigs were grazed on the heath but overgrazing was avoided through the enforcement of timed ‘shifts’ – the tenants’ animals could not be fed there at all times. The lord’s animals, however, could. Nevertheless, the grazing would not have resulted in the same damage likely done to shrubs and grasses at Hilborough or at Westwood in the Sandlings, with huge flocks of sheep grazed on the heaths there all year round. By the 1730s, almost all woodland on the heath had been removed and in 1766 very little was shown still standing. The heath itself had also shrunk in size considerably by that point, but the old ‘shift’ system of grazing commoners’ cattle remained in place. Tyttenhanger was never subject to an act of enclosure and the OS 6” map of 1874 shows parts of the heath still surviving, split almost in two by encroaching arable enclosures. Today, those remnants are the property of the private Warrens Farm, and have been partly planted up with conifers.

Hertfordshire heaths - conclusion

Post-medieval heaths in Hertfordshire carried a great deal more woodland than those in Norfolk or Suffolk – more closely resembling examples found in Essex, especially around Colchester. Some, like the private Burnt Heath, contained dense woodland into the 17th century with no surviving evidence of grazing or any other management except the preservation of tree cover, until arable cultivation became the preferred land use. Large heaths in the far north near the route of the Icknield Way, for example Thersfield Heath, maintained scattered trees into the late-18th century but have since been almost totally lost to agriculture, the soils here being far more tractable than the heavy clays found in the south and west of the county.

Large heaths in the far south at Hertford and Cheshunt maintained tree cover, in some cases dense but in most cases scattered, into the late 18th century. Hertford Heath maintained a wooded core within a more open wood-pasture landscape as late as 1766,

while Hornbeam pollards grew on most of North Hall and Cheshunt Commons, labelled as one large heath by a contemporary traveller, during the same period. The maintenance of another wood-pasture landscape on Colney Heath between Tyttenhanger and North Mymms, combined with these other examples, illustrate a common pattern of heathland trees being actively maintained, protected and, presumably, replanted on Hertfordshire's heaths into the 17th and 18th centuries. Alongside similar evidence from Essex, this weakens the assertion, made by some ecological historians and discussed in chapter one, that all or most heaths became open in prehistory, especially in counties outside of Norfolk and Suffolk.

In Tyttenhanger especially, the grazing of rabbits would locally have created conditions similar to those seen in the warrens of Breckland or the Sandlings, for example at Hilborough or Benacre. Under those conditions, heathland flora would likely have consisted of low grasses with few dwarf shrubs and patches of bare ground. The keeping of large flocks of sheep on heaths was not mentioned in any of the documentary evidence presented here, and the grazing of heaths was clearly managed in such a way that preserved heathland tree cover in the long term, for example at Tyttenhanger in the 16th century, and evidenced from the number of heaths shown bearing a degree of woodland on Dury and Andrews' county map of 1766.

Unlike in Breckland or the Suffolk Sandlings, conversion from heathland to arable land in Hertfordshire was a permanent transformation, with no evidence for the temporary cultivation of 'brecks'. The higher fertility of soil, for arable production, found beneath Hertfordshire heaths - compared to the acid sands underlying many of those in Norfolk or Suffolk - allowed for more sustained cultivation of heaths after it had been started and did not necessitate the tathing or long periods of fallow discussed in earlier chapters to maintain productivity. As such, the species composition associated with an alternating pattern of disturbance and neglect seen in Hilborough and Wretham would not have been common on the heaths of this county.

None of these heaths were managed on sandy soils visible on the association level national soils map and none of the historical accounts found concerning heaths in the county made mention of sandy or acidic conditions. As such, the edaphic nature of heaths in Hertfordshire echoes that seen in Essex – they were maintained on soils *locally* considered poor for the purposes of agriculture, but which were not necessarily either sandy or acidic. Because of this, those heaths found on the more easily-ploughed soils of the north east were enclosed earlier than those in the south and west of the county, but

those of Hertfordshire in general were lost earlier and in greater number than those on the acidic sandy soils of Breckland and the Suffolk Sandlings. It is for this reason that only a small combined area of them survived into the late 18th century, and why less than 300ha of surviving heathland can be found in the county today.

9. Discussion

Far from being the empty, desolate, and economically undesirable landscapes depicted in numerous artworks and descriptions in the 18th to 20th centuries, discussed in the first chapter, heaths were clearly intricately managed within a variety of edaphic contexts as a variable source of resources deemed desirable in the local area, in great part influenced by the qualities of surrounding soils, as well as broader economic factors. In terms of the latter, heaths and heathland products were a source of not insignificant wealth for those who owned them. These variations in management and character both between and within heaths in the study area raise important questions for conservationists to grapple with concerning modern heathland recreation and restoration projects. These are discussed thematically below.

Diversity of management

Management practices historically employed on heaths within the study area varied widely both spatially and over time. Those practices were selected by tenants and landowners depending on a diverse range of priorities concerning resource production, profit, and the maintenance of longstanding rights which also varied widely across the four counties. This resulted in a broad array of practices being employed on landscapes all considered to be heathlands by those who knew them.

Historical documents presented and discussed in chapter five concerning Breckland, for example, show that the management of heathland landscapes, even in nearby vills in similar edaphic circumstances, could vary widely. The management methods employed in Hilborough in Norfolk, and Icklingham in Suffolk were provably designed to prioritise the protection and supply of different heathland products. In the former, cereal production from brecks and outfield rotations were considered paramount, with some heather and grasses for the feeding of sheep and rabbits. In the latter, priority was given to the preservation of vast stands of gorse for the protection and sustenance of the lord's flock. Furthermore, on the edge of the Suffolk Breckland, at least, some provision must have been made for the retention of heathland tree cover as, on Hodskinsons' map of 1783, several common heaths near Bury St. Edmunds were drawn with scattered trees.

In the Suffolk sandlings, the maintenance of large flocks of sheep was sustained in many places into the early 19th century. Due to the poor quality of the soil, the profitability

of both cereal production and, later, livestock rearing relied upon the continuation of the medieval ‘foldcourse’ system. Large landowners who held the rights to such foldcourses dictated the management of huge swathes of sheepwalks in order to maintain those rights. Although the enclosure and ‘improvement’ of much of the Sandlings accelerated during the 18th century, this was limited to those areas of sandy soils which could be made agriculturally productive through marling and crop rotations without the need to rely upon manure from sheep. Elsewhere, intensive sheep grazing remained the preferred management practice of the Sandlings into the 19th century.

In the north of the Sandlings (discussed in chapter six), management objectives were split between grazing, the provision of fuel for commoners’ use, and the provision of doles (possibly used as shifts) during the 17th century. The maintenance of dispersed woodland must, however, have been an active consideration in the management of heaths near Lowestoft at that time as all heaths in that area were drawn with scattered trees still upstanding on Hodskinson’s map. The same must have been true for many Sandlings heaths further south as almost all were drawn with some tree cover, while some of those in the far south (near Ipswich and Foxhall) were drawn with scattered trees across their whole areas.

Linguistic and documentary evidence presented in chapter two strongly suggests that heaths were often either wooded landscapes themselves, or were often found on the edges of dense woodland during the Anglo-Saxon period. Evidence taken from the Domesday Book of 1086 suggests that, where heathland existed at that time, it was also likely wooded or partly wooded in character, and archival and documentary evidence from the southern half of the study areas show that trend continued there throughout the post-medieval period.

