PORTABLE ANTIQUITIES, PALIMPSESTS, & PERSISTENT PLACES

A MULTI-PERIOD APPROACH TO PORTABLE ANTIQUITIES SCHEME DATA IN LINCOLNSHIRE

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Contents

Abstract

This study explores the significance of Portable Antiquities Scheme data (PAS) for Lincolnshire, and in doing so makes a distinct and original contribution to the interpretation of plough-zone palimpsests and persistent places. PAS holds information on around 52,000 finds from Lincolnshire alone, but these had yet to be characterised and explored in a systematic way. Moreover, few studies of PAS data in general have explored how such finds come together to form palimpsests, and how these palimpsests in turn can be used to infer persistence of place. The present study addresses these shortcomings.

A bespoke methodology is developed that allows PAS data to be analysed at different scales of time and place. This brings into focus different sources of bias and different interpretative possibilities. PAS data are demonstrated to consistently enhance Historic Environment Record data, most notably for the Early Medieval period, where the number of 'activity areas' is increased by 64%. Taking the longer-term view reveals that 93% of PAS data form multi-period assemblages, referred to here as 'plough-zone palimpsests'. Analysis of these palimpsests shows the majority conform to Bailey's cumulative or spatial palimpsest types, depending on the scale of analysis used (Bailey 2007). They are, however, temporally chaotic, with various chronological combinations reflecting both the repeated use of particular places, but also a range of depositional and post-depositional factors.

A series of case studies explore plough-zone palimpsests on smaller scales of time and place. These demonstrate how portable antiquities are important biographical components of 'persistent places', which have the potential to reveal structuring within the landscape over long-periods of time. Combined with other evidence engrained within the landscape, PAS data help to explain how the antecedent landscape influenced the subsequent use of places, and how the aftershocks of human activity resonate in the landscape today.

Acknowledgements

Tables

Figures

Abbreviations

CCI – Celtic Coin Index

DEM – Digital Elevation Model

EMC – Early Medieval Coin Corpus

FLO – Finds Liaison Officer

GIS – Geographic Information System

GPS – Global Positioning System

HER – Historic Environment Record

HLC – Historic Landscape Characterisation Project

LHER – Lincolnshire Historic Environment Record

NELHER – North East Lincolnshire Historic Environment Record

NLHER – North Lincolnshire Historic Environment Record

PAS – Portable Antiquities Scheme

PAS_ALL – All Lincolnshire data recorded by the Portable Antiquities Scheme

PAS4+ – All Lincolnshire data recorded by the Portable Antiquities Scheme to four-figures grid reference or better

PAS6+ – All Lincolnshire data recorded by the Portable Antiquities Scheme to six-figures grid reference or better

Introduction

Britain, like most European countries, has seen an unprecedented amount of land given over to arable cultivation since the Second World War (Haselgrove *et al.* 1985). This is especially the case in the East Midlands – and Lincolnshire in particular – which contains vast areas of premium-grade agricultural land. Arable practices such as deep ploughing, harrowing and pan-busting have caused the destruction of many archaeological sites, and this continues today at unprecedented levels: sites are becoming scatters, and scatters are being increasingly dispersed through a range of post-depositional processes. This is, of course, a tension experienced across the globe wherever archaeology and the plough collide.

There has, as a consequence, been a long history of research into the significance of plough-zone assemblages, though much of this has traditionally focussed on the types of materials more commonly found through field-walking, such as lithics and pottery. However, in the last ten years or so increasing attention has been given to finds recovered through metal-detecting, primarily owing to the rapidly increasing number of finds being reported to the Portable Antiquities Scheme (Bland 2009). The Scheme gained national funding in 2003 and recorded its millionth find a little over ten years later. These finds have proved crucial to advancing issues such as typology (Booth 2014), economy (Walton 2012), settlement patterns (Brindle 2014), and identity (Kershaw 2013).

As with all archaeological datasets, PAS data are subject to bias. The range of biases contained within amateur collected datasets has, however, been found to be slightly different to that recovered through professional means, and accordingly a new framework for understanding PAS data has been proposed (Robbins 2012). Bias exists within seven key areas: burial/loss, preservation, survival, exposure, recovery, reporting, and recording, and Robbins has shown that their impact is regionally variable. Some of these factors have been identified already by earlier studies of selected PAS data for the county (Leahy 2007; Richards *et al.* 2009; Walton 2012; Brindle 2014), but in spite of the Lincolnshire dataset being one of the largest recorded by PAS, there is yet to be a comprehensive study undertaken of it.

Indeed, it is proving increasingly difficult to understand patterns on shorter scales of time in the absence of a thorough characterisation of the 'parent-dataset' – that is, all PAS data for Lincolnshire. Such an approach has been advocated elsewhere, not least by Reece, who argued that studies of Roman coin finds from sites could only be undertaken successfully if they were compared to the overall background pattern for the wider region (Reece 1987: 71-80). This issue of scales of understanding is addressed here.

This study goes beyond characterisation, however, and contributes further original knowledge by addressing what is at present a relatively neglected aspect of PAS data; that is, the archaeological significance of multi-period artefact scatters.

PAS data by their very nature are multi-period, often being found in the same place, but their character has not yet been dealt with.

Multi-period artefact scatters are, of course, intriguing assemblages, but many methodological and theoretical questions remain regarding their archaeological significance. How can we define 'sites' (Hole and Heizer 1973; Dunnell 1992; Mattingly 2000)? Do finds relate to below ground archaeology (Haselgrove 1985)? To what extent to they reflect 'real' patterns of historic activity? Do their chronological signatures simply reflect bias in survival rates (Millett 1985)? Indeed, might it be the case that some finds are accidental imports caused by manuring, or even the redistribution of soil (Wilkinson 1982; Jones 2005)?

In essence, this study seeks to explore the extent to which PAS data can be used to make inferences about the persistent use of places. Specifically, are objects found in the same place simply spatial coincidences resulting from a 'temporally-blind' reuse of the antecedent landscape; or, are there instances where we can see a more structured, repeated use of the landscape over much longer-periods of time (e.g. Leonard 2011)?

The suggestion that there are places across the landscape that have been persistently used over long periods of time is not a new one; the English landscape is dotted with places that have seen repeated episodes of occupation, and many of these survive today as cities, towns and villages (Aston 1985). The reasons for the success of these settlements have traditionally been explored by economic and cultural geographers using models such as Central Place Theory (King 1984). Yet, the rural English landscape contains many more places that bear witness to longer-term occupation, but which for a variety of reasons failed to survive today as towns or villages (Chowne *et al.* 1993; Clay 2002; Lane and Trimble 2010; Evans *et al.* 2014). This type of place has often been glimpsed through aerial reconnaissance, field-walking, and more recently through finds recorded by the Portable Antiquities Scheme.

The massive increase in the number of excavations undertaken at rural sites owing to the introduction of development-led archaeology has also shown that multi-period sites are a relatively common feature of the landscape (Powlesland 2000; Brindle 2013; Fleming 2013). One frequently encounters settlements being redefined, ditches being recut over centuries or millennia, and monuments being renewed, adapted or erased over long periods of time (Chowne *et al.* 2001; Everson and Stocker 2003b; 2011; Allen 2009; Lambourne 2010; Willis 2014). Many of these places were repeatedly visited over many generations, centuries and even millennia, in spite of short or medium-term episodes of abandonment (Nord 2009; Page and Jones 2007; Chadwick and Gibson 2013a).

Here, the evidence is often referred to as a 'palimpsest', borrowing a term from palaeography that essentially means 'a manuscript written over a partly erased older manuscript in such a way that the old words can be read beneath the new' (Encarta Dictionary; see also Lucas 2005: 37; Shiner 2009: 25).[1] It is now widely recognised that artefact scatters are a 'universal phenomenon that we can never escape' (Bailey 2007: 16). Given that over 90% of PAS data in Lincolnshire form

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1   Holdaway *et al.* (2004) suggest that 'aggregate' is more appropriate than 'palimpsest', since the latter implies the removal of a previous record (Holdaway *et al.* 2004: 34).

multi-period artefact scatters (see Chapter 4), this is an interpretative problem that requires some thought.

The interpretation of palimpsests is of course very much a localised task (Clay 2002; Chowne *et al.* 1993; Purtill 2012); each has its own internal logic reflecting the unique blend of natural and cultural elements at that particular place (Bevan and Conolly 2006). Palimpsests are, however, an archaeological concept (Purtill 2012: 2); naturally, any attempt to understand them as the material result of persistence must also acknowledge the wide range of agencies that led to their formation. To this end one must take a multi-temporal view that brings into focus different patterns and different explanations – an approach that has been promoted by the Annales School of thought (Braudel 1980; Foley 1981; Fahlander 2001), and not least in Bailey's Time Perspectivism (Bailey 1981, 2007, 2008). The multi-temporal view brings into focus not just environmental reasons for the use of a place – that is, landscapes that provide for the basic human needs such as water and food (Schlanger 1992; Bradley 2002; Nord 2009) – but also a wide range of deep rooted social, political, and religious factors that led to the persistent use of places (Schlanger 1992; Ingold 1993; Bradley 2002; Chadwick 2013; Chadwick and Gibson 2013b).

How then, can we understand the contribution of multi-period PAS data – refered to here as 'plough-zone palimpsests' – which are subject to a much wider range of post-depositional processes, and whose biographies are arguably more hazy (Peuquet 1994: 442)? This study approaches this question in a unique way by drawing principally upon the theoretical perspectives of Bailey's Time Perspectivism (1981, 2007), Schlanger's Persistent Places (1992), and Robbins's discourse on bias within amateur-collected datasets (2012). What emerges is a distinctive new approach to PAS data that allows its contribution to be seen on a multi-temporal scale.

Chapter 1 situates the study within the research area and considers formation and transformation processes on the archaeological record. It explores how this record has been sampled and how multi-period PAS data can be grouped into palimpsests. The Chapter concludes by discussing how palimpsests can be used to infer persistent places, and how different variables come into view at different scales of time and place.

Chapter 2 outlines the data and sources used in this study, and uses the theoretical perspectives of Chapter 1 to inform a pragmatic methodology for viewing palimpsests and persistent places on different scales of time and place.

Chapter 3 presents a discussion of HER data, and explores in detail the factors that impact upon the current distribution of PAS data. Issues such as the history of archaeological reporting and recording are considered, as is a variety of natural features, such as elevation, slope, and drift geology. The Chapter finishes with an overview of the spatial relationship of periodised PAS and HER data.

Chapter 4 progresses to explore the archaeological significance of multi-period PAS data. Several case studies explore those instances where professional excavation has followed the discovery of a plough-zone palimpsest, and this reveals a range of interpretative possibilities that may be encountered at any given place. Finally,

a detailed case study is presented for one of the most temporally 'sticky' places in Lincolnshire – at Osbournby.

Chapter 5 considers shorter-scale events within the context of their longer-term palimpsests – in this case the Middle Saxon period. The character of the Middle Saxon parent dataset is established, and a case study of Bardney 'island' explores low-density palimpsests in detail.

Chapter 6 continues the analysis of Middle Saxon finds and focusses on the relationship between high-density palimpsests – so-called 'productive' sites – and persistent places. Two 'new' palimpsests reported to PAS that contain significant quantities of Middle Saxon finds are explored in detail – from Garwick and Little Carlton – and these case studies once again take into consideration a wider range of features embedded in the landscape to provide an interpretative context for PAS data.

Chapter 7 concludes the study and provides a critical assessment of the methodological and theoretical approach taken. This reveals that while PAS data have their limitations, they nonetheless allow us to think beyond the confines of traditional temporal boundaries and to explore the 'interweaving of the evidence on the grander scales of time that archaeology affords' (Shanks and Tilley 1987: 137; *e.g.* Powlesland 2000; Fenton-Thomas 2011). Crucially, PAS data are shown to be important components of the landscape as a palimpsest, whose contributions can be effectively explored using a hybrid approach that blends a multi-scalar view with Schlanger's concept of the persistent place (Schlanger 1992).

i. The Study Zone

The study zone is the historic county of Lincolnshire, comprising Lincolnshire, North Lincolnshire, and North East Lincolnshire (Figure 1). This boundary was informed by several reasons. First, Lincolnshire boasts a diverse landscape which represents nearly every type of landscape encountered in Britain as a whole, including coast, fen, clay land, upland limestone, and chalk (Cooper and Clay 2006: 5). The diverse character of this landscape provides very favourable conditions for addressing a wide range of period-specific and cross-period research questions (Cooper 2006: 288; Cooper 2006: Chapter 12). While methodological objections might be raised regarding the use of a modern administrative boundary as the limits of the study area, for the most part the political boundary mirrors natural ones: the North Sea forms the eastern boundary, the Humber Estuary forms the northern boundary, the Trent loosely forms the western boundary, and the Fens and Wash form an expansive boundary in the south and south east.

Second, the author has worked as Lincolnshire Finds Liaison Officer – based in the Historic Environment Record Office, Lincoln – since the PAS began in 2003, and has recorded around 40% of the 52,000 finds explored in this thesis. The author is therefore uniquely placed to discuss the scheme's contribution to the current state of archaeology in Lincolnshire. Third, this study responds in part to a call by many period-specialists in the East Midlands for a greater understanding and contextualisation of PAS data (e.g. Willis 2006: 133; Taylor 2006: 139; Knight *et al.* 2012).

ii. Research Aim

The aim of this study is to explore the contribution that PAS data make to the archaeology of Lincolnshire, with particular emphasis on palimpsests and their capacity to infer persistence of place.
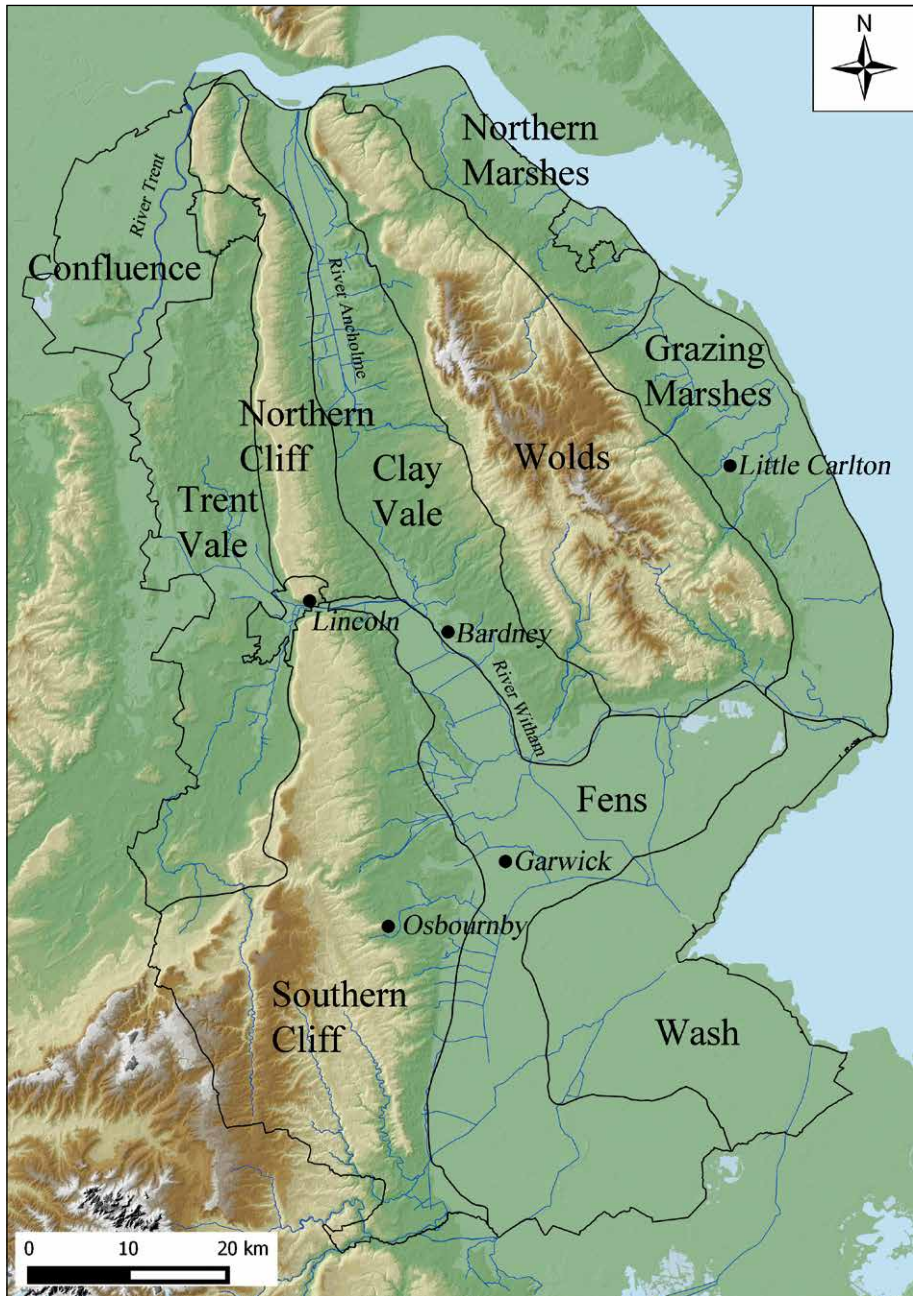
Figure 1. The research area: Topography, HLC Landscape Areas, and major places mentioned in the text. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

iii. Objectives

This aim will be achieved through the following objectives. First, the character of the parent (county) PAS dataset will be explored. Second, the spatial and statistical relationship between HER and PAS data will be explored according to traditional archaeological 'periods'. Third, the nature of palimpsests that PAS data form will be explored using GIS as a primary 'way-in' to the data. Fourth, GIS will be used alongside other quantitative and qualitative methodologies to explore how palimpsests can be used to infer persistence of place, and how changes in temporal and spatial scale changes what comes into focus. Finally, a critical assessment will be made of this study and further areas for research will be noted.

iv. Research Questions

These objectives will be aided by the discussion of the following key questions. First, how have PAS data been reported and recorded, and where are the main areas of bias? Second, how do PAS data enhance HER data? Third, how can artefacts be grouped into palimpsests, and to what extent do they infer persistence of place? Following this, what types of palimpsests do PAS data form, and how do they differ, mirror, or enhance the broader chronology of persistence seen at particular places? This then allows us to question the role that the antecedent landscape played in the subsequent use of persistent places, and whether PAS data tell us anything about potential structuring of activity within these places. The final research question asks what recommendations can be made for future research.

Chapter 1

Portable Antiquities, Palimpsests, and Persistent Places

1.1. Introduction

The purpose of this Chapter is to discuss the wide range of theoretical issues that impact upon the interpretation of PAS data at different scales of time and place. The sheer depth of time being dealt with in this study – along with the exceptionally large datasets at hand – makes this a crucial, but complex task. Accordingly, this Chapter covers some considerable ground. The discussion begins with the nature of the archaeological record, and then turns to consider plough-zone artefact scatters. These scatters are then considered on a multi-period level, exploring how they come together to form palimpsests. Finally, the discussion explores the ways in which palimpsests can be used to make inferences on human activity at different temporal scales, using the concept of the 'persistent place' as an appropriate theoretical framework. This discussion furthermore helps us to 'tune-in' to the type of signal that multi-period data emit, and is, accordingly, used to inform an appropriate methodology outlined in Chapter 2.

Before turning to these issues, it is perhaps useful to outline the overarching philosophy that is being brought to this study. This philosophy is best summed up by quotes from Shanks (2001), and from Haselgrove (1985); the first is in regard to the nature of the landscape, and the second the nature of artefacts recovered from the plough-zone. It is prudent to begin with Shanks, given it is from the landscape itself that plough-zone palimpsests derive:

> *The English countryside is one of interwoven traces and layers of previous inhabitation, punctuated by monuments and the relics of times gone by; a particular cultural ecology of narratives, plants and creatures, geology, language, music, customs, architectures, traces, archaeological sites and finds* (Shanks 2001: 2).

It is within this this qualitative – and perhaps at times phenomenological – understanding of landscapes that we approach the finds:

> *If interpretation [of unstratified artefact scatters] is not to be wholly erroneous, samples of unstratified ploughsoil assemblages must be treated for what they are: as unknown, their composition (as with the contents of any other archaeological deposit) a matter for explanation in terms of all the processes which contributed to their formation; their relationship to any other archaeological features as something for investigation rather than assumption* (Haselgrove 1985: 9).

In this philosophy, PAS data are one element of a much richer tapestry of longer-term landscape-use. They hold great potential for adding to the biography of particular places, but they require careful contextualisation in their landscape settings. Paradoxically, then, this study – which concerns some 52,000 portable antiquities – is at heart a study of landscape.

1.2. The Problem of Palimpsests

The discipline of archaeology primarily focusses on the interpretation of 'past human behaviour and its material consequences' (Bird and O'Connell 2006: 144). The study of material culture has, accordingly, developed strongly within the discipline, and much of the research on human behaviour entails 'reconstructing it from data, and accounting for it as reconstructed' (Bird and O'Connell 2006: 144; 2012). Integral to this process is the way in which assemblages have formed and been transformed over time. This, of course, has implications of the interpretation of palimpsests at different scales of time (Holdaway and Wandsnider 2008b: 2), though it must be duly noted that many past events have left no material traces at all (Lucas 2010: 354).

The concept of the 'palimpsest' has been used in archaeology since the early 19th century, but until the early 1980s it was primarily a metaphor applied to landscapes (Lucas 2012: 115). Its application to material culture gained momentum after 1981, following the publication of three papers by Binford (1981), Bailey (1981), and Foley (1981) in the same year (summarised by Holdaway and Wandsnider 2006: 189ff, and Lucas 2012: 115ff). Binford argued that 'even under the best of circumstances, the archaeological record represents a massive palimpsest of derivatives from many separate episodes' (Binford 1981: 197). Owing to the inability that much of the archaeological record has for telling us about short-term events, Binford thus argued that the evidence offers a 'different order of reality, the patterned structure of which represents not a simple accumulation of little events, but rather some of the basic organizational constraints and determinants operating on the events or episodes of daily living' (Binford 1981: 197).

Similarly, Foley argued that all archaeological deposits are palimpsests that vary only in the scale at which they may be interpreted (Foley 1981: 173, quoted in Bailey 2008: 4), while Bailey suggests they are a 'universal phenomenon that we can never escape' (Bailey 2007: 16). Palimpsests, naturally, contrast with what have been termed in anthropology as 'living floors' – short-term or 'rapid' events of deposition such as a single episode of hunter-gatherer occupation (Malinsky-Buller *et al.* 2011). Such isolated or 'moments' events are, according to Bailey, very difficult – if not impossible – to see in the archaeological record, owing to the fact that much of the archaeological record relates to activities that span multiple 'lived' generations (Bailey 2008: 16).

In contrast to Foley's view that all assemblages are palimpsests regardless of the temporal depth within them, Bailey understood the term palimpsest to represent 'activities ranging over a period of at least a hundred years to several thousand or more' (Bailey 1981: 109), and which 'refers not to the activities of individuals, or even individual societies, but to larger aggregates of behaviour, reflecting average

tendencies…over long periods of time' (Bailey 1981: 109). Moreover, these often represent unintentional assemblages – palimpsests which 'preserve things that were not intended to be preserved' (Driessen 2013: 15). De Lange likens this to the fossil record, which has been claimed to be a 'time-averaged' record in which 'the remains of organisms that did not live together end up in the same deposit' (De Lange 2008: 156, quoting Olzewski 1999: 226).

This observation does, of course, mirror Schiffer's transformation theory, in which he identified two main processes that led to the patterning that can be observed in the archaeological record today (Schiffer 1972, 1987). The first are those caused by natural agents, termed 'n-processes' (Schiffer 1987). N-processes are 'any and all events and processes of the natural environment that impinge upon artefacts and archaeological deposit' (Schiffer 1987: 7). These can range from the movement of artefacts downslope over time, to the impact of soil disturbance by animals. Schiffer understood these processes as somewhat like laws that govern the nature and extent of burial of a site – these processes were argued to be predictable, owing to the fact that they are observable today. Accordingly, such 'laws of burial' – known as taphonomy – were used to help explain past phenomena according to processes observable today (Okumura and Eggers 2008: 3).

The second are C-processes, or 'cultural formation processes'. These were argued to be less predictable, principally owing to the fact that they concern 'the processes of human behaviour that affect or transform artefacts after their initial period of use in a given activity' (Schiffer 1987: 7). These processes could occur both during and after an occupation at a site (Schiffer 1987). Together, n-processes and c-processes allow for a more nuanced understanding of the evidence contained within specific places. Crucially, it recognises that human behaviour was not the only contributing factor to the variability seen in the archaeological record (Schiffer 1972; 1976).

Schiffer furthermore defined four key types of transformations – disturbance, reclamation, re-use, and depositional transformations (Schiffer 1983). Disturbance transformations occur through processes such as digging and erosion. Reclamation transformations occur through processes such as scavenging or collections, while re-use transformations result in the circulation of objects over longer-periods of time than would normally be expected. In a sense, re-use transformations delay their deposition into the archaeological record. This is seen archaeologically not just through recycling, but also through the curation of artefacts into later periods, such as was the case at Nettleton Top in Lincolnshire (Willis 2014). Depositional transformations are wide ranging, but mainly occur through the creation of refuse. Artefacts can be deposited as primary refuse – that is, they are discarded where they were used – or they can occur as secondary refuse – where, for example, items are swept up and deposited in pits within or away from the settlement. Such was the case at Flixborough, Lincolnshire, where excavation revealed that detritus from the settlement areas was regularly cleared into a massive pit in a communal central zone (Loveluck 2007). Tani notes that this pattern of deposition may well result in a pattern whereby areas free of artefacts might represent the locations of regularly cleaned activity areas, with denser concentrations of artefacts being found at waste deposits at the edge of a settlement, or at designated areas within the settlement

(Tani 1995: 244). These observations do, of course, imply that the identification of formation processes must precede behavioural inference (Schiffer 1976; 1983).

Schiffer's observations imply that objects within palimpsests are not necessarily bound to particular events in history, but rather may transgress multiple events and take on different meanings for the individuals and communities encountering them (Schiffer 1972, 1987). Bailey refers to these as palimpsests of meanings (Bailey 2007: 203-208).

In addition to palimpsests of meanings, Bailey defined four other types of palimpsest, all of which have empirical, material outcomes, and are of greater relevance to PAS data;[2] these are true, cumulative, spatial, and temporal palimpsests (Bailey 2007: 203-208). True palimpsests are those in which earlier traces of activity have been totally destroyed, and only the most recent occupation is visible (Bailey 2007: 203-204); cumulative palimpsests are those in which successive periods of deposition result in mixed assemblages in which shorter-scale events are very difficult to see (Bailey 2007: 204-205). These surface deposits record the 'trace loads that accrue season after season, year after year' (Sullivan 2008: 45). Spatial palimpsests are spatially segregated areas of activity that merge to form a settlement or 'site' on a larger scale. The temporal relationships between these discrete areas are, however, usually 'blurred and difficult to disentangle' (Bailey 2007: 207). This blurring of temporal relationships does not just affect the interpretation of palimpsests of material culture, but also palimpsests of settlement. For instance, much effort has been exerted in trying to locate temporally fine-grained causes for settlement nucleation, but Jones has recently argued that 'villages might just as easily form from a series of small-scale actions or events that are unlikely to leave a visible signature in the historical and archaeological record' (Jones 2011: 25, emphasis mine). Moreover, these small-scale events may not have been 'conceived as a stage in a conscious project of nucleation' (Jones 2011: 25). Palimpsests may, then, be more indicative of longer-term processes than of 'living floor' events. The interpretation of palimpsests is, thus, an issue of framing the correct questions.

The final type of palimpsest defined by Bailey is the temporal palimpsest, formed of artefacts from different periods but which are found in the same place, and which may have been deposited at the same time (Bailey 2007: 207). Such was the case of the seventh-century Anglo-Saxon metal-worker's grave at Tattershall Thorpe, which contained scrap metal objects of Roman and Early Saxon date (Hinton 2000). The interpretation of a palimpsest is, of course, more complex once artefacts are brought into the plough-zone, owing to the loss of contextual information. Indeed, it would be very difficult to draw associations between finds contained within the Tattershall Thorpe inhumation should it have been ploughed-out. Further discussion is required, then, on the nature of plough-zone palimpsests.

2   This is discussed in detail at various points in the present study. In short, it is shown that PAS data often form spatial palimpsests, cumulative palimpsests, or a combination of the two depending on the scale of landscape at which one is looking (Chapters 4-6).

1.3. Into the Plough-Zone

One of the most profound transformations of the archaeological record occurs through arable cultivation, usually ploughing, when machinery rips through buried palimpsests and brings material culture into the plough-zone (Hinchliffe and Schadla-Hall 1980; Haselgrove *et al.* 1985; Lawson 1980; Lewarch and O'Brien 1981; Schofield 1991). This process results in an unstratified assemblage contained within a horizon that is subject to vertical and horizontal displacement (Dickson *et al.* 2005), and which is exposed to a wide range of factors that may accelerate their ultimate destruction (Fjaestad *et al.* 1997; Gerwin and Baumhauser 2000; Haldenby and Richards 2010).

Depending on the depth of cultivation, some plough-zone assemblages may represent sites that survive mostly intact, while others may represent severely decapitated sites (Dunnell and Simek 1995: 307). Others still may be totally destroyed, with the 'signature' of the assemblage being the last remaining lens for analysis (Steinberg 1996; Amkreutz 2013).

The general lack of context means, however, that plough-zone assemblages must be treated first and foremost as unknowns (Haselgrove 1985; Bowden *et al.* 1991). Indeed, it is hazardous to assume that all finds represent their original places of deposition; some may have been inadvertently introduced with manure or nightsoil (Jones 2005, 2011; Gerrard and Aston 2007), others may represent a range of 'on-site' and 'off-site' activities (Bintfliff and Snodgrass 1988; Gillings and Sbonias 1999; Bintliff 1999, 2000), while others may represent intrusive finds deposited in more recent times with topsoil, say, as a hollow or ditch is filled in using soil from elsewhere. It is prudent to remind ourselves, then, that the notion that material culture directly relates to human activity in a landscape is overly simplistic (Foley 1981; Taylor 2000: 16; Smit 2010, 2011). Plough-zone palimpsests are aspects of landscape archaeology that require investigation, not assumption.

Recent work funded by English Heritage at Damerham, Hampshire painted a bleak picture of the value of surface scatters in tracing below-ground archaeology,[3] but elsewhere there are many instances where excavation has found associated archaeology following the discovery of finds in the plough-zone (see Chapter 4). These often demonstrate that 'ploughing neither completely destroys nor homogenizes sites into background noise…What is left after ploughing is not the 'site' familiar to archaeologists but rather a distinctive 'site signature' ' (Steinberg 1996: 368). Steinberg's observation that plough-zone palimpsests are more appropriately seen as distinctive signatures, rather than sites themselves, is helpful to our understanding of PAS data. Indeed, Steinberg's observations broadly mirror those of Cherry (1983), who acknowledged various 'truths' regarding surface scatters. Principally, surface scatters are generally temporally coarse-grained, seldom being precise to less than a century. Finds are often 'smeared' by natural or

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3   The English Heritage survey found that surface assemblages offered a 'poor indication of the location and character of the monuments discovered through remote sensing' (Bayer *et al.* 2015). This comment appears, however, to relate primarily to material recovered through field-walking. While metal-detecting was used, the survey 'deliberately avoided the locations of known prehistoric and later monuments, as revealed by remote sensing' (Bayer *et al.* 2015: 29). The methodology appears to conflict somewhat with the conclusions as far as metal-detecting goes, then.

human agencies, meaning that small sites may be difficult to spot, and sites of all sizes may be difficult define spatially. Finally, Cherry notes that it is usually very difficult to arrive at information on the internal organisation and function of sites through surface scatters (Cherry 1983: 379).

A key aspect of the intepretative difficulties described by Cherry is the impact of bias upon the sample (Mattingly 2000: 5; Shott 2002: 90). This is an issue that has been explored in depth by Orton (2000), and more recently for PAS data by Robbins (2012). Orton suggests that there are three types of sample: an unintentional sample, a formal sample, and an informal sample (Orton 2000). The unintentional sample refers to the total body of material available in the present, but which has been selectively narrowed down from the original body of material culture through events outside of the control of the archaeologist. The formal sample refers to rigorous, planned methodologies such as structured field-walking, while the informal sample refers to discoveries resulting from more haphazard events such as chance finds and casual metal-detecting (Orton 2000). Orton's sample types do, of course, overlap in many instances, but while there are some instances of systematic survey that can be gleaned through the PAS data, in most cases these data represent informal samples. Our understanding of sampling bias in PAS data has been greatly enhanced by Robbins (2012) who has shown that the range of biases present in amateur collected datasets were different to those recovered by professional means. Factors include many unknowns, in addition to localised nuances resulting from search permissions to the presence of woodland, and even to how a region's history of relationships between archaeologists and metal-detector users affects the data (Robbins 2012: 26).

Building on prior research by Collins (1975) on the sampling of paleontological material, Robbins suggested there to be seven contingencies to amateur collected datasets:

1. In a body of material culture, not all objects will be lost or buried in a particular time or place;
2. Of those that are, not all will be preserved within the ground;
3. Of those artefacts that are initially preserved, not all will survive to the present;
4. Of those that survive, not all will be exposed where a collector may see them;
5. Of those that are exposed to the collector, not all will be recovered;
6. Of those artefacts recovered by an amateur collector, not all will be reported to a professional body;
7. Of those that are reported, not all will be recorded in a professional dataset.

Robbins summarised these seven areas of bias into the headings burial/ loss, preservation, survival, exposure, recovery, reporting, and recording (Robbins 2012: i). Accordingly, these headings can be used as a way of exploring material culture from PAS in a more structured way (Robbins 2012: 3).

Robbins' study was preceded by several others that aid our understanding of bias. The first national survey of PAS data for a specific period was completed in 2008 by the Viking and Anglo-Saxon Landscapes Project (VASLE). VASLE provided a 'detailed analysis of the nature of portable antiquities data, the bias within such datasets and the relationship between patterns of recovery and historic

settlement' (Richards *et al.* 2009). This established that the interpretation of distributions of portable antiquities data 'can only be adequately undertaken with reference to topography, geographical features such as rivers, and to the potential constraints on data collection, which may include urban areas, forests, and the limits of plough-zone farming' (Richards *et al.* 2009: 2.4, 2.6).

VASLE, along with several other studies, also highlighted other suspected biases within PAS data. For example, PAS data is under-representative of iron due to the majority of metal-detector users setting their machines to discriminate ferrous metal (Robbins 2012: 99). Similarly, bias is present within the quantity and distribution of records for lithics, owing to varying tendencies for metal-detector users to collect flint, and owing to the trend for usually only the more recognisable pieces – such as axeheads and arrowheads – to be recognised and reported (Bond 2010: 22).

1.4. From Portable Antiquities to Plough-Zone Palimpsests

Previous studies of bias provide a useful framework for understanding the factors that shape PAS data. There are, nonetheless, several methodological issues that arise when attempting to understand the assemblages or 'palimpsests' that they form at particular places and over longer-periods of time. Broadly, these concern two key areas: first, the temporality that is visible within the palimpsest; and second, the way in which surface scatters can be grouped into 'sites'.

First, the loss of contextual information on entry to the plough-zone results in assemblages that are chronologically 'not fine enough to put forward conventional synchronic behavioural interpretations' (Holdaway and Wandsnider 2008b: 10; Dooley 2008). It is, then, difficult to use plough-zone palimpsests to reconstruct detailed pictures of persistence or abandonment. Holdaway *et al.* summarise this eloquently regarding stone implements in Australia; the parallels for plough-zone archaeology in Britain are obvious:

> *Surface scatters of stone artefacts form the bulk of the archaeological record in Australia, yet for all their ubiquity, they continue to pose serious problems for archaeologists. Surface deposits lack stratigraphy in the conventional sense…they often represent long periods of deposition and spatial proximity is no guarantee of synchrony…In the vast majority of cases, it must be assumed that an assemblage from a surface deposit could have derived from more than one, and often many, separate events or occupations* (Holdaway *et al.* 2004: 34).

The failure to recognise this point has frequently led to an overemphasis on continuity, when in reality the evidence more frequently represents short-term events within areas used – often intermittently – over much longer scales of time (Evans *et al.* 2014). This notion was underlined by Foxhall regarding stratified objects, let alone plough-zone assemblages: 'the dynamic flow of social life is speedy…occupation at any one given place may in fact comprise a sequence of intermittent, generationally (or genetically) unconnected time-scales of lived reality' (Foxhall 2000: 484).

Bevan refers to this problem of temporal uncertainty as 'an elephant in the room of much archaeological interpretation', stating that the problem is a 'near ubiquitous feature of archaeological datasets, whether these are radiocarbon dates, geoarchaeological deposits or individual artefacts' (Bevan *et al.* 2013: 14). Accordingly, while is it common practice to speak of 'assemblages', in reality the relationships between finds are actually difficult to untangle, and usually rest upon careful reasoning rather than certainty (Bailey 2007: 204). GIS has of course been a key feature of this process of reasoning, and is particularly advantageous when used as a 'place to think' (Gillings & Goodrick 1996) rather than as way of producing 'complete archaeological interpretations' (Wheatley and Gillings 2002: 125).[4]

The temporal signature of deflated PAS palimpsests is, of course, influenced by a variety of factors, some of which were identified by Robbins, and which become more acute when taking a multi-temporal view. First, multi-period PAS data naturally better represent those periods (and sub-periods) with the highest outputs and survival rates of non-ferrous metalwork (Robbins 2012: Chapter 2). Similarly, they under-represent those periods in which lithics dominate the record (Bond 2010). A simple overview of PAS round-ups in Britannia clearly shows the differential reporting rates of types of Roman finds across the country (e.g. Worrell 2010); fourth-century coins are far more common than those of the first, and similarly the bulk of Iron Age finds recorded on PAS come from the final 100 years or so of the period, with most likely to be of conquest period date. PAS Annual Reports reveal a similar distinction between archaeological periods; medieval finds are widespread in comparison to those of the Bronze Age, for example. This renders any 'like for like' comparison of finds from one period to that from another somewhat unreliable (Millett 1985; Orton 2000: 60).

Moreover, there are periods in which the material culture of certain people-groups essentially becomes archaeologically invisible. The scarcity of metalwork and ceramics from the fifth century AD illustrates this point. Absence of evidence may not always equate to evidence of absence.

Second, it becomes increasingly difficult to define 'sites' from palimpsests, especially when taking the long-term view (Haselgrove 1985: 8; Dunnell 1992; Hosfield *et al.* 2000). Additionally, it becomes acutely problematic when attempting to understand how these 'sites' relate to one another across the landscape. Naturally, the definition of a 'site' greatly depends on the scale of place and time at which one is looking. At a broad level Hole and Heizer defined a site as 'any place, large or small, where there are to be found traces of ancient occupation or activity. The usual clue is the presence of artefacts…' (Hole and Heizer 1973: 86-7). Others have sought to refine this definition by applying a variety of statistical and spatial analyses. Some impose quantitative thresholds in order to define 'sites' from background noise (Gallant 1986; Terrenato 2004; Brindle 2014). This approach has often been used in conjunction with detailed studies of the composition of the assemblage, in which certain types of artefacts are used as distinctive makers of settlement (Perkins 1999: 106-107). Others still have replaced the term 'site' with

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4   Indeed, conventional GIS does not readily allow for the identification of human practices such as the curation of objects – an activity that played an important role in the creation, maintenance, and rejection of memory, identity, and the repeated use of particular places (Thomas 1996, 2001).

other concepts such as ADABS – 'Abnormal density above background scatters' (Keay and Millett 1991; Keay *et al.* 1995), or 'clusters' (Mattingly 2000: 6).

This approach to defining and interpreting assemblages is not without its problems. The imposition of thresholds runs the risk of excluding discrete forms of human activity based on single or low numbers of finds, such as votive deposition of single gold staters in the Late Iron Age. It also overlooks potentially acute areas of bias resulting from simple factors such as time spent metal-detecting, reporting, and recovery (Brindle 2014: 134).

A distinctly different approach to the problem of defining 'sites' has been to reject the term altogether on the premise that the 'site' is simply a modern archaeological construct, and therefore a theoretically flawed unit of analysis (Dunnell and Dancey 1983; Bowden *et al.* 1991: 108; Schofield 1991; Steinberg 1996: 369; Mattingly 2000: 6; Anschuetz *et al.* 2001: 172). The 'site', it is argued, assumes that all the material at a location relates to a certain phase or people group; this, of course, overlooks the fact that the deposition of finds is often speedy and may relate to unrelated episodes of activity (Foxhall 2000).

The term 'site' becomes increasingly untenable the greater the length of time that comes into view. Mesolithic patterns of activity were distinctly different to Roman patterns, and one simply cannot apply the term 'site' across the temporal spectrum. Accordingly, studies that take a teleological view of the landscape have applied a range of other terms such as 'habitat', 'locale', or even 'place' to describe landscapes large and small which contain evidence of human activity (Anschuetz *et al.* 2001; Purtill 2012). These do, nonetheless, bring with them certain meanings and inferences. The term 'locale', for example, has been used in a variety of ways, but is broadly taken to mean areas containing archaeologies of encounters, gatherings and social occasions (Gamble 1999: 65; Tilley 1994: 34, 2010: 39). Nonetheless, it is often conceded that in order to identify such 'areas of activity', one needs to impose some sort of artificial quantitative threshold that discerns palimpsests from 'background noise' (Sullivan 2008: 33). The methodological and theoretical risks of such user-defined thresholds are discussed further in Chapters 2 and 3.

1.5. From Palimpsests to Persistent Places

A major response to this problem has come from Schlanger, who introduced the concept of the 'persistent place' as a way of linking artefacts and 'sites' to the landscape (Schlanger 1992: 92). Schlanger's concept has since been adopted by many studies that explore prehistoric palimpsests, especially in North America and Australia (Holdaway *et al.* 2004; Holdaway and Wandsnider 2006; Littleton and Allen 2007; Ahlstrom 2008; Holdaway and Wandsnider 2008; Daehnke 2009; Shiner 2009; Thompson 2010; Moore and Thompson 2012; Purtill 2012; Fleming 2013). In their simplest form, Schlanger describes persistent places as 'places that were repeatedly used during long-term occupations of regions' (Schlanger 1992: 92). The reasons for the repeated use of a place are, of course, complex, but Thompson has noted three defining features of persistent places. First, their

physical characteristics make them appealing for use; second, their natural and cultural features stimulate and structure patterns of re-use; and third, they are created through practice over an extended period of time (Thompson 2010: 218).

For example, natural features such as rock outcrops, streams, rivers, and lakes, may have attracted human attention, or have stimulated specific forms of activity, such as ritual deposition (Bradley 1990; 2000: Chapter 1; 2002; Nord 2009; Doshi 2010; Thompson 2010; Moore and Thompson 2012: 269; Shepherd 2013). Likewise, in some cases this activity may have structured the repeated use of that place – be it through reuse or avoidance (e.g. Littleton and Allen 2007). This is apparent at many Neolithic and Bronze Age barrow sites in Britain, where monuments were used as agents of memory and myth in the reconstruction of the past and the formation of contemporary prehistoric identities (Thomas 2008). Indeed, such monuments are now known to have been important structuring agents well into the Anglo-Saxon period and beyond (Crewe 2012; Semple 2013). Barrows were also often important markers in the construction of parish boundaries (Hadley 2000), and in the post-medieval and modern periods they often acted as meeting points (Pantos 2001, 2004). These examples indicate some of the ways in which memory becomes engrained in the landscape through the outworking of visions of the past – and perceptions of present identities – held by successive communities (Schlanger 1992; Barton *et al.* 1995; Shiner 2004; Purtill 2012; Semple 2013: Chapter 7).