Heathland trees in Essex, for example, were very common, as research discussed in chapter seven proves. During the 17th and 18th centuries, the management of more than a dozen heaths near Colchester, in north-east Essex, including Wivenhoe Heath, Stanway Heath, and Lexden Heath, was in large part concerned with the maintenance of wood-pasture heathland landscapes. Legal arguments made in the 16th century clearly show that the vast Tiptree Heath further south was managed as wood-pasture heathland for hundreds of years, and the survival of tree cover shown on late 18th century maps proves the success of those management methods in the long term. Detailed analysis of documentary evidence for Mile-End Heath (formerly ‘Kingswood Heath’) shows the appointment of woodwards specifically to help manage the heath there in such a way as tree cover was maintained in

the 17th century. Grazing was also maintained on the heath from at least the 13th century, yet the maintenance of timber trees remained a principal concern there as late the 16th. Detailed documentary evidence from Bromley Heath shows that management there during the 17th and 18th centuries, in direct contrast to evidence from the Breckland manors of Hilborough and Icklingham, for example, was primarily concerned with the maintenance of coppice-with-standards woodland. The gathering of fuel was mentioned, as in those other manors, but no provision was made for grazing whatsoever, and no shifts, brecks, or even doles were mentioned there at all.

In chapter eight it is proven that some heaths in Hertfordshire, likewise, maintained significant tree cover into the 17th and 18th centuries, including Hertford Heath which maintained a densely wooded core into the 18th century. North Hall and Cheshunt Commons, near Cheshunt, were labelled a single ‘heath’ by a contemporary in the 1740s and, likewise, maintained a dense covering of Hornbeam pollards six feet high at that time, alongside heather and bracken which was grazed by livestock. The private Burnt Heath near St. Albans was managed primarily as a woodland into the 17th century, before being turned over to agriculture. The reasons for this are likely the same as those discussed in most detail in chapter six concerning the Sandlings – shifts in the market economy for cereals and other arable crops, as well as advances in agricultural technology, encouraged the breaking up of heaths for the plough. Elsewhere in Hertfordshire, Colney Heath near Tyttenhanger was managed as a mixed wood-pasture landscape at least until the mid 16th century, including the localised grazing of rabbits. Over time, though, management practices shifted in focus and grazing (by cows, sheep, horses, and pigs) was prioritised over other heathland uses in the 18th century with only limited heathland tree cover remaining. Although case studies and post-medieval documentary evidence presented for manors in Breckland and the Sandlings shows either occasional or, as at Hilborough, intensive employment of temporary agriculture on heathlands there, no such evidence exists for heaths in either Essex or Hertfordshire. This is likely for the most part due to soil characteristics.

Numerous descriptions of heathland management originating in the 20th and 21st centuries, discussed in chapter one, suggest that the ‘traditional’ management of English heaths was centred on the practices of grazing and burning. Several of the restoration and recreation projects also mentioned in that chapter have used those descriptions to create management regimes which match them. Restoration work at Cannock Chase, for example, was designed to recreate an open landscape which could then be maintained purely through

grazing. Such vague statements about ‘traditional’ management are, however, both inaccurate and, as a result, unhelpful to the practice of modern heathland recreation.

Although grazing was a common use of heaths throughout the study area, the intensity of that grazing varied widely both between and within heathland regions. Surviving evidence for some heaths, for example Bromley Heath in Essex or Burnt Heath in Hertfordshire, contain no evidence for grazing taking place there at all during the post-medieval period. Furthermore, no archival or documentary evidence found for any heathland within the study area from either the medieval or post-medieval period contained reference to burning. Although fire was evidently used on some heaths outside the study area during those periods, for example in the New Forest as given by Webb, within these four counties the burning of heathland was not historically employed at all. The research presented in this work suggests a more nuanced, localised approach to what constitutes ‘traditional’ heathland management within certain regions, rather than within England as a whole, would produce more historically accurate representations of past heathland character within those areas.

Heathland soils

Whereas the fertility of soils in much of Breckland and the Sandlings was maintained only through tathing, in turn necessitating the grazing of huge numbers of sheep on the heaths there, neither Essex nor Hertfordshire contain any acidic sandy soils of the type found in those two districts. As such, sufficient arable production could be achieved without the need for such large flocks, and without the need for brecking on the heaths. As well as, at least partially, explaining a marked difference in management between the heaths of Breckland and the Sandlings on one hand and Essex and Hertfordshire on the other, this also has implications for the modern reliance on acidic sandy soils being necessarily characteristic of heathland.

Although the vast majority of surviving historic heathland is found on acidic sandy soils within the study area, perhaps explaining a modern preoccupation with them based on survival bias, this research indicates that heaths were once more widespread - occupying a significantly broader range of soil types during the medieval and post-medieval periods. Mapping data presented in chapter three definitively proves that some heathland extant in the late 18th century, in the four counties that make up the study area, was managed on soil associations dominated by either loam or clay. Although research presented in that chapter suggests heaths were commonly found on soils with acidic properties, these were not

necessarily acidic *sandy* soils.

Evidence from early-modern-English ‘herbals’ shows that heaths (mainly near London) often contained significant areas of wet or waterlogged ground, as well as species restricted to those landscapes, during the 15th and 16th centuries. From within the study area, detailed documentary evidence presented in chapter six proves that some historic heathland, near the Suffolk town of Lowestoft at least, was found on impermeable, seasonally waterlogged soils during the post-medieval period. Heathlands in Wretham in the Norfolk Breckland and Tyttenhanger in Hertfordshire also contained wet, marshy areas within them. Despite the lack of sandy soils present in these landscapes, the people who inhabited and managed them still labelled them ‘heaths’ throughout. Historic heathland was not, then, limited in extent (before the 19th century, at least) to regions dominated by acidic sandy soil associations such as Breckland or the Suffolk sandlings. The survival of large tracts of historic heaths in those areas was dictated in large part by the presence and infertility of such soils, but the presence of acidic sandy soil did not historically define a heath. They were instead found on many soil types considered *locally* poor for agricultural production when compared to others in the direct vicinity. Because not all heathland soils required the grazing of large flocks for manure to maintain fertility, then, management techniques could be employed which preserved a much wider range of heathlands flora than just extensive stands of heather.

Numerous modern descriptions of heathland characteristics, discussed in chapter one, display a clear association between those landscapes and acidic sandy soils. This research suggests that such a close relationship, visible in many surviving heaths within the study area, is a modern, regionalised phenomenon. Heaths survived for hundreds of years on soils which were either acidic but not sandy or neither, especially in the southern half of the study area as around St. Albans or Colchester. A reliance upon acidic sandy soils within modern conservation, then, must be called into question. If modern heathland recreation or restoration projects were attempted within a wider variety of edaphic conditions, not limited to podzolic sands (either existing or deliberately recreated), modern heaths as a whole would become both more varied in terms of biodiversity and more historically accurate, depending on where those heaths were being created.

Heathland flora

These varying and, at times, contradicting management practices led to the creation of heathlands very different in appearance, both geographically and over time.

Geographically, the owners and users of heaths in the four counties clearly prioritised different heathland products. Heaths in Hilborough, in the Norfolk Breckland, for example, likely appeared devoid of most ‘common’ heathland species, exhibiting a character defined more by grass than by heather, and with swards inside the warren and outside of it appearing different to each other.