Schlanger describes persistent places as 'neither strictly sites (that is, concentrations of cultural materials) nor simply features of a landscape'; instead, they represent the 'conjunction of particular human behaviours on a particular landscape' (Schlanger 1992: 97). This observation resonates with the theoretical position argued for earlier, that palimpsests do not represent the 'site' familiar to archaeologists but rather a distinctive 'site signature' (Steinberg 1996: 368). It is these very palimpsests that are, according to Purtill, the result of 'persistence' – a 'social concept that defines how a geographically proscribed location is used by human populations throughout history' (Purtill 2012: 2). In turn, persistent places are 'given meaning by their use and accumulation over time', rather than necessarily containing elements that were 'intentionally created to give meaning to places' (Littleton and Allen 2007, quoted in Moore and Thompson 2012: 268, my emphasis).

Of course, persistent places may not always relate to settlement. On this note Schlanger's concept of persistent places provides another advantage for the study of PAS data; it does not imply settlement, nor does it suggest there to have been continuous occupation at any given place. Activity may range from hunting to votive deposition, and places may be characterised by periods of persistence and stability, punctuated by periodic absences caused by a range of factors, from geological events to population decline and even purposeful avoidance (Shiner 2009: 26). Furthermore, the definition does not assume that phases of occupation at the same place are necessarily related. The concept of persistence simply provides a way of exploring these aspects, rather than assuming them.

In a sense, the term 'persistent place' is one that conceptualises everything but assumes nothing; but this is its advantage for PAS data – and indeed the contexts from which they derive – which are, essentially, unknowns in the absence of excavation. It is a fairly value-free concept that allows us to think about the range of depositional and post-depositional possibilities that led to the formation of palimpsests, and additionally the place-history that they infer.

Schlanger's concept of the persistent place has been applied to a range of landscapes, varying both in physical size and also temporal depth; such is the flexibility that the concept inherently provides. The definition of persistent places is, accordingly, a fluid concept that must be set within the parameters of the research questions. The concept of the persistent place has been applied to households (Hayden *et al.* 1996), to 'locales' (Amkreutz 2013), and to wider landscapes (Daehnke 2009). Similarly, persistence has been used to chart change and continuity over several hundreds of years (Fleming 2013), to several thousands of years (Purtill 2012).

At a basic level, then, 'persistence' emerges from the wider backdrop of activity across a landscape. Following this, Nord has proposed the term 'vague place' as a contrast to persistent places, that being a 'place [that is] vague in the sense of it being in use only sporadically or just very briefly, leaving little imprint for the future' (Nord 2009: 33).

Persistent places and vague places are, then, rather subjective terms, but a number of studies have attempted to refine this within their research contexts by imposing temporal parameters. Dooley's study of the Northern Great Plains of Central North Dakota used rates of siltation and lichening to define a 'persistence index' (Dooley 2008). Similarly, Amkreutz's study of Neolithic sites in the Lower Rhine Area divided persistent places into three different types based on the length of time they were apparently used for. Short duration sites were characterised by a somewhat indiscriminate use of space with less distinct patterning, such as a knapping floor (Amkreutz 2013: 81-82). Medium duration sites were those that were used over longer periods, such as the repeated and seasonal use of sites by non-sedentary hunter-gatherers and early farmers. These sites might, however be used differently each season, for example as a base camp in one year, and as a hunting camp in another, thus blurring the material record through different forms of use (Amkreutz 2013: 82). Similarly, long duration sites were those that were in all likelihood used by non-related communities for a variety of purposes. However, even at this scale of time Amkreutz argued that persistent places 'may have existed on mental maps, even in the face of long hiatuses' (Amkreutz 2013: 82). In some cases the survival of persistence may result from the outworking of the longer-term rhythms of social life, such ritual or ceremonial activities, or the attachment of new values onto existing monuments or landscapes (Gosden 1994).

Of course, persistent places do not exist in isolation, but are components in wider inhabited, inherited landscapes. The temporal relationships between persistent places are, however, often blurred – as was the case found to be for palimpsests. Nonetheless, on a coarser-grained temporal scale it has been suggested that persistent places could be seen as 'nodes' that connect various pathways within the natural environment (Moore and Thompson 2012). These nodes represent

places 'saturated with social relations, not just relations among humans but also between people and animals, people and objects, and people and places' (Moore and Thompson 2012: 276). Over time, these nodes and pathways become engrained in the mental-maps of the area, until which point they eventually diminish or become so repeatedly visited as to emerge as permanent settlements.

The importance of pathways, routes and the natural topography between these nodes has become an inevitable key element for further understanding persistent places. Indeed, even before the term became more commonly used, Gamble stressed the importance of rhythmic movement along tracks and pathways as agents in the creation and maintenance of social lives (Gamble 1996, 1998, 1999). Ingold alluded to this in his 'dwelling perspective', which argued that 'the landscape is constituted as an enduring record of – and testimony to – the lives and works of past generations who have dwelt within it, and in so doing, have left there something of themselves' (Ingold 1993: 152; see also Ingold 2000) – it is, as he later described it, the world 'perceived through the feet' (Ingold 2004).

The advantage of the dwelling perspective for the concept of persistent places is in the fact that it regards landscapes – and the palimpsests contained therein – as being in a constant process of formation no matter which temporal scale one views it on. Ingold likens this process of longer term change to the rhythm of music; there are rhythmic patterns created by human activities, and these are 'nested within the wider rhythms of the world, from the animal kingdom up to the extremely slow rhythms of geological time' (Ingold 1993: 152-164). Amkreutz contextualised this within the concept of the persistent place, suggesting that longer term patterning is the result of different rhythms operating at different scales; daily, such as tidal fluctuations, yearly such as storms and seasonal migrations of birds and fish, the ripening of berries and buds, the seasons, and those rhythms occurring over decennia that involve more gradual or abrupt changes in the composition of the landscape (Amkreutz 2013: 308).

Integral to the interpretation of persistent places is the agency of deeper rooted structuring aspects of inhabitation, such as identity and memory – subjects that have gained increasing attention in recent years (Bradley 2002; Hirsch 2006; Chadwick and Gibson 2013b). These studies bring into focus the roles of social memory, meanings and myth-making, and how landscapes become imbued with meaning in the short-term through dwelling (Ingold 1993; 2000; 2004). The study of persistence extends this process over longer-scales of time, and draws attention to the often understated fact that people in the past frequently encountered traces of earlier phases of inhabitation, some of which they might associate directly with their own past – whether based on fact or myth (Bradley and Williams 1998; Chadwick and Gibson 2013b: 5). This approach to persistent places has, in some cases, helped to explain why communities remained tethered to particular places in the face of rapid changes in climate and environment (Daehnke 2009).

Arriving at an understanding of the biographies of these persistent places is a complex process, not least because the aggregate pattern seen within palimpsests results from human and environmental processes that operate at different spatial and temporal scales (Anschuetz *et al.* 2001: 188). Unravelling these palimpsests is, according to Purtill, key to understanding persistent places (Purtill 2012: 2).

Amkreutz describes this process of unravelling as 'tuning in' to the signal that the assemblages are emitting (Amkreutz 2013). Crucially, advocates of the persistent place argue that there is no one particular 'type' of palimpsest that one will encounter. Rather, one should expect 'various combinations of palimpsest types…due to the repeated occupation [of places] over an extended period of time' (Purtill 2012: 2).

The demand for a teleological view of agency that the concept of the persistent place brings with it has meant that approaches have often been augmented with the Annales school of thought, of which Braudel (1980), and Bailey (1981, 1987, 2007, 2008) are key contributors. Essentially, this view states that 'different processes unfold at different rates and become manifested over different lengths of time' (Wandsnider 2008: 64). In order to understand these processes, Braudel proposed a three-phase schema that divided historical processes according to those that operate on long, medium and short terms (Braudel 1980: 3). Long-term processes (the longue durée) was 'an inquiry into a history that is almost changeless, this history of man in relation to his surrounding…a history which unfolds slowly and is slow to alter, often repeating itself and working itself out in cycles which are endlessly renewed…' (Braudel 1980: 3). At the medium-term level are changes such as wages or inflation, and on the short term are processes caused 'not so much of man in general as of men in particular'…processes resulting from individual actions and natural events (Braudel 1980: 3).

This multi-scalar view is a key aspect of Bailey's Time Perspectivism, which at its heart argues that viewing the archaeological record at different scales of time and place brings into focus 'different variables and processes that are not visible, or easily visible at other time scales, thus requiring different sorts of concepts and explanatory principles' (Bailey 1981, 1987, 2007; 2008: 13; see also Holdaway and Wandsnider 2008). In essence, what we see very much depends on what scale of time we are looking. This view is, of course, evident in Bailey's perception of palimpsests, discussed a little earlier in this chapter.

Fahlander conceptualised this sliding-scale range of agency, visualising sources from macroscopic world systems through to microscopic aspects of individual thought and action (Fahlander 2001; Figure 1.1). At the widest view one can see the entire history of human occupation of a landscape, and at this level one is able to approach questions regarding general trends in societies and groups across a study zone, arriving at a general theory of social practice (Fahlander 2001: 29). Conversely, at shorter scales of time one can see individual or group agency much clearer (Fahlander 2001: 29).

As has already been discussed, Bailey and others argue that the very nature of palimpsests renders any study of personal agency, interaction and short-term events difficult (Bailey 2008). Instead, one should search for longer temporal trends, including environmental causes and wider political and social dynamics.

This view is, however, somewhat reminiscent of the New Archaeology of the 1970s and 80s, much of which focussed more on the longer-term processes that resulted in the patterns seen in the archaeological record today (Binford 1972; 1983). This stance has been criticised by post-processualists, who argue that it ignores the agency of the individual and 'dehumanises' the past (Shanks and

Macroscopic | Objective

- World systems
- Societies
- Groups
- Interaction
- Individual thought and action

Microscopic

- Agency
  Social construction of reality
  norms, values, etc.

- Mixed types, combining in varying
  degrees objective and subjective
  examples including the state, family,
  world, religion etc.

- Actors, interaction,, bureaucratic
  structures, law, etc.

Subjective

Figure 1.1. The general relationship between level of analysis and the subjective-objective scale (Fahlander 2001: 22).

Tilley 1987). Indeed, while societal structures existed and to some extent determined the grander-scale patterns of deposition, these societies were made up of individuals who were invested with 'agency' (Thomas 1996; Hodder 2000). Individual actors, along with their belief systems, values and external agencies are removed from the interpretation, resulting in 'shadowy organizational themes or clusters of ideas' (Bailey 2008: 21, quoting Benjamin 1985: 223). In response, the short-term view has been criticised for being a contemporary Western tendency towards individualism (Meskell 2001; McGuire and Wurst 2002).

The longue durée has also been duly criticised for its tendency to veer towards environmental determinism (Gosden 1994: 8; Lambourne 2010: 56ff). Indeed, at this scale of time it is difficult to see changes that occurred on much finer scales of time; Van de Noort points out that while large-scale external events, such as climate change and weather can affect large numbers of people within an area, its impact on the environment will have very dissimilar consequences for different groups, especially on shorter scales of time (Van de Noort 2013: 39).

Accordingly, it has become increasingly accepted that in order to achieve the fullest understanding of human interaction in landscapes, it is important to look on multiple scales of time (Fahlander 2001; Malinsky-Buller *et al.* 2011) – a view which takes in a 'sliding-scale of formation process'…and which 'provides a much needed middle ground between the scales of coarse-time averaged formation process and short, "near real-life" behavioural episodes' (Malinsky-Buller *et al.* 2011: 89). This view, which is characterised by theoretical pluralism, is shared by Moore and Thompson (2012) who argue that the best approach to palimpsests is one that:

> …takes into account various proximate explanations of particular historical events and how macroscalar phenomena occurring over long periods of time across regions structure those events. Thus, the goal is not to find the 'best way' to study the past but to integrate multiple theoretical perspectives and promote a multivocal archaeology (Moore and Thompson 2012: 266).

Related (spatially, ideologically, religiously…)

Short Term Event ⟷ Long Term Accumulation

Coincidental
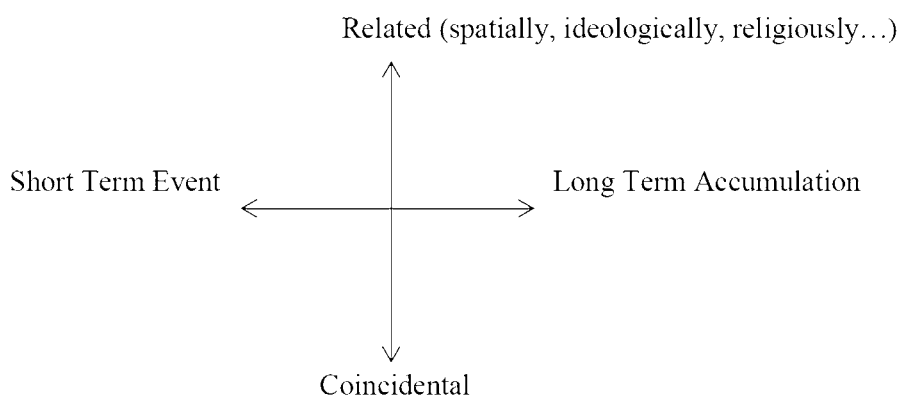
Figure 1.2. Conceptual model of temporal relationships within a persistent place.

The importance of retaining a theoretically pluralist view of persistent places is succinctly expressed in Everson's observation of the archaeology of medieval Lincolnshire:

> *Medieval Lincolnshire was itself built on and out of previous, complex periods of landuse and culture, which themselves thoroughly exploited and altered the landscape. These endowed the medieval period with all manner of baggage, both physical – e.g. obvious residuals like paved Roman roads where they were maintained and major stone buildings in ruins – and less tangible – e.g. locations and features with ancient values or on which traditional values could be put (places of meeting, of ritual, of superstition even), from prehistory, from the Roman period, and from the early post-Roman centuries* (Everson 2000).

Arguably, the sliding-scale view of agency aids our understanding of the formation of palimpsests at specific places within the landscape. Quite to what extent patterns of re-use were informed by the antecedent landscape is, of course, a matter for localised case studies – of which there are several in this present study – rather than broader scale assumption. Lambourne understood patterns of re-use as 'coincidence, correlation or cause' (Lambourne 2010: 4ff). These potential associations can, however, be coarsely visualised by polarising time and relatedness along four axes (Figure 1.2). This is, of course, a high-level concept that simply serve to stimulate further discussion.

1.6. Conclusions

This Chapter has discussed the nature of portable antiquities and palimpsests, and has introduced the concept of the persistent place as an appropriate theoretical framework for exploring multi-period PAS data.

A key argument has been that PAS data are biased samples drawn from an incomplete original body of archaeological material. They are, nonetheless, important components of the archaeological landscape, and are particularly useful for exploring the temporal depth that is possible within the discipline of archaeology (e.g. Shanks and Tilley 1987: 137).

A number of types of palimpsests have been discussed that provide a range of interpretative possibilities for PAS data. These in turn allow us to approach the evidence in a more sophisticated way; moreover, they provide a framework through which one can bring different variables and different processes of change into focus, including the role of the antecedent landscape, and the agency of bias. This, it is argued, will allow the contribution of PAS data to emerge in a fuller and more critical way.

Of course, this 'teleological' view of the landscape demands the consideration of a wide range of evidence, including topography, geology, place-names, documentary sources, parish boundaries, and estate boundaries. The difficulty of this approach is duly noted, and there is always the risk of unintentional mishandling of the evidence:

> 'One needs to be a botanist, a physical geographer, and a naturalist, as well as an historian, to be able to feel certain that one has all the facts right before allowing the imagination to play over the small details of a scene' (Hoskins 1955: 18).

This does not negate the value of the multi-temporal approach, however, and the following Chapter develops a pragmatic methodology that allows complex datasets to be viewed at different scales of time and place.

Chapter 2

Data and Methodology

2.1. Introduction

This Chapter sets out the data and sources used in this study, and then progresses to develop a methodology that allows PAS and HER data to be analysed and visualised at different spatial and temporal scales.

The major datasets used in this study are HER and PAS data, and together these total around 90,000 pieces of data. HER data were supplied by Lincolnshire HER, North Lincolnshire HER and North East Lincolnshire HER. These datasets were merged after minor cleaning and standardisation. PAS data were downloaded directly from www.finds.org.uk (Table 2.1).

A digital elevation model (DEM) was constructed in Quantum GIS, using Land-Form PROFILE data. This DEM is the source from which all topographical calculations have been made. Solid and drift geology data for the region were downloaded from the British Geological Survey. Boundary data on the character of the modern-day landscape were provided by the recently completed Historic Landscape Characterisation Project (HLC) (Table 2.2).

Dataset	Captured	Format	Converted to
PAS	1.12.2012. Additional data for case studies captured 12.01.2015.	CSV	Shapefile
Lincolnshire HER	23.01.2013	Shapefile	Standardised and merged to form a master HER shapefile
North Lincolnshire HER	9.11.2012	Shapefile	
North East Lincolnshire HER	19.11.2012	Shapefile	

Table 2.1. Main sources of data.

Maps	Map Source
OS Boundary Line	Ordnance Survey OpenData
OS Land-Form PROFILE	Edina Digimap
OS: 1:10,000 Scale Raster	Edina Digimap
OS 1:25,000 Scale Raster	Edina Digimap
OS 1:50,000 Scale Raster	Edina Digimap
BGS 1:625.000 Scale Superficial geology	British Geological Survey
BGS 1:50,000 Scale digital geological map data	Edina Digimap
LIDAR (1m and 2m resolution)	Environment Agency
Historic Landscape Characterisation Project	Lincolnshire County Council

Table 2.2. Digital maps sources.

2.2. Dividing the Landscape: Historic Landscape Characterisation (HLC)

Most, if not all studies that incorporate data covering large areas are confronted with the problem of what landscape boundaries to use. This is especially so for studies that concern multi-period data where modern or historic boundaries bear little relationship to past landscapes.

Several studies have responded to this problem by exploring patterns within landscapes of shared character, such as Fen, Marsh, or Uplands (Holdaway *et al.* 2008; Nord 2009; Shiner 2009). This ensures that bias introduced by different forms of landscape, such as those containing large areas blown sand or alluvium, is reduced. Shiner, for example, explored persistent places along a major terrace running parallel to a Creek, and another along the fringe of a flood plain (Shiner 2009: 28). Nord, on the other hand, explored Neolithic sites in Sweden using environmental zones, defined using a version of English Heritage's 'Historic Landscape Characterisation Project' (Nord 2009). Nord suggested that HLC is very well suited to the purposes of understanding not just the conditions in which people lived, but also understanding today's landscape as a whole and the processes that have shaped it (Nord 2009).

It is fortuitous, then, that English Heritage's Historic Landscape Characterisation Project (HLC) has recently been completed for Lincolnshire (Lord and Macintosh 2011a, 2011b; Aldred and Fairclough 2003; Figure 2.1; Appendix 1).[5] The purpose of HLC was to 'describe the modern landscape of the historic county of Lincolnshire in terms of the existing features seen today, and the processes by which they were formed' (Lord and MacIntosh 2011a). HLC therefore allows a better understanding of the different historical processes that resonate in the landscape today (Green 2011: 26), and provides spatially bounded interpretative contexts for PAS data. Accordingly these boundaries will form the basis for analysis throughout this study.

The philosophy of HLC is important to the study of multi-period PAS data on two accounts. First, it perceives the landscape visible today as a palimpsest of past human activity; this mirrors what has been argued for PAS data in the previous chapter. The comparison of the two then, is arguably the best way to provide an interpretative context for PAS data. Olsen captures this philosophy:

> *…what we conceive of as our contemporary world is not made up of entities originating from the same age, the "present", but instead takes the form of a "flattened" multi-temporal field…*(Olsen 2010: 161).

Second, HLC is an important reference point for PAS data, not least because it essentially provides a snap-shot of the landscape from which it derived around the time of data capture – that is, 2011 (Lord and MacIntosh 2011a; 2011b; 2011c). HLC goes into micro-detail in defining the character and extent of different types of land-use, from arable fields to settlement and industry. The importance of this

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5   HLC excluded the main urban centres from the character zones – Lincoln, Scunthorpe and Grimsby. This complements the nature of PAS data which predominantly derives from rural areas.
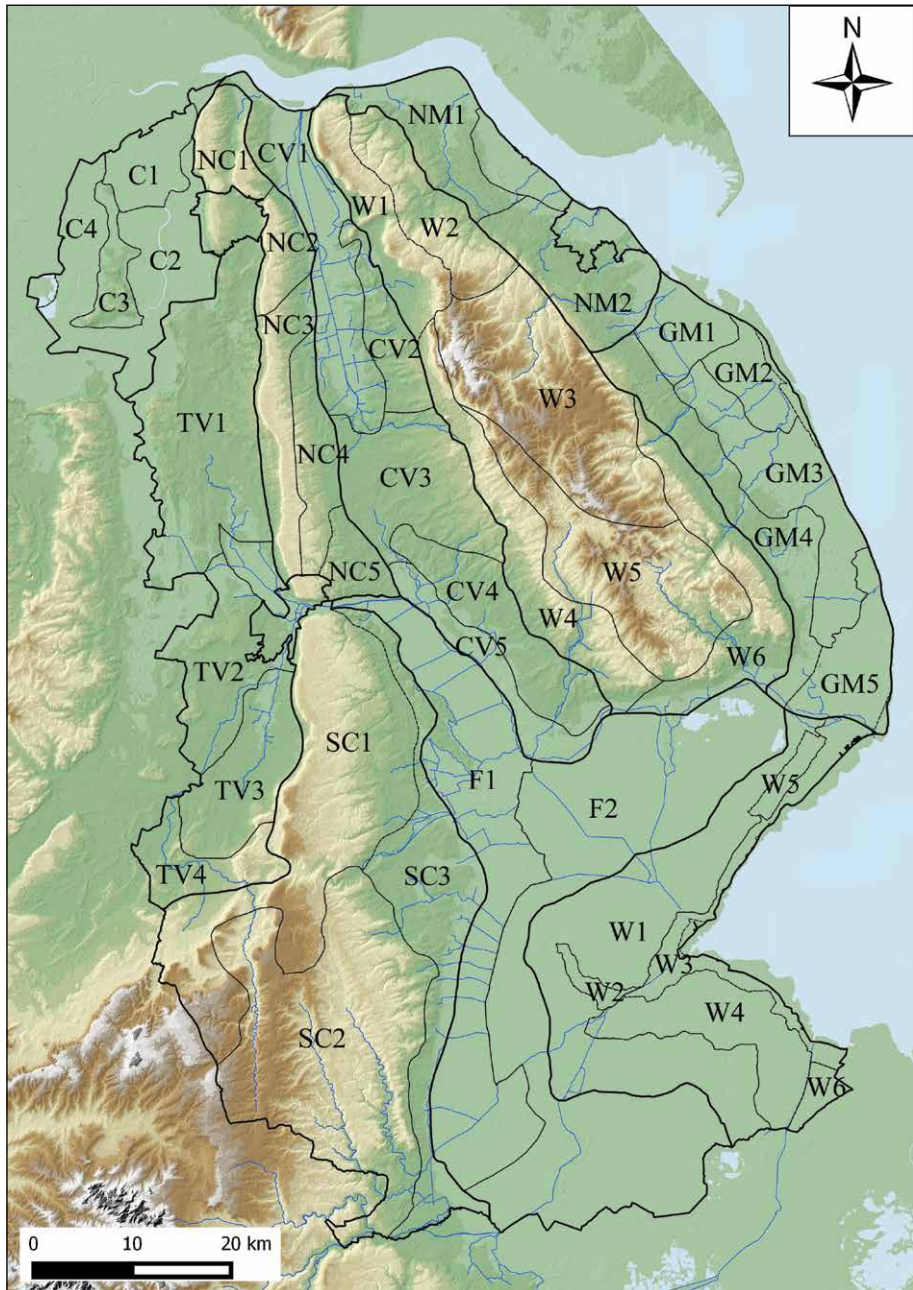
Figure 2.1. HLC Character Areas and Zones (after Lord and MacIntosh (2011). © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

snap-shot will undoubtedly become clearer as time progresses and landscapes change beyond recognition.

Prior to HLC, Lincolnshire had been defined into eight Natural Areas by Natural England (formerly the Countryside Commission): the Wolds, Coast and Marshes, the Wash, the Fens, the Lincolnshire and Rutland Limestone, the Humber Estuary,

the Trent Valley and Rises, and the Cover sands and Clay Vales, each having its own distinctive natural character (Countryside Commission 1998). HLC made minor modifications to Natural England's character zones according to observed concentrations of character types, landscape patterns and through ground-truthing by project staff. This resulted in the establishment of ten Landscape Character Areas (LCAs): the Confluence, the Trent Vale, the Northern Cliff, the Southern Cliff, the Clay Vale, the Wolds, the Northern Marshes, the Grazing Marshes, the Fens and the Wash (Figure 2.1). These LCAs are subdivided into 45 smaller Landscape Character Zones (LCZs), which derive from variations within the dominant character area (Lord and MacIntosh 2011a; 2011b; 2011c; Figure 2.1).

Some limitations must be noted; first, the divisions between landscape areas and zones are often somewhat arbitrary; changes in landscape are often gradual and discrete, rather than abrupt and obvious (Lambourne 2010: 16ff). Second, the use of GIS might in some cases artificially divide palimpsests, especially where activity areas are located on the juncture between ecological/resource zones. Third, it must be born in mind that HLC areas and zones are generalisations of character; micro-scale variation in landscape exists nonetheless within these areas. Finally, while HLC carries a number of methodological and theoretical limitations and difficulties (Aldred and Fairclough 2003; Williamson 2006; Rippon 2013), it nonetheless provides a pragmatic way of assessing PAS data in a systematic way.

2.3. HER Data

There are three HERs in Lincolnshire, reflecting the modern administrative boundaries of Lincolnshire, North Lincolnshire and North East Lincolnshire. HERs – formerly known as Sites and Monuments Records (SMRs) became widespread in the 1970s with the primary purpose of making information recorded by the Ordnance Survey available to local authority planning systems (Gilman and Newman 2007: Section A.2). In Lincolnshire this duty was already being carried out by staff at the City and County Museum, Lincoln. At this time the museum was recording data from the entire historic county, however in 1974 Lincolnshire was reorganised and split into Lincolnshire and Humberside (the latter including present-day North and North East Lincolnshire). Archaeological data were divided accordingly, and an SMR was established at Scunthorpe Museum. There was a hiatus in archaeological cover in Scunthorpe between 1974 until 1978, when Kevin Leahy was appointed, but some cover was provided by staff of the Humberside Joint Archaeological Committee (Leahy pers. com). The Humberside SMR was established with the appointment of Keith Miller in the mid-1980s. In 1996 Humberside was reorganised, resulting in the establishment of the separate unitary authorities of North and North East Lincolnshire. Data held by the SMR at Scunthorpe were divided accordingly, and an SMR was established in North East Lincolnshire. SMRs changed in name to HERs after 2004 to reflect their broader remit in recording.

National HER guidelines on recording ensure that data are, for the most part, compatible, through there are a number of difficulties in comparing data across HERs, particularly regarding the way in which the evidence is described (Baker

Broad Period	Lincolnshire HER records		
	Minimum number confidently dated	Probably related	Total
Palaeolithic	70 (47%)	77 (53%)	147
Mesolithic	158 (23%)	521 (77%)	679
Neolithic	947 (24%)	2918 (76%)	3865
Bronze Age	1389 (32%)	2913 (68%)	4302
Iron Age	474 (20%)	1831 (80%)	2305
Roman	4063 (82%)	885 (18%)	4948
Early Medieval	843 (49%)	844 (51%)	1687
Medieval	5747 (79%)	1458 (21%)	7205
Post-medieval	2780 (61%)	1743 (39%)	4523
Total records	**16,471**	**13,190**	**29,661**

Table 2.3. Chronological profile of HER data.

and Shepherd 1993: 104; Taylor 2007: 12, 23). Accordingly, a degree of editing was required in order to merge these datasets into a master CSV file, but this was successfully undertaken and a master GIS layer was created that contained just under 30,000 records.[6]

A simple distribution plot of all HER data shows the immense value of this resource (Figure 2.2); records are spread across most upland Landscape Character Areas in Lincolnshire, but are sparser across low-lying areas such as the Fens, Wash, Coastal Marshes, the Ancholme Valley and the Isle of Axholme, all of which were subjected to large-scale drainage from the medieval period.

In order to allow these data to be compared to PAS data, HER data were grouped according to the PERIOD field (e.g. Roman). While a pragmatic approach, it did present difficulties where records contain data that cross one or more periods, or where a monument was undated, for example 'a scatter of Neolithic or Bronze Age flints', or a 'prehistoric crop-mark'. While some studies have chosen to exclude records of uncertain date in the comparison of HER and PAS data (c.f. Robbins 2012; Brindle 2014) the proportion of this category of data, given in Table 2.3, suggests they are too large a category to overlook. Indeed, exclusion of these data would have the potential to erase entire categories of monuments such as salterns, which in the absence of excavation are almost always broadly dated Iron Age-Roman. Consequently, two map layers were created: one containing data that can be assigned to one period, and the other those which are possibly or probably related to that particular period. This allows the testing of PAS data against both variables and is a more robust, albeit more time-consuming, approach.

The wide variations in the percentage of confidence with HER data highlight two important points that have bearing on how the contribution of PAS data can be understood. First, it is clear that archaeology of certain periods is better recognised than others. There is a notable dip in the percentage of confidence for records for the Mesolithic, Neolithic and Bronze Age, largely owing to the

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6   HER data gathered for this study includes settlement data, monuments and find spot data up to circa AD 1700, but information on roads, extant buildings, and environmental data were not included.
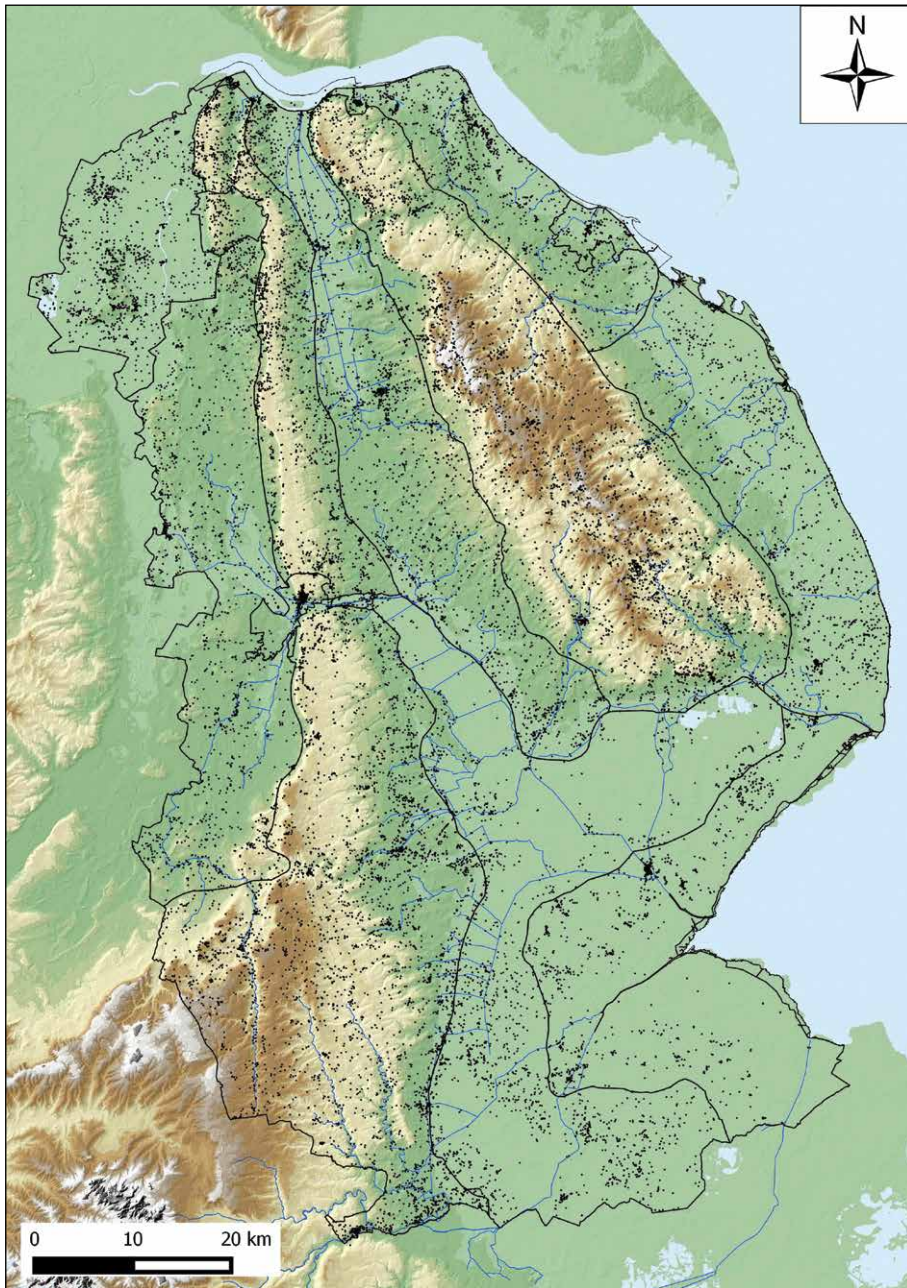
Figure 2.2. All HER data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

difficulties with dating certain types of flints. On the other hand, HER data for the Roman and medieval periods are well dated, reflecting the relative ease at which sites and material culture concerning these periods can be dated. These nuances will, of course, have some bearing on the spatial comparison of PAS and HER data presented towards the end of Chapter 3.

2.4. PAS Data

The Portable Antiquities Scheme has been in operation for more than a decade, and at the time of data capture (1st December 2012) the county dataset comprised 52,837 objects in 43,693 records. Superficial data cleaning was undertaken to rectify obvious erroneous grid-references or errors in date fields. Undoubtedly, less obvious mistakes remain within the cleaned dataset, particularly where an erroneous grid-reference places a find to the wrong field but within the correct parish. Likewise, there remains the possibility that a small number of finds have been recorded using intentionally erroneous information provided by the finder. These problems are difficult to overcome when using such an extensive database, but the number of errors is thought to be statistically insignificant given the size of the dataset.

As might be expected, PAS data are of variable spatial accuracy, though most are recorded to six-figures NGR (100m2) or better (Appendixes 2-5). The variability in spatial accuracy presents difficulties in using just one dataset for multi-scalar analysis. Consequently, three separate datasets were created according to grid-reference accuracy. The 1st December download, which contains the complete dataset, is hereafter named PAS_ALL (Appendixes 2-5). The most immediate problem with this dataset is that it includes unfinished records, and also records that are recorded to parish only. The second dataset, PAS4+, excludes these data, but retains finds recorded to four-Figure NGR (1km2) or better. This dataset contains 46,722 objects in 37,690 records.[7] While PAS4+ is valuable for regional distribution mapping, it is of limited value for finer-grained analyses. This study therefore makes use of a third dataset (PAS6+), which includes only those data recorded to six-figures NGR or better (100m2+). Owing to the way in which spatial data is recorded on PAS, all those records with 6 Figure or better NGRs but which were qualified with 'Centred on Parish' or 'Centred on village' were also excluded. In spite of these exclusions, PAS6+ remains a large and viable dataset, comprising 38,132 objects in 31,107 records.

Statistical analysis of the chronological character of the datasets used in this study – PAS4+ and PAS6+ – demonstrates that the exclusion of data does not result in chronological bias (Appendix 6). While PAS4+ and PAS6+ represent a gradual refinement in the quantity of data, the chronological proportions remain the same (Figures 2.3-2.5). The only notable exception is seen in the proportion of finds from the Iron Age contained within PAS_ALL owing to the inclusion of data from the Celtic Coin Index. As noted earlier, however, PAS_ALL refers to the entire 'uncleaned' dataset and is not being used in this study. The proportions of Iron Age artefacts and coins within PAS4+ and PAS6+ are comparable, however.

Confidence levels regarding the dates assigned to PAS data are also variable, though are generally better than for HER data (Table 2.4). This is undoubtedly due to the greater ease with which artefacts can be dated. There are exceptions,

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7   Also excluded are 3,886 records created by the North Lincolnshire pilot scheme which though having reasonable spatial data on their original card-indexes, were carelessly entered onto the database by a volunteer and cannot be trusted as a spatial dataset. This problem is currently being rectified. Likewise, all 333 records incorporated to PAS via the Celtic Coin Index records have been excluded. This dataset is also spatially problematic.
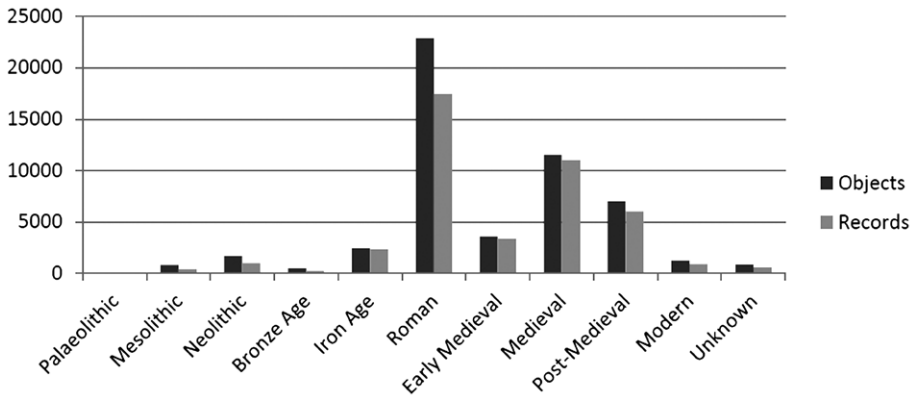
Figure 2.3. Chronological distribution of PAS_ALL.
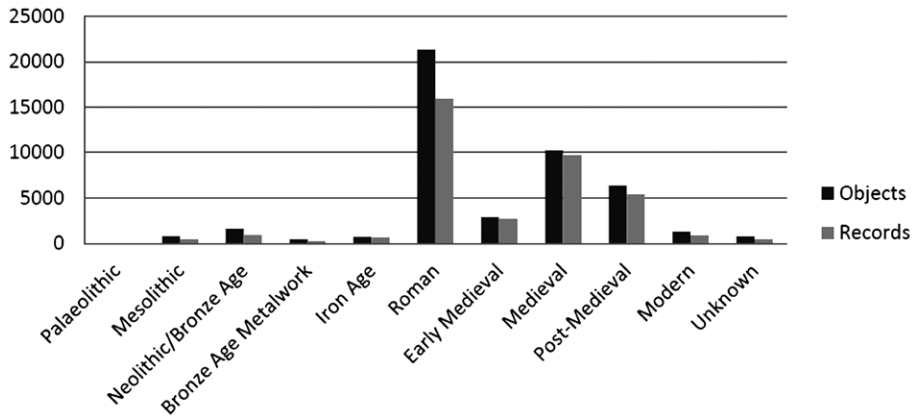
Figure 2.4. Chronological distribution of PAS4+.
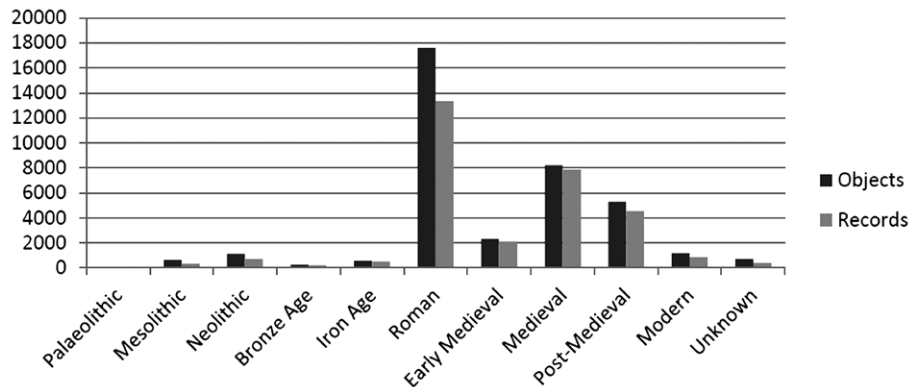
Figure 2.5. Chronological distribution of PAS6+.

however; the majority of Mesolithic and Neolithic finds are broadly dated, largely owing to difficulties in identifying and dating flint. Second, only half of objects dating to the Iron Age are confidently dated, and most of these are coins. This

Broad Period	Lincolnshire PAS records		
	PAS records confidently dated	PAS records probably related	Total
Palaeolithic	14 (100%)	0 (0%)	14
Mesolithic	86 (25%)	252 (75%)	338
Neolithic	336 (47%)	380 (53%)	716
Bronze Age	201 (84%)	38 (16%)	239
Iron Age	284 (51%)	268 (49%)	552
Roman	12,937 (97%)	429 (3%)	13,366
Early Medieval	1816 (84%)	329 (16%)	2145
Medieval	6883 (88%)	977 (12%)	7860
Post-medieval	4303 (94%)	283 (6%)	4586

Table 2.4. Confidence levels of dating of PAS6+ (excluding undated records).

statistic highlights the explosion of material culture in the first century BC/AD, much of which cannot be confidently dated to the decades either side of AD43.

Finally, unlike HER data, which has been recovered by a wide variety of methods, PAS data is dominated by finds recovered through metal-detecting on cultivated land (Appendix 7 and 8). 93% of PAS data have been recovered through metal-detecting, and only 2% of all objects (1.5% of all records) from the study zone have been recovered through field-walking. 85% of all data come from cultivated land, and it is assumed that the majority of 11% of records recorded as 'not known' represent those instances where the FLO has forgotten to set the dropdown qualifier on the database to 'Cultivated Land'.

Brief mention must be made at this point about the distribution of all PAS data, though this is discussed more fully in the next Chapter (Figure 2.6). PAS data show a strong tendency to cluster, unlike HER data which are more evenly spread across the landscape. This undoubtedly reflects the wider tradition of reporting within HER data, and the strongly focussed method of recovery by metal-detecting in PAS data (Robbins 2012; discussed further in Chapter 3; Appendix 9).

2.5. Methodology

Given the complex nature of the topic of persistent places, in addition to the complex datasets being used, this Chapter moves on to consider a pragmatic and flexible methodology for analysing PAS and HER data at different temporal and spatial scales.

2.5.1. Establishing the Character of PAS Data

As was identified in Chapter 1, there is a pressing need to understand better the character of the parent dataset. Robbins's seven key areas of bias provides a useful framework (Robbins 2012). The first three areas – burial/loss, preservation, and survival – have been dealt with in part in Chapter 1; accordingly, the discussion in Chapter 3 focusses more on exposure, recovery, reporting, and recording. PAS6+
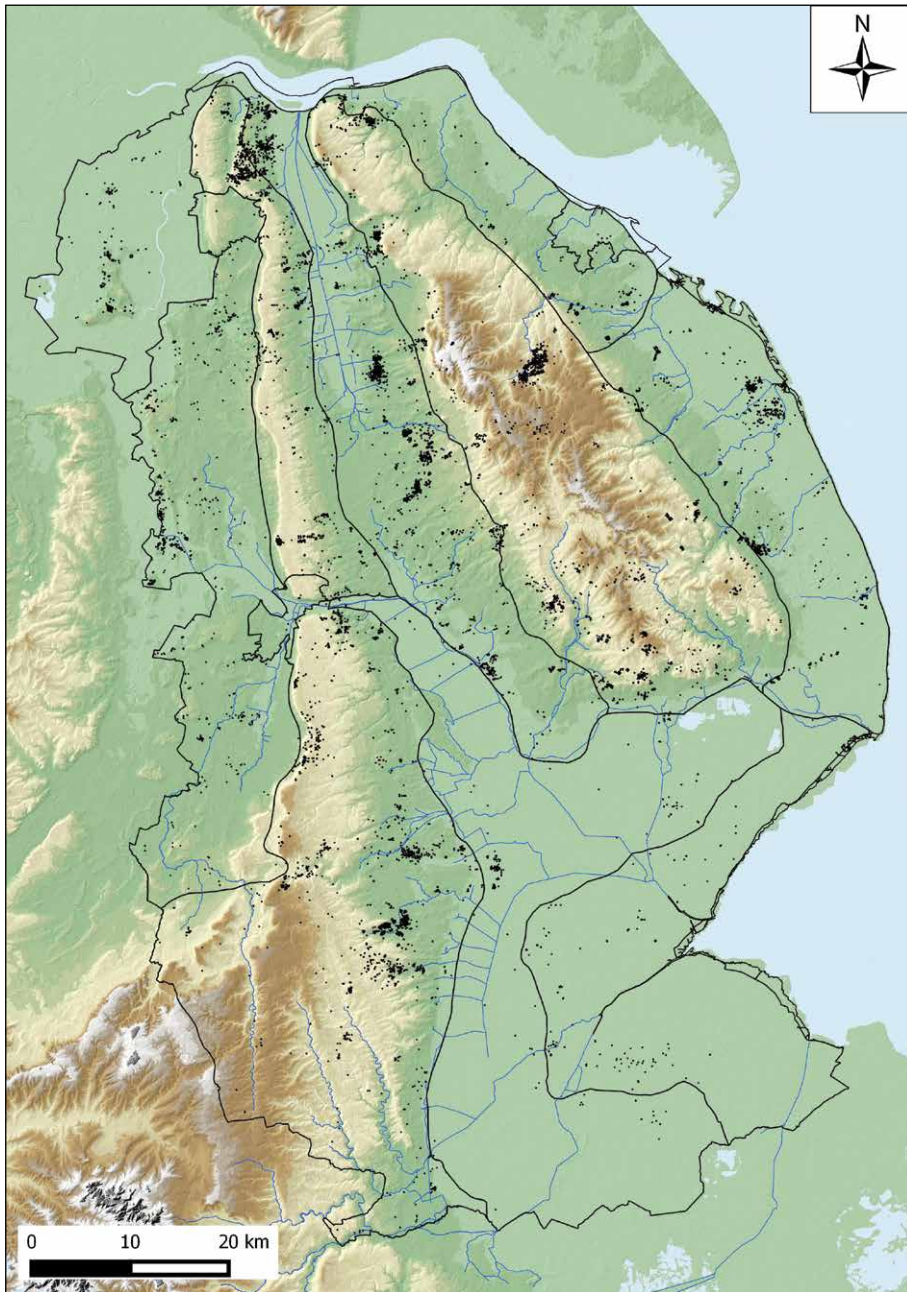
Figure 2.6. All PAS data recorded to six-Figure NGR or better (PAS6+). © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

will be the dataset used to explore these themes, which include aspects such as elevation, slope, and drift geology. Further observations on the character of PAS data as assemblages will be gained through the methodology described below.

2.5.2. Establishing the Relationship between PAS and HER Data (see Chapter 4)

A key question of this study concerns the spatial and temporal relationship between PAS and HER data. To achieve this, it is inevitable that individual finds will have to be grouped together into some sort of 'site', using spatial and temporal boundaries imposed by the user. The theoretical issues surrounding this process have been dealt with in Chapter 1; here, the discussion turns to the main approaches that have previously been taken to PAS data.

The most recent attempts to compare and plot PAS and HER data have been undertaken by Boldrini (2007), Robbins (2012) and Brindle (2014). Boldrini developed an alternative method of mapping in order to allow PAS and HER data to be better used during development control decision making. Boldrini created an Artefact Density Index (ADI) comprising finds that were given weighted values which reflected the precision of individual findspots. An alternative approach is given by Robbins (2012), who calculated the distance of individual PAS finds to HER data, in addition to a range of other features in the modern landscape such as roads, waterways and settlements. Brindle took a different approach in his study of Roman period PAS data, focussing more on assemblages than on point data. Brindle implemented a methodology in which Roman period PAS finds discovered within 200m of each other were classed as being potentially linked, and were therefore defined as an assemblage. If an assemblage fell within 200m of HER data it was seen as potentially being linked to the 'existing' area of activity recorded by the HER. Likewise, if an assemblage fell further than 200m from the nearest related HER data-point it was seen as being a 'new' area of activity (Brindle 2014: 24). In order to reduce the problem of bias, Brindle repeated his analysis at 100m and 400m buffer zones.

At 200m buffer, this methodology resulted in the identification of 29 new 'sites' within PAS data for the Roman period in North and North East Lincolnshire – an increase of 21% based upon the NMR from the region (Brindle 2014: 91).[8] Brindle further divided assemblages into five groups according to the density of finds within them: single artefacts; small groups (two to four artefacts); medium groups (five to ten artefacts); large groups (eleven or more artefacts), and assemblages represented exclusively by non-metal finds (Brindle 2014: 23). Following on from these results, Brindle then turned to site-specific case studies as way of extracting greater meaning from data, and these are, arguably, the analyses that produced the most nuanced understandings as they account for more localised processes and influences.

Brindle's methodology provided a pragmatic 'way-in' to complex datasets, and the core of it is adopted in this present study (Figures 2.7 and 2.8). There are, however, three areas that can be developed to provide a more nuanced understanding of the data. The first concerns the buffer zones implemented to group data into 'new' sites. Brindle argued that at 200m the buffer zone 'sits somewhere within the size range of…different types of settlements, incorporating artefacts that may have been lost or deposited on-site as well as those in the immediate area surrounding a site' (Brindle 2014: 22). However, recent studies of the effects of ploughing have

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8   Based on 'medium' and 'large' assemblages (Bridle 2014).
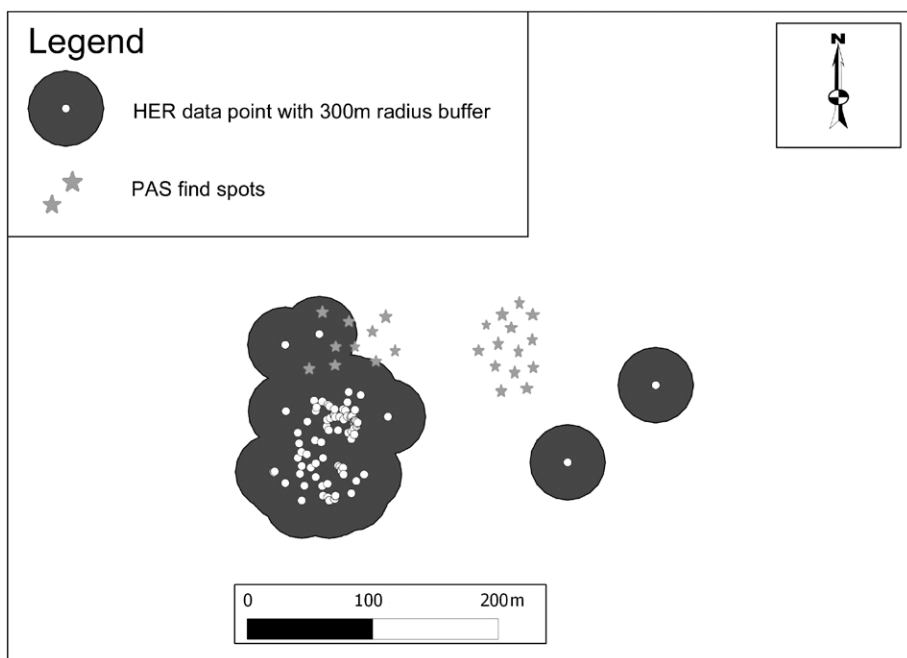
Figure 2.7. Conceptual approach to comparing HER and PAS data.

shown that artefacts can move up to 7m in a single episode (Dickson *et al.* 2005; Diez-Martin 2009). Hypothetically, then, some finds within an assemblage will reach the edge of the buffer zone within 14 episodes of ploughing. Given that many fields are ploughed twice a year, this implies that the buffer zone could be exceeded in as little as 7 years. Most parts of rural Lincolnshire have been intensively ploughed since the end of the Second World War, and it might therefore be prudent to extend the buffer zone to 300m, with 500m offering an additional level of observation. In addition, in order to ensure that the results are as conservative as possible, only PAS records found more than 500m from HER records were classed as 'new'.

The second area for development is in regard to HER data that cannot be dated to one particular period. As was shown earlier in this chapter, a large proportion of HER data pertains to more than one archaeological period. Accordingly, PAS data were analysed against both 'certain' and 'all' HER data for each archaeological period ('all' being certain data and also those that may pertain to that particular period). Thus, analysis was able to be undertaken against four variables: certain HER data at 300m buffer, certain and uncertain HER data at 300m buffer, certain HER data at 500m buffer, and certain and uncertain HER data at 500m buffer.

One final theme for discussion is the name that might be given to PAS assemblages grouped together into buffer zones. Brindle, with due caution, called his assemblages 'sites' on the premise that the area of landscape is a 'site' where some form of activity took place. The term is, however, frequently equated with 'settlement' – a term which is somewhat difficult for the concept of the persistent
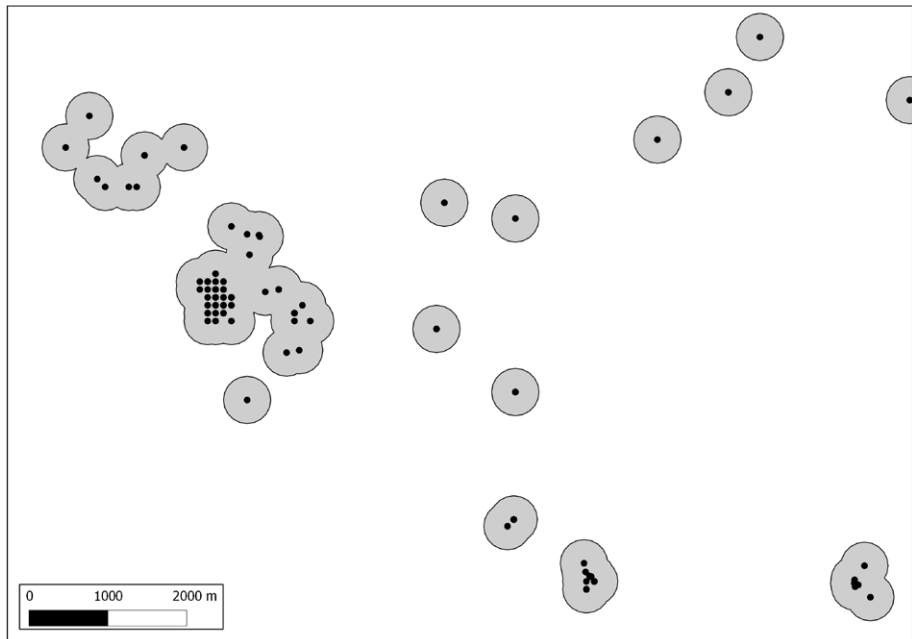
Figure 2.8. Conceptual approach to defining new PAS activity areas at 300m radius buffer. Note the irregular shapes of the resultant activity areas.

place to adopt (see Chapter 1). Accordingly, this present study uses the more neutral term of 'activity area' – a term which implies some kind of human activity having taken place, but whose temporal, spatial, and functional character remains subject to investigation.

2.5.3. Identifying Persistent Places and Exploring Palimpsests

A major research question posed by this study is how one can identify persistent places, and how one can explore the palimpsests contained within them. A methodology that utilises GIS in a pragmatic and exploratory way is proposed. Indeed, the size of the datasets inevitably means that GIS must be used to explore multi-period artefact scatters. Doing so raises various methodological issues covered in Chapter 1 (e.g. MacEachren 1994; Koussoulakou and Stylianidis 1999; Daly and Lock 1999, 2004). It is, nonetheless, the most pragmatic solution, and it is therefore important to stress that GIS is used as an 'extension of our observational equipment', rather than as way of producing 'complete archaeological interpretations' (Wheatley and Gillings 2002: 125); a 'place to think' (Gillings & Goodrick 1996), and a way of exploring datasets that would be too time-consuming to do in any other format. Indeed, GIS is a key feature of the English Landscape and Identities project, which analyses continuity and change in the English landscape from the middle Bronze Age to the Domesday survey (Gosden *et al.* 2012; Cooper and Green 2015). This project includes PAS data, and uses temporal heatmapping as a way of visualising coarse-grained trends across regions.
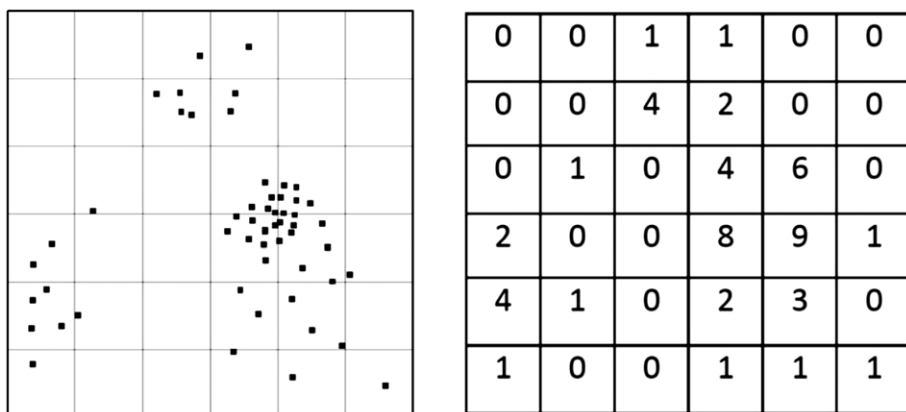
Figure 2.9. Schematic diagram showing irregularly distributed PAS data points (all periods). Left: distribution of point data; right: number of archaeological periods represented.

Turning to persistent places first, the coarse-grained temporal depth contained within HER and PAS data – individually and as a merged dataset – can be visualised by grouping data into 1km squares,[9] and then heatmapping the BROAD PERIOD field using the TIN function (Figure 2.9).[10] The TIN (Triangular Irregular Networks) function joins data points (nodes) through the construction of a network of triangles, and these in turn create a continuous surface morphology (Conolly and Lake 2005: 107). The resultant map depicts variation in temporal depth across the study zone; with 'hot' red areas indicating greater temporal diversity, and 'cold' blue areas representing fewer periods. This provides a more visually dramatic and somewhat clearer way of viewing multi-period data, which in more traditional forms mapping would instead be shown by a variety of symbols. Unlike other site-based studies, this methodology involved no minimum number thresholds; an archaeological period was deemed to be represented within the 1km2 cell on the basis of its mere presence and not its quantity.

In a very coarse-grained way, these temporal hotspots might be thought of as 'persistent places', especially when viewed against the general backdrop of temporal activity within their relative HLC Areas and Zones, as is indicated by merged HER and PAS data. Of course, this method interpolates the trend between data points, and this may or may not always reflect reality; all maps have the potential to create 'chronological fictions, conflating data from different phases of activity and creating an artificial image of the province that is 'true' for no one moment in time' (Mattingly and Witcher 2004: 4). Due caution – in addition to ground-truthing through case studies – is therefore required. Temporal mapping does, however, provide a coarse-grained backdrop that stimulates discussion of a range

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9   This exercise was also undertaken on a finer scale resolution using 100m² cells; however there were too many cells with little or no temporal diversity to make it visually comprehensible.

10   This method encounters difficulty when attempting to display data that crosses archaeological periods. Given the severity of this problem for prehistory in particular, a pragmatic solution was to assign undated prehistoric records a value of 'one' in order to indicate a general presence within the temporal map. Accordingly, a 1km² cell containing Bronze Age, Iron Age and Medieval data would be given a diversity value of 3, as would a cell containing an undated prehistoric record, Iron Age data, and medieval data.

of possibilities; it presents possibilities for interpretation, not interpretations in themselves.[11]

Indeed, a degree of caution is required especially since the methodology being proposed here carries no quantitative thresholds. Davies' evaluation of the multi-period assemblage from Chalkpit Field, Sedgeford, illustrates one such problem (Davies 2008); here, Neolithic, Iron Age, and Roman period finds were discovered during excavation of a Middle Saxon assemblage, but all of the pre-Saxon evidence was found to be probably unrelated to settlement (Davies 2008: 211). A temporal heatmap would, then, produce a false picture of persistent activity. This is not to negate the application of temporal heatmapping, but rather it brings a timely warning of its limitations.

The creation of a smooth temporal surface does, however, complement the theoretical position outlined in Chapter 1, which argued that multi-period PAS data are best understood using the concept of the persistent place (Schlanger 1992). This combination of theory and method results in a perspective that regards the 'landscape as a continuum', in which concentrations of material – regardless of their size and density – can be perceived as 'nodes of social action' (Daly and Lock 1999: 260). This further complements Schlanger's observation that persistent places represent the 'conjunction of particular human behaviours on a particular landscape' (Schlanger 1992: 97).

With a methodology for visualising persistent places established, it is possible to turn to the identification of the palimpsests that form them. For this, the methodology of grouping data into 'activity areas' according to a user-defined buffer zone provides a pragmatic solution. An additional problem of scale emerges with the methodology when considering multi-period PAS data, however. This approach requires the entire PAS dataset, and the dataset is so large that at a buffer resolution of 300m many artefact scatters merge to form extensive polygons that are too large to be meaningfully interpreted. Accordingly, it was necessary to reduce the size of the buffer to 100m (see Chapter 4). The resultant polygons allow us to analyse them for composition, chronology, density, and a range of other aspects. However, again it is important to stress that these polygons are simply a 'way-in' to these data; polygons cannot be used to comment on the reasons for the persistent use of a place; nor is it useful for visualising anything but coarse-grained trends in data.

2.5.4. Establishing a Constraints Map

A shared feature of major studies of landscapes and material culture has been the creation of base maps which show constraints, such as woodland, modern housing estates, lakes, and so on (e.g. Richards *et al.* 2009: 2.4).

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11 A more sophisticated approach to visualising changes in data across the landscape is Trend surface analysis – a method that was successfully used by Green in his study of 'fuzzy-GIS' (Green 2011). This method is, however, negatively affected by insufficient data-points and more importantly, the clustering of data-points (Green 2011: 207ff). Given that PAS data are by their very nature comprised of assemblages that cluster densely at particular points in the landscape, this technique has not been pursued here.

Given that at least 93% of all PAS data in this present study comes from the plough-zone, it can be deduced that any type of land-use other than that for arable purposes represents some form of constraint. Accordingly, instead of plotting all known constraints, a far simpler method is to create an 'inverse' constraints map – that is, a map which shows arable and pasture land as opposed to all other forms of land-use (Figure 2.10). HLC make this a straightforward task in GIS by using the Broad HLC land type 'Fields and Enclosed Land', which contains the following land-use types that are now predominantly used for arable cultivation or pasture: Ancient Enclosure, Estate Fields, Modern Fields, Paddocks and Closes, Parliamentary Planned Enclosures, Private Planned Enclosures, Private Enclosure from Woodland, Re-organised Piecemeal Enclosure, and Strip Fields.

Because of the regional view needed of this general landscape, HLC polygons from the above land-use types were manipulated in QGIS to form one continuous area to show cultivated land as a green, though in reality this area is dotted with farmsteads, lanes and so on. Areas shaded red on the map therefore show all other areas in which it has been demonstrated that metal-detecting is less likely to take place, such as urban areas, woodland, and also those areas of cultivated land where metal-detecting cannot take place such as on Scheduled Ancient Monuments. The majority of PAS finds (blue stars) that occur on red areas are finds discovered in back-gardens, or are finds with no spatial data but which are centred on a town or village.

A simple calculation for the average number of PAS finds per km2 in Lincolnshire as a whole (52, 838 finds from approximately 7002 km2) gives a Figure of 7 PAS finds/km2. The total area for HLC broad type 'Fields and Enclosed Land reduces the available land to 585,343 ha (5853.34 km2), and increases the average density to 9 finds/km2.

The inverse constraints map is, of course, limited in its usefulness in explaining the remaining 5% of finds that are not subject to the same constraints as those recovered by metal-detecting (Robbins 2012: 71). Similarly this type of map fails to show where metal-detecting is not allowed by choice of the landowner (c.f. Robbins 2012: 72). This bias is not insignificant; on the Isle of Wight, for example, 25% of farms have refused permission to metal-detector users, while nearly half have never been asked for search permission (Robbins 2013). Such issues – along with discrete, localised changes in land-use – are best explored through case studies (Chapters 4-6); a regional constraints map can only say so much.

2.6. Conclusions

The methodology has negotiated a pragmatic approach to PAS data, principally through a bespoke use of GIS. However, while GIS allows the rapid evaluation of datasets that would otherwise be too large to analyse by hand, due caution must be exercised to avoid the risk of overemphasising the degree to which the environment has influenced where and when people settled (Gaffney and van Leusen 1995; Fisher 1999; Anschuetz *et al.* 2001: 164). Indeed, the relationship between environment and human activity is complex, and it is now well understood that not all landscapes suitable and/or favourable for human occupation were settled
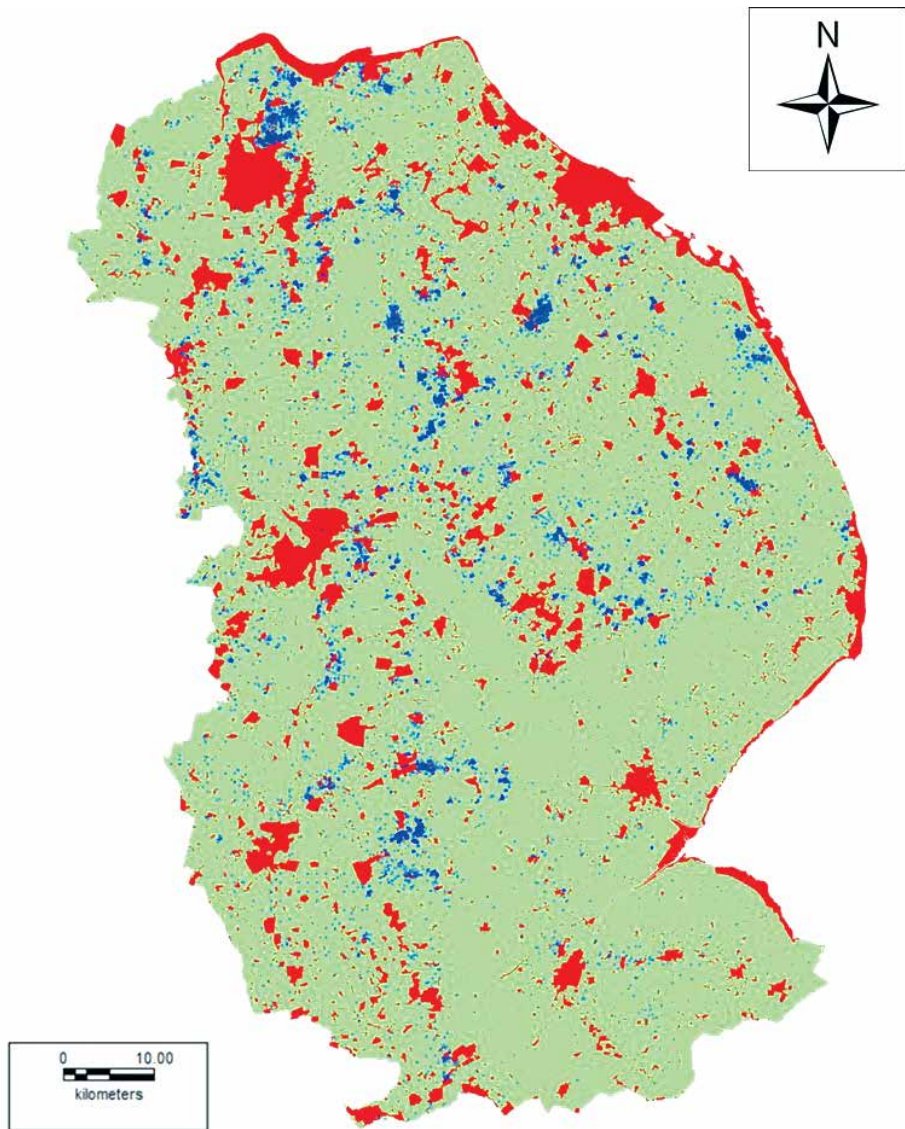
Figure 2.10. Lincolnshire constraints map. PAS4+ (blue dots) is set against areas of cultivated land and pasture (green). All other land types are regarded as probable constraints. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

or exploited (Holdaway *et al.* 2004; Zimmerman *et al.* 2009). Indeed, it is often the case that patterns of land-use are not consistent with assumptions inherent in GIS models (Phillips 2004: 1; Lewis *et al.* 2008: 38). Accordingly, qualitative approaches will also be taken to illustrate further biases, such as those that may occur owing to the turbulent relationships previously had between metal-detector users and archaeologists in the county.

Chapter 3

Landscape and Bias – The Contribution of PAS data

3.1. Introduction

This Chapter explores the character of PAS data and gives an account of how aspects such as sampling, recording and landscape have shaped the patterning we see today. The discussion covers several key areas of bias identified by Robbins (2012), and this reveals a number of significant nuances that are specific to Lincolnshire data at different scales of time and place. Building on this, the discussion then turns to the broad character and contribution of periodised PAS data.

3.2. HER Data

HER data includes a wide range of sources, such as aerial photographs, geophysical survey and excavation, reported by a wide range of individuals and groups over a long period of time. HERs are widely seen as the principal sources of information about the archaeology of an area (Gilman and Newman 2007: section A.1; for discussion of bias see Hancox and Mindykowski 2010). They are, accordingly, the most appropriate source against which to assess the contribution of PAS data. HER data are, of course, also subject to a range of biases, and while a full discussion of the history of archaeological recording in Lincolnshire is beyond the scope of this present study, several observations can be made that may have a bearing on the interpretation of PAS data.

 The first major synthesis of the current state of knowledge since Phillips (1933; 1934) occurred in Priorities 1977, published by the East Midlands Committee for Field Archaeologists (Mahany 1977a). This document identified gaps in knowledge and themes for future research; however, while it coincided with the advent of metal detecting, the research agenda did not consider the potential contribution that data deriving from this method of recovery could make.

 The lack of attention paid to data recovered through metal-detecting mirrored the poor state of relationships between staff at the City and County Museum, Lincoln and metal-detector users during the late 1970s and early 1980s. In 1979 relationships were at a low following the discovery of Saxon artefacts on Council-owned land where it was later discovered the metal-detector user had no permission to search. Lincolnshire County Council reacted by placing a ban on the use of metal-detectors on the land it owned, naming metal-detecting as 'basically anti-social and selfish'…'playing no part in the scientific retrieval of what

is a rapidly wasting national heritage' (Procter and Gunstone 1979); the metal-detecting community responded by refusing to record finds with Council staff. One year later the anti-metal detecting campaign 'STOP' (Stop Taking Our Past) was launched (Thomas 2010: Chapter 5), which had as its secretary the curator of Lincoln museum.

Fortunately, many detector-users chose to record instead with Kevin Leahy at Scunthorpe Museum. Leahy fostered positive relationships with metal-detector users, and while recording finds was mostly a personal venture done in his own time, this resulted in around 1,700 objects being recorded over the 16 years before the scheme started. Only Anglo-Saxon and Viking artefacts from Lindsey were recorded in detail, though other finds were being listed on a card index (Leahy pers. com). As a consequence, the Anglo-Saxon rural landscape became better known for Lindsey than for the county south of the Witham (Albone 2000: 1). Positive relationships with metal-detector users were also being forged by Jeffrey May at Nottingham University who used numismatic data from metal-detecting in his publication Prehistoric Lincolnshire (May 1976).

Just as the popularity of metal-detecting continued to grow during the 80s and 90s, so too did the amount of archaeological field work being carried out across the county by universities, museum staff and other collaborations (e.g. Stead 1976; May 1996), but few of these made use of metal-detectors as part of the wider strategy for fieldwork. The 1970s and 80s also saw the beginning of several other large-scale surveys, particularly of the lowland landscapes of the county, though again metal-detecting did not feature strongly, if at all. Field-walking surveys were undertaken by Hallam (1970) and the Car Dyke Research Group (Cope-Faulkner and Simmons 2004), and further extensive survey was undertaken between 1982 and 1989 under the English Heritage funded survey of the Fenlands of Eastern England (Hayes and Lane 1992; Lane 1993). The Lincolnshire part of this survey brought a greater understanding of the archaeology of the northern Fen Edge in the south-east of the county (Lane 1993), but no survey was undertaken in the Witham Valley (Field and Parker Pearson 2003: ix). The Fenland survey initiated an extensive programme of fieldwalking covering some 2400km2 which identified over 2500 'sites' dating from the Mesolithic to the medieval period (Van de Noort 2002: 90; Hall and Coles 1994: 10). Only 30% of the Fens were surveyed (Lane 2002), however, and this is visible in the distribution of HER data. Whether or not the areas that lay outside the survey area would have produced results is uncertain, though, especially as many of these areas are very low lying and may well have been unusable at a much earlier date (Lane 2002: 138).

Three further major surveys took place in the 1980s, two of which concerned selected parts of the Wolds (Chowne 1984; Chowne 1994; Phillips 1989), while the third concerned the medieval landscape of West Lindsey (Everson *et al.* 1991: 1); none used metal-detecting as a methodology, in spite of fieldwalking being a prominent feature.

The early 1990s saw another large-scale landscape research project focussing on the wetland areas of the county. The Humber Wetlands Project began in 1992 and covered the area below the 10 metre contour line within the watershed of the River Humber, covering some 330,000ha (Etté and Van de Noort: 1997: 1).

The survey included three regions relevant to the geography of this study – the lower Trent valley, the Ancholme valley and the Lincolnshire Marsh (Van de Noort and Ellis 1997, 1998; Ellis *et al.* 2001). The Humber wetland survey identified over 400 archaeological sites and many more artefact scatters, but metal-detecting was not part of the methodology (Van de Noort 2002). More recent work on the Lindsey Marsh has advanced our understanding of the relationship between archaeology and geomorphology of this region, but while this made extensive use of HER data, it only briefly touched on PAS data (Fenwick 2007).[12] Metal-detector surveys were, however, part of the pre-excavation methodology used during the Fenland Management Project Excavations undertaken between 1991 and 1995 (Crowson *et al.* 2000). This project explored the 41 sites identified during the Fenland Survey, though only Saxon sites were subjected to metal-detecting (Crowson *et al.* 2000: 75), but this rarely produced results.

While field-surveys continued to identify new sites, a substantial contribution was made in the early 1990s owing to a revival in aerial mapping of the county akin to the surveys initiated by O.G.S. Crawford seventy years before. In 1992 Lincolnshire became the first and largest pilot project for a systematic aerial archaeology mapping programme funded by English Heritage and the RCHME (Bewley 1998: 9). This was later extended to the rest of the country under the National Mapping Programme (NMP) (Bewley 1998: 9). The 1992 survey did not cover North and North-East Lincolnshire, but limited aerial reconnaissance had sampled the area a few years earlier (Jones 1988). The 1992 survey also only covered a small proportion of the Fens (Kershaw 1998: 18, fig.1b).

The survey covered 4,775 sq. km of Lincolnshire's 5,915 sq. km (81%) and significantly increased the number of known sites (Bewley 1998: 9). Of the 14,043 records created during the project, 67.7% were 'new', in that they had no NMR or SMR reference (Kershaw 1998: 22). 3,736 of these 'new' sites were interpreted as dating to the prehistoric or Roman period, 3,894 to the medieval period and 999 to the post-medieval and modern period (Kershaw 1998: 22). Bias exists within the chronology of sites recorded by the NMP, however; Kershaw noted that crop marks dating to the Mesolithic were not identified, and there were difficulties in identifying crop marks dating to the Anglo-Saxon period (Kershaw 1998: 20). It was also noted that the distribution of crop mark and soil mark sites were biased towards those areas where the combination of soil and geology provide favourable conditions of the appearance of crop marks (Carter 1998: 102). As such, a greater number of sites were recorded from lighter soils, while fewer were noted on the heavier soils, for example the clay vale (Carter 1998: 102; Lane 1995: 53). Further bias was noted due to the concentration of military airfields across the county which has reduced the available airspace and therefore had a negative effect on the ability of aerial reconnaissance (Carter 1998: 96).

One final area concerning HER data requires discussion, and this is the impact of developer-led archaeology upon the current state of knowledge (Department of the Environment 1990; Darvill and Russell 2002; Thomas 2013). Planning Policy Guideline 16 (PPG16) fixed a role for archaeology within the planning process and

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12   Fenwick duly notes that PAS data could have contributed much information, but there was little scope, understandably, to consider these data fully within her study.

provided a framework through which all archaeological remains – not just those that were covered by the ancient monuments legislation – could be systematically investigated (Darvill and Russell 2002: 3).

In Lincolnshire this has resulted in over 4000 grey literature reports,[13] but these tend to cluster around parts of the landscape where development is more intense. In the rural landscape this includes areas such as Baston and West Deeping, where large-scale excavation for aggregates has led to intensive archaeological intervention. More common, however, are smaller-scale interventions in and around the fringes of medieval/modern settlement, and this has resulted, in general, in a greater body of evidence for these places as opposed to rural sites that contain no visible settlement today (Figures 3.1 and 3.2). Indeed, data derived from the planning process are also notably sparse areas where planning is more tightly controlled, such as in conservation areas. Thus, there are far fewer records for parts of the Wolds designed as Areas of Outstanding Natural Beauty (ANOB). This patterning of PPG16 data is therefore almost at direct odds to PAS data, which are more randomly distributed across the rural landscape.

The strong correlation between interventions and historic/modern settlements might well be caused by what has been identified elsewhere as a self-serving closed loop of information (Newman 2010: 3; Evans 2013); HER data is extensively used within the planning process, and planning applications are considered primarily according to the impact on the known archaeological record. Conditions are therefore placed upon areas where archaeology is known, and this causes the 'known' to become better known, while the 'unknown' is left to reporting through chance discovery or exploratory fieldwork.

PPG16 has, however, enhanced our understanding of rural areas especially where pipelines have gone through large stretches of the countryside. These data are limited in their ability to comment on metalwork in two main ways, however. Archaeological contractors infrequently use metal-detecting as a method of survey. The Lincolnshire Archaeology Handbook (revised 2012) suggests that metal-detecting may be undertaken as a form of non-intrusive field work; however, only fourteen events are listed on the Lincolnshire HER as having incorporated metal-detecting in their methodology (Appendix 10); two of these were in response to a major discovery initiated through casual metal-detecting.[14] The involvement of metal-detector users in archaeological works has been offered in the past, however. During the summer of 1992 the Lincolnshire Metal Detecting Liaison Group was established with the aim of bringing together archaeologists and representatives of metal-detector groups in the county. Involvement of metal-detector users on searching of spoil heaps, larger excavations and surveys, the searching of river dredging was suggested, however, the group was abandoned a little over a year after it started (according to unpublished letter in Lincolnshire HER). Indeed, the presence of PAS does not appear to have had much effect on encouraging contractors in using metal-detectors. This is a problem that is not particular to Lincolnshire; there is a common tendency for sites investigated through the

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13   According to Archaeological Data Services, 2013.
14   This Figure is likely to be larger; some projects might have used metal detecting but not mentioned it in the grey literature report.
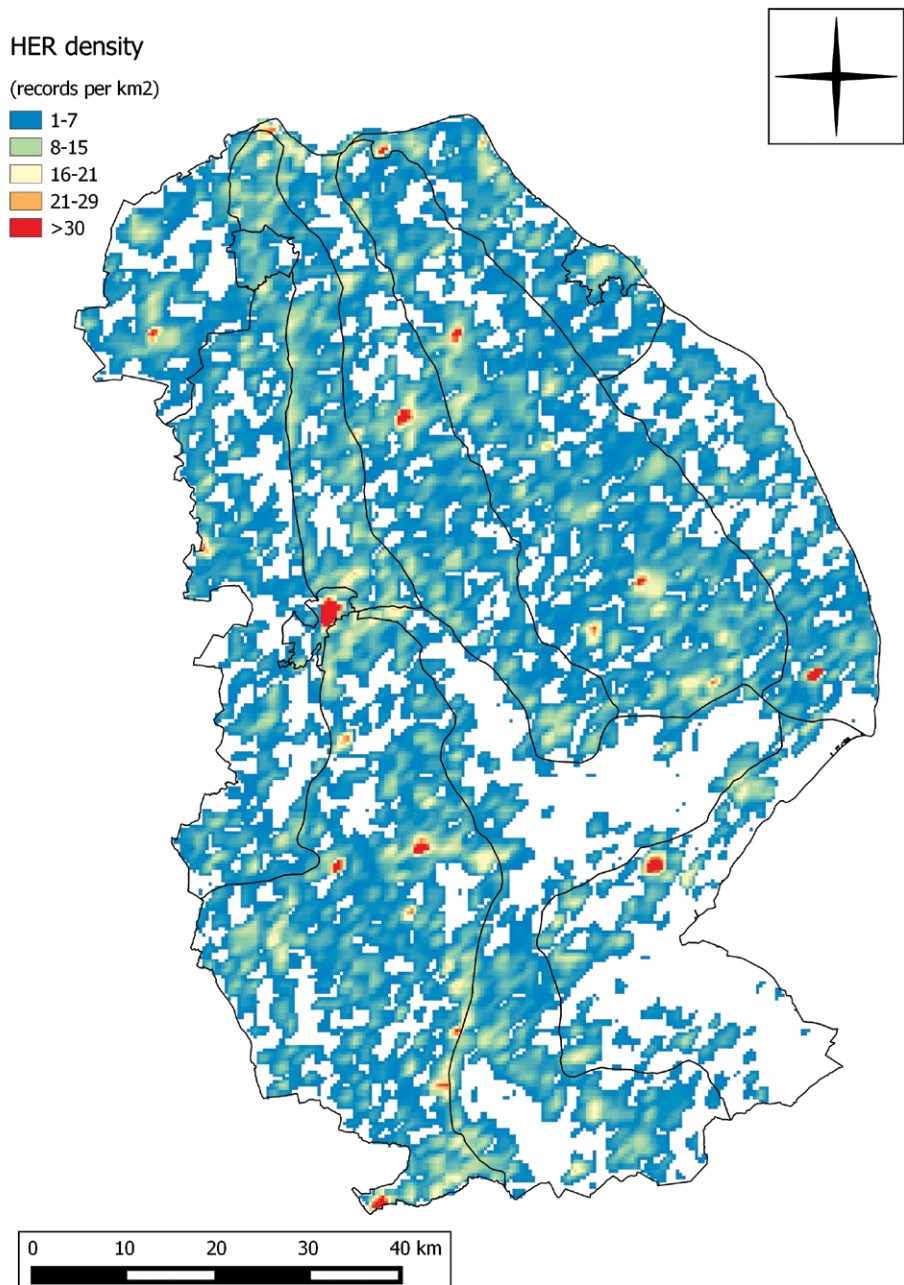
Figure 3.1. Density of HER records per 1km², shown against HLC Areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

planning process largely to ignore the evidence within the plough-zone in favour of the buried archaeology beneath. As a consequence, narratives are often constructed without consideration of unstratified finds (e.g. Evans *et al.* 2014).
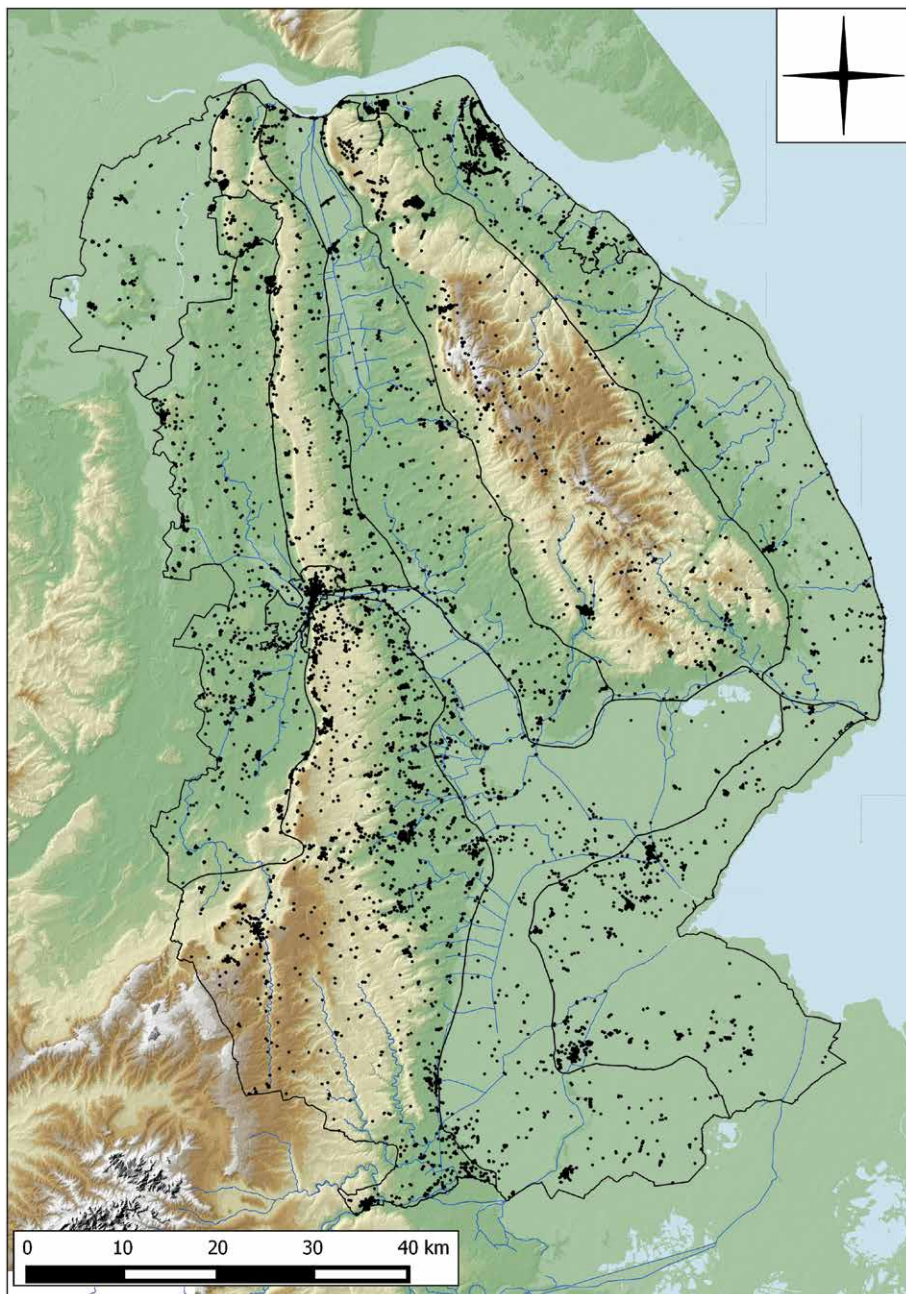
Figure 3.2. HER events resulting from the planning process shown against HLC Areas (note the fewer events in the Wolds and the clustering at Lincoln). © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

This brief overview of HER data has begun to make the point that the types of finds more commonly recovered through metal-detecting are underrepresented within HER data. This is, of course, a problem that the results of this present study will go some way in rectifying.

3.3. The Portable Antiquities Scheme in Lincolnshire

The latter part of the 1990s saw pressure put on the Government from the Surrey Archaeological Society and the British Museum to support a Private Members Bill reforming the law of Treasure Trove (Bland 2009). Following the publication of its discussion document on portable antiquities in 1996, the Government established six regional pilot schemes to promote the recording of public finds (Bland 2009). One was established in North Lincolnshire, building on the work done by Leahy. 2,776 were recorded in the first year, representing a fortyfold increase (DCMS 1998: 30; Figures 3.3. and 3.4). In Lincolnshire, a three-month pilot scheme was established by Lincolnshire County Council in order to gain data to support the assumption that a full-time post was needed. Consequently, David Hopkins was appointed in 1999 for three months, during which time approximately 2000 finds were recorded directly onto the Lincolnshire Sites and Monuments Record (Catney 1999). The pilot schemes proved successful, and in 2003 the Portable Antiquities Scheme was extended to cover England and Wales (Bland 2009).