Within the warren, before its disannulment, grasses would likely have been locally dominant, with few heather or gorse plants, intermixed with patches of bare ground produced by overgrazing. Gorse was sometimes present but only in deliberately planted stands separated from the rabbits. Outside the warren, heather would have been heavily grazed upon by large sheep flocks, which increased significantly in size over time, and probably some escaped rabbits as well. Furthermore, heather bushes would have been ploughed out by annual disturbance associated with temporary agriculture. Gorse would have been likewise grazed upon and ploughed out. Because much of the heath was ploughed yearly, and a third of those lands were planted every year, the most constant flora on the heath in the 16th century was likely cereal crops, with other grasses and shrubs maintained in a constant state of youthful regrowth. The most common fauna appearing on the heath at that time was, at first, split between rabbits and sheep, but after the removal of the rabbit warren, only sheep – with over a thousand grazed there simultaneously.

At Icklingham in the Suffolk Breckland, though, less than 30km away from Hilborough, the heaths would have appeared as fields of gorse. There the manorial lord used legal proceedings to protect the large stands of gorse which provided shelter and feed for his most prized commodity – the sheep in his foldcourse. The gathering of heather for fuel was permitted but limited to certain small heaths within the two parishes, meaning the floral composition of those would have differed significantly from those heaths on which the gorse stands were protected into old age. Some temporary agriculture was employed during the post-medieval period but this was limited in extent compared to at Hilborough, meaning the pattern of regrowth created by regular patterns of disturbance and fallow would have been far less common here.

Most heaths in Essex, on the other hand, would have appeared as wood-pasture landscapes. Pollarded trees, with occasional timber standards alongside them, grew above a substorey of heather and gorse grazed by rabbits, sheep, and sometimes larger ruminants. In places like Tiptree Heath, the tops of those pollards were cut on rotation, as were the heathland shrubs and bushes beneath them, for fuel – creating a patchwork of tall trees, stripped bollings, and mixed-aged bushes in various states of regrowth. The presence of

these trees in the post-medieval period suggests those landscapes were once more wooded still – the remaining worked trees being only the ‘shadow’ of a larger, earlier wood.⁸⁷⁹ A stark contrast with the bare, heavily grazed, and regularly ploughed heaths of Breckland is clear. Bromley Heath in that county, specifically, would not have resembled Breckland heaths in any way, nor, indeed, many heathland sheepwalks in the Suffolk Sandlings. It would have appeared, quite simply, as a wood. In Hertfordshire, too, the dominant heathland flora in numerous heaths which survived into the post-medieval period was some form of woodland.

Whereas many heathland conservation efforts have, in recent decades, attempted to recreate only tree-less heathland landscapes dominated by heather (to the extreme of seeding those shrubs *en masse* from a helicopter), post-medieval heathland in the four counties of this study area presented a wide variety of open, wooded, grazed, cut, and ploughed landscapes. Indeed, even where no heathland trees could be found, even by the 18th century, as in many Breckland heaths, several of the ground-flora species found there (both then and now) are likely indicators of a distant wooded past, having their origins in the understoreys of semi-open woodlands, and so presenting a ‘ghost’ of that wood in themselves.⁸⁸⁰ If heathland recreation or restoration projects were, in future, attempted in areas where wood-pasture landscapes survived on heaths into the post-medieval period, for example in much of Essex or Hertfordshire, the inclusion of woodland cover based on historical models such as those presented in this work would make the results of those projects more historically accurate. It would also increase heathland biodiversity both locally and nationally.

Evidence for wooded heaths presented in this thesis also calls into question the common assertion, discussed in the introduction, that most or all heaths achieved a state of openness in the prehistoric period. This is evidently not true in the counties of Essex and Hertfordshire, while numerous heaths in Norfolk and Suffolk, which contain the by far the most open surviving heathland in the study area, were shown carrying a degree of woodland cover into the 18th century. Elsewhere in Norfolk, recent research undertaken in the north of the county shows that some heaths there were also clearly wooded in the 17th and 18th centuries.⁸⁸¹ Some of the scattered heathland trees shown on county maps might conceivably have been the result of reforestation through natural means, i.e. management

⁸⁷⁹ Rotherham, I.D., Shadow Woods: A Search for Lost Landscapes (Sheffield, 2017) p.146

⁸⁸⁰ *ibid.*

⁸⁸¹ Barnes and Williamson, Rethinking Ancient Woodland p.90; NRO BL71; NRO BRA 2526/6; NRO MC 22/11

techniques on those heaths were not intensive enough to check the natural re-seeding and growth of trees from beyond a once-cleared heathland, but in Breckland and the Sandlings especially, grazing intensity on heaths and sheepwalks was provably high throughout the post-medieval period. Scattered or clumped woodland cover remaining on many heaths in Essex and Hertfordshire in the same period are almost certainly examples of longstanding, woodland cover. Their existence on maps and documentation from the 16th-18th centuries strengthens the argument made by Vera that trees, organised within a wood-pasture system, were a common feature of historic heathland landscapes, at least within the southern half of this study area.

10. Conclusion

As a work of history, this thesis presents original research not found in other works and analyses it in a unique and innovative way. By focussing on case studies displaying the two chief selection criteria of detail and diversity, this work is able to illustrate for the first time the wide variation of heathland characteristics and associated management methods recorded in the study area, especially during the post-medieval period, in a single volume. By focussing specifically on those heaths for which detailed documentary evidence survives which explains the rights and practices associated with them in great depth, contextualised within wider examples, this thesis is an authority on the management structures of those heaths unrivalled in other works. By focussing on case studies which illustrate diversity of character and management, both between and within heathland regions, this work has avoided the simplistic task of defining a single regional character in favour of presenting a deliberately broad and wide-ranging dataset.

The results of the research undertaken for this thesis provides both a baseline and a rationale for future detailed historical research into heathland, both within the same study area and beyond it. The diversity of heathland habitats and management practices found within just four counties suggests a broader study or group of studies investigating the heaths of other counties and regions in England, using similar methods, would uncover a huge variety of landscapes and practices which have hitherto been neglected or little discussed. The combined results of all such projects, should they be undertaken, and this current work, would revolutionise our understanding of lowland heathland in Britain and provide an indisputable body of evidence for what provably constituted the historic or ‘traditional’ management of English heaths.

The evidence given in this work, were it to be consulted, would have substantial implications for both the methods and aims of future historical-model heathland restoration. Almost all examples of such projects given in the introduction of this work took inspiration only from 19th century depictions and descriptions of the heaths they wished to restore or recreate. This thesis clearly shows that heathland character could change significantly both locally and over time within the study area. If the managers of similar future projects, using the research published here as a guide, undertook similar research of their own into the older histories of the heaths in question, historical models might be discovered which differ greatly from examples more easily found from the 19th century.