There are currently two Finds Liaison Officers (FLOs) covering Lincolnshire; one is based at North Lincolnshire Museum and HER, and the other within the HER in Lincoln. In 2003 the author became the first FLO for Lincolnshire, having previously worked as Assistant Keeper of Archaeology at the City and County Museum, Lincoln (now 'The Collection'). Despite the poor relationships that had developed between detector-users and the museum during the 1980s, subsequent curators fostered positive relationships. The arrival of the author to the Museum in 2001 saw him work alongside principal curator Tom Cadbury, who had spent many years previous encouraging reporting and providing identifications for metal-detector users. This brought the author into contact with numerous metal-detector users, who were subsequently generally receptive to reporting when
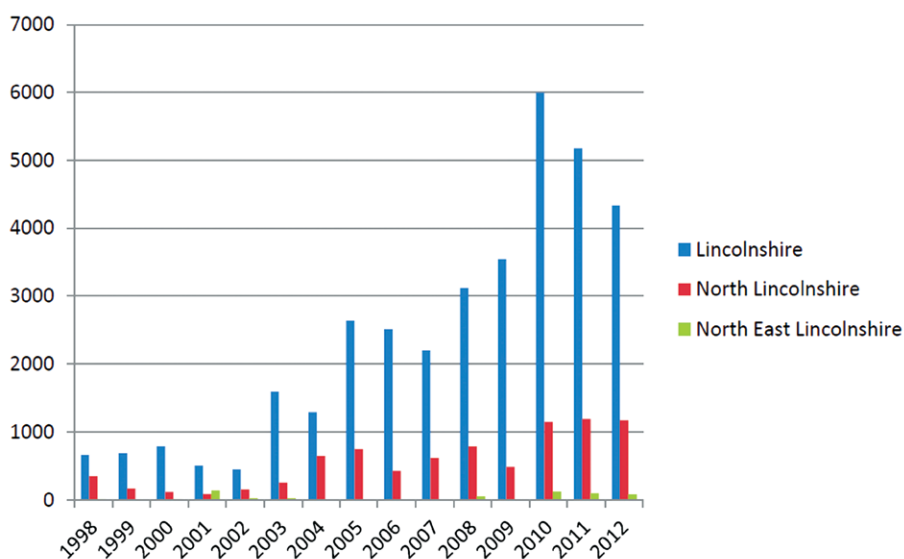
Figure 3.3. Number of records created per year within the study zone, according to modern administrative area (excluding Celtic Coin Index data).
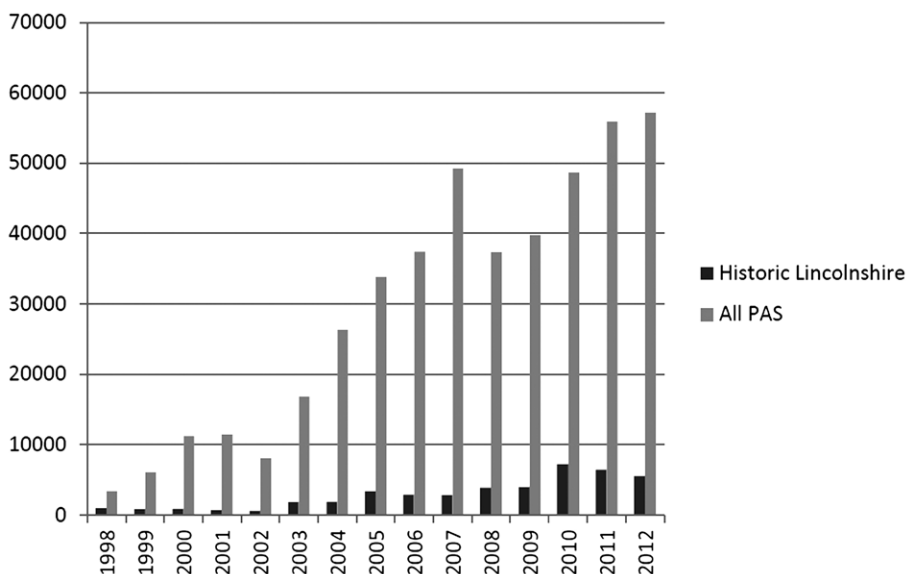
Figure 3.4. Number of records created per year according to the historic county of Lincolnshire and all PAS (excluding Celtic Coin Index data).

the PAS was established in Lincolnshire in 2003. The success of the established Scheme in North Lincolnshire along with Leahy's lone venture prior to this was also invaluable in helping to prepare the ground.

3.3.1. Reporting and Selection of Sites

At the time of data collection, 2273 individuals had reported finds from Lincolnshire, of which 1410 (62%) reported to staff based in the county. Yet, of the total quantity of objects and records contained within PAS4+, 42,211 objects (80%) in 34,205 records (78%) had been recorded by staff, volunteers or self-recorders based in the county. This equates to 62% of the total reporting population reporting 80% of data to PAS staff based in the county. Furthermore, 20,945 objects (40%) in 15,162 records (35%) have been recorded by the author, who has held the post since its establishment in 2003. This reduces negative effects that may result from changes in staff (*cf.* Robbins 2012: 189). Four changes in staff have occurred in North Lincolnshire since the pilot scheme began.

As was mentioned above, there has been a history of poor relationships between professionals and metal-detector users in Lincolnshire, and as such it is prudent to begin the characterisation of PAS data in this light. A recent questionnaire survey of several Lincolnshire metal-detecting clubs by Munday has revealed that reporting is still an issue in the county. Munday's found that while 5 of 21 respondents stated that they always report to PAS, 7 usually do this (i.e. more than 50% of the time), while a further 7 only do this sometimes (i.e. less than 50% of the time). One individual stated that they never report to PAS (Munday 2013). This was in spite of 20 of 21 individuals stating that they had used the PAS in one form or another, and that of these 20, 100% found the FLO helpful (Munday 2013).
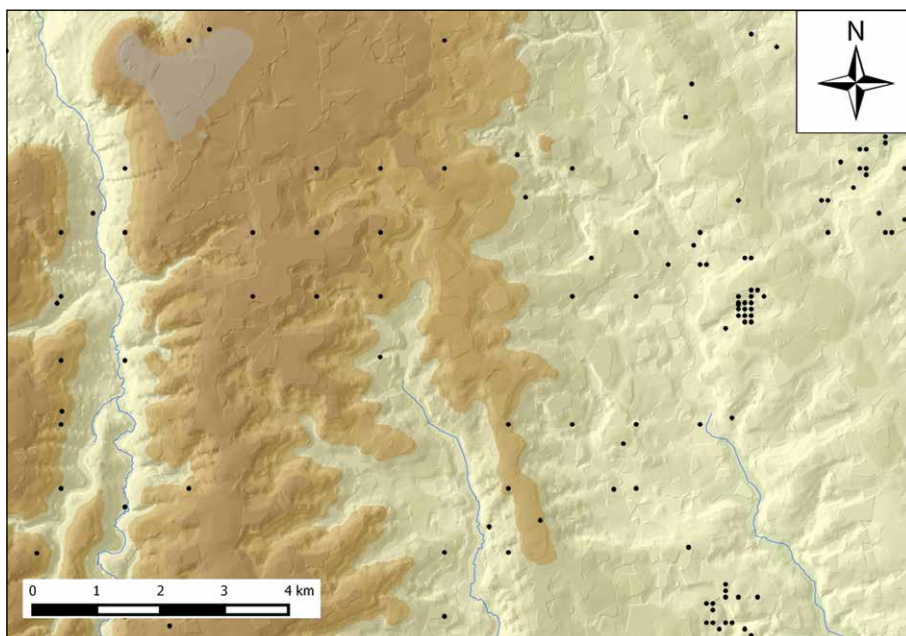
Figure 3.5. Differences in recording accuracy expressed spatially. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

The aftershocks of the turbulent relationships described above are still visible within the distribution of PAS_ALL. Certain metal-detecting clubs in the south of the county, for example, have traditionally given poor spatial data, and this is notable in the Grantham area where point-data form a distinctive grid pattern owing to finds only having a four Figure grid-reference (i.e. 1km2; Figure 3.5). Similar trends are also formed by individuals who take the same stance on recording.[15] These issues do of course disappear when finds with poor spatial data are excluded; the result is, however, a relative lack of data from these landscapes.

Analysis of grid-reference accuracy by district reveals further biases in the spatial quality of PAS data that most acutely affect Boston, North East Lincolnshire and South Holland (Figure 3.6). These areas coincide with the locations of metal-detecting clubs that on the whole have a negative attitude to recording. The lack of finds with good spatial data is exacerbated owing to these being largely lowland landscapes from which PAS already data holds relatively little information. These examples highlight the inevitable bias introduced by stripping out unsuitable data; those districts where there has been a more acute history of poor recording might be statistically under-represented in the GIS analyses that follow later in this study (*cf.* Dobinson and Denison 1995; Thomas 2010; Thomas and Stone 2009).

While the history of turbulent relationships in Lincolnshire accounts for some of the patterning now seen in PAS data, some of this trend can be attributed to the way in which metal-detector users select – and are restricted by – the locations of accessible sites. Robbins sought to understand site selection through the use

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15   Shortly after the date of data extraction, the author made the decision not to record finds that have less than a 6-Figure grid-reference.
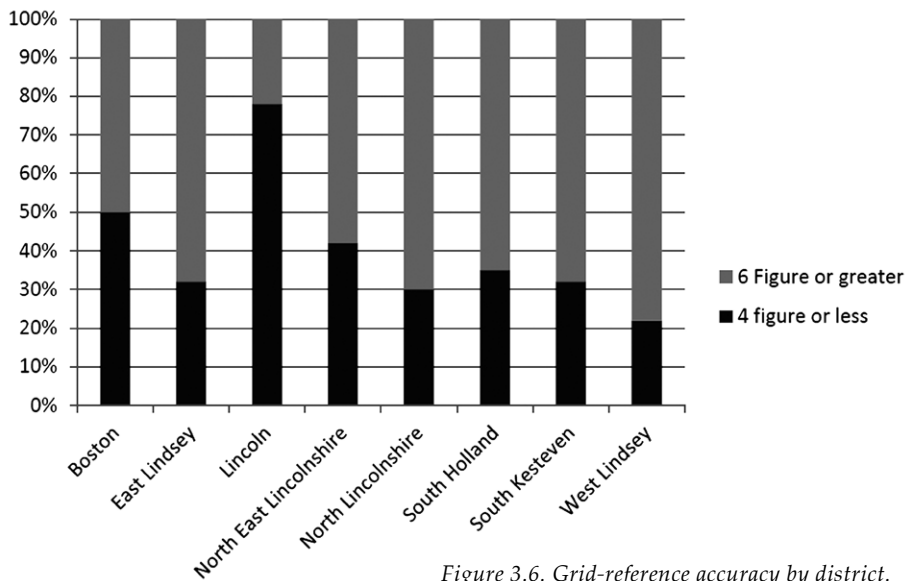
Figure 3.6. Grid-reference accuracy by district.

Finder	Minimum distance to site (km)	Maximum distance to site (km)
A	12	31
B	42	54
C	0.2	32
D	12	27
E	1	37
F	0.5	2
G	0.1	14

Table 3.1. Minimum and maximum distance travelled to site in a randomly selected group of metal-detector users in Lincolnshire.

of a questionnaire, in which metal-detector users were asked to comment on how factors such as distance from home, type of site, and the presence of known archaeological sites affected their search locations (Robbins 2012: 88). Robbins found that while the presence of known archaeological sites was considered important (33% of respondents), the selection of sites was primarily influenced by the response of landowners; 85% of respondents chose sites 'wherever they could get permission' (Robbins 2012: 88). Similarly, Robbins established that a high proportion of metal-detector users did not actively target sites of specific periods (61 % of respondents), nor did they target sites of particular types (68% of respondents). A similar trend was also noted by Brindle in his study of Roman period settlement in North Lincolnshire (Brindle 2014: 90).

Random sampling of Lincolnshire-based finders based on digital data recorded on the PAS data for a) finder's home address, and b) location of recorded find (non-rally), supports these results; there is great spatial variability in the minimum and maximum distance people travel to site, with few travelling more than 40km (Table 3.1). This broadly corresponds with Robbins' findings that the average distance that a respondent was willing to drive was 43-60 miles (Robbins 2012: 93).
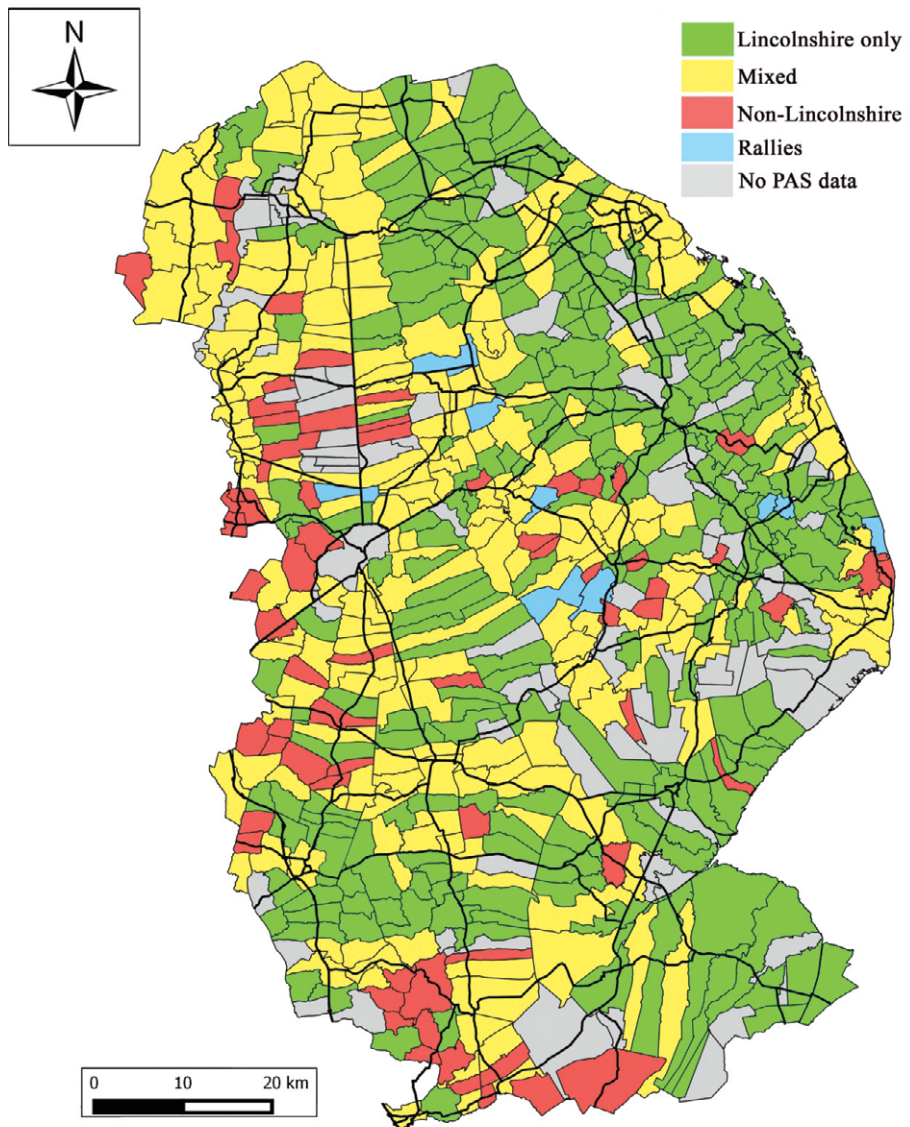
Figure 3.7. The character of metal-detecting in Lincolnshire. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

The trends noted by Robbins and Brindle are also confirmed by a more recent study by Munday (2013) of Lincolnshire metal-detector users who belong to clubs. Munday found that most metal-detector users who belong to clubs in Lincolnshire usually travel up to 10 miles, but on occasion would travel up to 50 miles (Munday 2013). Regarding the factors that influence how a site is chosen, Munday also found that 86% of respondents did not speak to a professional, while 62% never consulted a book. Instead, most undertook research by either talking to a friend or by looking at a map (Munday 2013). Regarding permission, 57% of respondents reported that they 'often' encountered difficulty in gaining permission

(more than 50% of the time), while a further 38% reported 'sometimes' (less than 50% of the time) (Munday 2013).

The issue of site selection inevitably entails issues of access, and to this extent the road infrastructure comes into focus. 38% of finders reporting finds from Lincolnshire live in counties other than Lincolnshire, and there is – naturally – a greater tendency for those parishes that are searched by out-of-county detectorists to be located on or near to primary roads. This can be visualised by colour-categorizing parishes according to whether they are searched by local finders only, by out-of-county finders only, or by both (Figure 3.7). Conversely, parishes searched by local metal-detector users tend to be located in more rural areas away from the primary road network, which probably reflects issues of distance and reduced ease of access, and the tendency identified elsewhere for rural farmers to grant search permission to local, recognised individuals. This trend was also identified by Robbins for other counties (Robbins 2012: 90).

Some of these parishes do, of course, produce large quantities of finds and are returned to seasonally over long periods of time, for example at Revesby, Torksey, Osbournby, East Kirkby, Appleby, Lissington, Wickenby, Roxby cum Risby, Barton on Humber, and East Keal. The same is true of sites on which large-scale rallies have taken place, and where individuals have access to certain 'high-yield' sites, such as at Osbournby (see Chapter 4). Large-scale organised rallies have returned to sites at Alford and Hatton, but not to Stixwould and Woodhall, Grange-de-Lings, North Carlton or Linwood. These trends reflect common search habits regardless of county; Robbins demonstrated that clubs tended to make repeated visits to high-yield sites, while low-yield sites are less likely to be re-visited (Robbins 2012: 96).

These trends within the way the landscape has been searched have a great impact upon the pattern of density within PAS data (Figure 3.8). Indeed, heatmapping of the density of records within PAS6+ shows them to be somewhat erratically distributed across the county (the top 100 parishes by density are given in Appendix 11). Interestingly, only one large-scale 'organised' rally site features in the top 20 densest parishes for PAS records; rather, the highest density parishes tend to be those in which high-yield sites are located, and to which individuals and clubs frequently return. This spatially varied history of recording does, of course, have a relationship with temporal diversity – a matter which is explored in depth in Chapter 4.

| Rally	Date	Attendees	Reporters	FLOs or volunteers	Finds reported
Hatton	2006	circa 300	Unknown	0	c. 281
Hatton	2007	circa 300	54	3	117
Stixwould	2008	circa 300	51	4	c. 200
Linwood	2009	circa 300	119	3	383
Grange de Lings/North Carlton	2010	circa 500	127	4	307
Alford	2011	circa 400	118	4	261
Alford	2012	circa 250	48	3	83
Hemswell/Kirton	2013	circa 150	42	4	80

Table 3.2. Reporting trends at metal-detecting rallies.
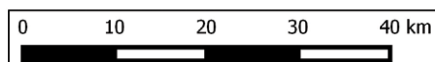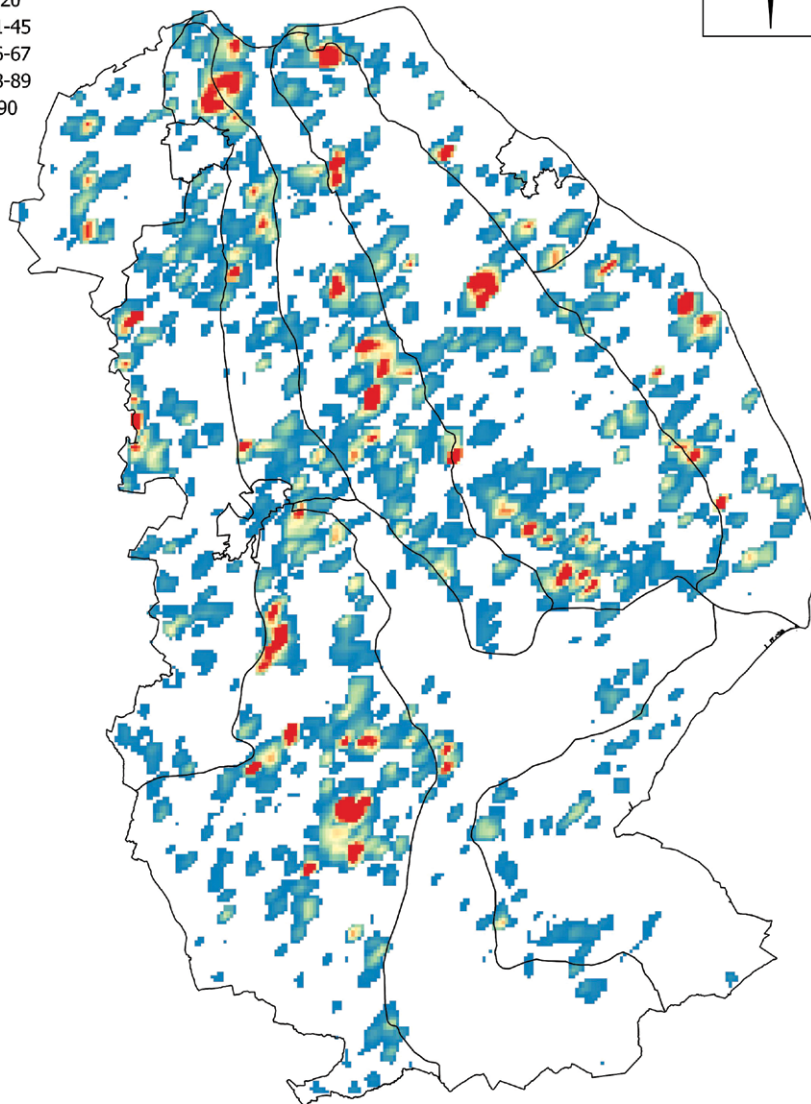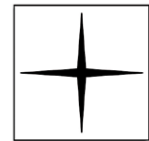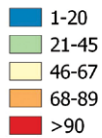
Figure 3.8. Density of records within PAS4+ shown against HLC Areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

Bias introduced through reporting and recording is just one area that affects PAS data and the interpretation of palimpsests; legibility is also highly dependent upon the character of the historic and modern landscape, and also upon a range of post-depositional processes that may affect patterning of PAS data at different spatial scales. These are discussed in sequence below.

3.3.2. Manuring and Refuse Disposal

Increasing attention has been given to the identification of manuring scatters in the archaeological record (Hinton 2010; Fowler 1997: 268; Beresford and Hurst 1990: 43-44; Jones 2005, 2012). Manuring is the process whereby organic material is added to soil in order to increase its fertility – a practice that has been in use since at least the Iron Age (Fowler 1983; Jones 2005), and possibly even extending back to the Neolithic (Bradley 1978: 41). It is particularly well documented for the medieval period where a number of documents describe techniques such as the digging in of animal manure from stalls and animal pens, the ploughing in of green manure such as stubble, and the addition of farmyard, household, and urban waste (Campbell 1983; Jones 2005, 2011; Gerrard and Aston 2007: 156).

Later diaries, journals and letters from Lincolnshire farms and estates indicate that manuring was a regular and important part of agricultural practice; on the Isle of Axeholme, for example, warpland was manured with 15 or 20 tons per acre of horse and cow dung sourced from Hull and London (Beastall 1978: 365). Similarly, field records dating 1829-49 from a farm at Stenigot document wide-scale spreading of prolific quantities of 'town manure' (Beastall 1978: 208). Manuring also explains the prolific number of post-medieval and modern metal buttons that are ubiquitous in the collections of metal-detectorists. Old garments (or shoddy) were intentionally spread on fields as manure (Robbins 2012: 29; Wheeler 1913), and while the fabric rotted down over time, the metal fittings were eventually ploughed in. A similar process is thought to account for the many thousands of modern copper-alloy carpet rings that are found every year.

The archaeological evidence for manuring is occasionally seen indirectly, such as at Wharram Percy, Yorkshire, where excavation of a peasant house at the medieval village revealed a floor that was so thoroughly and repeatedly swept that it had become dished (Bond 2000). However, it is more commonly seen in scatters of pottery, which after being swept up with household detritus were then spread onto the fields. As might be expected, many manuring scatters create a halo-effect around a settlement, and in some cases these have been useful in identifying different farming regimes (Brooks 2002; Jones 2005; Jones and Page 2006).

HER data contains information on 90 ceramic scatters that are suggested to derive from manuring, but is it likely that many more scatters remain unidentified (for example Herbert 1997: 5; LHER 89335). These range in date from the Roman to the post-medieval period, but all have in common the fact that they derive from the peripheries of settlement. Lane, for example, noted that the fields surrounding many of the Roman spring-line settlements contained low quantities of sherds, perhaps indicating the extent of arable activity – in the form of manuring – undertaken by the occupants of these sites (Lane 1995: 25). Lane also suggested that the practice of manuring might have even been more acute in Lincolnshire owing to the vast areas of heathland that are prone to soil exhaustion (Lane 1995: 20). Manuring, then, is likely to be more prevalent in certain landscapes within the county, and this may hold implications for the interpretation of surface scatters.

Few studies have explored manuring through the lens of metal-finds, however, and it is currently rather problematic to suggest that the proliferation of low-density finds within Lincolnshire PAS data necessarily relate to this process. Brindle suggested that the tendency for Roman period metal objects to be found away from middens indicated that they were more likely to be the process of depositional activities 'other than having been discarded as rubbish' (Brindle 2014: 16). Brindle furthermore suggested that the presence of coins within an assemblage might be a reassuring indication that an assemblage reflects depositional activities other than manuring (Brindle 2014: 16), based on the notion that people rarely throw away coins. While this suggestion has some merit, Brindle concedes that coins may at time have been deliberately discarded as devalued items or swept up with household waste or waste from public areas (e.g. Casey 1986: 81; Metcalfe 1998: 14; Mayhew 2002: 17). Indeed, this appears to also be the case for Middle Saxon sceattas – a type of coin once thought of having a restricted and 'elite' use, but which are now known from rubbish deposits and floor surfaces (Rippon 2010: 51).

The situation is complicated by the way in which rubbish was also sometimes disposed of at offsite locations. In France it has been shown that material sometimes clusters at village margins, presumably having been deposited in specially dug ditches (Suchodolski 1996: 319). Similar scenarios are seen in Lincolnshire (e.g. Moorhouse 1974), and notably at the Anglo-Saxon settlement at Flixborough, Lincolnshire, where artefacts were deposited into a large communal rubbish pit over many years (Loveluck 2007).

Where analysis of metal artefacts has taken place, it has been placed alongside data from ceramics. The Bosworth Battlefield Trust and Flodden 500 Project have, for example, explored the character of ceramic distributions, and from that established which scatters were likely to represent manuring (Flodden 500 Project: 2009). In both instances the spread of metal finds was then plotted and interpreted against this backdrop. This technique assumes, however, that metal-objects had the same life-cycle as ceramics, which might well not be the case. Either way, systematically collected ceramics and well-plotted PAS data rarely coincide to enable such a study.

At present, then, it is prudent to acknowledge that some low-density scatters recorded on PAS – especially those from the periphery of settlement – may represent manuring, but one should not assume this to be the rule. Detecting such finds is exceptionally difficult at a regional or even sub-regional scale of mapping. Accordingly, this issue is developed further in the case studies presented in Chapters 4-6.

3.3.3. Dredging

Works undertaken to install, modify, or dredge waterways has also often led to the exposure of archaeology, and this is particularly noticeable in lowland Lincolnshire owing to its high density of inland waterways and drained fen and marsh (Honnor & Lane 2002: 1, 8; Figures 3.9 and 3.10). Indeed, the frequency with which archaeological material was being found led to the establishment of a series of dyke surveys in Lincolnshire during the 1970s and 80s (Chowne 1980; French and Pryor 1993).

Figure 3.9. Dredging of the Great Eau at Withern. Image copyright Richard Croft. This work is licensed under Creative Commons Attribution-Share Alike 2.0 Generic Licence.

Figure 3.10. Recently dredged ditch near Skidbrooke, with spoil heaped several metres into the field. Photo: Author.

Dredged antiquities include the vast array of prehistoric, Viking and medieval caches from the River Witham found during works in the eighteenth and nineteenth centuries (May 1976: 165; Everson and Stocker 2003b; Field and Parker

Figure 3.11. South Beck at Osbournby. The beck has been mechanically deepened and now cuts into underlying sands and gravels. Image copyright Kate Jewell. This work is licenced under the Creative Commons Attribution-Share Alike 2.0 Generic Licence.

Pearson 2003). Numerous finds have been dredged from other sites (c.f. Moore 1974; HER no's 61788, 61287, 61288); widening of the Car Dyke at Haconby in the early 1800s uncovered a 'Roman anchor and the skeleton of a man' (HER no. 33132), while Constantinian coin moulds were found during cleaning of the Car Dyke at Nocton in 1811 (Trollope 1872: 81).

Undoubtedly, some of the find spots recorded by PAS relate to items recovered and subsequently moved through dredging, though their identification as such within the plough-zone is often difficult. In 2012, dredging of a ditch in Legsby, Lincolnshire resulted in a large quantity of Roman pottery being deposited on the adjacent field (PAS ref. LIN-01F664). Similarly, a gold Anglo-Saxon sword hilt from Stainton by Langworth, Lincolnshire, and now in the British Museum, is thought to have derived from deposits dredged from the Barlings Eau.[16] The sword fittings were discovered through metal-detecting and subsequent excavation of the find spot revealed the finds to have been deposited on the river bank in a layer of alluvium which also contained a silver short cross penny of Offa and a modern light bulb fitting. Dredging is also likely to explain the concentration of Lower Palaeolithic hand-axes at Osbournby, where they are found in the plough-zone either side of the Beck mixed with riverine sands and gravels (Figure 3.11; see Chapter 4 for further discussion).

This is also likely to be the case at Sudbrooke, where a group of late Iron Age and Roman terret rings were discovered either side of a stream (Joy 2006: 57). The objects are likely to have derived from a hoard, which was later redeposited

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16 PAS reference NLM6885; British Museum accession number 2006, 1001.1.

through dredging, with objects becoming dispersed up to 30 metres apart. A similar occurrence was noted with a late Bronze Age sword blade from Norfolk, where three adjoining pieces were found on arable land on both sides of a stream (PAS ref. NMS-90CAB7). Dredging also certainly explains the Anglo-Scandinavian lead brooch from Skidbrooke, found within a mound of recently dredged material (PAS ref: PUBLIC-9AA0E3).

Objects from other counties recorded on PAS that are assumed to have derived from dredging include a Roman bracelet from Berkshire (PAS ref. PUBLIC-EFB8A1), a clay pipe from Staffordshire (PAS ref. PUBLIC-0D6602), a 17th century skillet (PAS ref. SUR-4A3B77), an Early Medieval brooch (PAS ref. KENT-3E9B33), and 117 objects of Roman to Post-medieval date found during searching of spoil from a dredged sewer drain in Sandwich (for example, PAS ref. KENT-65A2A4).

3.3.4. Imported Topsoil

In some cases PAS data may not relate to the past use of a landscape at all, instead being items imported accidently with topsoil. Topsoil is frequently moved to fill in ditches and dykes, often to create larger fields. Such was the case recently at South Somercotes, where two years' worth of dredged material was moved over 1km to fill in a 520m stretch of dyke (Figure 3.12). The volume of material needed to fill in this dyke is estimated to have been around 1000 cubic metres and was extracted from an area producing medieval finds. Unfortunately this was deposited in an area also producing medieval finds, and a degree of mixing is possible. Of course, dredging usually only takes out more recent accumulations of sediment, but deeper scouring also occurs.

Topsoil is also frequently moved around farm holdings as a result of the harvesting process of potatoes and other root crops. Harvested crops are usually transported to the farmyard by trailer for grading (Figure 3.13), and the amount of topsoil that accompanies the crop varies depending on the weather. Two farmers – both of whom are also metal-detector users – independently stated that in wet conditions up to 40% of the volume of a 14 tonne trailer might contain soil (circa 6.4m3), while in average conditions this might be up to 10% (circa 1.2m3). The graded soil is then usually transported back to the field, and placed wherever there is space or wherever it is desired. This occurs '8 or 9 times out of ten'. During the other times the soil is placed back on other fields as is desired or convenient.

One might argue that this is of minimal impact to plough-zone archaeology; however, the aggregate impact is significant. 22% of the total horticultural output of England is produced in Lincolnshire, 28% of field vegetables and 40% of bulbs and flowers. Nationally, South Holland alone comprises 5% of the entire English potato production area (Lincolnshire Research Observatory 2011). In 2009 alone, the county produced 13,650 tonnes of potatoes (Lincolnshire Research Observatory 2011).

A conservative estimation, therefore, might envisage some 1,365 tonnes of soil being moved within or across fields each growing season simply through the grading of soil from potatoes. At worst, that Figure could be up to 5,460 tonnes.

Figure 3.12. Imported topsoil taken from an area circa 1km away, ready to be used to fill in the dyke to the right of the digger. Photo: Tom Redmayne.
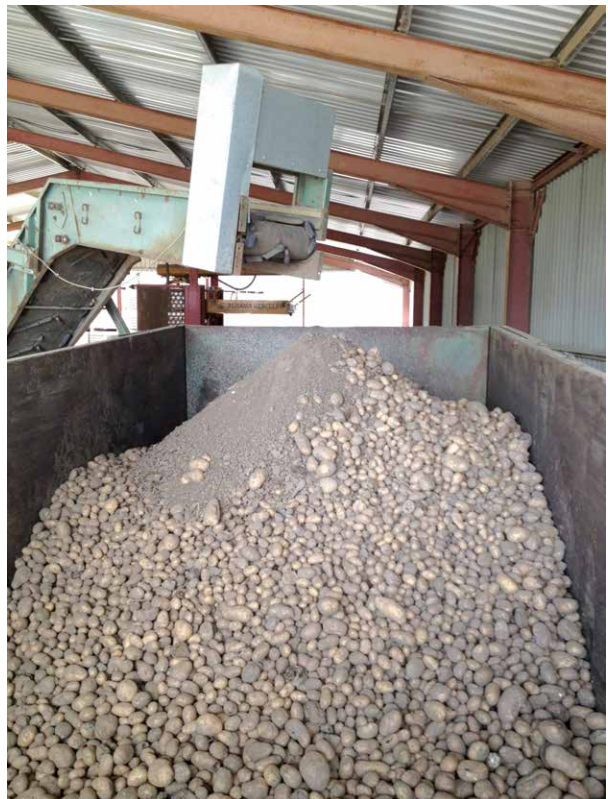
Figure 3.13. A potato grader at work at Great Hale, Lincolnshire. Photo: Author.

Going by the comments made by the farm manager, at least 10% of this (546 tonnes) might end up on different fields each year.

A similar pattern is also created by the harvesting of sugar beet. According to British Sugar, over 300,000 tonnes of soil are brought in each year with the 7.5 million tonnes of sugarbeet that it purchases from UK farmers (British Sugar 2015). This is then resold as topsoil to the landscaping industry; around half of it is returned to agricultural land (British Sugar 2015). Extrapolation of these figures suggests that since the creation of the Portable Antiquities Scheme in 1997, 4.8 million tonnes of soil has been redistributed via sugar beet harvesting alone, while at least 21,840 tonnes has been moved during the harvesting of potatoes. However, given the range in the grading of soil it might be presumed that only low-grade soil holds the potential to contain artefacts. More concerning, though, is the fact that this is not necessarily a modern phenomenon; shortly before 1849 nearly 50 tonnes of soil was extracted from a pit containing a large quantity of Saxon antiquities in Southampton and sold on as manure (BAA 1850: 162).

Identifying such finds within HER and PAS data within the plough-zone is difficult, but some are known. In the parish of Marston, Cheshire, two Bronze Age axeheads were discovered in a grader after harvesting for potatoes (PAS refs. LVPL239 and LVPL245), while in Shropshire a Venetian soldino was found in the turf of a newly laid lawn (PAS ref. HESH-FBE567). Other finds discovered in topsoil include a Neolithic axe (PAS ref. GAT-77EB04), and a fragment of a medieval lead window vent (PAS ref. CAM-E950F7). Yet, the process of soil movement is perhaps no clearer however than in the case of a fourth-century nummus discovered in a bag of potatoes bought from Sainsbury's. The label on the potatoes stated that they had been grown in Lincolnshire (Reavill pers. com).

The potential archaeological impact that the movement of soil can have is illustrated by archaeological investigations recently undertaken in advance of the construction of a new gas compressor station at Hatton, Lincolnshire (Ward 2011). Twenty-four pieces of worked flint were recovered, along with seventy-eight sherds of pottery ranging from Roman to the early Modern. Also included were 103 fragments of ceramic building material, two iron objects and one animal tooth. Excavation also revealed that this area had been previously disturbed, and that the soil – including the artefacts – had been introduced previously during ground moving works for the nearby original compressor stations (Ward 2011: 5). Had this deposit been ploughed one would have little hope of telling 'real' archaeology from false patterning.

3.3.5. Artefact Movement within the Plough-Zone

A key interpretative issue regarding plough-zone assemblages is the degree to which the process of arable cultivation has spread the mother population (Ammerman 1985; Spandl *et al.* 2010). Horizontal displacement within the plough-zone is an undeniable occurrence, but it is not one that renders the assemblage to be of no practical value (Reynolds 1988; Steinberg 1996); rather, a detailed understanding of the process helps us to adapt our questions to suit the signal being emitted by these finds.

Figure 3.14. Field boundaries and associated search permission causing an artificial restriction of an artefact scatter at Skidbrooke. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

Several studies have sought to understand the issue of artefact movement in the plough-zone, either through practical experiments using modern artefacts (Dickson *et al.* 2005; Timms and Hopkinson 2006; Spandl *et al.* 2010), or through computer simulation (Yorston *et al.* 1990). The results vary somewhat, undoubtedly owing to the impact of local conditions on the assemblage. However, all agree that ploughing results in a halo of decreasing artefact densities around the original place of deposition owing to the effect of repeated ploughing alignments (*cf.* Kaptijn 2009: 56; Diez-Martin 2009). Over time the halo pattern itself becomes considerably confused as subsequent ploughing further moves objects in different directions (Reynolds 1988: 209). What is left, then, is 'not the 'site' familiar to archaeologists but rather a distinctive 'site signature' (Schofield 1991).

The loss of the original signature is, however, often confined by natural or human-made boundaries such as ditches and dykes, streams, and hedges (Boismier 1991, 1997; Kaptijn 2009: 57). The confinement of scatters is an obvious feature within PAS data, especially in the former wetland areas of the county which contain a greater amount of drainage ditches and thus smaller strip fields (Figure 3.14).

The degree to which finds move within their boundaries differs somewhat between studies owing principally to the uniqueness of each place – both in terms of topography and the way in which different forms of machinery are used. In general, however, artefacts usually move somewhere between 5 and 10m per episode of ploughing according to the direction of plough (Reynolds 1988; Dickson *et al.* 2005; Spandl *et al.* 2010: 28ff). Of particular concern are those
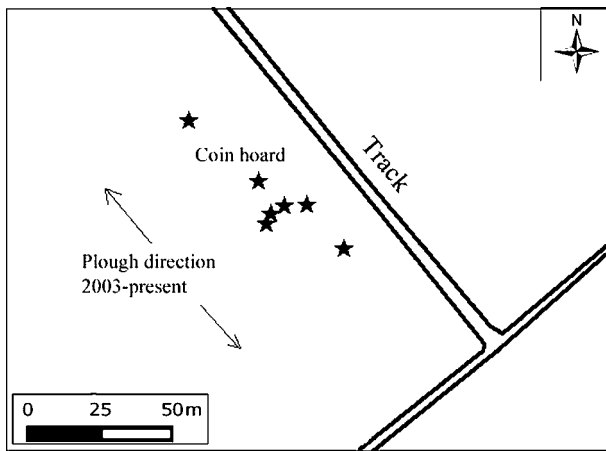
Figure 3.15. Distribution of dispersed Iron Age gold coin hoard at Stixwould. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
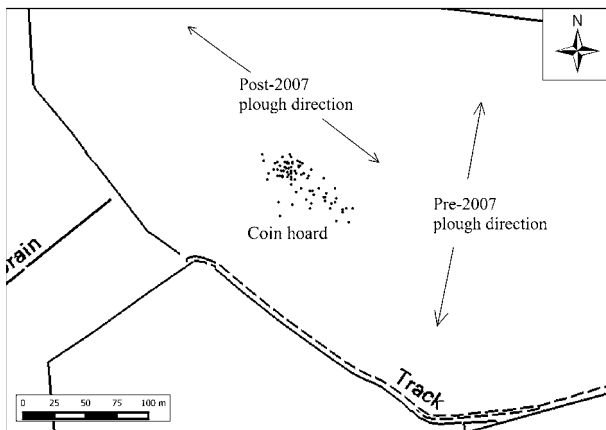
Figure 3.16. Distribution of dispersed Roman coin hoard near Spilsby. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

occurrences where artefacts are displaced over much larger areas owing to them getting stuck within the wheels of a tractor. This was observed at Ladybridge Farm, near Nosterfield in North Yorkshire, where a group of shattered beads were found 30m away from their original place of deposition (Dickson *et al.* 2005).

From this one might conclude that the degree to which scatters have now lost their original signature will depend on how long the assemblage has been in the plough-zone and how intensively it has been worked. The intensive way that much of the county has been worked may indicate that we should expect the worst. This process is, of course, difficult to read within PAS data in the absence of excavation, but a number of instances hint at the problem. In 2008 a dispersed hoard of late Iron Age gold staters and silver units was found on a rally at Stixwould. The original cluster of nine coins was described by the finders as coming from an area measuring 10m in radius. A further five coins were found, and these were plotted using a handheld GPS. This revealed a central cluster with outliers stretched out some 40m in either direction along plough furrow. GoogleEarth imagery suggests ploughing has for many years followed the alignment of the field boundary (Figure 3.15). A similar pattern was found more recently near Spilsby (Treasure ref. 2014 T629), where a hoard of 206 late Roman copper alloy nummi was found within the plough-zone, but clearly dispersed 90m along the axis of
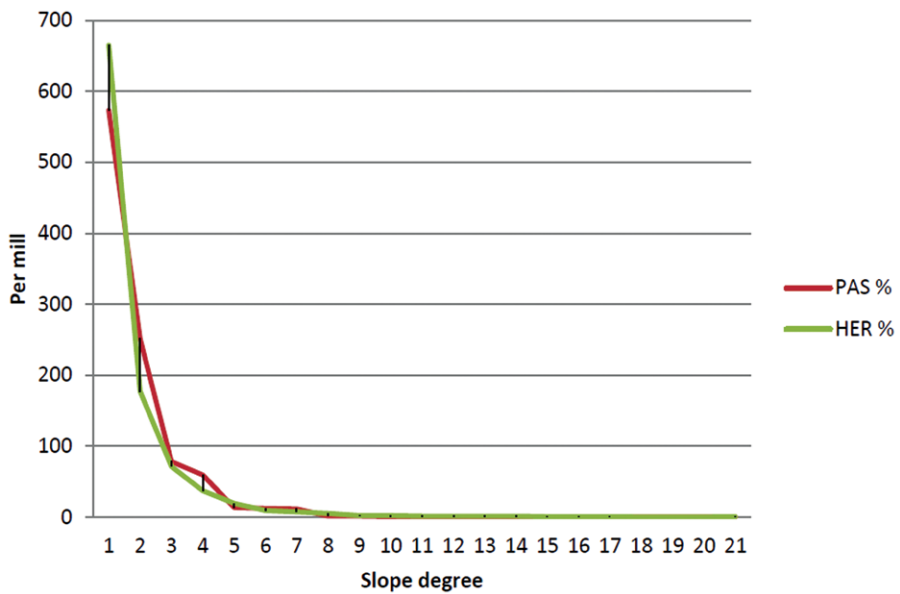
Figure 3.17. HER and PAS data by slope.

ploughing (Figure 3.16). Here, GoogleEarth imagery revealed that the field in question had been ploughed in a broadly north-south alignment between 2003 and 2006, and in a north-west to south-east alignment thereafter. This change in plough direction probably explains the dispersal of coins in two directions from the core area. Essentially, these examples indicate that where Middle Saxon or earlier 'sites' are ploughed in the middle ages, this appears to have no little effect on the distribution of the palimpsest. Rather, artefacts remain within boundaries that were late established, thus the effect of open-field farming on the movement of earlier artefacts was not significant (Jones pers. com.).