If such research was undertaken, based on the intentions and methods outlined in this thesis, the more varied, historically accurate heaths which were created as a result might help to counteract the effects of what Rotherham calls ‘cultural severance’. As he has written, ‘a key process [of cultural severance] is the breakdown of local community ‘ownership’ and use of natural resources ... separation may be inherently locally-based and social, or involve ownership and exploitation removed to remote stakeholders’.⁸⁸² If recreated heaths could be presented as legitimately unique or regionally distinctive examples of a historically significant form of landscape management, perhaps a stronger relationship or bond between people and place might be established. A sense of empathy might then be engendered among a greater portion of the local populace, leading to a reduction in some of the damaging and detrimental ‘misuses’ of heaths, for example those mentioned by Hart concerning heathland sites around Mansfield and west Nottinghamshire.⁸⁸³ If a programme of educational workshops could accompany future projects, based on in-depth historical research describing the everyday uses of the heath in the past (as shown here), to the local populace the landscape created might become popularised as ‘their’ heath rather than ‘the’ heath. As Rotherham says, understanding these landscapes ‘introduces the people who lived and worked here, our ancestors’.⁸⁸⁴

The creation of a more diverse range of heathland habitats, overlying more than just acidic sandy soils, would also benefit biodiversity both locally and nationally. This work does not advocate for the total abandonment of heather or sand – some heathlands within the study area were clearly characterised by such things, and species which depend on them to survive, such as the Silver-Studded Blue butterfly mentioned in the first chapter, must continue to be protected. Widening the scope of future recreation and restoration projects to areas overlying different soils and displaying different flora, using this thesis as a guide, would aid in the achievement of broader biodiversity targets. To repeat a phrase used earlier – landscape diversity breeds biodiversity.

What is more, the purpose of biodiversity, at a broad level, is to ensure the survival of at-risk species in a modern environment to which they are maladapted. A more varied heathland character across different regions of the country, then, would, in the long term, achieve just that – as an insurance against the potentially calamitous effects of disease on

⁸⁸² Rotherham, *Shadow Woods* p.195

⁸⁸³ Hart, R., “Grazing the Urban Fringe: An Overview of the Experiences of Nottinghamshire Wildlife Trust in Grazing Heathland and Other Related Sites Around Mansfield and West Nottinghamshire” *Journal of Practical Ecology and Conservation Special Series* 5 (2009) p.79

⁸⁸⁴ Rotherham, *Shadow Woods* p.50

the surviving heathland resource. After the introduction of Dutch Elm Disease and Ash Die Back (*Hymenoscyphus fraxineus*) within the past three decades (and, recently, the threat of *Xylella fastidiosa* – which can infect more than 350 different species of plant – reaching England’s shores), the rate at which plant diseases are being introduced from abroad appears to be accelerating.

If the aims of heathland conservation remain unaffected by the research and discussion presented in this thesis, the introduction of a single incurable disease fatal to *Calluna vulgaris* would destroy almost every heathland in the country. The landscape could, within a generation, simply cease to exist. If reconstructed or regenerated heathland landscapes were more biodiverse than many of those mentioned in the introduction, however, not in place of heathland but as heathland in its own right, the culturally important landscape of English lowland heathland would be damaged but not destroyed by such an outbreak. Heathland recreation using these methods, and using the research and results of this thesis as a guide, would go some way to ‘future-proofing’ heaths for generations to come.

It is hoped that this work might be the first of many, undertaken by many authors in numerous places, that do not seek to replace or remove an established view of heathland in the historic past, but rather to inform it. If that is achieved, the future conservation of these landscapes might, as a result, become more biodiverse, more regionally diverse, more historically accurate (where accuracy is to be valued), and more resilient, should any future event threaten their survival as cultural landscapes. If these landscapes can be viewed as the variable, sustainable, and useful products of generations of management, interaction, and experimentation that they are – based on works such as this one – they could become the basis for a culturally meaningful, ecologically diverse, and viable future generation of conserved landscapes. As Rotherham writes, ‘far from being human-formed anachronistic habitats of little relevance, the targets of nature conservation, such as ... heaths, fens, woods etc., are ecological time capsules from the earlier, primeval landscape ... in this sense, these time-capsules, far from being an irrelevance, become the seed-corn for sustainable future ecologies’.⁸⁸⁵

⁸⁸⁵ Rotherham, *Shadow Woods* pp.76-7

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Appendix 1. A list of woodland-indicating place-names recorded in Domesday Book in Norfolk, Suffolk, Essex, and Hertfordshire. Arranged alphabetically by county with modern settlement name, Domesday vill name, and place-name elements present.

County	Modern Settlement Name	Domesday Vill Name	Place-Name Elements
Norfolk	Acle	Acle	OE <i>āc</i> (oak) + <i>lēah</i>
	Ashill	Asscelea	OE <i>æsc</i> (ash) + <i>lēah</i>
	Babingley	Babinghelea	OE <i>Babba</i> (pers. name) + <i>inga</i> (people of) + <i>lēah</i>
	Bale	Bathele	OE <i>bæth</i> (bath) + <i>lēah</i>
	Bastwick	Bastwic	OE <i>baest</i> (lime bast) + <i>wic</i> (farm)
	Bayfield	Baiafelda	OE <i>Bæga</i> (pers. name) + <i>feld</i>
	Beetley	Betellea	OE <i>bietel</i> (beetle) + <i>lēah</i>
	Bixley	Bichesle	OE <i>byxe</i> (box wood) + <i>lēah</i>
	Blofield	Blawefeld	[unknown element] + <i>feld</i>
	Boyland	Boielund	<i>Boia</i> (pers. name) + ON <i>lundr</i>
	Breckles	Breccles	OE <i>bræc</i> + <i>lēah</i>
	Cantley	Cantelai	OE <i>Canta</i> (pers. name) + <i>lēah</i>
	Catfield	Catefelda	OE <i>catte</i> (wild cat) + <i>feld</i>
	Chedgrave	Scatagrava	OE <i>Ceatta</i> (pers. name) + <i>grāf</i>
	Crostwick	Crostueit	OE <i>cros</i> (cross) + ON <i>thveit</i>
	Crostwight	Crostwit	OE <i>cros</i> (cross) + ON <i>thveit</i>
	Dickleburgh	Dicclesburc	OE <i>Dicel</i> (pers. name) + <i>lēah</i> + <i>burh</i>
	East Walton	Waltuna	OE <i>wald</i> + <i>tun</i> (settlement)
	Edgefield	Edisfelda	OE <i>edisc</i> (park) + <i>feld</i>
	Fersfield	Fersuella	OE <i>fyr</i> + <i>feld</i>
	Fishley	Fiscele	OE <i>fisca</i> (fisherman) + <i>lēah</i>
	Foxley	Foxle	OE <i>fox</i> (fox) + <i>lēah</i>
	Gateley	Gatelea	OE <i>gate</i> (goat) + <i>lēah</i>
	Gaywood	Gaiwde	OE <i>Gaega</i> (pers. name) + <i>wudu</i>
	Haddiscoe	Hadescou	OE <i>Haddr</i> (pers. name) + <i>skógr</i>
	Hardley Street	Hardale	OE <i>hard</i> (hard) + <i>lēah</i>
	Harpley	Harpelai	OE <i>hearpe</i> (harp) + <i>lēah</i>
	Hockwold	Hocwella	OE <i>hock</i> (hock) + <i>wald</i>
	Holt	Holt	OE <i>holt</i>
	Intwood	Intewida	OE <i>Inta</i> (pers. name) + <i>widu</i>
	Kimberley	Chineburlai	OE <i>Cyneburg</i> (pers. name) + <i>lēah</i>
	Langley	Langale	OE <i>lang</i> (long) + <i>lēah</i>
	Methwold	Methelwalde	OE <i>methal</i> (middle) + <i>wald</i>

	Morley St. Botolph	Morlea	OE <i>mor</i> (moor) + <i>lēah</i>
	Mundesley	Muleslai	OE <i>Mundel</i> (pers. name) + <i>lēah</i>
	Northwold	Northwalde	OE <i>north</i> (north) + <i>wald</i>
	Palgrave	Paggrava	OE <i>Paga</i> (pers. name) + <i>grāf</i>
	Pattesley	Patesleia	OE <i>Pætti</i> (pers. name) + <i>lēah</i>
	Rising, Castle	Risinga	OE <i>hrīs</i> + <i>ingas</i>
	Rising, Wood	“	“
	Rockland All Saints	Rokelunda	ON <i>hrokr</i> (rook) + <i>lundr</i>
	Ruston	Ristuna	OE <i>hrīs</i> + <i>tun</i>
	Ryston	“	“
	Sall	Salla	OE <i>salh</i> (willow) + <i>lēah</i>
	Sco Ruston	Ristuna	OE <i>hrīs</i> + <i>tun</i>
	Shelfanger	Sceluangra	OE <i>scylf</i> (shelf) + <i>hangra</i>
	Sloley	Slaleia	OE <i>slah</i> (blackthorn) + <i>lēah</i>
	Southwood	Sudwda	OE <i>suth</i> (south) + <i>wald</i>
	Sporle	Sparlea	OE <i>spear</i> (enclosure) + <i>lēah</i>
	Stanfield	Stanfelda	OE <i>stan</i> (stone) + <i>feld</i>
	Stockton	Stoutuna	OE <i>stocc</i> + <i>tun</i>
	Strumpshaw	Stromessaga	[unknown element] + <i>sceaga</i>
	Suffield	Sudfelda	OE <i>suth</i> + <i>feld</i>
	Swafield	Suafelda	OE <i>swæth</i> (swathe) + <i>feld</i>
	Thwaite	Tuit	ON <i>thveit</i>
	Westfield	Westfelda	OE <i>west</i> (west) + <i>feld</i>
	Wicklewood	Wikelewuda	OE <i>wice</i> (wych elm) + <i>lēah</i> + <i>wudu</i>
	Wilby	Wilgaby	OE <i>welig</i> (willows) + ON <i>by</i> (settlement)
	Wilton	Wiltuna	OE <i>welig</i> + <i>tun</i>
	Witton	Widituna	OE <i>widu</i> + <i>tun</i>
	Woodbastwick	Bastwic	OE <i>baest</i> + <i>wic</i>
	Woodton	Wdetuna	OE <i>wudu</i> + <i>tun</i>
	Wootton, North	“	“
	Wootton, South	“	“
Suffolk	Alderton	Alretuna	OE <i>alra</i> (alder trees) + <i>tun</i>
	Ashfield	Asfelda	OE <i>æsc</i> + <i>feld</i>
	Ashfield, Great	Eascefelda	“
	Badley	Badelea	OE <i>Bada</i> (pers. name) + <i>lēah</i>
	Bedfield	Bedefelda	OE <i>Beda</i> (pers. name) + <i>feld</i>
	Bedingfield	Bedingafelda	OE <i>Beda</i> + <i>inga</i> + <i>feld</i>
	Bentley	Benetleia	OE <i>bēonet</i> (bent-grass) + <i>lēah</i>

	Bradfield Combust	Bradefeldda	OE <i>brād</i> (broad) + <i>feld</i>
	Bradfield St. Clare	“	“
	Bradfield St. George	“	“
	Bradley, Great	Bradeleia	OE <i>brād</i> + <i>lēah</i>
	Bradley, Little	“	“
	Bramfield	Brunfelda	OE <i>bræmel</i> (bramble) + <i>feld</i>
	Bredfield	Bredefelda	OFrisian <i>brēd</i> (broad) + <i>feld</i>
	Brockley	Broclega	OE <i>broc</i> (a badger) <u>or</u> <i>brōc</i> (a brook) + <i>lēah</i>
	Butley	Butelea	ON <i>Butti</i> (pers. name) + OE <i>lēah</i>
	Charsfield	Cerresfella	OE <i>Cerr</i> (pers. name) + <i>feld</i>
	Cockfield	Cothefelda	OE <i>Cocca</i> (pers. name) + <i>feld</i>
	Cookley	Cokelei	OE <i>Cuca</i> (pers. name) + <i>lēah</i>
	Cratfield	Cratafelda	Danish <i>krat</i> (thicket) + OE <i>feld</i>
	Crowfield	Crofelda	OE <i>croft</i> (croft) + <i>feld</i>
	East Bergholt	Bercolt	OE <i>beorc</i> (birch-tree) + <i>holt</i>
	Eleigh, Brent	Illeleia	OE <i>Illa</i> (pers. name) + <i>lēah</i>
	Eleigh, Monks	“	“
	Fressingfield	Fessefelda	OE <i>Fresena</i> (Frisians) + <i>feld</i>
	Hadleigh	Hetlega	OE <i>hæth</i> + <i>lēah</i>
	Hartest	Herterst	OE <i>heorot</i> (hart, stag) + <i>hurst</i>
	Haughley	Hagala	OE <i>haga</i> (hedge/enclosure) + <i>lēah</i>
	Hemley	Helmaleia	OE <i>Helma</i> (shortened pers. name) + <i>lēah</i>
	Henley	Henleia	OE <i>hēah</i> [dative: <i>hēan</i>] (high) + <i>lēah</i>
	Hollesley	Holeslea	OE <i>Hol</i> (pers. name) + <i>lēah</i>
	Homersfield	Humbresfelda	OE <i>Hūnmær</i> (pers. name) + <i>feld</i>
	Huntingfield	Huntingafelda	OE <i>Hunta</i> (pers. name) + <i>inga</i> + <i>feld</i>
	Kirkley	Kirkelea	ON <i>kirkja</i> (church) + OE <i>lēah</i>
	Laxfield	Laxafelda	ON <i>Læxa</i> (pers. name) + OE <i>feld</i>
	Lound	Lunda	ON <i>lundr</i>
	Mickfield	Mucelfelda	OE <i>micel</i> (large) + <i>feld</i>
	Oakley	Acle	OE <i>āc</i> + <i>lēah</i>
	Occold	Acolt	OE <i>āc</i> + <i>holt</i>
	Otley	Otalega	OE <i>Ota</i> (pers. name) + <i>lēah</i>
	Pakefield	Paggafella	OE <i>Paca</i> (pers. name) + <i>feld</i>
	Ramsholt	Rammesholt	OE <i>ramm</i> (ram) <u>or</u> <i>hræm</i> (raven) + <i>holt</i>
	Redlingfield	Radinghefelda	OE <i>Rædel</i> (pers. name) + <i>inga</i> + <i>feld</i>
	Ringsfield	Ringesfella	ON <i>Hringr</i> (pers. name) + OE <i>feld</i>