Yet, while finds undoubtedly move around in the plough-zone, excavation often reveals clusters still lie within the general area of sub-surface archaeology (see Chapter 4). Indeed, this was the case at Cottam in Yorkshire, where subsequent excavation of a cluster of Middle Saxon objects revealed an enclosure of the eighth and ninth centuries (Richards 1999a).

The movement of artefacts is, of course, often thought to be exacerbated in undulating landscapes where downward slope movement of soil occurs (Ammerman 1985; Wilkinson *et al.* 2006). Logically, convex areas suffer the greater soil erosion, while concave areas experience soil accumulation (Taylor 1979; Orton 2000: 58). Yet, recent experiments to map multi-period/multi-material artefact scatters on low-angled slopes within a lowland river valley environment concluded that there was very little movement of artefacts (Hosfield 2008: 13). The topography of Lincolnshire is varied, and slope is more of an issue for the upland landscapes of the Limestone Ridge and the Wolds.

To assess the relationship between slope and PAS data, all finds recorded to six figures NGR or better were analysed against the digital terrain model (Figure 3.17). This revealed that 96% of find spots are located between a 0o and 4o slope, which

equates to a maximum of 6.99% gradient or 1:14 ratio.[17] There are no find spots from slopes greater than 10o. A 1:14 gradient is very mild and indicates that the potential distortion of find spots through downslope soil movement is not a significant factor. This is also the case for HER data, where 95% of data also fall between 0o and 4o slopes. A similar trend was noted on the Isle of Wight, where it was found that all PAS data came from sites with between 1-4o slopes (Robbins 2012: 142). Here, this association was interpreted as a genuine reflection of the preference for settlement at such locations (Robbins 2012: 142).

Differences are noted at the extremities of the curve within Lincolnshire, however, where a greater proportion of HER data correlates with landscapes with no slope or less than 2o. This undoubtedly results in part from the evidence gained through the Fenland Survey (Hayes and Lane 1992; Lane 1993, 2002), and the Humber Wetlands Project (Etté and Van de Noort: 1997; Van de Noort and Ellis 1998; Ellis *et al.* 2001; Van de Noort 2002).

3.3.6. Finds from the Coast

One final area of the county that remains problematic regarding the interpretation of artefact scatters is the Lincolnshire coastline, especially the 24km of coastline between Mablethorpe and Skegness, which comprises thin layers of sand over clay that is vulnerable to erosion. A series of works were undertaken between 1996 and 1998 to re-establish the beach, and since then yearly replenishment has been undertaken using sand dredged from offshore locations in the vicinity. An estimated 500,000m3 of sand is dumped onto the beach each year (Environment Agency 2010; Royal Haskoning DHV 2014; Figure 3.18). Dredging takes place in an area now understood to have been an important Quaternary and early Holocene landscape known today as Doggerland, and this leads to a situation whereby pre-existing lithic material eroding from the coastline may on occasion be mixed with archaeological material accidently imported from off-shore sites (Lyon 2005: 3).

This might occur where dredging disturbs offshore sites which are now lost to the sea – such as the medieval town of Wilegripe (HER no. 41704), or even the surmised Roman walled town of 'Chesterland' or 'Castorland', mentioned in the Court Rolls of Ingoldmells and also by Leland as being 'clene consumid, and eten up with the se' (Whitwell 1992: 51). Similarly, such finds may even indicate the presence of offshore wrecks; such was the interpretation of a sherd of mortarium dredged from approximately 14 miles off the coast of Chapel St Leonards by the CEMEX vessel Sand Heron (HER no. 80021).

Distinguishing the two is difficult, if not impossible. While 'new' finds that correlate with periods of replenishment might be assumed to be from offshore-contexts, the fact that a mammoth tooth was discovered on the beach at Ingoldmells in 1973, twenty years prior to replenishment (Lyon 2005: 17), shows that prehistoric finds do occasionally erode from this location. There are only six PAS finds from the present-day coastline, but these suggest that a variety of processes influence their deposition and recovery.

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17   Slope conversions calculated using an online resource at www.1728.org/gradient.

Figure 3.18. Sand dredging and replenishment at Mablethorpe beach. Photograph courtesy of Mablethorpe and Sutton Town Council, and Lincolnshire County Council.

1 cm

Figure 3.19. Roman greyware sherd from Croft (PAS ref. LIN-B49D76).

The only item of prehistoric date is a flint backed-knife of Neolithic or Bronze Age date which was found at Gibraltar Point (PAS ref. LIN-CF1DF4).[18] The flint has a bulb of percussion and retouch; however the entire flint is extremely water-worn which suggests that it has been redeposited by marine action. PAS data also records a rim sherd of Roman greyware found among sand dunes at Croft (PAS ref. LIN-B49D76; Figure 3.19); however, the interpretation of the find spot is

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18 A flint 'knife' is recorded from the beach at Moggs Eye, but this appears unlikely to be archaeological (PAS ref. SWYOR-4093F4).

unclear. Croft lies to the south of the area of beach replenishment and the southerly longshore drift along this stretch of coastline increased the average beach volume by nearly 40% since 1991 (Leggett *et al.* 1998; British Geological Survey 2011). This process may have transported the sherd from areas of Roman archaeology known in the north. Similarly, a number of erosive mechanisms operate in Sand-Dune landscapes that can cause the exposure, movement or accumulation of archaeological material within sand landscapes (Griffiths 2004: 14; Barber 2004). No other Roman artefacts are recorded on the HER from this area, however, yet the relatively fresh appearance of the edges of the sherd would suggest that it has not moved far since its deposition. It would appear that only further fieldwork in this area would aid interpretation.

Four post-medieval or early modern lead alloy objects, possibly weights for a line or net were discovered within 230m of three twentieth-century boat-wreaks (HER nos. 43424, 43425, 43426; Buglass 1997). It is unclear whether they are directly related to the boats, or whether they reflect earlier fishing activity in the same location, but these weights appear to have eroded out of the vicinity rather than being imported.[19]

3.3.7. Elevation

Elevation in Lincolnshire ranges from just below sea level to around 170m OD (Figure 3.20). In general, the county is low-lying; 50% of land lies below 45m OD, and 85% lying below 100m. Analysis of PAS6+ and HER data against the Digital Elevation Model created using OS Profile Data reveals these two datasets to behave in similar ways (Figure 3.19).[20] Both are concentrated at lower elevations; around 70% of all find spots come from the first 50m OD. This is at odds to the cumulative elevation of land in the county, where around 40% of land in the county is below 50m OD.

Differences between HER and PAS data exist at the lower elevations, however. HER data is better representative of the lowest elevations, which PAS data only begins to match closely the HER curve after circa 35m OD. Again this is likely to reflect the results of the Fenland and Humber Wetland Surveys. The slight bias in PAS data against the lowest elevations may also reflect trends identified earlier in this chapter; the districts of Boston and South Holland are proportionally underrepresented by PAS data owing to the rural aspects of these locations, the poor history of recording, and also the character of the underlying superficial geology.

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19   Two other PAS finds come from these areas that perhaps should not have been recorded; PAS ref. SWYOR-4093F4 is recorded as a Neolithic knife, however the photograph indicates that it is likely just to be a naturally flaked 'potlid'. PAS ref. YORYM-6213B6 appears to be an encrusted modern button.

20   PAS6+ was chosen in preference to PAS4+ because of the possibility for find spots with 4 Figure grid-references to distort localised patterns in topography.
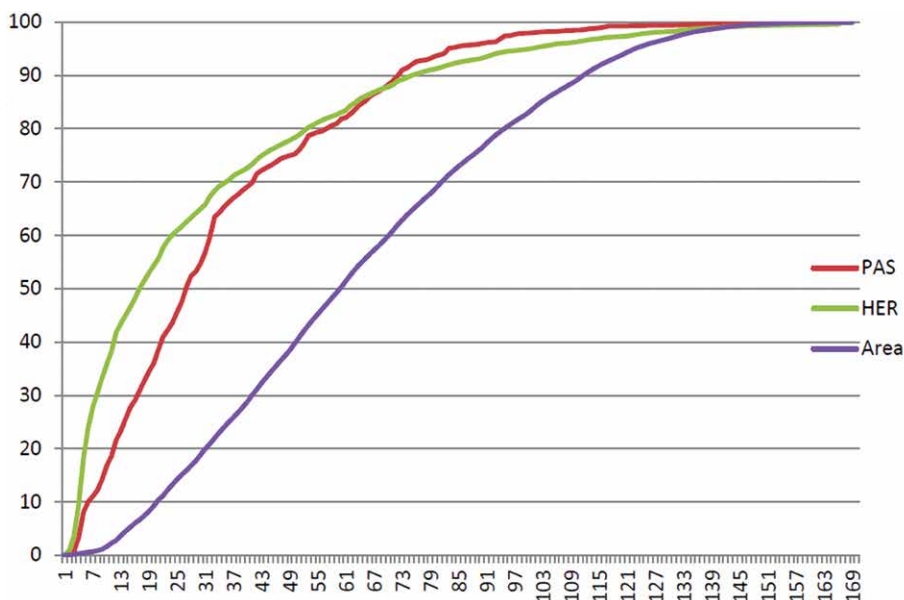
Figure 3.20. Cumulative percent of PAS and HER find spots according to height above sea level.

3.3.8. Aspect

Aspect was investigated to see if there was a relationship with HER and PAS data. Within the county there is a slightly higher proportion of land with easterly facing slopes (Figure 3.21). PAS and HER data show a slight preference for easterly and south-easterly aspects, but the trend is otherwise unremarkable as a feature of the parent dataset.[21] This was also the conclusion gained by Robbins (2012: 142).

3.3.9. Drift Geology

One final area for consideration is drift geology. The county contains a varied superficial geology that is complex both in its distribution and its character. Deposits are broadly grouped as alluvium, till, clay, sand and gravel, peat, and blown sands deposited from the Quaternary period (c. 2.5 million years ago) to the present day (Boutwood 1999: 23; Figure 2.22). These deposits have in turn greatly influenced the character of the natural environment and with it the way in which humans have avoided or exploited these areas. While there is, of course, a close correlation between the boundaries of HLC Landscape Character Areas and the underlying drift geology, a closer reading can be gained by exploring the relationship between PAS data and drift geology mapped by the British Geological Survey 1:625k.

The majority of deposits were formed during the Pleistocene Ice Ages and warmer interglacial periods (c. 450,000-10,000 BP) (Boutwood 1993: 23; Lyon 2005: 15), and as a consequence stratified archaeological material from the end

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21   A slight easterly aspect bias is seen in the find spots of Iron Age hoards – a phenomenom provisionally attributed to behavioural patterns in late Iron Age deposition (De Jersey 2014: 39, Figure 4). However, the same slight easterly aspect also seen in all PAS data might suggest this is in part attributable to patterns underlying the entire PAS dataset (Haselgrove *pers. com.*).
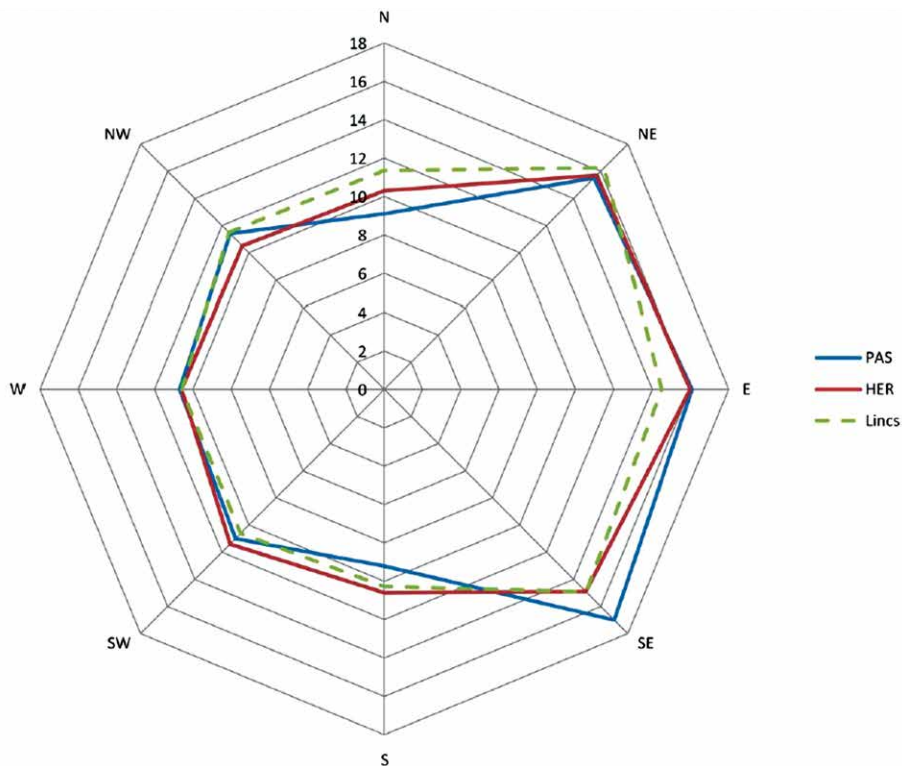
Figure 3.21. Aspect of HER and PAS find spots, shown against the relative proportions of slopes.
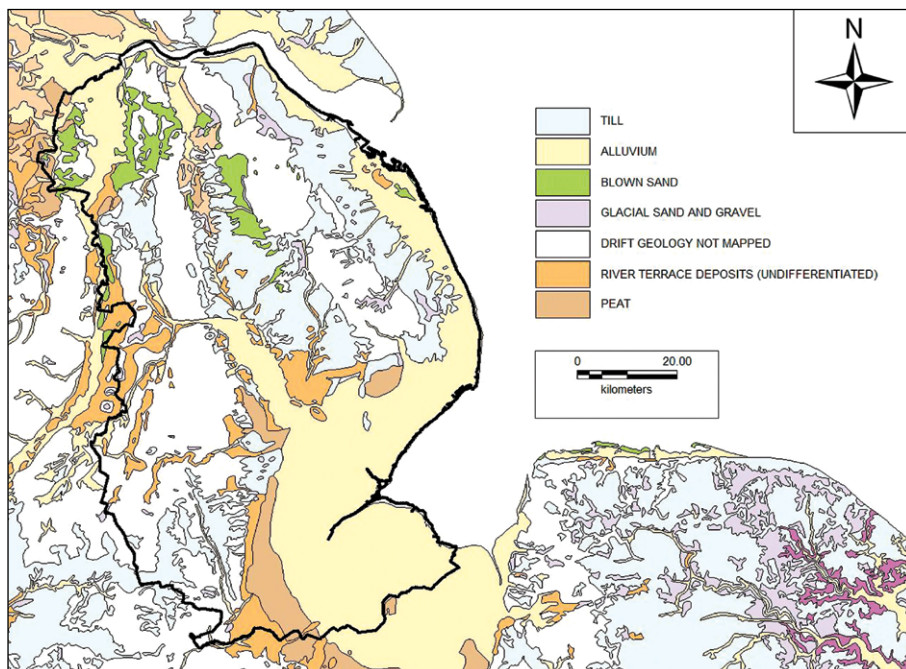
Figure 3.22. Superficial geology of the East Midlands (Lincolnshire outlined in black). © BGS 1:625k Superficial Geology data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

of the last glaciation (i.e. the Upper Palaeolithic onwards) generally overlays these deposits. Superficial geology in this instance includes blown sands, glacial sands and gravels, river terrace sands and gravels, and till. The presence of Pleistocene glacial deposits implies a degree of scouring of the lower and middle Palaeolithic landscape, and therefore most, if not all, archaeological material from these early periods in Lincolnshire represent re-deposited material (Boutwood 1993: 23; Lyon 2005: 15).
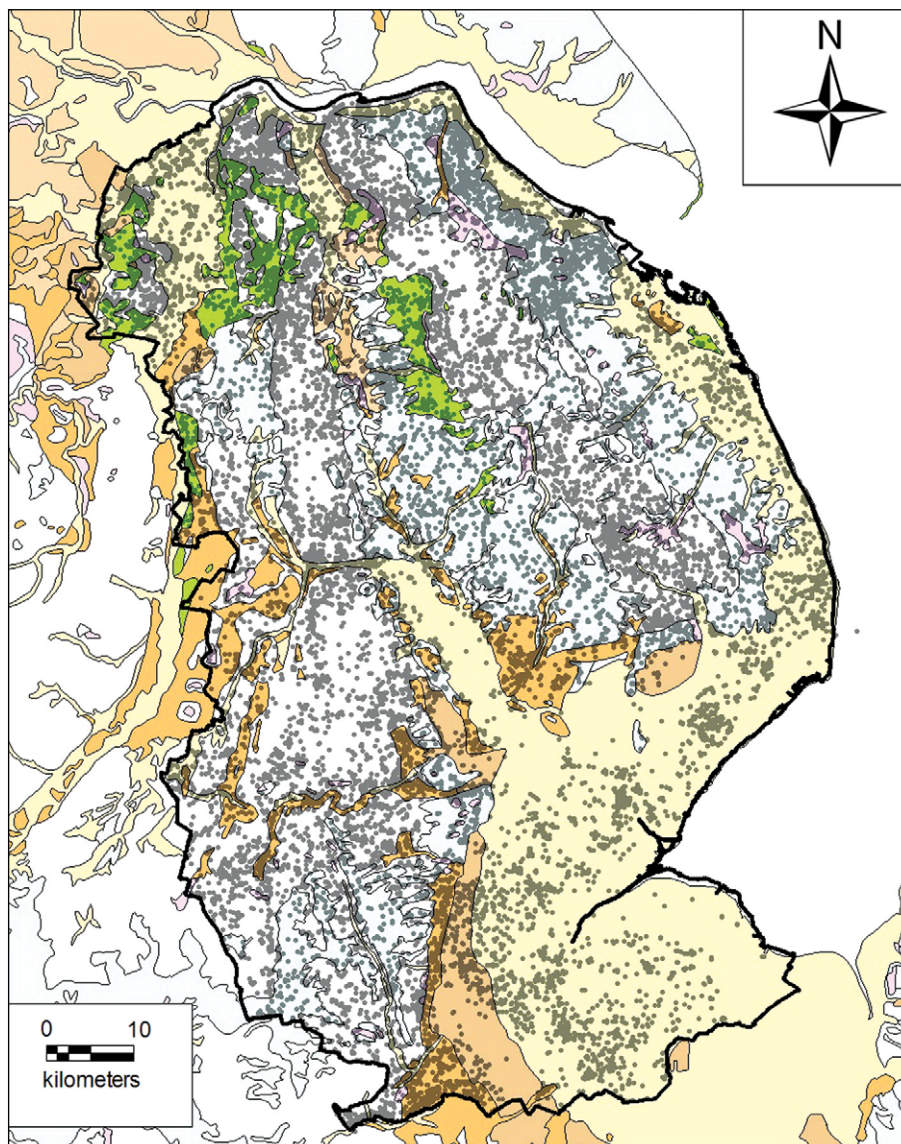
Figure 3.23. HER data according to drift geology. HER data shown at 50% transparency. © BGS 1:625k Superficial Geology data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
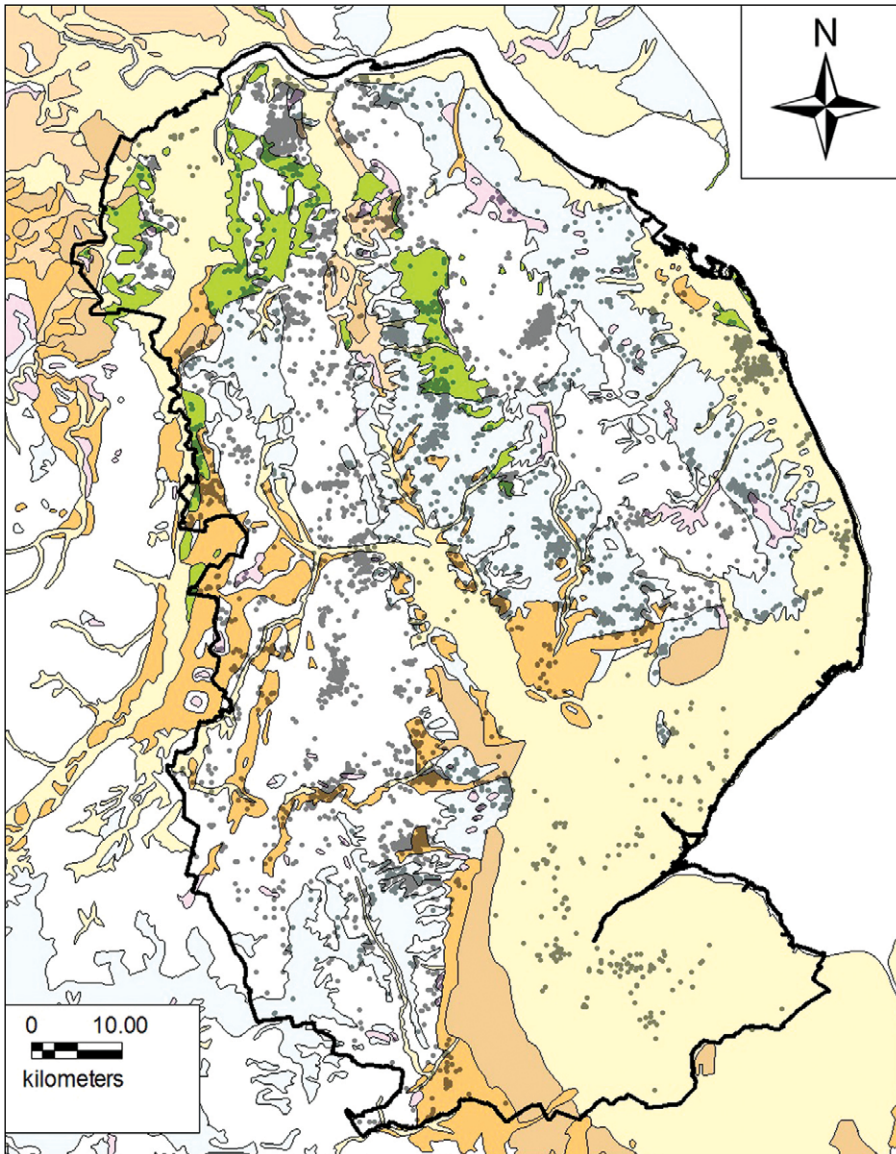
Figure 3.24. PAS4+ according to superficial geology. PAS4+ shown at 50% transparency.
© BGS 1:625k Superficial Geology data. © Crown Copyright and Database Right 2015.
Ordnance Survey (Digimap Licence).

Other deposits, especially alluvium, peat and blown sands continued to form throughout the historic period, and areas such as the Fens, the Lindsey Marsh, and the Trent Vale became, and continue to be dynamic and evolving landscapes. In parts of these landscapes some of the evidence for human activity is buried by sediment, if it is present at all (e.g. Hayes and Lane 1992; Lane 1993; McIlwaine and McDonnell 2006).
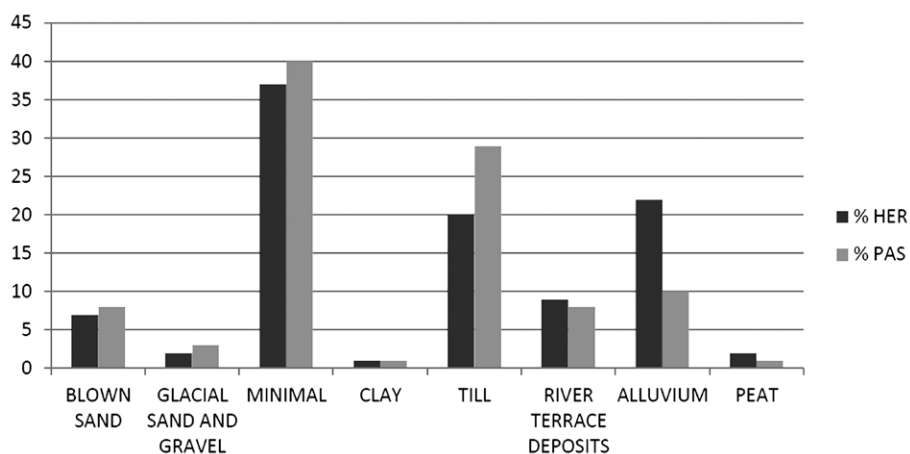
Figure 3.25. Proportion of PAS and HER data (records) according to drift geology.

In terms of their relationship to drift geology, HER and PAS data behave in a reassuringly similar way, both spatially and chronologically (Figures 3.23-3.25; Appendix 12). First, the proportion of HER and PAS found across the different drift geologies mirror each other well, though this principally reflects the size of these zones. A notably greater proportion of HER data come from areas of alluvium – principally the Fens and the Lindsey Marsh – and this again largely reflects the aforementioned intensive fieldwork undertaken by Fenland Survey and the Humber Wetlands Survey.

The greater proportion of PAS data for areas of till represents both a general preference for settlement within free-draining areas contained within it, but also a degree of bias in search areas. Glacial till underlies many high-yield Roman sites recorded by PAS, including those at Middle Rasen, Lissington, Wickenby and Thonock. The tills are further over-represented owing to four large metal-detecting rallies, at Hatton, Alford, Stixwould and Linwood.

A slightly different perspective, but one which nonetheless reflects a degree of bias, is gained when HER and PAS data are viewed according to number of records per km2. This reveals that while the majority of PAS data have been found on areas containing minimal or no drift geology, PAS data are more densely distributed within areas containing blown sand, and glacial sand and gravel. While this undoubtedly reflects the presence of just a handful of high-yield sites, glacial sand and gravel is free-draining and was often chosen for settlement. Within the Blown Sands PAS data clusters at a number of artefact-rich Middle and Late Anglo-Saxon sites, including Torksey, Appleby and Roxby. Indeed, an analysis presented later in this Chapter demonstrates that PAS data are characterised by a large number of low-density sites, with the majority of finds clustering around a handful of high-yield sites. Conversely, HER data in Lincolnshire are more evenly distributed owing to them stemming from a longer and more varied tradition of reporting. This complements the trend noted by Robbins in her study of the national dataset (Robbins 2012: 96).

Figure 3.26. Exposed section of coversand near Crosby, North Lincolnshire. Photo: Jonathan Thacker, licenced under Creative Commons Licence.

Nonetheless, there is a legibility issue at hand, with landscapes that have seen post-Holocene accumulations of sediment having greater potential for masking archaeological deposits, not just in the Fens, but also where Blown Sands are encountered (Figure 3.26), as the Antiquary Abraham De La Pryme describes in his account of landscape change at Nettleton, Lincolnshire:

> *'All along the hill side there, for at least a mile, lyes a long bed of sand, which has spring somewhere thereabouts out of the ground, and encreas'd to the aforesaid bignes, having cover'd a great quantity of good ground, and by that means undone several poor people. Within these twenty years it begun to move towards this town, and all that part of it that layd close to the hill edge (which was about twenty-five houses, with their folds and garths) has been destroy'd by it this several years, onely there is one house, which is a poor man's, that has stood it out by his great pains and labour; but as for his folds and gardens they are all cover'd'* (de la Pryme: 1870: 67).

The impact of shifting sands is no clearer that at the Anglo-Saxon settlement at Flixborough near the River Trent. Here, building foundations were recorded some two metres below sand deposits (Figure 3.27). The dune graded out to the west, however, where one might expect artefacts to be within reach of the plough.

Turning finally to the chronology of PAS data, some trends emerge at a broad level which complement what is already known about the history of land-use in the county (Figure 3.28). Areas of alluvium and peat contain some of the highest proportions of medieval and later finds, and this reflects the increasing amount of settlement

Figure 3.27. Excavation of Building 1 at the Anglo-Saxon settlement at Flixborough, North Lincolnshire. Photo: Kevin Leahy.
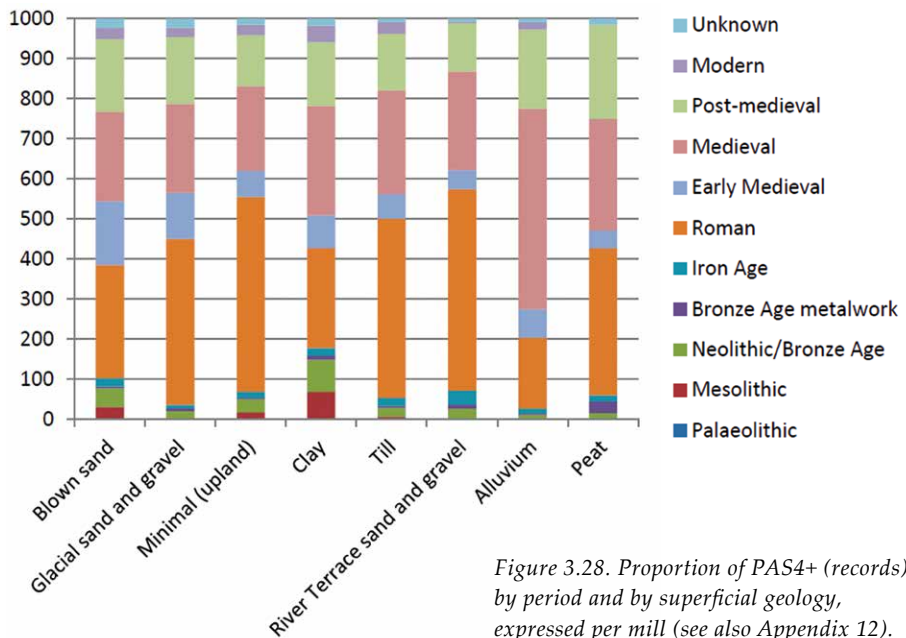
Figure 3.28. Proportion of PAS4+ (records) by period and by superficial geology, expressed per mill (see also Appendix 12).

in this landscape following drainage and land reclamation (Bennett and Bennett 1993). Similarly, the claylands contain relatively higher proportions of prehistoric flints than any other landscape, and this complements research by Clay who found that this landscape was frequently exploited and settled in prehistory – in spite of the commonly held modern perception that the claylands were generally avoided

(Clay 2002). T. Lane also found there to be a close relationship between lithic scatters and areas of boulder clay in the parish of Ropsley and Humby (Lane 1995: 53).

Neolithic and Bronze Age activity is seen on deposits of till, spreads of which are along the western and eastern edges of the Wolds (Figure 3.22). Loess soils probably covered much of the till on the Wolds (Chowne pers. com.), and the evidence from Northern Europe indicates these soils were favoured for early Neolithic agriculture (Catt 1978).

The blown sands contain the second largest proportion of Mesolithic, Neolithic and Bronze Age flint, and this correlates well with evidence recorded on the HER; the cover sands of North Lincolnshire are well known for prehistoric settlements and single finds and assemblages of lithics (McIlwaine and McDonnell 2006), such as the Mesolithic site at Sheffield's Hill near Scunthorpe (Loughlin and Miller 1979; May 1976: 34), and Risby Warren (NHER no. 2009). It is thought that the cover sands were favoured for exploitation because the soils were well-drained, light and with little vegetation cover. Furthermore the location of the cover sands provided good vantage points overlooking valleys and watercourses that sustained good hunting and grazing grounds (McIlwaine and McDonnell 2006: 6). The chronological characteristics of PAS4+ from the Blown Sands also show it to contain a greater proportion of Early Medieval finds than any other landscape. This is, however, owing to the aforementioned influence of the Viking winter camp at Torksey, and several other high-yield sites around Scunthorpe.

Finally, it is intriguing to note the greater proportion of Middle and Late Bronze Age metalwork recovered from the peats. This statistic is not a quantitative bias related to the presence of hoards; while that from Stixwould contained over 100 items, they were recorded in just one record. At face value, then, this trend may continue the association established elsewhere between ritual deposition of metalwork and wetland landscapes beginning in the late Middle Bronze Age (Bradley 1990; Everson and Stocker 2003b; 2011).

3.4. Spatial Comparison of HER and PAS Data

With these issues of bias and chronological legibility in mind, this Chapter finishes with a statistical overview of the spatial comparison of periodised HER and PAS data. As was outlined in Chapter 2, HER data were categorised by broad period and then buffered to 300m and 500m radii respectively. PAS data were then analysed to see how many finds fell within HER buffer zones; those that did not, and which fell more than 500m from an HER buffer, were in turn grouped together to form 'new' activity areas.

Buffering 'certain dated' HER data to 300m resulted in 7211 activity areas; this Figure reduces to 4406 at 500m owing to many activity areas found in close proximity merging together to form more extensive scatters (Table 3.3). As might be expected, Roman, medieval and post-medieval activity areas dominate the HER dataset.

PERIOD	HER Activity Areas		
	300m	500m	% difference
Upper Palaeolithic	13	10	-15
Mesolithic	121	105	-13
Neolithic	663	497	-25
Bronze Age	801	551	-31
Iron Age	321	258	-20
Roman	1497	787	-47
Early Medieval	528	423	-20
Medieval	1891	891	-53
Post-medieval	1376	884	-36

Table 3.3. Number of HER activity areas at 300m and 500m buffers.
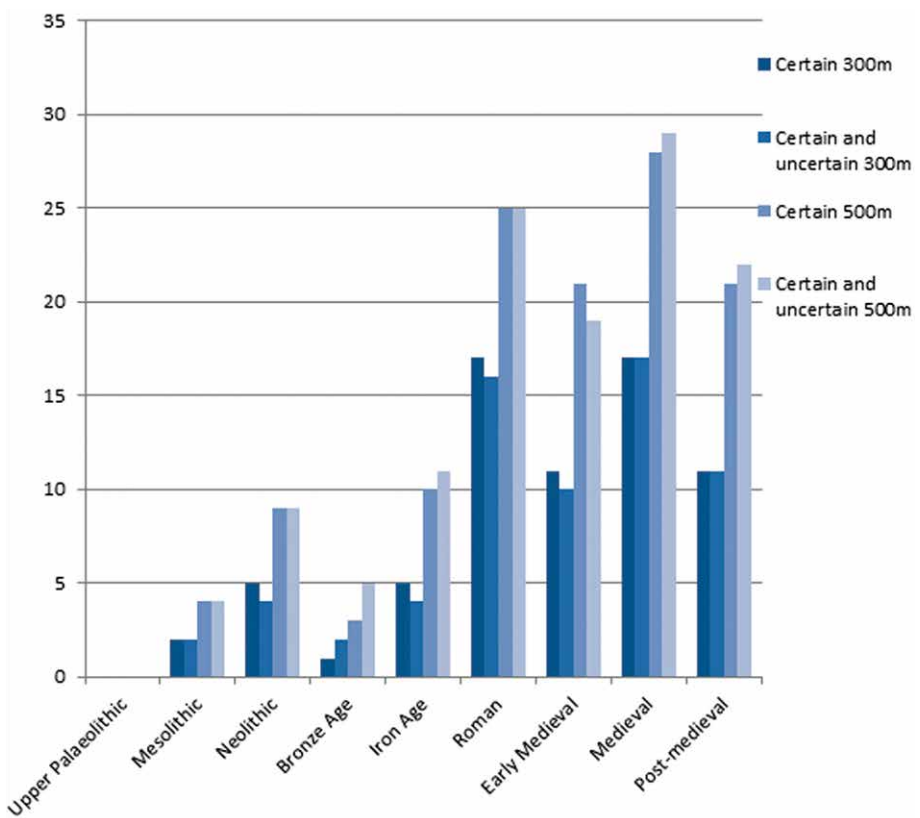
Figure 3.29. Proportions of HER buffers that contain PAS data, shown at 300m and 500m.

Analysis of PAS data shows that they only enhance a small proportion of HER activity areas. This is true for all archaeological periods, and at both 300m and 500m scales of analysis (Figure 3.29; Appendixes 13-17). Similarly, this trend varies little when the analysis is repeated with 'uncertain' data included.
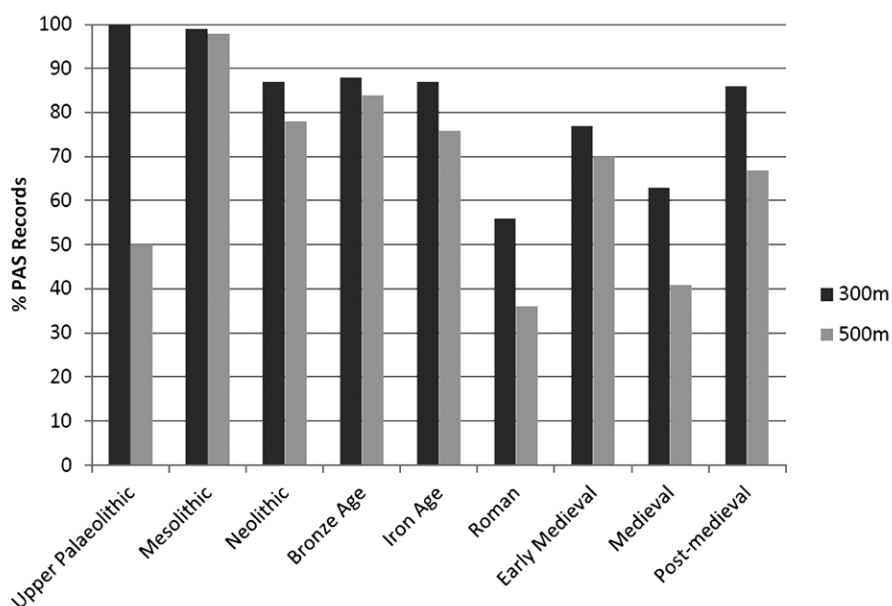
Figure 3.30. Percentage of PAS records that fall outside HER buffer zones at 300m and 500m (according to certain dated HER records). Taken from Appendix 18.

PERIOD	HER	PAS	% increase
Upper Palaeolithic	13	2	15
Mesolithic	121	44	36
Neolithic	663	148	22
Bronze Age	801	104	13
Iron Age	321	198	61
Roman	1497	386	26
Early Medieval	528	339	64
Medieval	1891	426	23
Post-medieval	1376	429	31

Table 3.4. The contribution of 'new' PAS activity areas: HER and PAS6+ at 300m radius using certain HER data only.

Rather, the vast majority of PAS data fall more than 500m away from the nearest related HER record; these assemblages therefore tentatively form 'new' areas of activity (Figure 3.30: Appendixes 18 and 19). Indeed, it is only for the Roman period that less than 50% of PAS data do not fall within an existing activity area, and this largely reflects the greater legibility of the Roman period within HER data for Lincolnshire (82% confidently dated; Table 2.3). Elsewhere the Figure is much higher, especially for prehistory where the contribution regularly exceeds 80% at 300m. These observations seem to support the observations made by Robbins, Brindle, and Munday that metal-detector users do not, in general, target known archaeological sites but are instead primarily governed by issues of access (Robbins 2012: 88; Munday 2013; Brindle 2014: 90).

The assemblages that are found away from HER data can in turn be buffered in order to establish notional 'new' areas of 'activity'. Doing so quickly establishes that PAS data significantly increase the total number of activity areas known for each period, and most notably for the Early Medieval period (Table 3.4).

Analysis of the density of finds within these 'new' activity areas shows that regardless of period, the majority comprise a large number of low-density assemblages, with a small number of very high-density assemblages (Appendixes 20-23).[22] The fact that this trend applies to periods which include very different forms of settlement – such as the Mesolithic and the medieval period – suggests that there is a source of bias within the parent dataset, and most probably within the areas of exposure, reporting, and recording. As has already been seen, some may indeed simply represent areas that have been subject to infrequent searching. Others might represent finds from the periphery of larger sites, 'off-site' activities, manuring, or casual losses (Bintliff 2000: 2; Terrenato 2000). It would be unwise to suggest bias for all low-density activity areas, however; some may reflect the range of settlements one might encounter in any given period, while others may represent votive deposition, casual losses, or perhaps finds from the periphery of a core area (see Chapter 5, case study on Bardney).

3.5. Conclusions

Robbins' framework has proved a useful way of systematically assessing PAS data for bias. While the presence of bias within the dataset is wholly unsurprising, what has become very apparent is that its nature and severity is very much dependent upon the scale of time and place on which one is looking. At a county level aspects such as topography and geology inevitably come to the forefront, and it is somewhat difficult to move beyond environmentally deterministic reasons for the shape of PAS data. Similarly, other trends such as manuring, dredging, and sampling are often highly localised and can only be better understood on much finer scales of mapping. These findings have implications for the interpretation of palimpsests that occurs in the case study chapters.

Additionally, the spatial analysis of HER and PAS data has underlined the importance of the resource as an additional source of information on the archaeological record. With these understandings in mind, it is now appropriate to move on to explore the archaeological significance of multi-period PAS data, in particular their character, and whether they hold any potential for inferring the persistent use of places.

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22   The pattern for the Bronze Age and Iron Age are a little more varied owing to the lower number of activity areas represented. The Upper Palaeolithic and Mesolithic periods are not included owing to the lack of, or small number of PAS finds from within HER buffers.

Chapter 4

Across the Borders – The Archaeology of Multi-Period Artefact Scatters

4.1. Introduction

This Chapter explores the archaeological significance of multi-period PAS data – referred to here as 'plough-zone palimpsests' – and their potential contributions to our understanding of persistent places. As was outlined in Chapter 1, multi-period artefact scatters are a common but relatively less understood aspect of PAS data. Moreover, they are a source of evidence that is yet to be addressed within the major studies on persistent places. This Chapter goes some way in resolving this problem by approaching PAS data in three main ways.

First, the broader significance of these data is explored through a characterisation of density, temporal diversity, and distribution. Second, the potential significances of these data are summarised through a series of case studies that compare surface scatters to below soil archaeology. This reveals a range of archaeologies that we might encounter in any given scatter, and this in turn helps us to adjust our questions to 'tune-in' to the type of signal that is being emitted (Amkreutz 2013: 224). Finally, these understandings are applied to a case study of persistent places and plough-zone palimpsests in one of Lincolnshire's most temporally diverse places – at Osbournby, near Sleaford.

4.2. The Character of Multi-Period PAS Data

A coarse-grained understanding of plough-zone palimpsests can be gained by viewing these data at two different spatial scales; first as data agglomerated into 1km2 cells, and second, as data grouped into 100m activity areas. Comparison of the two allows us to better understand the degree to which trends visible within these palimpsests are affected by differences in spatial scale.