	Rishangles	Risangra	OE <i>risc</i> (rush) + <i>hangra</i>
	Shadingfield	Scadenafella	OE <i>sceatha</i> (thief) + <i>feld</i>
	Shelley	Sceueleia	OE <i>scylf</i> + <i>lēah</i>
	Shotley	Scoteleia	OE <i>scot</i> (small building, hut) + <i>lēah</i>
	Sotterley	Soterlega	OE <i>suth</i> + <i>lēah</i>
	Southwold	Sudwolda	OE <i>suth</i> + <i>wald</i>
	Stanningfield	Stanfella	OE <i>stānen</i> (stoney) + <i>feld</i>
	Stansfield	Stanesfelda	OE <i>Stān</i> (pers. name) + <i>feld</i>
	Sternfield	Sternefella	OE <i>Stern</i> (pers. name) + <i>feld</i>
	Trimley St. Martin	Tremlega	OE <i>Tryma</i> (pers. name) + <i>lēah</i>
	Trimley St. Mary	“	“
	Waldingfield, Great	Waldingefelda	OE <i>Walda</i> (pers. name) + <i>inga</i> + <i>feld</i>
	Waldingfield, Little	“	“
	Waldringfield	Waldringafeld a	OE <i>Waldhere</i> (pers. name) + <i>inga</i> + <i>feld</i>
	Wattisfield	Watesfelda	OE <i>Wætel</i> (pers. name) + <i>feld</i>
	Westerfield	Westrefelda	OE <i>west</i> + <i>feld</i>
	Westley	Westlea	OE <i>west</i> + <i>lēah</i>
	Whatfield	Watefelda	OE <i>hwæte</i> (wheat) + <i>feld</i>
	Wingfield	Wighefelda	OE <i>Winga</i> (pers. name) + <i>feld</i>
	Withersfield	Wedresfelda	OE <i>Wether</i> (pers. name) + <i>feld</i>
	Woodbridge	Wudebryge	OE <i>wudu</i> + <i>brycg</i> (bridge)
	Yaxley	Iacheslea	OE <i>gēac</i> (cuckoo) + <i>lēah</i>
Essex	Ardleigh	Erleia	OE <i>Earda</i> (pers. name) + <i>lēah</i>
	Ashdon	Ascenduna	OE <i>æscen</i> (adj. ‘overgrown with ash trees’) + <i>dūn</i> (hill)
	Aveley	Aluielea	OE <i>Ælfgȳð</i> (pers. name) + <i>lēah</i>
	Bardfield, Great	Byrdefelda	[unknown element] + <i>feld</i>
	Bardfield, Little	“	“
	Bardfield Saling	“	“
	Bentley, Great	Benetlea	OE <i>bēonet</i> + <i>lēah</i>
	Bentley, Little	“	“
	Berden	Berdane	OE <i>bær</i> (woodland pasture for swine) + <i>denu</i> (valley)
	Birchanger	Becangra	OE <i>bierce</i> (birch) + <i>hangra</i>
	Borley	Barlea	OE <i>bār</i> (boar) + <i>lēah</i>
	Boxted	Bocstede	OE <i>bōc</i> (beech) + <i>stede</i> (place, site)
	Bradfield	Bradefelda	OE <i>brād</i> + <i>feld</i>
	Bromley, Great	Brumlea	OE <i>brom</i> (broom) + <i>lēah</i>
	Bromley, Little	“	“

	Broomfield	Brumfelda	OE <i>brom</i> + <i>feld</i>
	Canfield, Great	Canefelda	OE <i>Cana</i> (pers. name) + <i>feld</i>
	Canfield, Little	“	“
	Chatham Green	Cetham	British <i>cet</i> + OE <i>ham</i>
	Crawley End	Crauelæam	OE <i>crāwe</i> (crow) + <i>lēah</i>
	Dengie	Daneseia	OE <i>dænn</i> + <i>ingas</i>
	Dickley	Dicheleia	OE <i>dic</i> (dike, stream) + <i>lēah</i>
	Doddinghurst	Doddenhenc	OE <i>Dudda</i> (pers. name) + <i>hurst</i>
	Eastwood	Estuuda	OE <i>ēast</i> (east) + <i>wudu</i>
	Elmdon	El̃mduna	OE <i>elm</i> (elm-tree) + <i>dūn</i>
	Elmstead	Almesteda	OE <i>elm</i> + <i>stede</i>
	Felsted	Felesteda	OE <i>feld</i> + <i>stede</i>
	Finchingfield	Fincingefelda	OE <i>Finc</i> (‘finch’ as a pers. name) + <i>inga</i> + <i>feld</i>
	Hanningfield, East	Haningefelda	OE <i>Han</i> (pers. name) + <i>inga</i> + <i>feld</i>
	Hanningfield, South	“	“
	Hanningfield, West	“	“
	Hatfield Broad Oak	Hadfelda	OE <i>hæth</i> + <i>feld</i>
	Hatfield Peverel	“	“
	Hazeleigh	Halesleia	OE <i>Hægel</i> (pers. name) + <i>lēah</i>
	Hockley	Hocheleia	OE <i>Hocca</i> (pers. name) + <i>lēah</i>
	Lashley	Lacelea	ME <i>lache</i> (slow stream) + OE <i>lēah</i>
	Lee Chapel	Lea	OE <i>lēah</i>
	Leigh-on-sea	Legra	“
	Leighs, Great	Lega	“
	Leighs, Little	“	“
	Mistley	Mitteslea	OE <i>mistel</i> (mistletoe) + <i>lēah</i>
	Navestock	Nessetocha	OE <i>næs</i> (headland) + <i>stocc</i>
	North Weald Bassett	Walda	OE <i>wald</i>
	Notley, Black	Nutlea	OE <i>nut</i> (nut) + <i>lēah</i>
	Notley, White	“	“
	Oakley, Great	Accleia	OE <i>āc</i> + <i>lēah</i>
	Oakley, Little	“	“
	Panfield	Penfelda	OE <i>Pant</i> (river name) + <i>feld</i>
	Purleigh	Purlai	OE <i>pur</i> (bittern, snipe) + <i>lēah</i>
	Rayleigh	Ragheleia	OE <i>ræga</i> (wild she-goat) + <i>lēah</i>
	Shelley	Senleia	OE <i>scylf</i> + <i>lēah</i>
	Shenfield	Scenefelda	OE <i>sciene</i> (fair) + <i>feld</i>
	South Weald	Welda	OE <i>wald</i>