The temporal heatmap resulting from PAS6+ reveals 'hotspots' of high temporal diversity in the north of the county close to the Humber Estuary, in the south near Sleaford and also at Osbournby, and at other sites along the southern and central Wolds (Figure 4.1). Further hotspots are seen along the Trent, especially in the area between Marton to Torksey. Hotspots are, however, the exception in PAS data; rather, the landscape is dominated by a wide spread of palimpsests displaying low-temporal diversity. This pattern – of few high-temporal diversity areas and many low – does, of course, reflect the pattern previously established for density (Figure 3.8); in other words, temporally diverse hotspots generally coincide
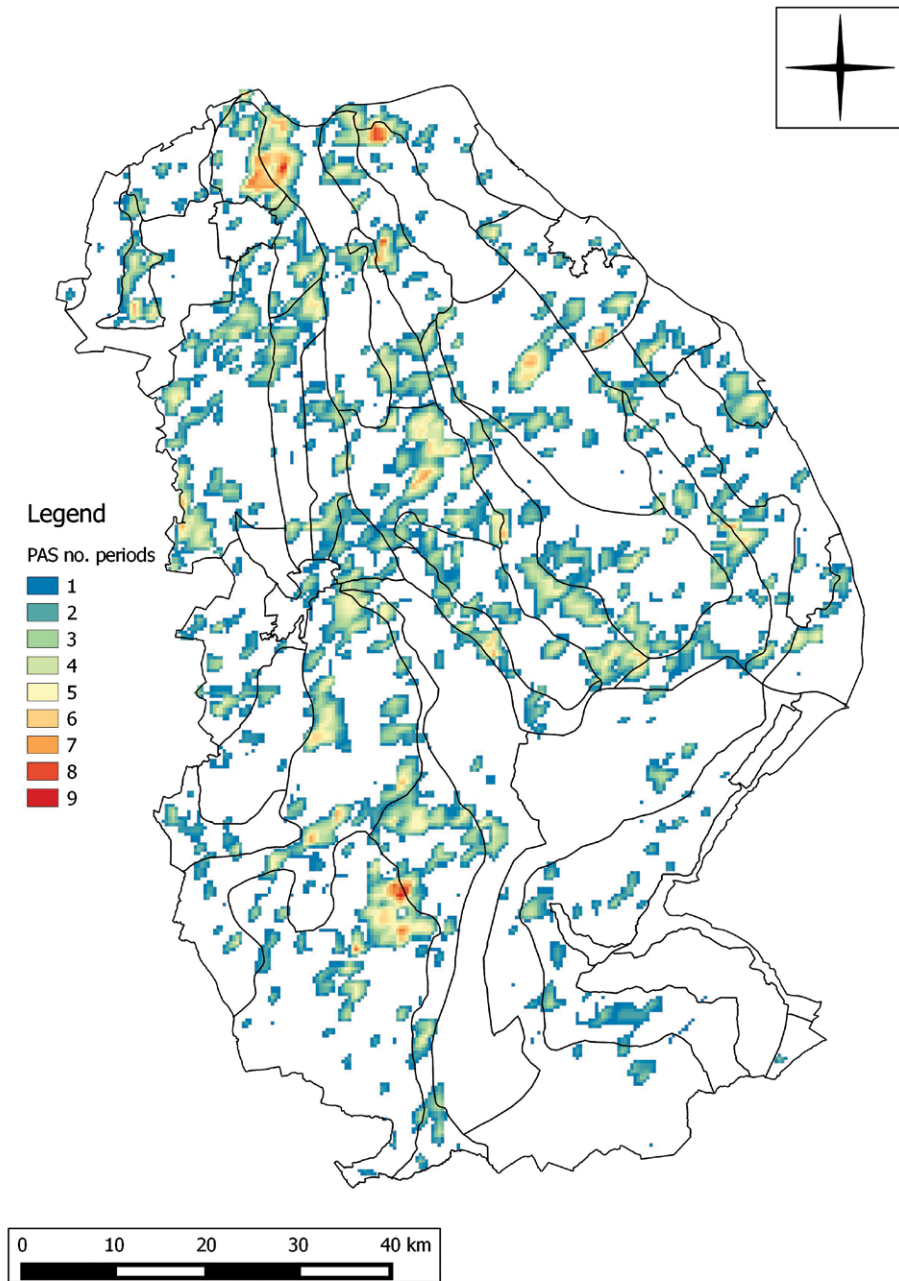
Figure 4.1. Temporal diversity in PAS6+ according to data grouped by 1km2. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

with areas of the landscape from which the most finds have been reported. This is perhaps unsurprising; a major criticism with calculating diversity within any dataset is that it is often influenced by the number of samples that have been taken (c.f. Scheldeman and van Zonneveld 2010: 97).

PORTABLE ANTIQUITIES, PALIMPSETS, AND PERSISTENT PLACES

	DIVERSITY	DENSITY
DIVERSITY		7.0366E-146
DENSITY	0.54481	

Table 4.1. Pearson's Linear R test.

Diversity level	No. 1km cells	Average no. PAS4+ records/1 km cell	Minimum	Maximum	Range
1	698	2	1	50	50
2	403	5	2	52	50
3	298	13	3	381	378
4	233	30	4	311	307
5	139	55	6	437	431
6	66	99	11	880	869
7	34	125	14	491	477
8	7	311	139	783	644
9	3	472	153	925	772

Table 4.2. Density characteristics of multi-temporal scatters aggregated to 1km2 cells.
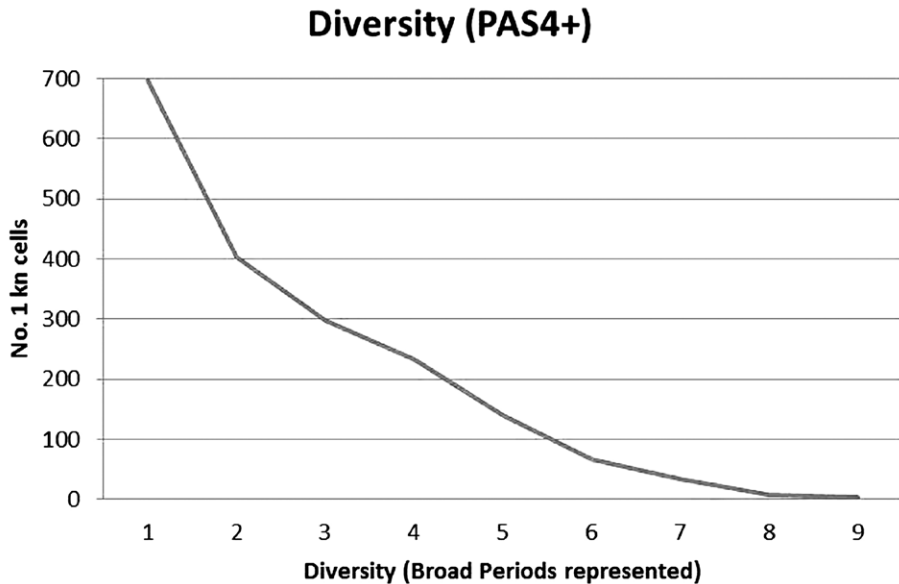
Figure 4.2. Number of 1km cells and diversity.

This observation can be supported statistically using a Pearson's Linear R analysis (McDonald 2014: 190-208), which shows a statistically highly significant relationship between density and diversity (Table 4.1); in other words, the more finds an area produces, the more temporally diverse it is. In some ways this relationship can be seen as a self-fulfilling prophecy; one would expect more finds from a landscape that has been occupied for multiple archaeological periods. Yet, analysis of the range demonstrates there to be much variation (Table 4.2; Figure 4.2). For example, there are some activity areas in which four periods are represented by a total assemblage size of 311 finds, yet elsewhere in the county

$$0.3258x4-4.443x3+24.16x2-45.34x+27.42$$
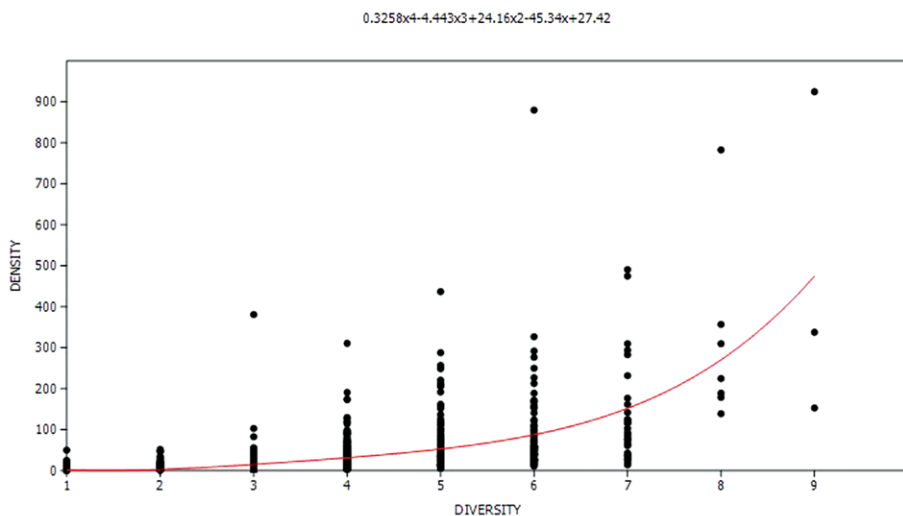
Figure 4.3. Plot showing polynomial fit of Density (assemblage size) and Diversity (number of archaeological periods represented), to 4th order.

there are activity areas that have produced just six artefacts that represent five different archaeological periods. In short, there is a degree of temporal chaos within the general trend.

Nonetheless, by drawing a best-fit curve across the statistical analysis of density and diversity, we can arrive at a set of quantitative thresholds above and below which the assemblage can be considered as statistically 'normal' (Figure 4.3). This suggests that diversity peaks at around 450 finds, which in turn indicates that this Figure can nominally be taken as the quantitative threshold at which a sample is deemed to be more reliable.

A finer grained understanding of plough-zone palimpsests can be gained by buffering PAS6+ into 100m activity areas (see Chapter 2). At 100m radius there are 2396 activity areas, and around half of these are formed by artefacts from two or more periods (1081 of 2396 activity areas). However, these multi-period activity areas contain 93% of all PAS data. Just 7% of the parent dataset form single-period activity areas, revealing such scatters to be abnormal within PAS data. As might be expected, there is once again a statistically significant relationship between the number of activity areas and the number of archaeological periods represented (Appendix 24). That is, the more periods represented, the fewer activity areas there are. Naturally, there is also a statistically significant relationship between the density of finds and the number of archaeological periods represented. That is, those activity areas with greater chronological diversity tend to produce larger assemblages, but within this is much variation. This simple exercise shows that the general trend visible within the parent dataset is independent of spatial scale; the trend remains the same regardless of whether these assemblages are seen according to 1km2 cells, or by 100m activity areas.

	U PAL	MES	NEO	BA	IA	Rom	E Med	Med	P-med
Upper Palaeolithic		2	3	2	4	4	3	4	4
Mesolithic			25	16	13	28	21	31	31
Neolithic				44	48	120	74	126	111
Bronze Age					45	81	62	89	84
Iron Age						162	104	191	164
Roman							317	593	476
Early Medieval								352	275
Medieval									623
Post-medieval									

Table 4.3. Number of times that archaeological periods coincide within PAS6+ activity areas (at 100m).

This being the case, our next question should naturally concern the temporal signatures displayed within PAS data. A simple overview of the number of times finds from different periods occur in the same activity area reveals a bewildering picture (Table 4.3). At this level of mapping there is little sense that can be made of the statistics, and these undoubtedly reflect the unique biographies of persistent places (e.g. Purtill 2012), in addition to sources of bias located in the seven key areas identified by Robbins (2012). Indeed, with data grouped into 9 broad periods there are 502 possible chronological combinations at any given place, and any attempt to arrive at archaeological significance at this level of analysis must be met with suspicion (Appendix 25). This statistical exercise does, nonetheless, highlight the dynamic nature of PAS data, in addition to the importance of case studies.

In some ways the temporal chaos of PAS data reflects the diverse pattern of land-use already seen in the historic landscape. For example, the RCHME's survey of medieval settlements in West Lindsey found that some medieval village cores produced clear evidence for occupation in the Roman period, but their hinterlands often contained further Roman settlement at which there is no evidence for later use (Everson *et al.* 1991). Similarly, there are some medieval villages that contain Early and Middle Saxon finds, and others sites in the vicinity that contain Early Anglo-Saxon finds and no later occupation. This is also the trend established for settlement in the East Midlands, where fifth- to ninth-century settlements in Northamptonshire and Leicestershire show some settlements to have no evidence of earlier occupation, while others appear to emerge from sites used in the Roman period (Lewis *et al.* 2001: 79).

This trend can be elucidated a little more by establishing the degree to which PAS and HER activity areas of one period contain evidence from the subsequent period. While this is a crude way of exploring multi-period artefact scatters, it nonetheless provides a backdrop against which trends within smaller scales of mapping can be discussed.

A striking degree of consistency between the temporal dynamics of HER and PAS data was noted (Figures 4.4, Appendixes 26 and 27). In part this reflects issues of legibility that affect both datasets; the seemingly low level of continuity between the Neolithic and Bronze Age is likely to reflect the infrequency in which
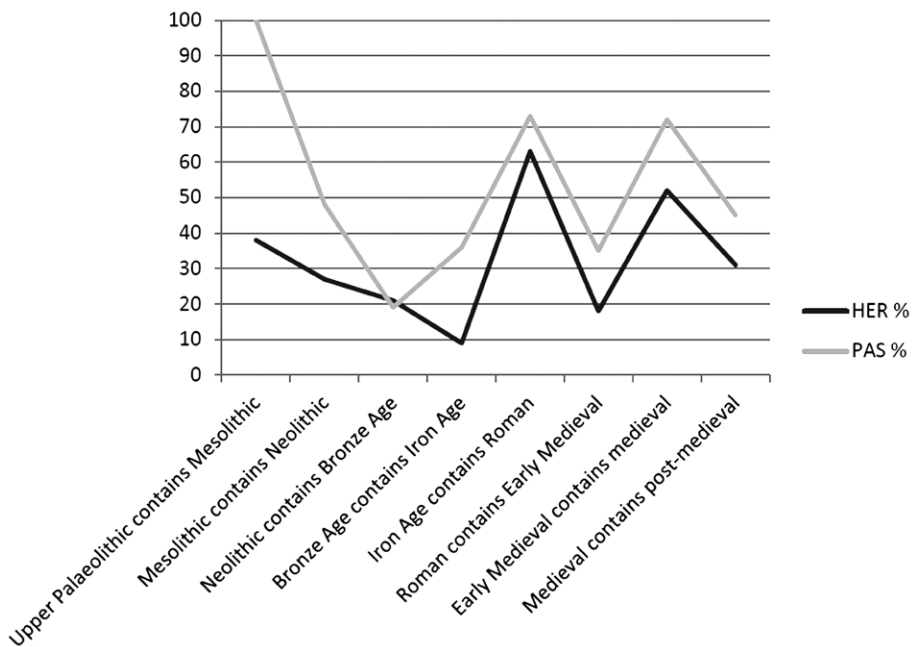
Figure 4.4. Proportion of activity areas that contain data from the subsequent period; for example, 63% of HER activity areas dating to the Iron Age contain Roman period finds.

lithic scatters are recorded to one period only (most are uncertain dated scatters). Indeed, T. Lane's survey of the parish of Ropsley and Humby demonstrated a high degree of continuity (Lane 1995: 51). However, the same survey also found that Iron Age pottery was found on most Roman sites, while Saxon pottery was absent from all Roman sites (Lane 1995: 29) – trends which are indicated on a wider level by the statistical analysis. Lane's observations mirrored a pattern seen across many settlements in West Lindsey, where a low continuity of occupation from the Roman period into Early Anglo-Saxon times was noted (Everson *et al.* 1991: 7, 8). This pattern is also mirrored by PAS data, where just 35% of Roman sites contained Early Medieval material. Conversely, settlement evidence from West Lindsey also demonstrated that many of the sites occupied in the Early, Middle and Late Anglo-Saxon periods went on to be occupied in the medieval period, and this is a trend also noted in PAS data (Everson *et al.* 1991: 8). The trend previously established by evidence other than PAS data brings a certain sense of confidence that plough-zone assemblages are largely representative of the wider picture in Lincolnshire.

4.3. Visualising Persistent Places – HER Data

An additional aid for the interpretation of multi-period PAS data can be gained by heatmapping the temporal diversity seen within periodised HER data grouped into 1km2 cells (Chapter 2; Figures 4.5 and 4.6). This reveals a much fuller picture of activity across a much wider landscape, though again it must be stressed that the areas between datapoints are interpolated. Nonetheless, at a broad level the temporal heatmap shows a clear upland-lowland divide in the degree of temporal
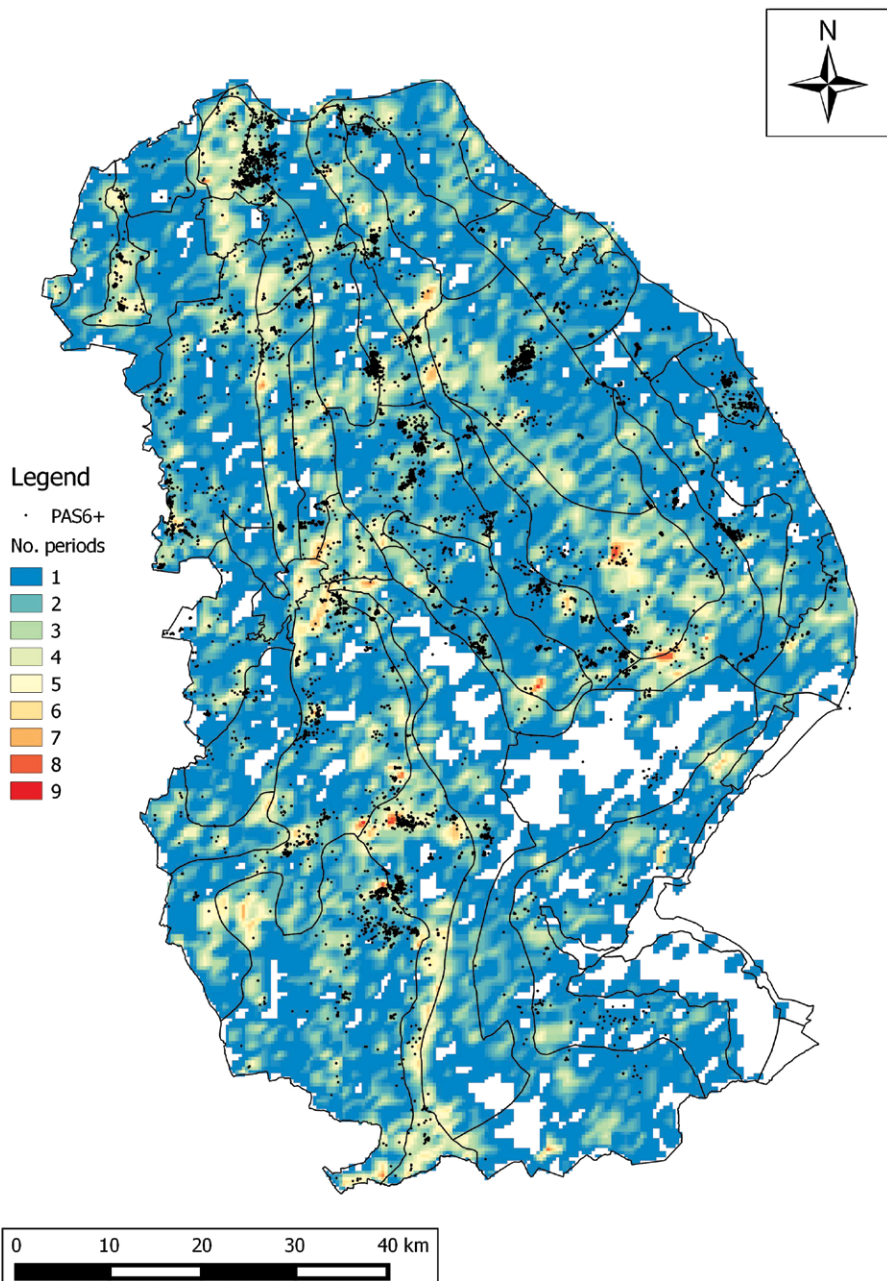
Figure 4.5. Temporal heat-map of HER data, with PAS6+ overlaid. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

diversity encountered. Much of the lowland areas of the county are former wetland habitats which only became available for arable cultivation and settlement following the major drainage works that began in the medieval period and which continue today (Hayes and Lane 1992; Lane 1993). Bias within this lowland landscape is enhanced by the ability for post-Holocene sedimentation to render
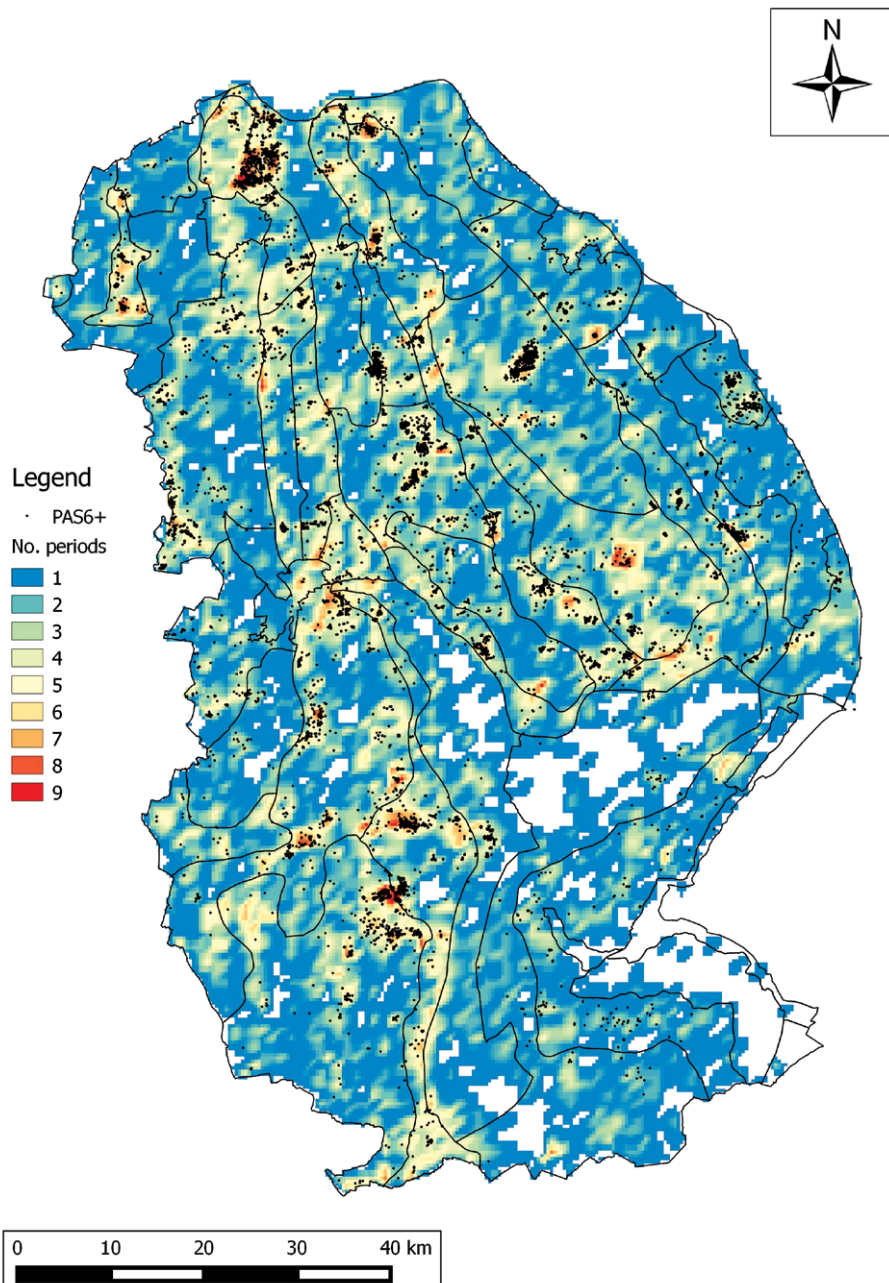
Figure 4.6. Temporal heat-map of merged HER and PAS data, with PAS6+ overlaid. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

certain landscapes unsuitable for occupation, or indeed by its ability to mask earlier sites (Pryor 2001). Nonetheless, there is a clear persistent use of landscapes along the Fen Edge (e.g. Chowne *et al.* 2001), and along the sand islands of the Wash (Figure 4.5).

Naturally many of the upland landscapes display a greater degree of temporal diversity. Persistent places are seen along the eastern and western sides of the Northern Cliff, with large areas of heathland between them being relatively void of activity. The Southern Cliff also displays persistent places along the western edge, with large areas of low-temporal diversity on the heathland north of the Ancaster Gap running up to Lincoln. Again, this may have something to do with the lack of watercourses here, in addition to the low nutrient soils that become easily exhausted without regular manuring. Low temporal diversity is seen across much of the Clay Vale, though this increases dramatically on the western foothills of the Wolds.

The broader relationship between HER and PAS data is rather variable (Figure 4.6). In some areas of the county, especially the Fen Edge, the Trent Valley, parts of the Southern Wolds, parts of the Northern Cliff, in addition to areas around Lincoln there is a strong correlation. However, as was established in Chapter 2 and 3, PAS data have a tendency to cluster, and several groups of finds appear to derive from areas to which HER data displays a low-temporal diversity, such as parts of the Clay Vale and the Lindsey Marsh. This is, however, a very coarse grained way of viewing multi-period data, and only the most broad-level interpretations can be drawn from them. Indeed, to take interpretations further would simply lead us into explaining the minutiae of statistical trends, which may not be particularly archaeologically significant (Fentress 1999). Rather, the value of multi-period PAS data seems to lie in what they say about the chronological profile of particular places. Accordingly, it is to finer scales of mapping that we now turn.

4.4. The Archaeology of Plough-Zone Palimpsests

Before turning to a case study of the Osbournby area, it is important consider the potential range of archaeologies that might be represented by a plough-zone palimpsest (e.g. Bayer *et al.* 2015). Excavation is a key aid to interpretation (e.g. Millet 1999; Richards 1999a), but we must concede that for the vast majority of PAS scatters we simply do not have the level of fieldwork that might be desired. Accordingly, we must turn to those instances were excavation has followed discovery of plough-zone assemblages in Lincolnshire (e.g. Hayes and Lane 1992; Crowson *et al.* 2000).

The multi-period site discovered at Tattershall Thorpe, Lincolnshire, provides an intimidating picture of change and continuity that would be otherwise difficult to extract from a temporally deflated plough-zone assemblage (Chowne 1984, 1994). The site was intensively field-walked in advance of quarrying, and this identified an extensive scatter of lithics. Subsequent excavation revealed a complex multi-phase site spanning the Neolithic to the present day. The buried palimpsest indicated that the site was cleared sometime in the early fifth millennium BC, and the earliest evidence was indicated by a series of early Neolithic pits and hearths, some of which contained pottery and flint. No earlier evidence of occupation was found through excavation, but Mesolithic flints were found in the plough-zone,

and these were later shown to have come from river sediments that could only have reached the surface through drain cleaning (Chowne pers. com).

Several pits contained early Neolithic pottery, but no sherds were found in the plough-zone; unsurprising given their friability. Nonetheless, Neolithic to Early Bronze Age flints were found in the surface collection. The site also contained the exceptional grave of an Anglo-Saxon metalworker, whose toolkit contained several Roman coins and several Early Saxon artefacts, presumably kept for recycling. The site was later used for medieval ridge and furrow, and was completely destroyed by quarrying in 1983-86.

Should the entire buried palimpsest have been recovered from the plough-zone we might well have arrived at a somewhat different interpretation of activity. Indeed, it would have been exceptionally difficult to show the curation of Roman and Early Saxon objects into the seventh century; instead these items may have been read as evidence for activity in those particular periods.

Metal-detecting was not used at Tattershall Thorpe, however, and it is unclear as to what extent later periods would have been indicated through the plough-zone palimpsest. Indeed, given that Robbins has argued that metal-detected assemblages are subject to a much wider range of bias, it is important to consider in detail the three instances where excavation has followed the reporting of metal-detected assemblages reported to PAS. These sites are at Wickenby (Allen and Clay 2005; Wessex Archaeology 2008), Sudbrooke (Clay 2005; Spence 2006; 2007; 2008), and at Wrawby (Murphy 2008).

4.4.1. Wickenby

One of the areas of high-temporal diversity seen on the heatmap of PAS data is located on the parish boundary between Wickenby and Lissington. Here, metal-detector user Keith Kelway discovered over 300 objects mostly contained within one field (Figure 4.7). This assemblage indicated activity beginning in the Late Iron Age, with apparently high levels of activity continuing through all four centuries of the Roman period. Finds of early medieval, medieval and post-medieval date were also present, though in small quantities. In conjunction with Keith, the author arranged for a geophysical survey, and this revealed a palimpsest of ditches, field boundaries and pits. Subsequent trial trenching confirmed the pattern suggested by PAS data, with the settlement beginning in the Late Iron Age, and experiencing several phases of occupation and remodelling right up to the late Roman period (Allen and Clay 2005; Wessex Archaeology 2008).

Excavation revealed the usual assemblages of animal bone and pottery, but metalwork was scarce, in spite of metal-detecting being part of the excavation methodology. Several pieces of late Roman metalwork were, however, found in a refuse tip within the fills of one of the ditches, including a number of late Roman coins. This observation is important on two accounts. First, it joins a much wider body of evidence that shows detritus was regularly dumped into ditches and pits within or on the edge of settlements (e.g. Suchodolski 1996; Loveluck 2007). Plough-zone palimpsests may, then, more often indicate the areas of dumping, rather than the areas of original deposition. Second, the presence of coins challenges the

Figure 4.7. Time Team's excavation of a Romano-British settlement at Wickenby. Photo: Author.

suggestion that they are a good way of indicating non-manuring scatters (Brindle 2014: 16). Coins, it seems, did get swept up with detritus on occasion.

The excavated evidence does, then, broadly mirror that recovered through metal-detecting for the late Iron Age and Roman period, and this is also somewhat true of the later periods, though evidenced through the absence of evidence rather than its presence.

No evidence for Early Medieval activity was recorded through excavation, and PAS holds information on just one Early Medieval artefact from the field – a sixth-century sleeve clasp. Three possible inhumation cemeteries are, however, suggested in the vicinity by PAS data; one from the fields immediately to the south; another to the north of the Roman site, and possibly another to the east (Green 2012: 144). It may be, then, that this sleeve clasp was erroneously recorded to the wrong field, or that it is simply represents activity in the wider area (c.f. Richards 1999b: 72). Either way, the PAS assemblage and the excavated evidence suggests the focus for Early Medieval activity was further afield, and this in turn raises the questions as to whether the Roman field was purposefully avoided. The temporal dynamics of the palimpsest may, then, be indicative of the important role that the antecedent landscape played in the structuring of land-use over longer-periods of time.

The evidence for the medieval period is more intriguing. PAS data comprises an eclectic range of finds: a halfpenny of Henry III, a penny of Edward I, a fifteenth-century buckle, and two late medieval strap-ends. Excavation failed to show any evidence for medieval settlement, but it did indicate that much of the area was used for arable cultivation in the form of ridge and furrow. While it may be that some of these finds relate to isolated rural dwellings that are no longer visible

through excavation (e.g. Lewis 2006: 192), it appears more likely in this case that the assemblage represents casual losses or manuring scatters associated with the nearby settlements of Wickenby and Lissington.

More can be made of the ridge and furrow in terms of PAS data. Interestingly, the fills of one of the furrows contained Roman pottery, and this suggests that horizontal displacement through ploughing has been occurring here since the medieval period at least. Yet, while furrows were seen across parts of the site, other areas of the field had none at all, which led the excavators to comment that there had only been 'limited loss of the former ground surface since the Roman period' (Allen and Clay 2005: 10). Interestingly, the area that produced the stratified Roman metalwork had no evidence of ridge and furrow. It may be the case, then, that the bulk of the Roman metalwork recovered from the plough-zone are those from the uppermost levels that were disturbed first of all through medieval ploughing.

PAS data for the post-medieval period is similarly eclectic, comprising a buckle dated 1600-1900, a silver sixpence of Elizabeth I, a twopence of James II, and a sixpence of William III. The field to the south has since produced a greater quantity of post-medieval finds, including a dress accessories and domestic items. Map regression at Wickenby is only possible to about 1800, around which time the fields were used for arable cultivation. However, the alignment of these modern field boundaries are the same as the medieval ridge and furrow, and this suggests there to have been a strong degree of continuity between the arable landscape of the medieval period, and that seen today (Wessex Archaeology 2008: 6). This again suggests that the post-medieval finds may be the product of manuring, shoddying, or dumping of waste from nearby villages. They are certainly not direct evidence for settlement.

The PAS assemblage does, then, represent all periods from the Iron Age to the present day, but a coarse-grained reading of the landscape suggests that the nature of activity that led to their deposition varied greatly over time. At a broad level this activity included settlement, avoidance, dumping, and arable cultivation with possibly manuring regimes taking place. The significance of PAS data emerges, therefore, when we begin to reconnect the strands of chance and correlation, and change and continuity at particular places.

4.4.2. Sudbrooke

Another large Roman site – this time a 'villa' at Sudbooke, near Lincoln – has been systematically surveyed by metal detecting and subsequently excavated (Figure 4.8). The site was initially discovered in 1994 by Gordon Taylor, and several seasons of field-walking recovered an abundance of Roman pottery, tile and tesserae. Geophysics undertaken later that year revealed a palimpsest of features, including evidence for a stone building.

A systematic metal-detector survey was organised by the author in 2004, and this was undertaken at 5m stints. 276 artefacts spanning the first century AD to circa 1750 were recovered, and of these 45 were dateable to the Roman period, four to the medieval period, and 11 to the post-medieval period. The rest of the assemblage was of modern or of uncertain date, owing to both ferrous and non-ferrous metal being recovered (Daubney 2004). The Roman finds spanned all four

Figure 4.8. Excavation of a Roman villa at Sudbrooke, Lincolnshire. Photo: Author.

centuries, with a particular concentration of brooches and coins of the first and second centuries, and also coins of the fourth century. Casual metal-detecting at the site in the years since the survey has added more finds, but has not altered the chronological signature.

Subsequent excavation arranged by the author to determine the preservation of the monument, along with possible management options, revealed a palimpsest of Romano-British settlement beginning in the mid-late first century and continuing into the third (Clay 2005). This work was expanded upon by four further seasons of excavation (Spence 2006; 2007; 2008). The evidence from excavation indicated initial settlement began as a typical small-scale rural farmstead comprising a series of timber structures and land divisions. These were later rebuilt in a more elaborate fashion, incorporating mosaic floors, a hypocaust system, and painted wall plaster. The stone building was apparently abandoned in the late second or third century (Clay 2005: 9ff), with robbing of the walls being carried out into the late third century (Spence 2008: 38). No evidence for occupation after the demolition of the stone building was discovered through excavation, and the site has a complete absence of pottery dating to the fourth century (Darling 2009).

At face value, then, the evidence from the excavation broadly complements that from the metal-detected assemblage for the late first to mid-third century. However, excavation has a complete absence of evidence for the fourth-century, while PAS data suggests a degree of continuity. The nature of late Roman activity can be understood a little more through analysis of the coin signature.

A total of 85 Roman coins have been recovered in the plough-zone at Sudbrooke, 49 of which date to the fourth century.[23] Clearly, there are too many coins to have derived from manuring. In addition, their dates and their dispersed distribution across the main villa-area show they are clearly not a dispersed hoard. 'Reece analysis' of the coins infer they derive from a late Roman rural settlement. Reece developed a methodology of dividing coins into 21 periods, which allowed the 'signature' of assemblages to be compared against one another, and also against

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23   An additional 9 coins are illegible radiates or *nummi* (c.260-402).
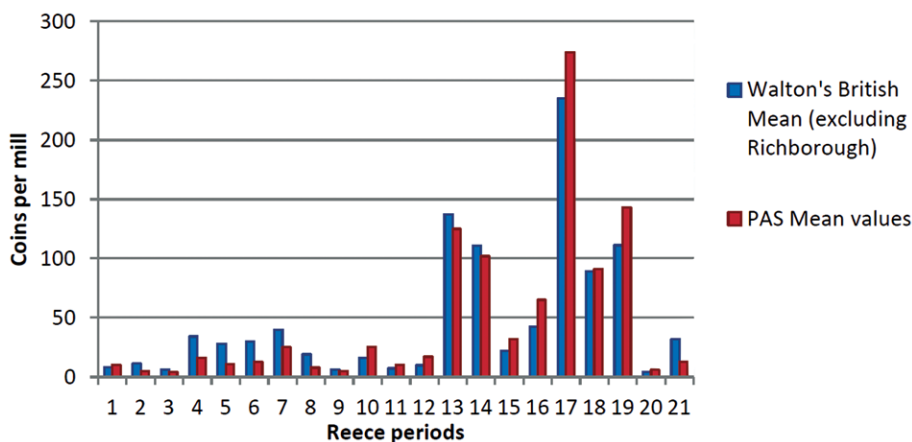
Figure 4.9. Walton's British mean, and that for PAS (Reproduced from Walton 2012: 37, Figure 15).
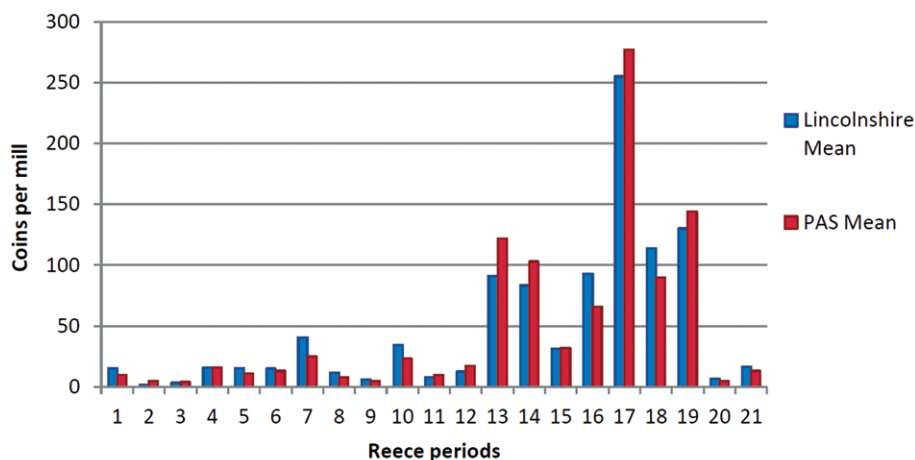
Figure 4.10. Walton's Lincolnshire mean (Reproduced from Walton 2012: 40, Figure 19).

the national mean (Reece 1987, 1991). Walton expanded upon Reece's work in her national study of Roman coins from rural sites recorded on PAS; this provided not just a new British mean (merging both PAS and excavation data) (Figure 4.9), but also that for PAS data alone (Walton 2012: 36ff; Figure 4.10). Broadly, Walton's figures show the British mean to have a low rate of coin loss in the first to third centuries, and a high rate in the fourth century. A high rate of loss for periods 17, 18 and 19 is a common feature of rural sites recorded on PAS. The PAS mean calculated by Walton for Lincolnshire is remarkably close to the national dataset (Walton 2012: 39; Figure 4.10).

Comparison of the Sudbrooke data to Walton's means reveals a general similarity, but with a few key differences (Figure 4.11). The concentration of coins in periods 2 and 5 are higher than both the Lincolnshire and the PAS mean, and while the later Roman coins reflect the more abundant use of coinage, the concentrations in Periods 18 and 19 are notable. Turning first of all to the peak in Period 2
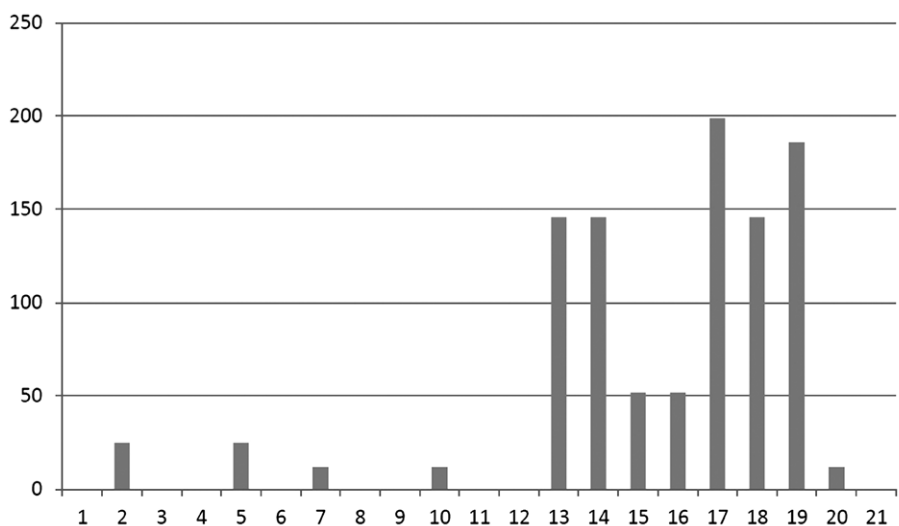
Figure 4.11. Reece analysis of coin data from Sudbrooke (per mill).

coinage, Claudian coinage has long been taken as evidence of military or official Roman activity (Walton 2012: 79). Walton found that such coins recorded on PAS are almost exclusively found south and east of the Fosse Way, but rather than being restricted to military sites, Walton found that many examples come from areas of native population away from military centres (Walton 2012: 67, 81). This potential military, but rural, association at Sudbrooke is intriguing given that the villa lies several miles to the east of Lincoln, but within its suggested *territorium*. Additionally, excavations at the villa have revealed the presence of imported Lyon ware – a form of pottery that is strongly related to military sites (Darling 2009: 1).

The profile of the Sudbrooke coins for the later third and fourth centuries (Reece Periods 13-19) is, however, a relatively 'normal' signature for a late Roman rural settlement in the East Midlands (Walton 2012 Chapters 7-8), though the number of Period 17 coins is somewhat low. In Walton's study, between 70 and 75% of sites producing high numbers of coins between Periods 17 and 19 were unclassified rural and villa site types – evidence which is suggested to show the growth in small towns and villages (Walton 2012: 102). The evidence for Sudbrooke appears to suggest – statistically at least – that there was some sort of rural settlement here in the later Roman period. It may be the case, then, that the plough-zone palimpsest is the sole witness to a form of activity now obliterated through arable cultivation; indeed, the fact that plough scars were seen across one of the surviving floors of the villa indicates that much has been lost to cultivation (Figure 4.12). It may also be the case that late Roman settlement is further to the east of the villa, where excavation did not take place.

The distribution pattern of the plough-zone palimpsest may not be especially helpful in this regard, however. Similar to Wickenby, there was evidence for the dumping of domestic waste in ditches at the periphery of the site (Clay 2005: 5). Finds may not be revealing the centre of activity, but rather the periphery of settlement.

Figure 4.12. Plough-scars running east-west across the Roman floor surface. Note the shallow depth of the plough-zone in the section. Photo: Author.

No evidence for the Early Medieval period was found during excavation or through metal-detecting, and only a handful of medieval finds were discovered. Again, similar to Wickenby, these include a rather abstract array of low density finds: a copper alloy annular brooch dated AD1250-1450, a tumbrel, a thirteenth-century harness pendant, and an enamelled buckle plate dating circa AD1250-1400. Post-medieval/modern finds include a number of copper alloy and iron buckles, a pewter spoon, and a horseshoe (Daubney 2004). The sparse and eclectic nature of these finds is somewhat mirrored by the ceramic evidence from excavation.

The pottery reports for Spence's excavations are still awaiting publication, but only a few post-Roman sherds were found during Clay's excavation: a fragment of a mid-fifteenth to early seventeenth-century Cistercian-type ware cup, and a fragment of a nineteenth-century Buff ware vessel (Clay 2005: 34). This evidence – or better, lack of – appears to confirm that the metal finds are unrelated to settlement, and probably the result of manuring, top-soil movement, or casual loss. Quite where these items derived from, if they are imports, is impossible to say; the medieval settlements of Sudbrooke and Scothern lie equidistant from the site.

4.4.3. Wrawby

The evidence from the final site – at Wrawby in North Lincolnshire – tells a strikingly similar story to Wickenby and Sudbrooke. Once again, investigation was prompted by the discovery of large quantities of Roman material in the plough-zone (Murphy 2008). The plough-zone palimpsest included Roman pottery and tile, in addition to metal finds spanning the first to fourth centuries. A systematic metal-detecting survey was undertaken during the excavation, and subsequent excavation revealed a settlement emerging in the late Iron Age, and continuing into the second century (Murphy 2008). Some third and fourth-century pottery was also found suggesting there was some degree of activity here in this later period. No metalwork of the late Iron Age was discovered during the metal-detecting survey, but once again late Roman coins were discovered that mirrored the pattern established for rural sites in general (Reece 1995). 43 coins dated between AD260 and 402, with the majority dating AD330-378.

No medieval features were found archaeologically, and the excavators suggested that most of the area had lost post-Roman layers owing to the heavy ploughing practised persistently here (Murphy 2008: 10). Only a handful of medieval and post-medieval objects were discovered through metal-detecting, again comprising buckles and mounts. Here, the excavators suggested that they represented casual losses. This may well be the case, but manuring cannot be discounted. Once again, they do not appear to be direct evidence for settlement.