	Springfield	Springafelda	OE <i>spring</i> (spring) + <i>feld</i>
	Takeley	Tacheleia	OE <i>Tæcca</i> (pers. name) + <i>lēah</i>
	Thundersley	Thunreslea	OE <i>Ḍunor</i> (Thor, god of thunder) + <i>lēah</i>
	Toppesfield	Topesfelda	OE <i>Topp</i> (pers. name) + <i>feld</i>
	Ugley	Ugghlea	OE <i>Ucga</i> (pers. name) + <i>lēah</i>
	Waltham, Great	Waldham	OE <i>wald</i> + <i>ham</i>
	Waltham, Little	“	“
	Warley, Great	Wareleia	OE <i>wær</i> (covenant, agreement) + <i>lēah</i>
	Warley, Little	“	“
	Weeley	Wileia	OE <i>wīh</i> (idol or temple) + <i>lēah</i>
	West Bergholt	Bercolt	OE <i>beorg</i> (hill) + <i>holt</i>
	Wethersfield	Witheresfelda	OE <i>Weðer</i> (pers. name) + <i>feld</i>
	Woodford	Wdefort	OE <i>wudu</i> + <i>ford</i> (ford)
	Woodham Ferrers	Wdeham	OE <i>wudu</i> + <i>ham</i>
	Woodham Mortimer	“	“
	Woodham Walter	“	“
Herts.	Ardeley	Erdelei	OE <i>Earda</i> (pers. name) + <i>lēah</i>
	Aspenden	Absedene	OE <i>æspe</i> (aspen-tree) + <i>denu</i>
	Barley	Berlai	OE <i>byrgen</i> (burial-place) + <i>lēah</i>
	Berkhamsted, Great	Berchamstede	OE <i>beorc</i> + <i>ham</i> + <i>stede</i>
	Berkhamsted, Little	“	“
	Bramfield	Brandefella	OE <i>brant</i> (steep) + <i>feld</i>
	Graveley	Gravelai	OE <i>grāfe</i> + <i>lēah</i>
	Hailey	Hailet	OE <i>hēg</i> (hay) + <i>lēah</i>
	Hatfield	Hatfeld(e)	OE <i>hæth</i> + <i>feld</i>
	Langley, Abbots	Langelai	OE <i>lang</i> + <i>lēah</i>
	Langley, Kings	“	“
	Lilley	Linleia	OE <i>lin</i> (flax) <u>or</u> <i>lind</i> (lime tree) + <i>lēah</i>
	Mardleybury	Merdelai	OE <i>meard</i> (marten) <u>or</u> <i>meardā</i> (weasel) + <i>lēah</i>
	Offley, Great	Offelei	OE <i>Offa</i> (pers. name) + <i>lēah</i>
	Offley, Little	Offelei altera	“ + Latin <i>alter</i> (the other)
	Shenley	Scenlai	OE <i>sciene</i> + <i>lēah</i>
	Temple Dinsley	Deneslai	OE <i>Dyn(n)e</i> (pers. name) + <i>lēah</i>
	Therfield	Derevela	OE <i>þyrre</i> (withered, dry) + <i>feld</i>
	Thorley	Torlei	OE <i>þorn</i> (thorn-bush) + <i>lēah</i>
	Wakeley	Wachalei	OE <i>Waca</i> (pers. name) + <i>lēah</i>
	Wormley	Wermelai	OE <i>Wyrma</i> (pers. name) <u>or</u> <i>wyrma</i>

			(grass-snakes) + <i>lēah</i>
	Wymondley, Great	Wimundeslai	OE <i>Wilmund</i> (pers. name) + <i>lēah</i>
	Wymondley, Little	“	“

Appendix 2. A list of soil associations underlying 18th-century heathland redrawn from the county maps of Norfolk, Suffolk, Essex, and Hertfordshire. Arranged alphabetically with a brief description of each.

Association	Description
Ashley	Fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging associated with similar but wetter soils. Some calcareous and non-calcareous slowly permeable clayey soils.
Beccles 1	Slowly permeable seasonally waterlogged fine loamy over clayey soils, associated with similar clayey soils.
Beccles 2	Slowly permeable seasonally waterlogged fine and coarse loamy over clayey soils. Some deep sandy soils affected by groundwater.
Beccles 3	Slowly permeable seasonally waterlogged fine loamy over clayey soils and similar soils with only slight seasonal waterlogging. Some calcareous clayey soils especially on steeper slopes.
Burlingham 1	Deep coarse and fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Some deep well drained coarse loamy and sandy soils.
Burlingham 3	Deep fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Some similar fine or coarse loamy over clayey soils. Some deep well drained coarse loamy over clayey, fine loamy and sandy soils.
Efford 2	Well drained fine loamy soils over gravel at variable depth. Associated with fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some fine loamy over gravelly soils affected by groundwater. Some slowly permeable seasonally waterlogged fine loamy over clayey soils.
Essendon	Slowly permeable seasonally waterlogged coarse loamy over clayey soils. Associated with similar fine loamy over clayey and fine silty over clayey soils.
Felthorpe	Sandy naturally very acid soils with a bleached subsurface horizon, some with a slowly permeable subsoil, some affected by groundwater. Associated with deep less acid sandy soils affected by groundwater.
Gresham	Stoneless slowly permeable seasonally waterlogged coarse loamy soils and silty over clayey soils. Some deep coarse loamy soils affected by groundwater.
Hamble 2	Deep stoneless well drained silty soils and similar soils affected by groundwater, over gravel locally. Usually flat land.
Hornbeam 2	Deep fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some well drained fine loamy and fine silty over clayey and clayey soils. Some soils very flinty.
Hornbeam 3	Deep fine loamy over clayey and clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some slowly permeable seasonally waterlogged fine loamy over clayey soils. Calcareous subsoils in places.
Hucklesbrook	Well drained coarse loamy and some sandy soils, commonly over gravel. Some similar permeable soils affected by groundwater. Usually on flat land.
Isleham 2	Deep permeable sandy and peaty soils affected by groundwater. Very

	complex soil pattern with hummock and hollow microrelief locally. Risk of winter flooding. Risk of wind erosion.
Ludford	Deep well drained fine loamy, coarse loamy and sandy soils locally flinty and in places over gravel. Slight risk of water erosion.
Melford	Deep well drained fine loamy over clayey, coarse loamy over clayey and fine loamy soils, some with calcareous clayey subsoils.
Mendham	Deep peat soils associated with clayey over sandy soils, in part very acid. High groundwater levels. Risk of flooding.
Methwold	Well drained calcareous sandy soils, associated with similar but non-calcareous soils usually in an intricate striped pattern. Risk of wind erosion.
Newmarket 1	Shallow well drained calcareous sandy and coarse loamy soils over chalk or chalk rubble. Some similar deeper sandy soils, often in an intricate striped pattern. Risk of wind erosion.
Newport 1	Deep well drained sandy and coarse loamy soils. Some sandy soils affected by groundwater. Risk of wind and water erosion.
Newport 2	Deep well drained sandy often ferruginous soils. Risk of wind and water erosion.
Newport 3	Deep well drained sandy and coarse loamy soils. Some coarse and fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Risk of wind erosion.
Newport 4	Deep well drained sandy soils. Some very acid soils with bleached subsurface horizon especially under heath or in woodland. Risk of wind erosion.
Ollerton	Deep permeable sandy and coarse loamy soils affected by groundwater. Some coarse loamy soils with slowly permeable subsoils and slight seasonal waterlogging.
Shabbington	Deep fine Loamy and fine loamy over sandy soils variably affected by groundwater. Some slowly permeable seasonally waterlogged fine loamy over clayey soils.
Tendring	Deep often stoneless coarse loamy soils. Some slowly permeable seasonally waterlogged coarse and fine loamy over clayey soils. Patterned ground locally.
Wick 2	Deep well drained coarse loamy soils often stoneless. Some similar soils with slowly permeable subsoils and slight seasonal waterlogging. Slight risk of water erosion.
Wick 3	Deep well drained coarse loamy often stoneless soils. Some similar sandy soils. Complex pattern locally. Risk of water erosion.
Windsor	Slowly permeable seasonally waterlogged clayey soils mostly with brown subsoils. Some fine loamy over clayey and fine silty over clayey soils and, locally on slopes, clayey soils with only slight seasonal waterlogging.
Wix	Deep permeable coarse loamy soils affected by groundwater. Associated with well drained sandy and coarse loamy soils and some slowly permeable seasonally waterlogged fine loamy over clayey and clayey soils giving patterned ground locally. Slight risk of water erosion.
Worlington	Deep well drained sandy soils in places very acid with subsurface pan. Widespread small scale polygonal soil patterns. Risk of wind erosion.