It is, of course, somewhat unfair to compare directly excavation evidence with metal-detector finds, regardless of how systematically the latter have been discovered. It is usually the case that excavation targets specific areas or features. As such the chronological diversity that it reflects may be rather restricted in all but the most extensive schemes of trenching. Metal-detecting, on the other hand, may often present a wider range of evidence owing the larger areas of ground that it can cover.

In principle, several of the observations made at Wickenby, Sudbrooke and Wrawby can be projected onto other multi-period assemblages. First, it appears that high-density assemblages often corresponded well with buried archaeology in spite of their original patterning having been distorted somewhat through medieval and later ploughing. Similarly, low-density assemblages – usually of material with dates spotted randomly across a particular period – may well represent post-depositional processes such as manuring, shoddying or causal loss. Yet, while in many cases such finds indicate that the core areas of activity lie in the wider area, these finds are nonetheless archaeological evidence in their own right. Arable cultivation is perhaps one of the most persistent forms of activity seen in the rural landscape, and manuring scatters hold the potential to tell us a great deal about arable regimes through time – should a more sophisticated way of identifying such scatters within non-ferrous metalwork emerge. Finally, this observation suggests that it would be hazardous, then, to remove low-density scatters or single finds from the analysis of multi-period scatters.

Of course, to take any of these observations further we need to turn to case studies of much smaller areas. Accordingly, the rest of this Chapter is devoted to a case study of one of highest diversity hotspots recorded through PAS data –

at Osbournby, near Sleaford. Chapters 5 and 6 continue this for the parishes of Bardney, Garwick, and Little Carlton, in which Middle Saxon assemblages are discussed as components of larger palimpsests.

These case studies moves towards the sorts of questions that plough-zone palimpsests are more capable of commenting on: what is the temporal backdrop to PAS data, and how do they enhance the chronology presented by HER data? How can the concept of the persistent place aid our understanding of finds on shorter scales of time, and how did activity on shorter scales of time impact upon the later development of these places? Why did some persistent places subsequently become deserted, and why did others succeed? Is there evidence for structured use of the landscape over longer periods of time? To what extent is our understanding influenced by bias?

4.5. Case Study: Osbournby – A Persistent Place

The technique of temporal mapping developed in Chapter 2 shows that one of the largest and most temporally diverse 'hotspots' or 'persistent places' recorded by PAS in Lincolnshire comes from the parish of Osbournby (Figures 4.13-4.16).[24] The parish lies at the eastern edge of the Southern Cliff Character Area, straddling the boundary of the Kesteven Parklands Zone and the Fen Edge Settlements Zone. The village of Osbournby represents one node in a longer string of medieval/ modern settlement that runs north-south along the Fen Edge.

The village is dissected in a north-south direction by the A15 and in an east-west direction by the High Street (Figures 4.14 – 4.16). This latter road extends to the west of the village where it is known as West Street, and also east where it is known as the Drove. The Drove extends from the medieval church towards the lower grounds of the Fens themselves, and this road is thought to be a causeway, having been built up above the surrounding lower ground (Haynes and Brown 1994: 1). The historic core of the village is located to the west of the A15, and is built around a triangular village 'green', though this is now completely covered by tarmac (Roffe 2000a). Most of the settlement to the east of the A15 is modern development. The A15 and the Drove do, therefore, somewhat artificially divide the Osbournby landscape into quadrants. For the ease of discussion, finds are referred to as coming from the north-west, north-east, south-west, or south-east quadrants (Figures 4.17).

The PAS assemblage contains 1877 finds recorded to 6-Figure NGR or better. Find spots extend right across the parish, though distinct clusters are visible within this (Figures 4.17 and 4.18). All 9 traditional archaeological broad periods are represented within an area measuring approximately 8km2, and all finds included here have been reported by just one individual who has permission to search the entire parish. The majority of finds are recorded to 8 Figure NGR (10m2),[25] and while searching has been carried out in an unsystematic way, the sample is now large enough to be able to discuss trends within their landscape setting, with particular reference to HER data.

24 The assemblage spills over on its western side into the neighbouring parish of Aunsby and Dembleby.
25 GPS has not been used. Rather, the finder marks up finds onto large-scale A3 maps provided by the author. Grid-references are then worked out using GIS. The attribution of an 8-Figure NGR may not therefore be as accurate had a GPS been used; nonetheless the accuracy is closer to 10m^2 than it would be if data were reduced to a 6-Figure NGR (100m^2).
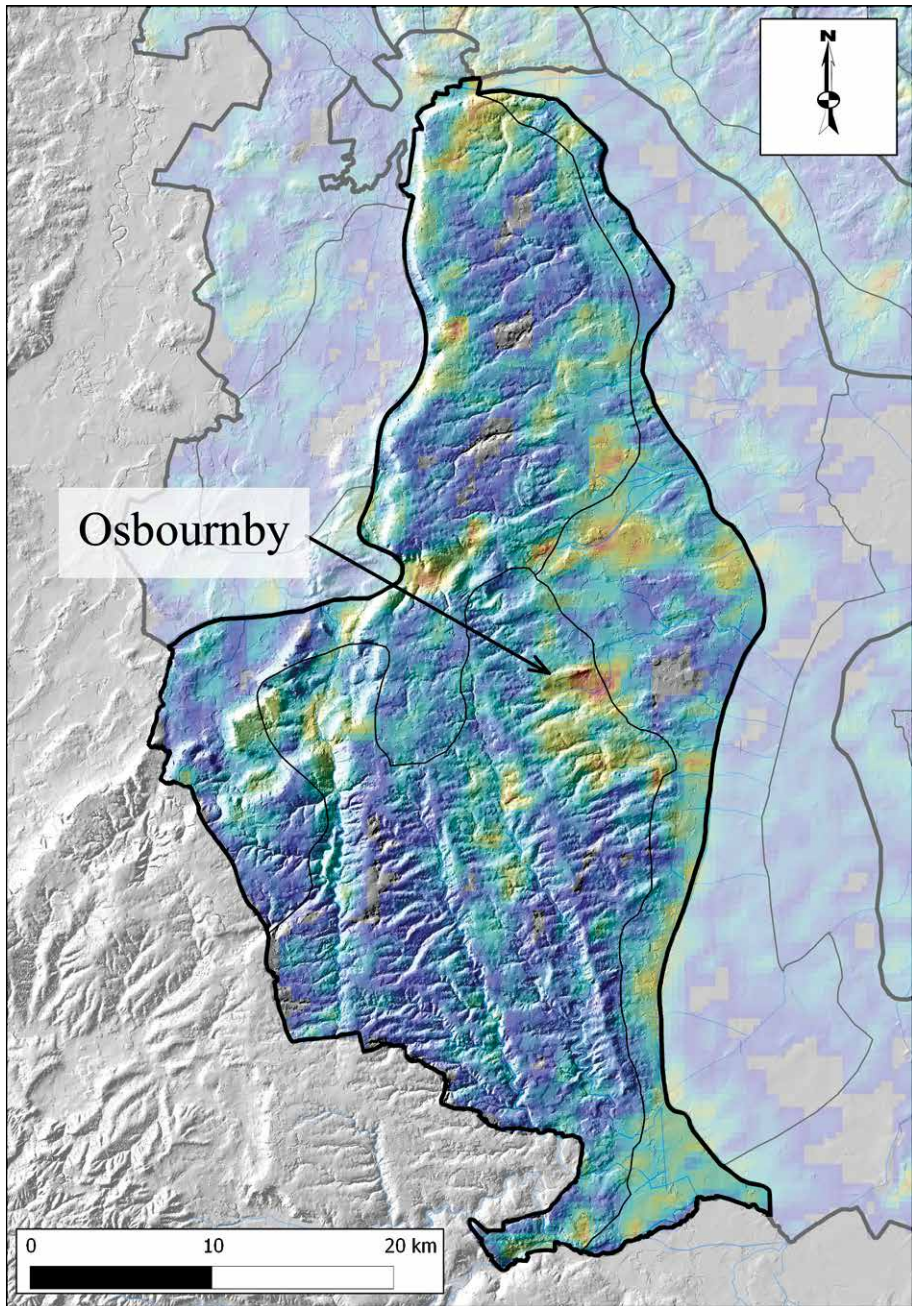
Figure 4.13. Temporal diversity in the Southern Cliff HLC Area (merged HER and PAS data). © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
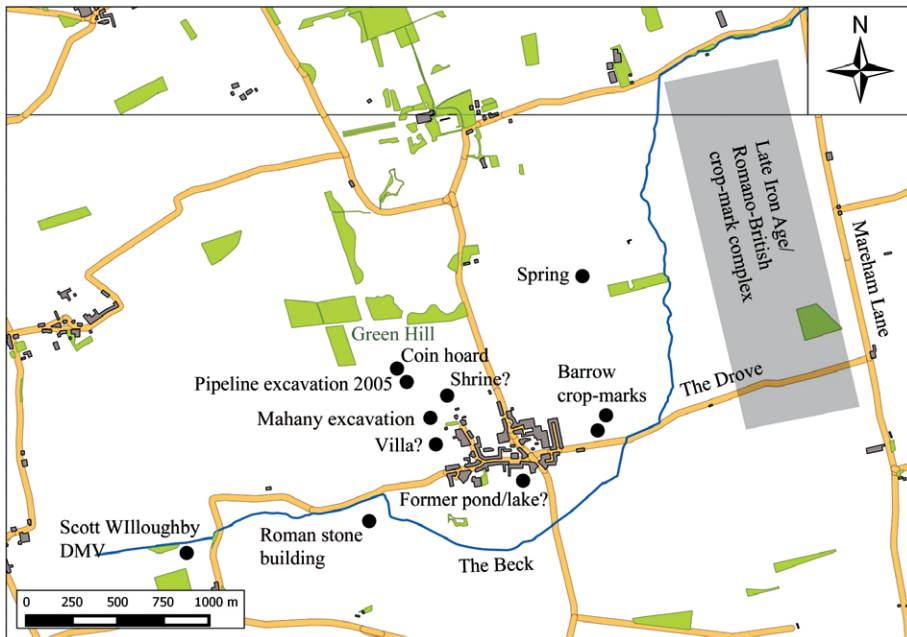
Figure 4.14. Key places and events mentioned in the text. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

Figure 4.15. Looking south from Green Hill onto the village of Osbournby. The 'shrine' spring is located in the clump of trees in the corner of the field, roughly in the centre of the image. Photo: Author.

PORTABLE ANTIQUITIES, PALIMPSETS, AND PERSISTENT PLACES

Figure 4.16. Looking east from Green Hill towards the Fen Edge. The flat fields in the distance contain the late Iron Age/Romano-British crop-mark complex. Photo: Author.
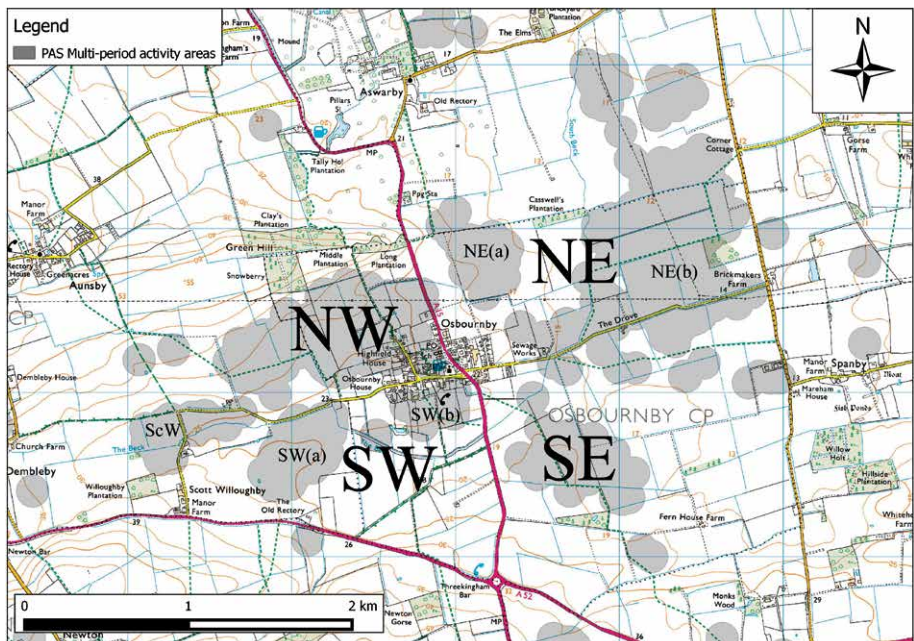
Figure 4.17. The general division of multi-period activity areas within the search area.
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
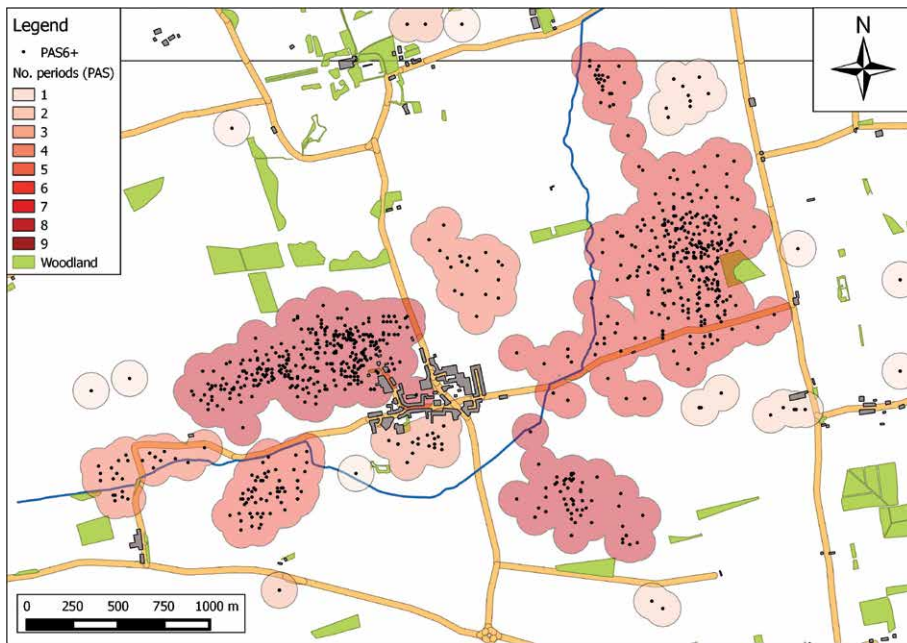
Figure 4.18. Multi-period PAS activity areas in the Osbournby area, buffered to 100m.
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
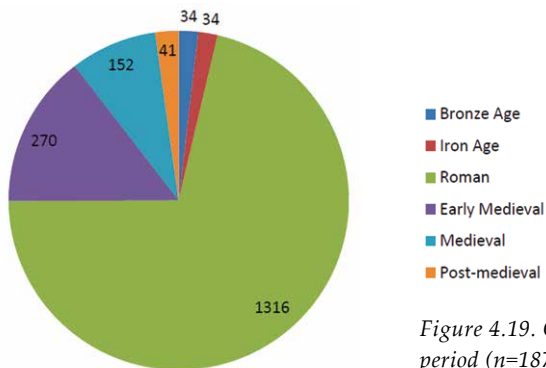
Figure 4.19. Osbournby: number of finds by period (n=1877).

The assemblage is dominated by Roman period data (1316 records), followed by a significant number of finds from the Early Medieval period (270 records) (Figure 4.19[26]). Bronze Age metalwork is well represented here too, forming low-density scatters at various places in the parish. Non-metalwork evidence, mainly lithic scatters and pottery scatters, is also abundant across the parish, but these are not included in Figure 4.19 owing to them having been recorded in a different way. Single finds of notable artefacts such as polished axes and arrowheads have usually been recorded to an 8 figure-NGR, but the finder has also recovered large

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26   Throughout the case study chapters, the chronological make-up of individual palimpsests is expressed as proportions. While this is a pragmatic way of providing an overview, the technique runs the risk of overemphasising periods that are material-rich, such as the Roman period. Naturally, this may cause other periods to show less strongly. Accordingly, numbers of finds are also shown on each pie-chart.
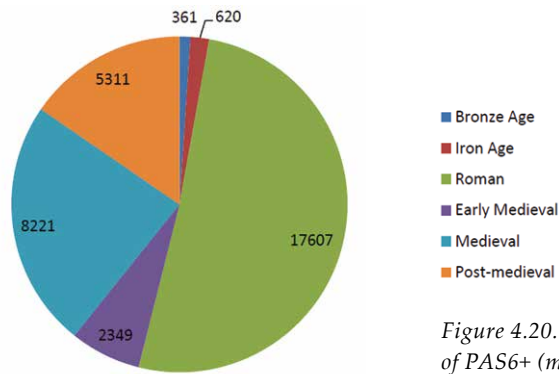
Figure 4.20. Lincolnshire: chronological profile of PAS6+ (metal finds only).
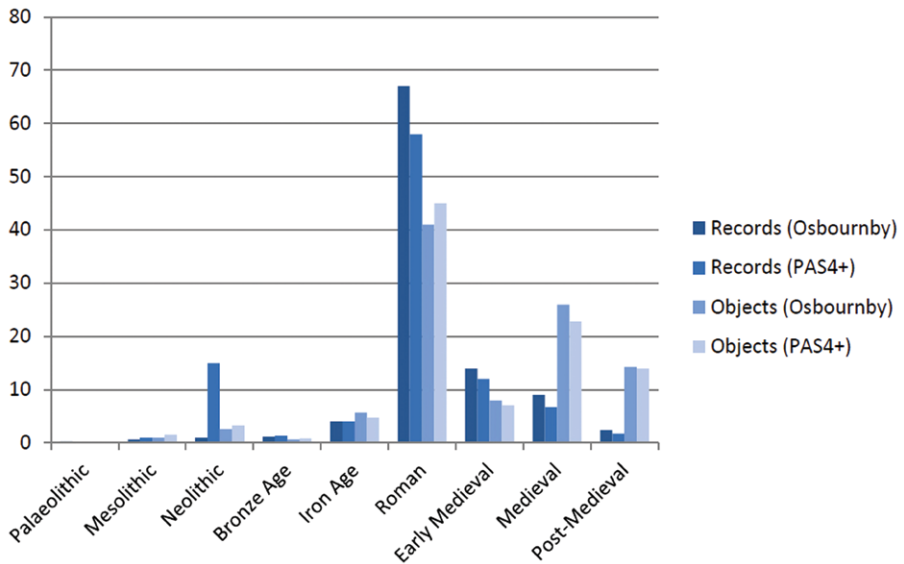
Figure 4.21. Chronological profile of PAS data from the Osbournby persistent place, alongside that for PAS4+. Data shows proportion of records.

assemblages of lithics from various parts of the parish – in addition to a large quantity of Middle Bronze Age pottery. These assemblages reach into the hundreds, but are contained within single, field-centred records.[27]

Comparison of the chronological profile of metalwork at Osbournby against the parent dataset (PAS6+) reveals some striking differences (Figures 4.19-4.21). Roman period finds within the parish are greatly over-representative of the county as a whole, as are finds from the Early Medieval period. Bronze Age metalwork is also slightly over-represented, though the picture is slightly distorted owing to PAS6+ containing a number of large hoards (for example, Stixwould (Treasure ref. 2006 T308), which contained 161 objects). The cluster of finds from Osbournby is therefore probably more significant than statistics would lead us to believe.

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27   This highlights a common difficulty in statistically representing metallic small finds and non-metallic small finds in the same way, or on the same graph or chart.
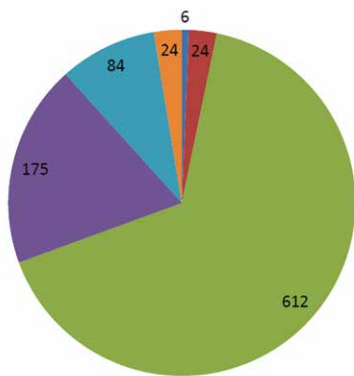
Figure 4.22. Proportion and number of finds by period at the NW palimpsest (n=925).
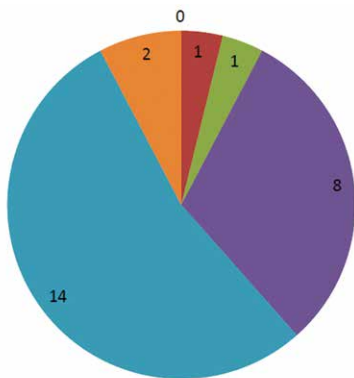
Figure 4.23. Proportion and number of finds by period at the Scott Willoughby palimpsest (ScW) (n=26).
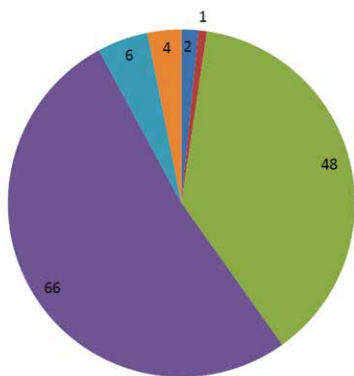
Figure 4.24. Proportion and number of finds by period at the SW(a) palimpsest (n=127).
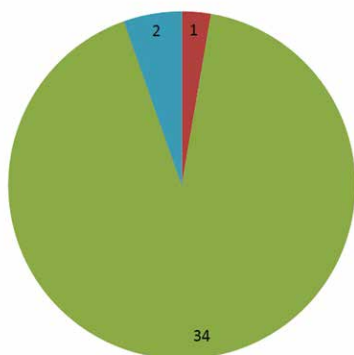
Figure 4.25. Proportion and number of finds by period at the SW(b) palimpsest (n=37).
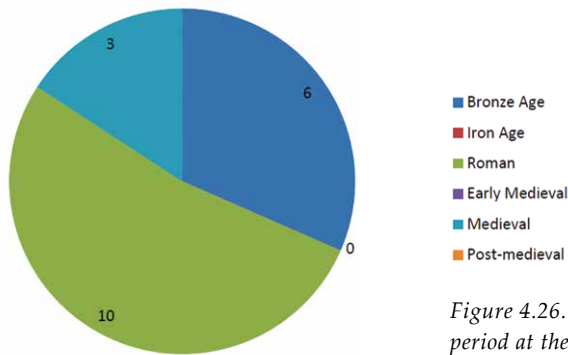
Figure 4.26. Proportion and number of finds by period at the NE(a) palimpsest (n=19).
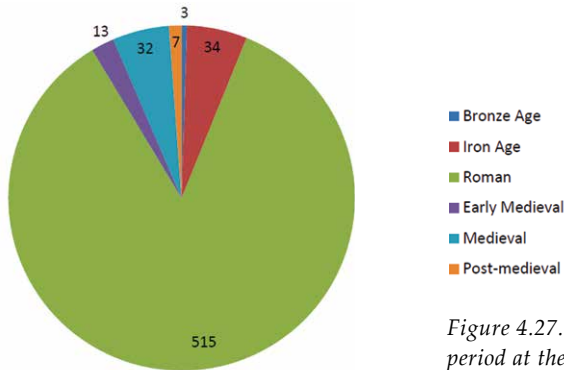
Figure 4.27. Proportion and number of finds by period at the NE(b) palimpsest (n=604).
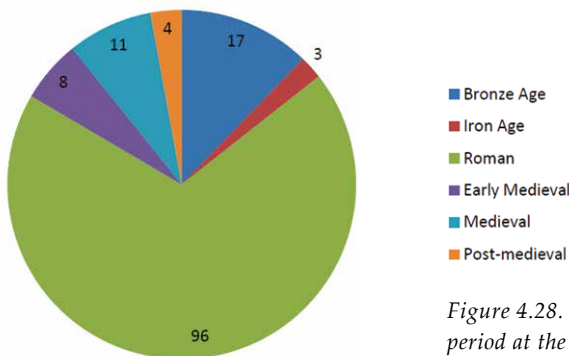
Figure 4.28. Proportion and number of finds by period at the SE palimpsest (n=139).

A closer analysis of the temporal heatmap shows the Osbournby persistent place to be formed of several palimpsests or 'nodes' within the wider pattern of persistence, some of which are discrete, and others which merge to form larger areas of activity (at 100m radius buffer) (Figures 4.30 & 4.31). Again, for ease of discussion each distinct palimpsest has been assigned a label as follows: NW, Scott Willoughby (ScW), SW(a), SW(b), NE(a), NE(b), and SE (Figure 4.17).[28]

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28   The extensive crop-mark complex seen at the eastern end of the north-east quadrant extends south of the Drove, and the PAS assemblage mirrors this. For ease of discussion, finds from the area immediately south of the Drove are included in the north-east quadrant assemblage.

Figure 4.29. The Osbournby hoard under scrutiny, 1980 (Left: T. Ambrose; Right: A. White).
Photo: © Lincolnshire County Council.

Further analysis of density and temporal diversity reveals each palimpsest to a have unique signature (Figures 4.22-4.28), and this in turn suggests they are best interpreted as a series of spatial palimpsests (c.f. Bailey 2007: 207) – that is, that they refer to discrete areas of activity within a wider 'site', or in this case, persistent place. The potential archaeological significance of these spatial palimpsests is, of course, a key question of this case study. Due caution needs to be exercised, however, particularly when exploring palimpsests or period-specific components of palimpsests formed of small samples (e.g. ScW, NEa), for which one or more of the seven areas of bias identified by Robbins may be particularly acute (Robbins 2012, 2013).

The general spatio-temporal diversity contained within these palimpsests corresponds well with the parish-wide backdrop provided by HER data (Figures 4.30-32), which also shows a greater body of evidence for the Roman and Early Medieval periods. Temporal mapping of HER data reveals PAS clusters correspond with places at which HER data also records multi-period activity, but with the highest level of diversity occuring in the north-west quadrant. PAS data from this quadrant also displays the highest level of temporal diversity. However, while this suggests PAS data is an accurate reflection of below-soil archaeology, there is undoubtedly a level of bias within the legibility of the archaeological record here owing to a greater amount of fieldwork.

First, archaeological excavation was undertaken by Mahany between 1973-4, following the discovery of Saxon pottery in the plough-zone. This revealed a hall-type post hole building, in addition to a large quantity of Middle Anglo-Saxon pottery. Unfortunately, the excavation was never fully published, and all that can be gleaned of it are the paragraphs published by Marjoram (1974b) and Mahany (1977b).
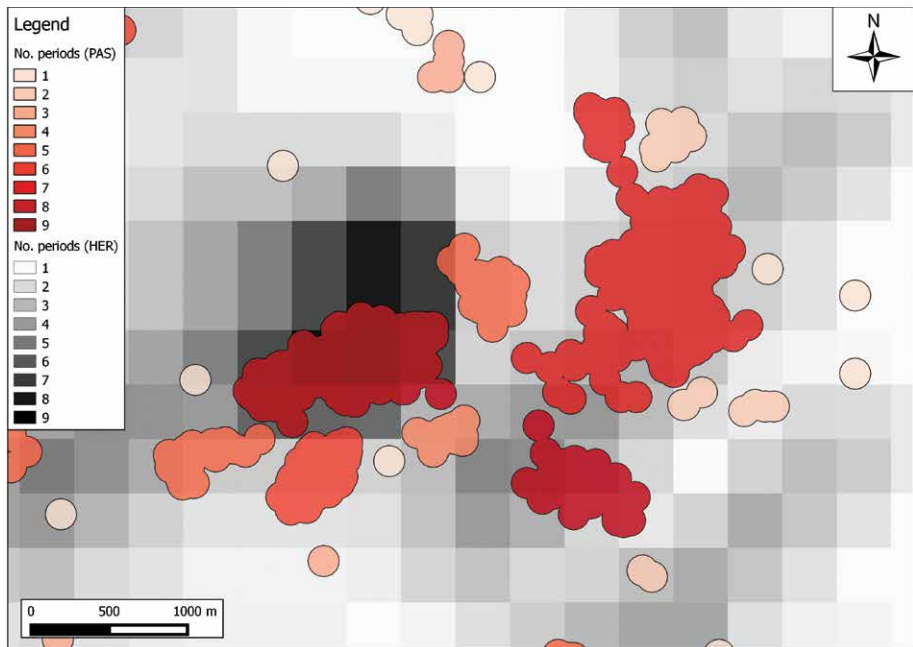
Figure 4.30. Multi-period PAS activity areas set against temporal diversity in HER data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
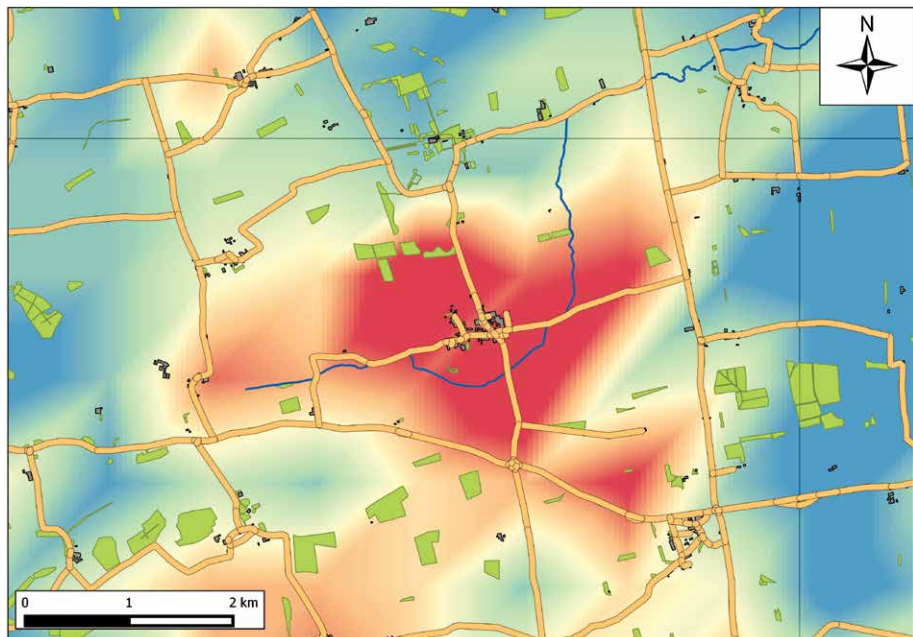
Figure 4.31. Merged temporal diversity: Upper Palaeolithic to Post-medieval HER and PAS data for Osbournby merged. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
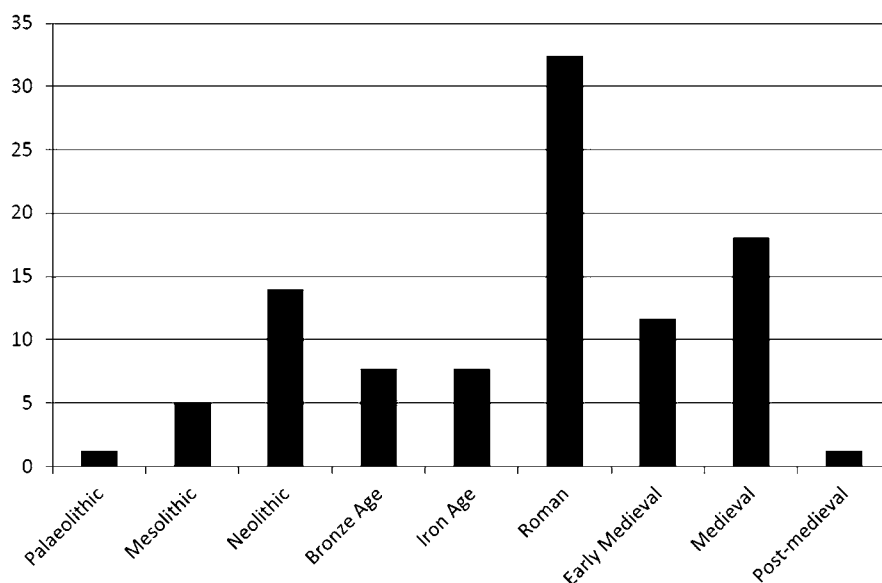
Figure 4.32. Chronological profile of HER records (%).

Second, several sites have become known through excavations during and in advance of water pipelines in this quadrant. The first occurred in 1979, and while no archaeological recording took place as it would have done today, the excavations revealed Roman and Saxon activity. A dispersed hoard of 22 late Roman silver siliquae was also found through metal-detecting in the months prior to the cutting of the pipeline in the same area. Further episodes of metal-detecting led to the discovery of a beaker containing a further 224 siliquae, in addition to several other single finds in the vicinity. In total the hoard contained 270 coins, and all were found by the present day finder, Tim Camm, when he was just 11 years old (White 1980, 1981; Bland and White 1984). The hoard is suggested to have been deposited circa AD395-400 and therefore represents one of the latest Roman coin hoards in the county (Figure 4.29).[29] Further works to the water-main were undertaken in 2005, and a programme of fieldwalking and excavation was implemented (Taylor 2005; Mellor 2007). This revealed a concentration of third-to fourth-century Roman material indicating occupation and iron smithing. Much of this material was redeposited in Early to Middle Anglo-Saxon features (Mellor 2007: 1). No further coins were discovered.

Temporal diversity in HER data is also seen extending to the south-east and north-east, and this is also reflected more generally in PAS data. A relatively lower diversity scatter of PAS and HER data is seen to the south-west quadrant, especially close to the village, and this may well reflect localised differences in the natural environment. Environmental evidence recovered through archaeological excavation here in 1992 suggested that this area was probably once a marsh or pond. This area once contained silt and clay likely to have been deposited in a

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29   White does, however, comment that the buff-red fabric beaker in which it was found is similar to 'others the writer has seen from Saxon Shore forts in East Anglia' (White 1981: 81).
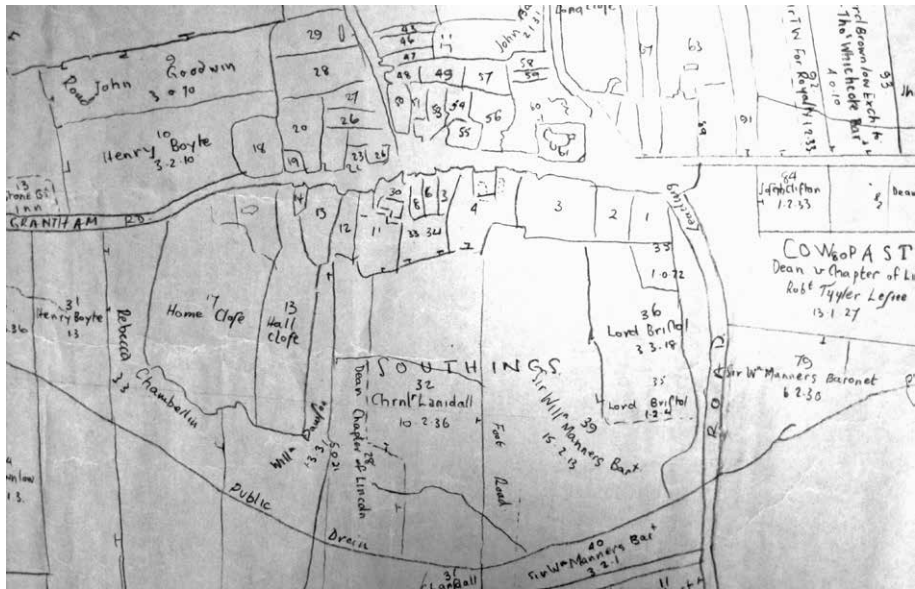
Figure 4.33. Sketch of the 1789 enclosure award map for Osbournby, showing 'South Ings' south of the medieval/modern village core. Photo of sketch. Courtesy of Tim Camm.

low energy water environment that drained further to the south (Dymond 1992). Indeed, that this area was once damp ground is suggested by the field name 'South Ings' seen on the Enclosure Award map of 1798; 'ings' may be understood as deriving from the Old Norse 'water-meadow' (Cameron 1996: 232; Figure 4.33).

A similar low diversity and low-density scatter is seen immediately to the northeast of the village, extending up to the northwards curve in the Beck. This area is under arable cultivation and contains at its northern end a large spring. The water has now dried up, having occurred when the water was tapped and diverted to Grantham (Camm pers. com). The velocity with which this spring once flowed is evidenced by the mass of lime that surrounds it (indeed, it is visible on GoogleEarth); the plough goes around this feature in the landscape. This spring is likely to be in the unlocated field once known as the 'spaw' field, which is described in an eighteenth century document as being medicinal (Healey 1995: 4). Yet, the finder prefers not to search here owing to the relatively low finds rate achieved. The lack of both HER and PAS data for this part of the parish is rather perplexing, though the lack of crop-marks can be explained in part owing it to be located directly on clays, as opposed to the gravels to the east (Figure 4.34). The lack of drift geology – which undoubtedly would have aided drainage – may, therefore, explain in part the apparently lower intensity with which this part of the landscape was used.

Finally, the lack of data from the landscape northwest of the scatter owes to the presence of a high crest of land known as Green Hill. That to the northeast is principally owing to the fields being under different ownership, as is the case to the south. Little searching has been undertaken to the east of Mareham Lane. The archaeological potential of these areas in terms of extending the PAS scatter is, therefore, unclear at present. However, the lack of finds reported by the

Figure 4.34. Superficial geology in the Osbournby region. © BGS 1:25,000 Superficial Geology. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
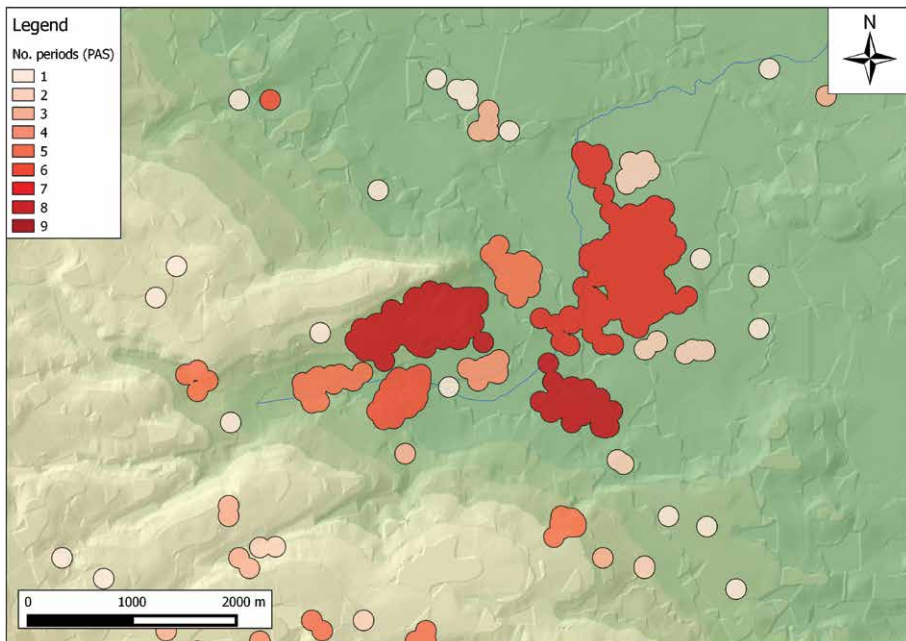
Figure 4.35. Topographical setting of the Osbournby PAS palimpsest. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

public other than through metal-detecting from the areas surrounding Osbournby suggests that the identification of the persistent place is valid.

Indeed, this is perhaps also supported by viewing the persistent place topographically. This shows it to be situated within a shallow basin on the eastern edge of the Southern Cliff (Figure 4.35). This is where the highground meets the Fen Edge, and it is accordingly a resource rich area. A modest watercourse runs off the limestone plateau in the west, and flows eastwards before turning north for a short distance, and then east again into the Fens. The medieval/modern day settlement of Osbournby is nestled within the crook of the Beck. This case study presents, for the first time, a discussion of HER and PAS data for the Osbournby region, with particular reference to the structuring of activity through time and place. This shows the dynamic relationship between HER and PAS data, and reveals how a multi-temporal view can help us to better understand the biographies of different nodes that form a persistent place.

4.5.1. Palaeolithic

The parish of Osbournby is emerging as an important source of information on Lower to Middle Palaeolithic hand-axes. Five of the 12 axes (41%) recorded on PAS for Lincolnshire have been found in the parish, though only three of these have been positively identified as such (Figure 4.37 and 4.38). Only one axe is recorded on the HER (LHER 64443) – this being one of the axes previously recorded by PAS.

The distribution of the positively identified examples shows a strong association with the present day course of the Beck, which for most of its passage through the parish cuts through glacial sands and gravels (Figure 4.36). Accordingly it might be assumed that the axes have been dredged from the underlying gravels into the plough-zone (Bee 2005: 97). The other 'possible' examples have been found further afield from the Beck, but they do nonetheless come from areas with similar superficial deposits. These axes presumably eroded from or were dredged out of MIS 6 (Balderton-Southrey) terrace deposits of the Trent, and derive from earlier deposits upstream. While these finds are impossible to date, they possibly derive from an MIS11 context (between 424,000 and 374,000 years ago) (Chowne pers. com.).

In keeping with the majority of palaeoliths from Lincolnshire, the Osbournby axes are highly abraded. This highlights a wider problem regarding the interpretation of Palaeoliths from the region; most, if not all, axes from the county are now thought to have been deposited by glacial outwash as the ice retreated – probably by the Late Middle Pleistocene glaciation (Wymer 1968, 1985; Hosfield 1999; McNabb 2000: 11; Hosfield *et al.* 2000). Indeed, Lincolnshire axe finds recorded on the HER also display a strong association with sand and gravel deposits; several examples have been found on reject heaps at working gravel quarries (Alabaster and Straw 1976; Wymer and Straw 1977; Brandon and Sumbler 1988), and others

Figure 4.36. Erosion of the land surface by the Beck. The plough-zone is visible as the black soil layer at the top in the background. Photo: Author.

Figure 4.37. Lower-Middle Palaeolithic PAS and HER data in the Osbournby area. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
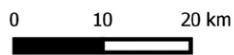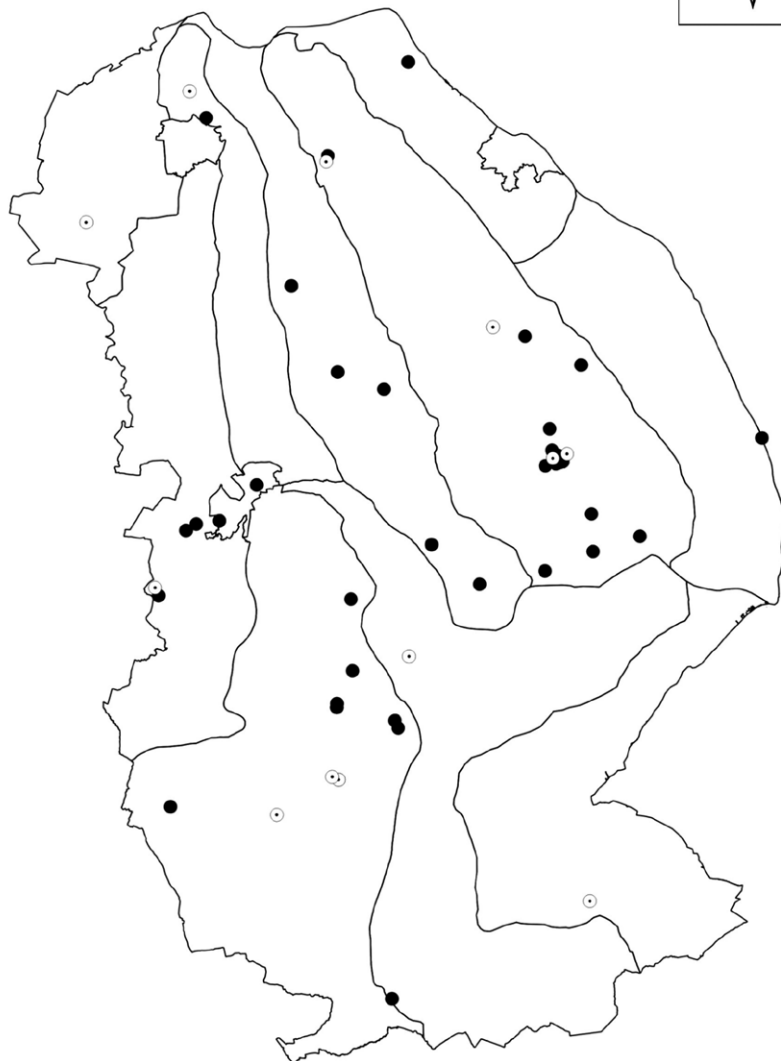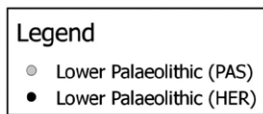
Figure 4.38. Lower Palaeolithic HER and PAS data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

have been found in the plough-zone, where drainage digging and dredging have scoured the underlying gravels (Bee 2001; 2005).[30]

Accordingly, their find spots are a taphonomic construct and do not therefore necessarily indicate the original place of deposition. They do nonetheless indicate a wider use of the former river valley landscape, probably owing to the wide range of resources they offer (Ashton *et al.* 2006).