Appendix 3: Indenture of award made between the freeholders of Great Bromley in Essex and Thomas Bowes, lord of the manor there, on 23rd April 1623 concerning rights to gather wood and timber on Bromley Heath. ERO D/DU 40/96.

1. To all [christ]ian people to whome this p[r]esent writeing of Award Indented Shall come Rob[er]t Willan Vactor of Vivuitye Rob[er]t Sandford Esq[uir]e Rob[er]t Maydston & Thomas
2. Williamson gent[leman] Arbitrators indifferently named & chosen aswell on the part & behalfe of Thomas Bowes gent[leman] Lord of the Mannor of Much Bromley in the countye of Essex as on the part
3. & behalfe of Rob[er]t Wood, John Heckford, Will[ia]m Clarke & other the copieholders & Custom[ar]y tenna[n]ts of the said Mannor on thother part And this Indenture also made betweene the said Thomas
4. Bowes on th'one p[ar]t And the said Rob[er]t Wood, John Heckford & Will[ia]m Clarke and th'other copieholders & Custom[ar]y Tenna[n]ts of the said Mannor on th'other part witnesseth That there now are
5. and heretofore have bin div[er]s & Sundry varianc[e]s questions & suits in lawe betweene the sayd Thomas Bowes and the sayd Rob[er]t Wood John Heckford W[ill]iam Clerke & other the said Tenna[n]ts of the said Mannor for
6. & conc[er]ning the Tymber, wood, trees, shrubbs, firres, & bushes growing & being in and upon a great p[ar]cel of Com[m]on or wast ground called [document damaged] estimation two hundred and Twenty
7. [document damaged] wee the sayd arbitrators h[document damaged] the said cause doe [document damaged] w[i]th the notice consent & agreem[en]t of the said Thomas Bowes, and of the said
8. Rob[er]t Wood John Heckford & W[illia]m Clarke declare, make and sett downe this our order award & Arbitra[t]i[o]n in manner & forme following First of all: That from henceforth for ev[er] hereafter it shall
9. and may be lawfull to & for the said Rob[er]t Wood, John Heckford & w[illia]m Clerke and the said other Tenna[n]ts their & ev[er]y of their heires & assignes fermors & occupiers any of their said Customary lands
10. Tenem[en]ts or heredim[en]ts holden of the said Mannor [document damaged] wills & pleasures from tyme to tyme and at all tymes for ever hereafter freely and quietly to have and take in & upon the said wast
11. ground called Bromley Heath of the bushes, hulls, and ffurres there groweing, Competent & resonable hedgeboote to be occupied and Spent in, upon, and for their & ev[er]y of their
12. necessary fenceing incloseing & hedgeing of the said custom[ar]y or Copiehold lands belonging to the said Mannor & not elsewhere w[i]thout any deniall disturbance or interrupc[i]on
13. of the said Thomas Bowes his heires or assignes or of any other p[er]son or p[er]sons clayming in, by, from or under his or their estate right or interest or by his or their meanes or
14. p[ro]curement. And also that in the like mann[er] it shall and may be lawfull to and for the said Rob[er]t Wade John Heckford, Will[ia]m Clerke & all other the said tenna[n]t[es], their & ev[er]y of

15. their heires and Assignes fermors or occupiers of any Custom[ar]y or Copiehold Messuage Tenem[en]t or ancient dwelling howse To have & take in, and upon the sayd wast or
16. heath of the fures, shrubbs and underwoods there groweing and being, competent and reasonable fierboote, to be occupied and spent in their said messuag[e]s Tenem[en]ts or
17. Dwelling howses and not elsewhere; as the same may be from time to tyme, had and taken for ev[er], one yeare w[i]th another in good and seasonable tymes and w[i]thout doing of any
18. estrepement or wast. The same to be alwaies taken by all the said Tenant[es] their heires and assignes fermors & Tenna[n]t[es] together, at or neere one place for the better
19. p[r]eservac[i]on of the spring, And at ev[er]y felling to leave Staddles according to the lawes and Statutes in such cases made and provided And wee doe order
20. publish and declare that the Intent agreem[en]t and true meaning of all the p[ar]ties to theis p[r]esents is, That these words before menc[i]oned (ffurrs shrubbs and
21. underwoods) shall not extend or be intended or construed to extend to any Timber tree or other tree of oake, elm, Ash or Aspe, now standing or growing
22. in or upon the said wast or heath, that was left unfelled for a staddle or staddles at or before the last felling of the Underwood then groweing about
23. the said Staddle or Staddles Nor to any Pollinger or Bowleing of oake, Elme, Ashe, or Aspe that now is already standing or groweing in or
24. upon the said wast or heath. Nor to any other oake, Elme, Ashe or aspe that now is or hereafter shalbe there groweing above the quantetis of Eight inches in bignes over
25. to be measured upon the barke Three foote above the ground. And wee doe also order publish & declare that it is th'agreem[en]t intent & true meaning of all the p[ar]ties to theis p[r]esent[es] That the said
26. Thomas Bowes his heires & assignes Lords or own[er]s of the said Mannor & heath or of the said wast or heath devided from the said Mannor Shall or lawfully may from tyme to
27. tyme & at all tymes for ever hereafter quietly and peaceably cutt, fell downe, hewe, take, & carry away & conv[er]t to his & their owne p[ro]p[er] use & behoofe all & ev[er]y the said Pollingers
28. or Bowlings And all & ev[er]y other the Tymber & trees w[i]th the heads, Topps, & lopps of the same before published, declared, agreed, intended, or meant not to be ffurres, shrubbs or
29. underwood. And it is also ordered that this p[r]e[se]nt order Award and agreement shalbe a finall end of all suits and contrav[er]sies now or heretofore stirred moved or depending
30. [document damaged] of the said Tena[n]t[es] their Tenant[es] fermors or Assignes for or conc[er]ning any of the [document damaged] And that if any variance or
31. contrav[er]sie shall hereafter happen to growe or arise betweene the said parties or any of them, touching or conc[er]ning any thinge menc[i]oned in this our order or Award

32. That then the same shalbe expounded, ended and determined by us the said Arbitrators or the greater p[ar]t of us. In witnes whereof to either part of this
33. p[r]esent Indenture the Abitrators aforesaid have sett their hands and seales and th' other p[ar]ties to the same have interchangeablie sett their hands and seales
34. Provided nev[er]theles That before the'nsealing hereof it is agreed by all the p[ar]ties to theis p[r]esent[es] That it shall and may be lawfull to and for the
35. said Thomas Bowes his heires and assignes Lords or own[er]s of the said heath To have and take there yearlye Eight Reasonable Loads of Bushes and no more to be occupied and
36. spent for the hedging and fenceing of the Demeasnes of the said Mannor, and for no other use or purpose A[document damaged] the said Thomas Bowes shall forbear any one yeare
37. to take the said Eight Loads of Bushes or any part of them That then he shall or may take the same the[document damaged] –ere then forgoweing and not afterwards. Dated the
38. Three & Twentith day of April In the yeares of the reigne of our Sov[er]eigne Lord James by the grace of God o[document damaged] ffrance & Ireland King defendor of the faith [etc]
39. the one and Twentith And of Scotland the Six and fiftieth.