While the Osbournby axes do, then, follow the wider trend established by HER data, they form a relatively large and 'new' component of the record for this period. The clustering is certainly unusual, and is probably best explained by the combination of archaeologically rich deposits and a finder with an excellent ability to spot these artefacts in the plough-zone. Indeed, the same comment can be made of another concentration of Palaeoliths in the Lymn Valley, where all have been recovered by just one individual (Bee 2001; 2005).

4.5.2. Mesolithic

The end of the Late Upper Palaeolithic is characterised by a period of rapid warming and dramatic environmental change. Temperatures rose to similar levels as today by around 9500 BP (Myers 2006: 51), and sea levels rose from around -55m OD to those of the present day by around 4900 cal. BC (Knight and Howard 2004: 31). Arctic tundra gave way to forests of birch and pine, and later species such as oak, elm and lime, and these in turn attracted a range of animals (Knight and Howard 2004: 33; Myers 2006: 51). An increase in human occupation accompanies these climatic and environmental changes, and the East Midlands – with its diverse upland and lowland landscapes – became increasingly exploited by seasonal trips of hunter-gatherers whose subsistence, social interaction and settlement involved a high degree of mobility (Myers 2006: 51, 53). Indeed, the topography of the county enabled a range of well-wooded and wetland environments that may well have supported rich faunal and plant resources (Knight and Howard 2004: 31).

The PAS evidence from Osbournby is minimal, but perhaps attests to seasonal activity here nonetheless (Figure 4.39). Finds comprises two single finds of perforated axes, in addition to low-density scatters set within larger multi-period flint scatters. The two perforated axes were discovered in the 1960s and eventually came into possession of the metal-detector user from the parish who subsequently reported them. It appears that both were, however, already recorded on the HER.

The first, PAS ref. LIN-DE2AC7, was found north-west of the village in the 1965 and appears to be the same as HER ref. 64644. Excavation in this part of the field in 2005 revealed a low-density scatter of Mesolithic flints (Mellor 2007). The second, PAS ref. LIN-DE7E13, was also reported by the metal-detector user, and is the same

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30 One axe – from Holbeach – is recorded on PAS. This find spot is unusual; Holbeach is located in the Wash, which was a large marine embayment during interglacial high sea-levels (Bridgland *et al.* 2014). It is possible that this axe was redeposited in relatively recent times; during the late eighteenth century many Fen parishes obtained chalk and gravel that were used form hard surfaces for roads (Brears 1940: 94). The gravel pits at Hagworthingham (on the eastern edge of the Wolds near the Lymn Valley), for example, which were in operation as early as the sixteenth century, supplied the parish of Halton Holegate parish forty-five loads of gravel in 1788, and the parish of Skegness with 787 tons in 1814 (Brears 1940: 94). The Holbeach axe may therefore have been accidently imported with a load of gravel.

as LHER 64653 found in 1960. This item was found in a drain, and similar to the Palaeoliths, is likely to have been exposed to the surface through ditching.

Lithic scatters are more widespread across the parish, and several scatters have been recorded. No Upper Palaeolithic implements have been identified so far, but a more detailed analysis of the assemblages may produce evidence in time. Several Mesolithic flints have been identified, however, and these appear to date to the later Mesolithic – as indeed do the majority of lithic scatters recorded on the HER.

To date these have been recovered from areas in the north-east and south-east quadrants in areas for which HER data holds no information. However, HER data show Mesolithic activity to also be located in the north-west quadrant (Mellor 2007), where PAS data is at present silent for this period. These assemblages once again closely correspond with the gravel terraces in the area close to the present-day course of the Beck, and this may indicate some degree of activity along the river terraces overlooking the watercourse. The assemblages recorded by PAS and HER have in common the fact that they of low density.

This is in contrast to sites such as Barnetby le Wold, where PAS holds information on several hundreds of flints. The low density may in part result from the finder only collecting flints as chance finds during metal detecting, rather than through systematic fieldwalking.

However, low-density scatters are frequently found during more systematic field-walking, such in the Trent Valley where such scatters were interpreted as representing occasional use of places and route-ways between more persistently visited places (Knight and Howard and 2004). It may be significant, then, that the two lithic scatters found in the plough-zone at Osbournby are mirrored by
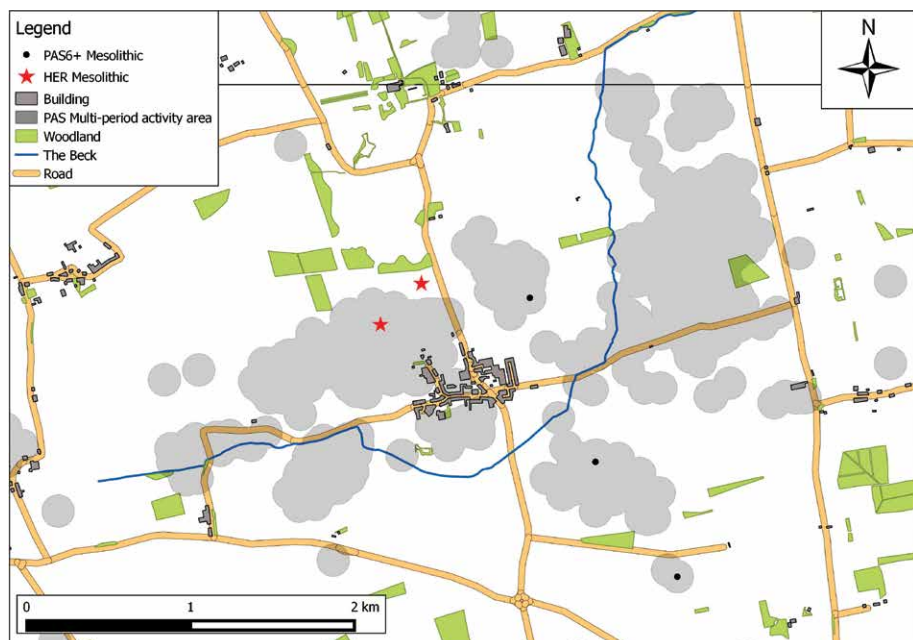
Figure 4.39. Mesolithic PAS and HER data in the Osbournby area. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
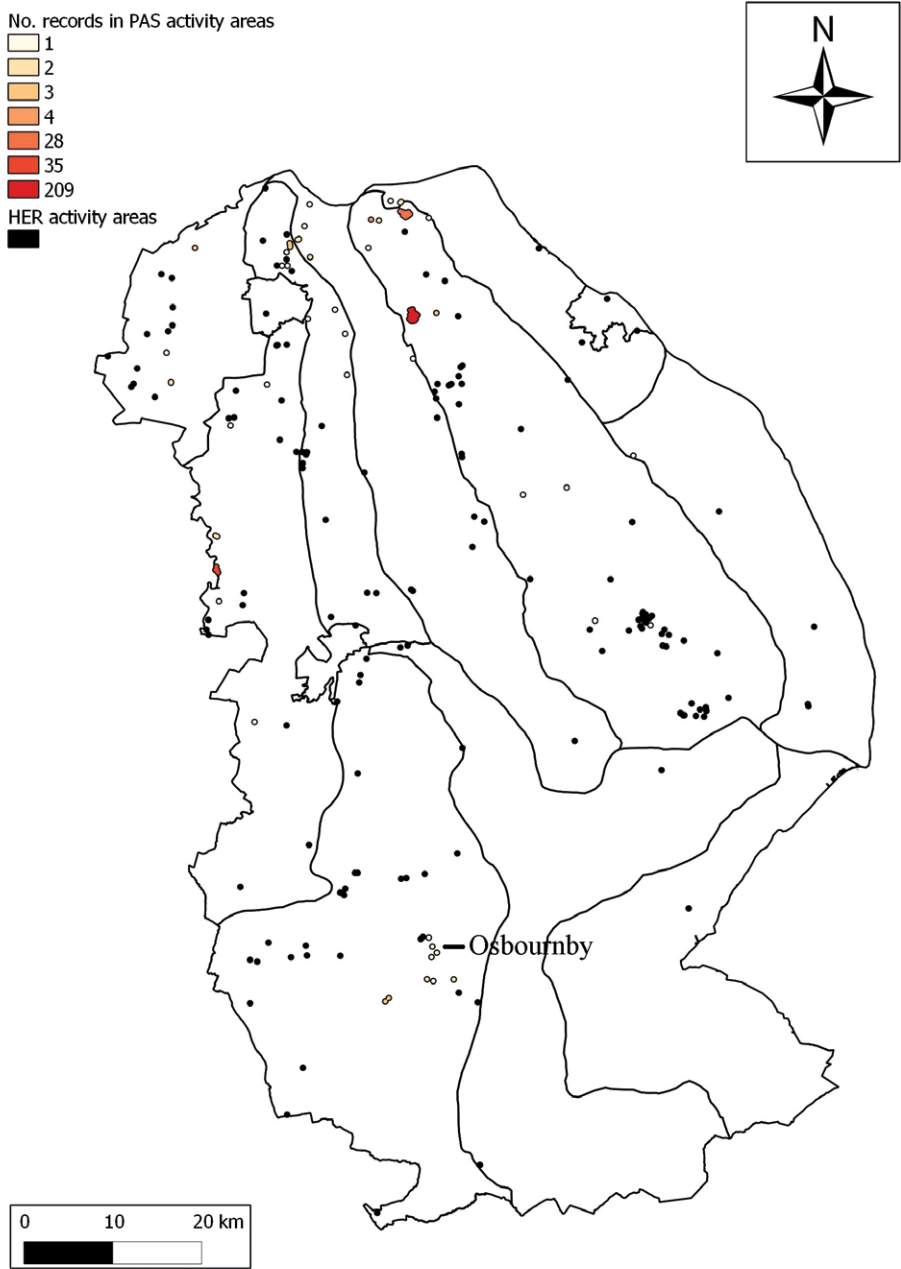
Figure 4.40. Density and distribution of new Mesolithic PAS activity areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

the evidence recovered through excavation in the north-west quadrant. Here, two areas of Mesolithic activity were identified, and both were low-density scatters (Mellor 2007).

Viewed from a dwelling perspective (Ingold 2000), we might envisage these flints as indicators of a well thought-out and intimately known landscape, in which task-groups moved between base camps, activity locations and a small number
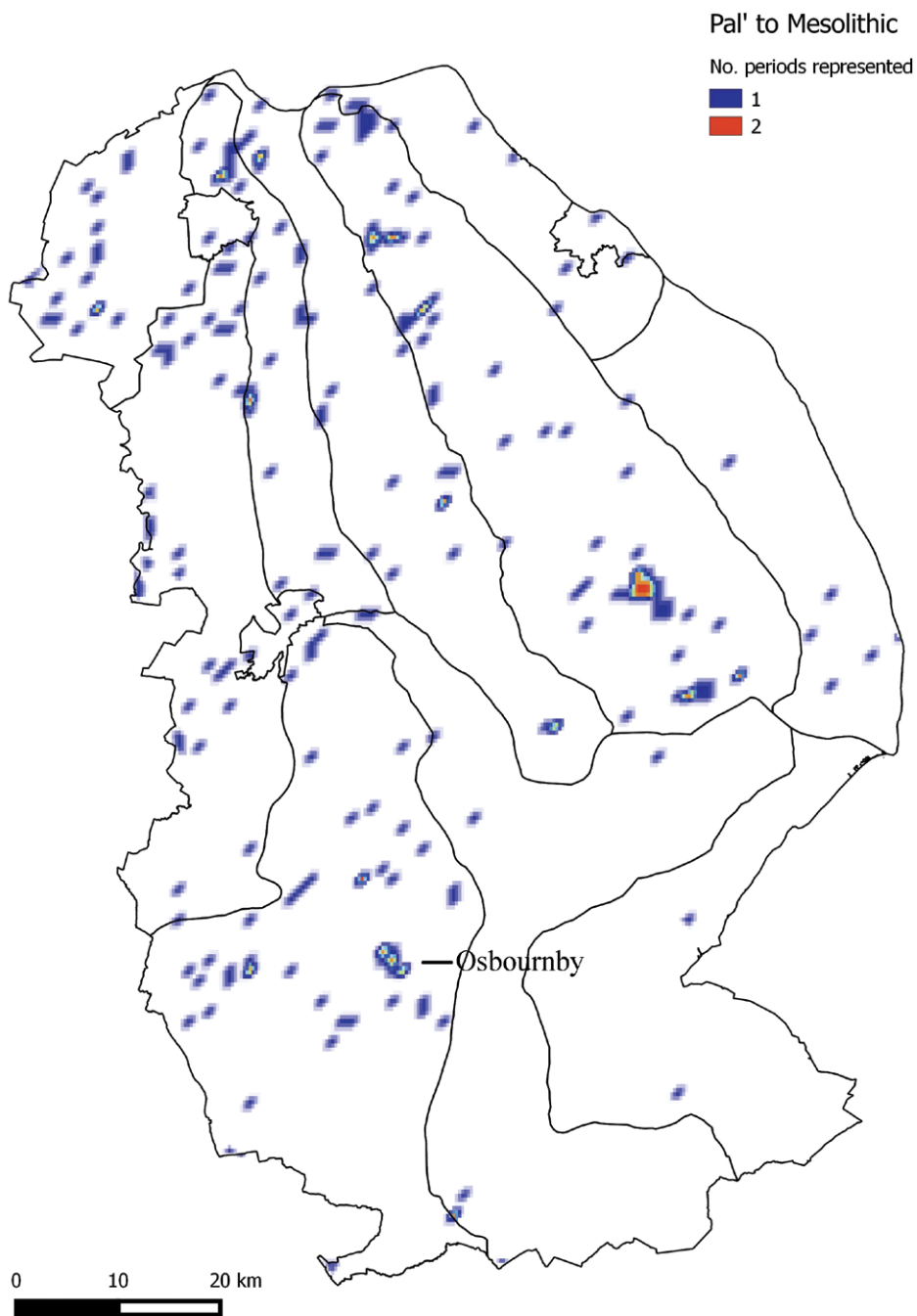
Figure 4.41. Temporal diversity: Upper Palaeolithic to Mesolithic HER and PAS data merged.
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of established residential bases (Myers 2006: 53; Driscoll 2009). Specifically, the scatters at Osbournby may represent the movement of people along the Fen Edge and/or from the higher ground of the Limestone ridge, to the lower ground in the east. Indeed, the Osbournby assemblages complement the wider known use of the

landscape during this period, in which lowland landscapes such as the Fen Edge and its feeder valleys were exploited (Hayes and Lane 1992; Lane 1995; Myers 2006; Mellor 2007). PAS activity areas in the wider area follow the slopes either side of the River Slea, and others continue south along the margins of the Fen Edge, complementing the string of Mesolithic sites discovered through fieldwalking by the Fenland Survey (Hayes and Lane 1992). It must be stated, nonetheless, that the nature, duration and punctuation of persistence are difficult to determine given the general absence of chrono-typological detail in these assemblages (Myers 2006: 59). Nonetheless, many of the places at which Upper Palaeolothic flints have been found have also produced Mesolithic flints, providing tentative evidence for a structured use of the particular places through time (Figure 4.41; Appendixes 26 and 27).

The Mesolithic activity areas recorded by PAS at Osbournby reflect the county-wide trend for this period (Figure 4.40); 99% of PAS data (335 records) are found more than 300m away from HER records (98%/332 records at 500m). These form 44 new PAS activity areas, increasing the 121 existing sites ascertained by using the present methodology of only using 'certain' dated material by around 35%.[31]

4.5.3. Neolithic

While the transition between the Mesolithic and the Neolithic was regionally variable, it is clear that major and rapid cultural changes took place between 4000 and 3700 BC (Clay 2006: 69). During this time Britain and Ireland saw the introduction of cereal cultivation, and with it, a change in the structure of individual and community life (Bradley 1998).

The general distribution of PAS Neolithic objects in the parish is more widespread than in the Mesolithic, owing to a larger number of more recognisable objects having been reported, such as arrowheads, scrapers and polished axes (Figure 4.42). Also included in this distribution area are several large assemblages that contain multi-period lithic scatters, with dates ranging from the Mesolithic to the Bronze Age. These larger lithic scatters are recorded to a six-Figure grid-reference (100m square), and therefore show as a single find spot. In reality, however, these flints represent extensive scatters.

HER data also records lithic scatters and single finds of polished axes and arrowheads scattered across the parish, and these broadly mirror the distribution seen in PAS data. In addition, HER data records two sherds of late Neolithic pottery, but these are unlocated (Chowne 1977: 16). Excavation has contributed a little more; while only one possible Neolithic flint was found during the 2005 water-main excavations (Mellor 2007), a greater quantity of finds – including a stone axe – was found during Mahany's excavation closer to the village (Marjoram 1974a: 18; Mahany 1977b).

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31   A slight discrepancy is seen in the number of existing sites; 140 were identified in 2006 (Myers 2006: 62), but this was achieved using a different methodology to the 300m radius method used here. The variation is not particularly statistically significant, however; the addition of 44 activity areas to 140 sites results in a 31% increase – a difference of only 4%.
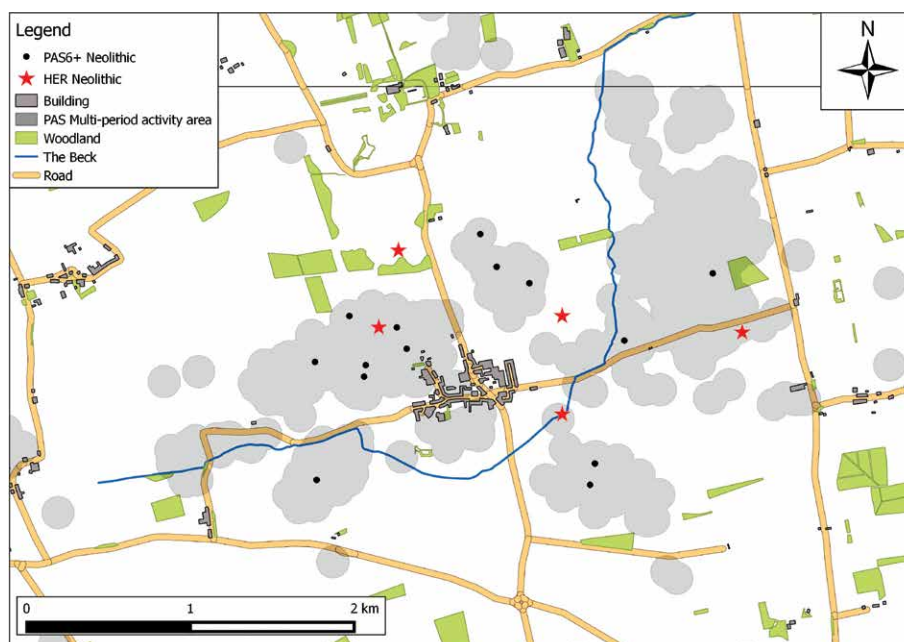
Figure 4.42. Neolithic PAS and HER data in the Osbournby area. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

In many ways PAS data from Osbournby mirrors the county-wide relationship with HER data for the Neolithic. HER data attests to 663 activity areas in Lincolnshire as a whole, and PAS contributes another 148, raising the total by 22% (Figure 4.43). While PAS data contribute relatively few sites in relation to HER data, 87% of PAS data have, however, been found more than 300m away from an existing record, thus the majority of finds are from 'new' areas of activity. The significance of Neolithic PAS data is somewhat difficult to establish, however, given that they are largely reported as chance finds rather than being systematically recovered. Accordingly, the county dataset – and that from Osbournby – includes a much larger proportion of the more recognisable pieces – such as polished axes, scrapers and arrowheads – than artefacts such as waste flakes and other knapping debris (c.f. Bond 2010).

The general correspondence between Mesolithic and Neolithic activity in the Osbournby area may well reflect the wider known tendency during the early Neolithic for population groups to carry on visiting those places utilised during the Mesolithic (Clay 2006: 69; Biddulph 2008: 1; Figure 4.44; Smit 2010). Indeed, several sites in the county indicate repeated use in the Mesolithic and Neolithic (c.f. Garton 1983; Lindsey Archaeological Services 1999; Clay 2006: 73), and these also include sites situated along the Fen Edge (Chowne and Healy 1982; Chowne *et al.* 1993; French 1992: 2-3). Regarding PAS data, 48% of Mesolithic activity areas contain Neolithic flints (Appendix 26). This Figure may well be artificially low owing to difficulties in dating lithics.
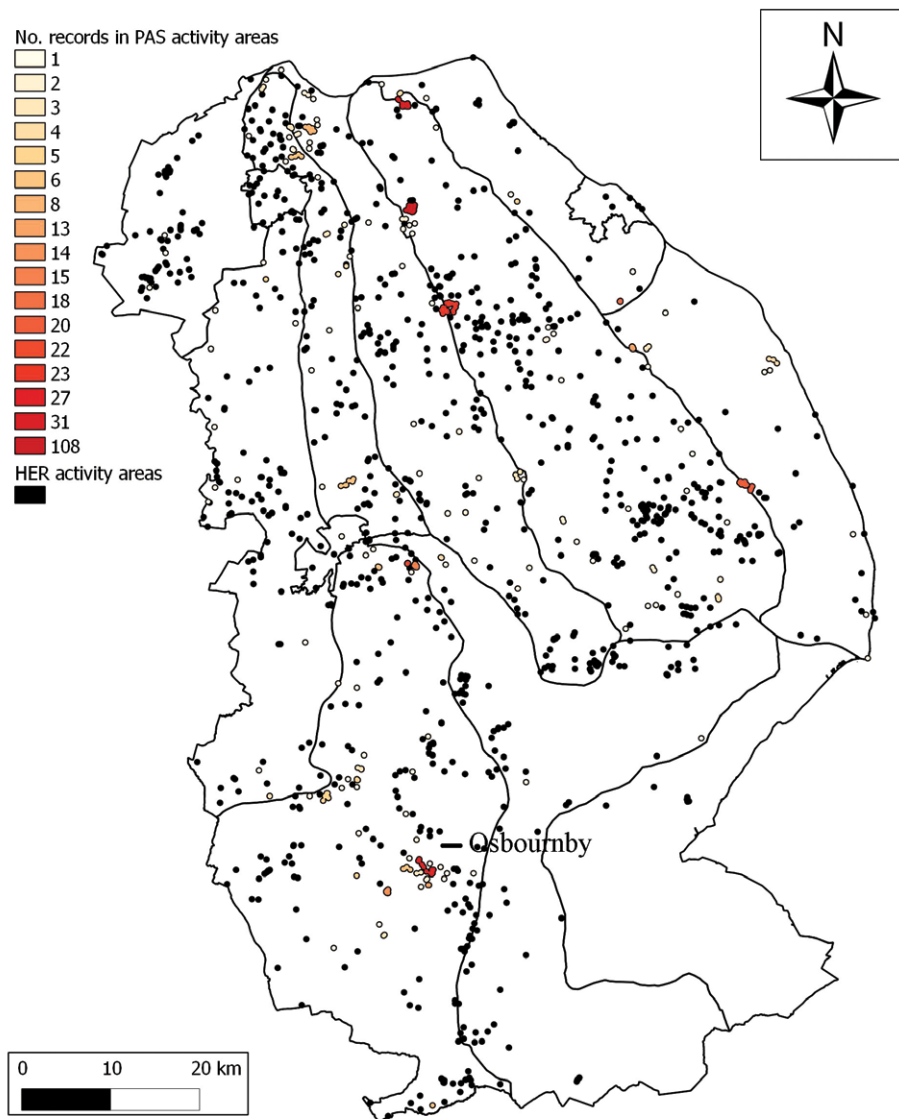
Figure 4.43. Density and distribution of Neolithic PAS activity areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

4.5.4. Bronze Age

Lithic scatters also form a large component of Bronze Age PAS data for the parish (Figure 4.45). The aforementioned larger scatters of lithics appear to run into this period, though it must be acknowledged that many assemblages cannot be confidently separated from late Neolithic types (Clay 2006: 82). This problem also extends further into the Bronze Age; in 2006 Clay listed fewer than 20 Middle Bronze Age settlements, but he argued that many of the lithic scatters recorded as 'later Neolithic to earlier Bronze Age' may well continue much later (Clay 2006: 77, 82). This does, of course, present certain difficulties for the
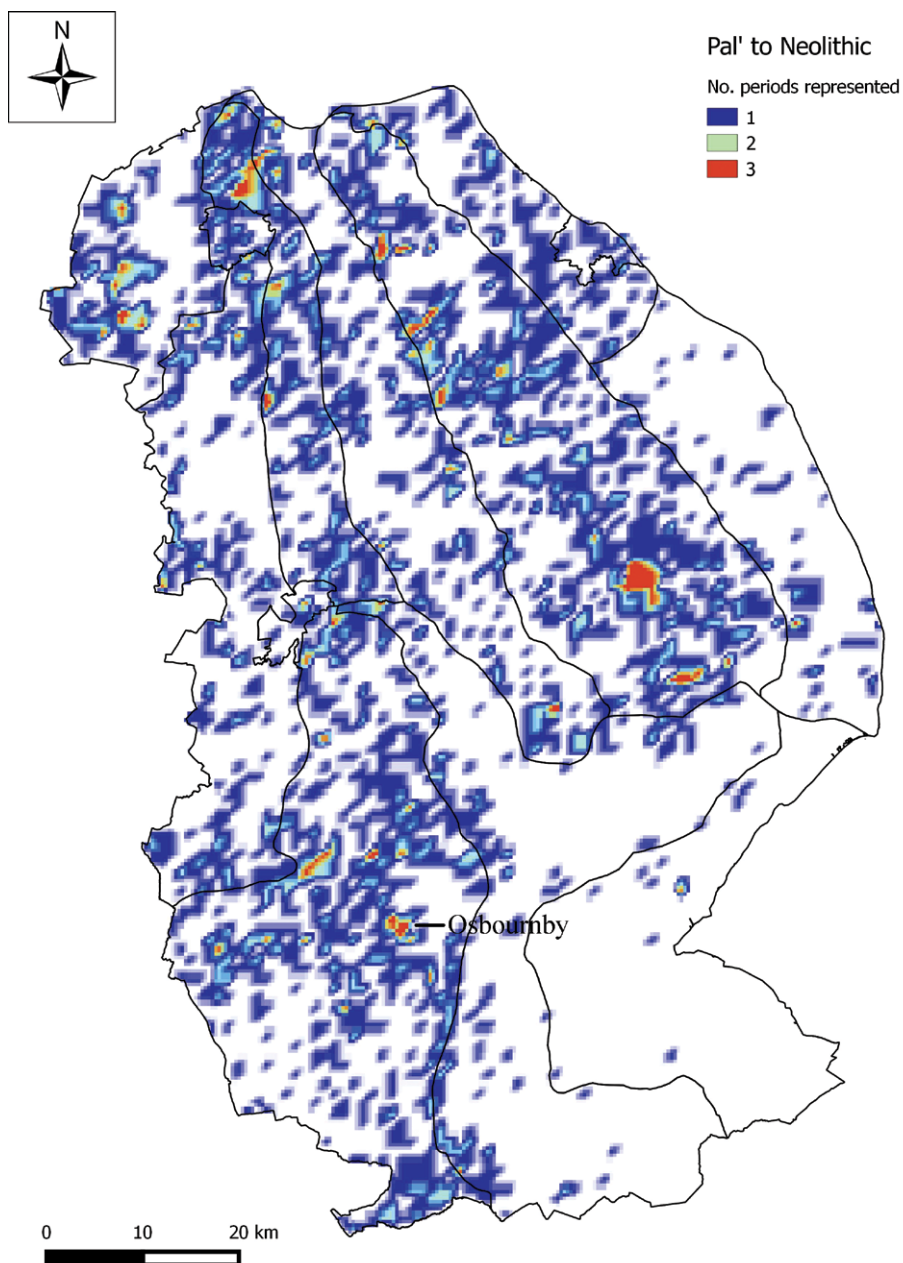
Figure 4.44. Temporal diversity: Upper Palaeolithic to Neolithic HER and PAS data merged.
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coarse-grained picture of temporal diversity being established by HER and PAS data (Figure 4.47). This problem of defining chronology is certainly present at Osbournby, though persistence of use of particular places is hinted at through the water-main excavation, where Neolithic flints were found along with three cores of Middle Bronze Age date (Mellor 2007: 150).
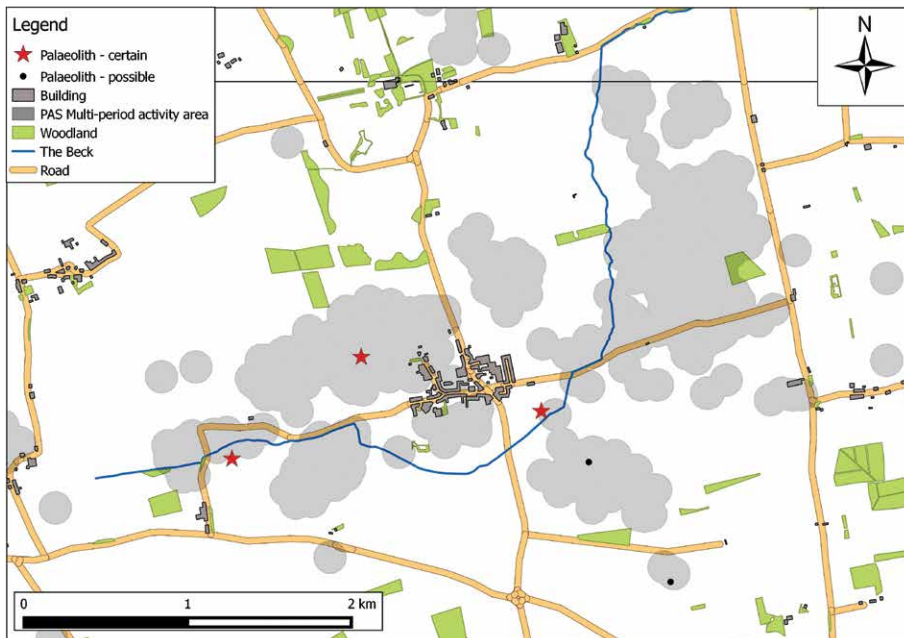
Figure 4.45. Bronze Age PAS and HER data in the Osbournby area. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

Lithics are not the sole source of information recorded on PAS, however; there is a relative abundance of middle and late Bronze Age metalwork, in addition to a substantially large collection of late Neolithic and early Bronze Age pottery which coincides with a similarly dated lithic scatter in the north-east quadrant, close to the spring. Before turning to the metalwork and pottery in detail, it is prudent to note that PAS data for the period in general tends to be concentrated in the north-east and south-east quadrants, in contrast to HER data which largely comes from the west of the village.

This differential patterning in HER and PAS data at Osbournby broadly mirrors that established for the county-wide dataset. HER evidence for the Bronze Age in Lincolnshire is widespread and prolific (Figure 4.46). HER evidence attests to 801 activity areas, and PAS contributes 104 activity areas, increasing the total by 13%. Again, while PAS data complements wider trends, the fact that 88% of PAS data have been found more than 300m away from the nearest 'certain' HER record indicates that they contribute significantly to our understanding of activity areas. Moreover, the fact that many of the sites from the parish recorded on PAS come from the eastern parts – where the landscape dips gently towards the Fens proper – suggests that this landscape was not low-lying enough to have been detrimentally effected by the changes in climate and environment at this time. Palaeoenvironmental data from the Fens suggests widespread formation of peats over low-lying ground in the region during the early Bronze Age (Hayes and Lane 1993: 14-15), and this resulted in vast areas of low-lying land becoming abandoned or avoided. At Dogdyke, for example, a late Neolithic settlement was abandoned during the early Bronze Age when to the site became uninhabitable

Figure 4.46. Density and distribution of Bronze Age PAS new activity areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

due to increasing wetness (Crowson *et al.* 2000: 95-99). A similar site occupied during the late Neolithic located on a sand-island at Pinchbeck was also abandoned around 2000 BC, probably owing to the onset of flooding that continued until the Roman period (Hayes and Lane 1992: 112-113; Lane and Trimble 2010: 149). These issues were not confined to the Fens proper; several sites located along the Fen Edge were abandoned too (c.f. Lane and Trimble 2010: 149). The landscape west of Mareham lane was too high to have been directly impacted by marine incursions, though the development of peats may have inhibited drainage via the Beck, and this may have caused localised flooding (Chowne pers. com.; Hayes and Lane 1992; Waller 1994).

Figure 4.47. Temporal diversity: Upper Palaeolithic to Bronze Age HER and PAS data merged.
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This varied pattern of landscape change, along with problems in dating lithics, results in the relatively low level of continuity suggested by statistical analysis of the parent dataset; only 19% of Neolithic PAS activity areas contain Bronze Age evidence, and this is just 21% for HER data (Appendixes 26 and 27).

Turning to the metalwork, PAS data holds information on a relatively large quantity of spears and axes, though all are fragments. Large quantities of casting waste, including casting jets often associated with Bronze Age metalworking are also known from across the parish, but with several concentrations correlating with areas of spears and axes. Hints that metalwork was present in the parish came in 1898 when a broken hilt and upper part of a Late Bronze Age sword or dagger was dug up, though its find spot was not recorded (Davey 1973: 82, Figure 205). The widespread nature of PAS data does not particularly help regarding to the identification of the find spot; through three distinct clusters have emerged.

The first concentration is in the south-east quadrant. The assemblage comprises two fragments of socketed axes, six casting jets, and nine pieces of casting waste. A second distinct cluster comprising four fragments of spears and one piece of possible axe is located in the north-west quadrant, and this assemblage coincides more generally with Bronze Age activity found here through excavation (Mahany 1977b; Mellor 2007). It also coincides with a part of the parish that will later be argued to have been used for ritual deposition in the Late Iron Age and Roman periods. A small scatter of flints was found during the excavation for the water-main; however, many more were found during Mahany's excavation of the Anglo-Saxon Grubenhaus. Included in this assemblage were also a stone hammer, an unfinished stone hammerhead, and a sherd of Bronze Age pottery (Mahany 1977b).

However, the main area of Bronze Age activity appears to be located in the north-east quadrant, between the village and the Beck. The metalwork assemblage closely mirrors that found elsewhere in the parish, both in terms of dating and composition. The assemblage comprises two spear fragments, a bronze bead, a possible knife fragment and several pieces of casting waste. However, unlike the other palimpsests, these finds are set against a dense scatter of Middle Bronze Age pottery dating to the second half of the 2nd millennium cal. BC (Chowne pers. com), also found by the metal-detector user. This pottery scatter appears to have some sort of spatial relationship with both monuments and natural features that would have been visible in the landscape at the time the depositional activity took place. Bounding the pottery scatter to the south are two crop-mark ring-ditches, probably barrows, also discovered by Tim Camm (LHER 65714; 65715).[32] Bounding the pottery scatter to the north is the spring mentioned at the beginning of this case study – a spring which was demonstrably of high velocity, and which was perceived as life-giving in a medicinal sense in the eighteenth century at least.

At present the ceramic and metalwork evidence appear to relate to settlement activity. The positioning of this activity does, then, appear to take advantage of the landscape bounded by the spring in the north, and the barrows to the south. This in turn raises the question as to whether this reflects a structured use of the

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32   These barrows complement the wider distribution of barrows along the Fen Edge (Chowne 2015). The eight bowl barrows known from North and South Kesteven form a distinctive north-south line flanking the eastern flank of the limestone scarp (May 1979: 73). This line broadly mirrors the line of the Marham Lane, a prehistoric track way along the fen-edge.

landscape, perhaps reflecting a cosmology that opposed monuments and mortality to water and life.[33]

Given the intense reuse of this landscape in the Bronze Age one has to wonder why there are so few finds from other periods especially given that late Iron Age and Roman finds are exceedingly abundant to the east of the Beck. Indeed, while the fields were apparently used for arable cultivation in the medieval and post-medieval periods, there appears to have been a particular avoidance of this particular place for settlement at least, after the late Bronze Age. In part this may owe to issues of legibility; ceramics of the Late Bronze Age and Early Iron Age rarely survive in the plough-zone, and Early Iron Age metalwork is rare. However, Roman material is also infrequently found here, and the wider pattern of deposition from the Late Iron Age suggests the focus for ritual activity to shifts to the north-west quadrant. This is discussed further below.

4.5.5. Iron Age

There is poor legibility of the archaeological record from the end of the late Bronze Age to the beginning of the late Iron Age at Osbournby, as is the case with the county in general (e.g. Haselgrove and Pope 2007b: 6; Knight *et al.* 2012). Indeed, almost all the evidence from the parish concerns the decades immediately before and after the Roman conquest, during which the 'explosion' in the number of metallic objects in circulation brings the period in question into view more clearly (Figure 4.50). Nonetheless, the difficulties encountered in confidently dating certain types of brooches and coins to either side of AD43 has traditionally led to the period being artificially divided, rather than being seen as a transitional period in its own right.

This problem of dating has an impact on the statistical analysis presented in this present study; many sites are categorised as being of 'uncertain' date, and this is apparent in the statistics. Using only certain dated HER data at 300m buffer, just 13% of PAS finds fall within an HER buffer zone (Figure 4.51). Yet, when uncertain data are included, this rises to 31%. Using certain data only at 300m, PAS contributes 198 activity areas to the 321 attested by HER data, raising the total by 61%. Just 36% Bronze Age activity areas contain Iron Age data, however, and while the statistics are affected by the difficulties mentioned above, distinct changes in land-use are detectable at Osbournby between the Bronze Age and late Iron Age (Figure 4.52).

During the late Iron Age a large 'washing-line' complex of enclosures, hut circles, and boundary ditches was established in the east of the parish, running alongside Mareham Lane – a trackway thought to be of prehistoric origin and

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33   A broadly similar pattern in land-use is seen at Honington (near Ancaster), where the Iron Age 'hillfort' – which possibly overlies a Bronze Age hilltop enclosure – is set adjacent to two roundbarrows to the west, and a spring to the east. Preliminary research by the author has suggested that this alignment reflects a cosmology that associated the west with death, and the east with life (e.g. Williams and Creighton 2006: 50). The author observed the sunrise at Honington on the winter solstice of 2013 and noted a strongly alignment with the entrance to the monument. This phenomenological aspect of the landscape was further enhanced by the spring also being on the same alignment. The spring is, in fact, contained within a narrow coombe and gives the sense of emerging from the ground, much as the sunrise does on the winter solstice (Daubney 2015).

which ran along the Fen Edge (Winton 1998; Figure 4.14). Their alignments closely mirror one another, and both in turn appear to have taken their influence from the general north-south boundary between the gravels to the west and the clay and silts of the fens to the east. This extensive string of enclosures – which runs for at least 2km – is divided by the Drove at the southern end; however, the available evidence appears to suggest that it dissects the structures rather than being a feature contemporary with them. This massive crop-mark complex marks an important development of the local landscape, and it reflects the rapid population growth and an increase in settlement density known across much of late Iron Age Britain (Haselgrove and Pope 2007: 13), and indeed also the rapid expansion of settlement across the Fen Edge and sand-islands within the Fens (Lane 1988: 314-321). As was previously discussed, this complex does not show as crop-marks to the west of the Beck in the area of Bronze Age pottery scatter. The north-west and south-west quadrants are almost void of HER data for the Iron Age, but PAS data suggests the north-west was the focal point for high-status activity, including votive deposition.

HER data holds just two further records for the Iron Age, both being for the discovery of late Iron Age coins. The first is for a Gallo-Belgic gold stater found somewhere in the parish in 1837, though no further details are given on its find spot (LHER 64659). The second record relates to two late Iron Age coins found in the north-west quadrant close to the area of Bronze Age and Saxon activity identified through Mahany's excavation (LHER 64665; Mahany 1977b). These two coins were reported by the landowner to the local museum prior to PAS.

An additional two gold staters and two gold quarter staters have also been found through metal-detecting, but unlike the parish-wide spread of silver units and half-units, gold coins cluster in the north-west quadrant, some 100m north of Mahany's excavation. The clustering seen within the gold coins in turn strongly suggests that the Gallo-Belgic coin found in 1837 also derives from this place. Indeed, one of the two quarter staters found by metal-detecting is also Gallo-Belgic (Van Arsdell 1989: no. 69-1), the other being a scyphate. The Gallo-Belgic coin reported to PAS dates to c. 50 BC and is one of about 80 of this type currently known from the UK. Most examples have been found in the south-east, and this appears to be only the third example recorded from Lincolnshire – the others also coming from the wider region at Bourne and Sleaford.

The clustering of late Iron Age gold coins in the north-west quadrant is significant, as is their absence from elsewhere in the parish where late Iron Age artefacts and coins are relatively abundant, notably the crop-mark complex in the east of the parish. The differential spatial use of gold and silver coins is a pattern of coin-use that is mirrored at several other sites elsewhere in Britain, where ritual activity is known or suspected (Haselgrove and Wigg-Wolf 2005; Leins 2007). In this light it may be significant that the finds cluster around a spring that is still visible in the landscape today (Figure 4.49). We might speculate, then, whether votive activity here was stimulated by the nature of the physical environment, perhaps complementing the wider ritual use of sacred groves in the late Iron Age and Roman periods (Reed 2002: 82). Many examples are known from across Roman Britain, and most were generally small areas either comprising a circular or square building, or in its simplest form simply a ditch surrounding a tree or grove.

Figure 4.48. Gold and silver droplets from the 'shrine' area. Photo: Author.

The shrine itself was thought to be the home of the god or spirit, and personal offerings were placed within its bounds (Reed 2002: 82).

Non-numismatic evidence is also present around the spring, and supports this hypothesis. Finds include a gold penannular ring of Bronze Age or Iron Age date (PAS ref. LIN-337095), a copper-alloy 'Birdlip' brooch (LIN-2BB520), and a late Iron Age or Roman tankard handle (PAS ref. LIN-477E50). From this same place have also come nine molten droplets, three fragments of silver ingots and three fragments of gold twisted wire (Treasure ref. 2004 T145; PAS ref. LIN-338B36; Figure 4.48). The molten objects are made of both gold, silver, and in one case, lead with tin, and one molten item has a piece of gold wire infused within it (Hill 2004: 163). The dating and significance of these items is at present unclear, but the landscape context suggests a possible ritual function. Indeed, several of the 'droplets' resemble the type of pellets that were used to cold-hammer into flans ready for striking coins (Farley 2012: 113). Moreover, Farley suggests that mixed alloys produced during the production of coins might have sometimes been drawn out into wire or strips – a suggestion which might be seen in the gold wire within the collection, one of which was partially molten (Farley 2012: 112). The attribution of this assemblage to coin production or the recycling of precious metal is speculative, but the combination of several strands of evidence for ritual or high-status activity at this specific point in the landscape indicates structured activity.

That this specific point in the Osbournby persistent place continued into the Roman period as a focus for ritual activity is strongly suggested by 200-300 early Roman sestertii, dupondii, and denarii discovered in a halo around the spring and, in addition, several artefacts that may have cult/votive connections (discussed

Figure 4.49. The spring at the north-west quadrant 'shrine'. Once a focus for ritual deposition, now a dumping ground for modern rubbish.

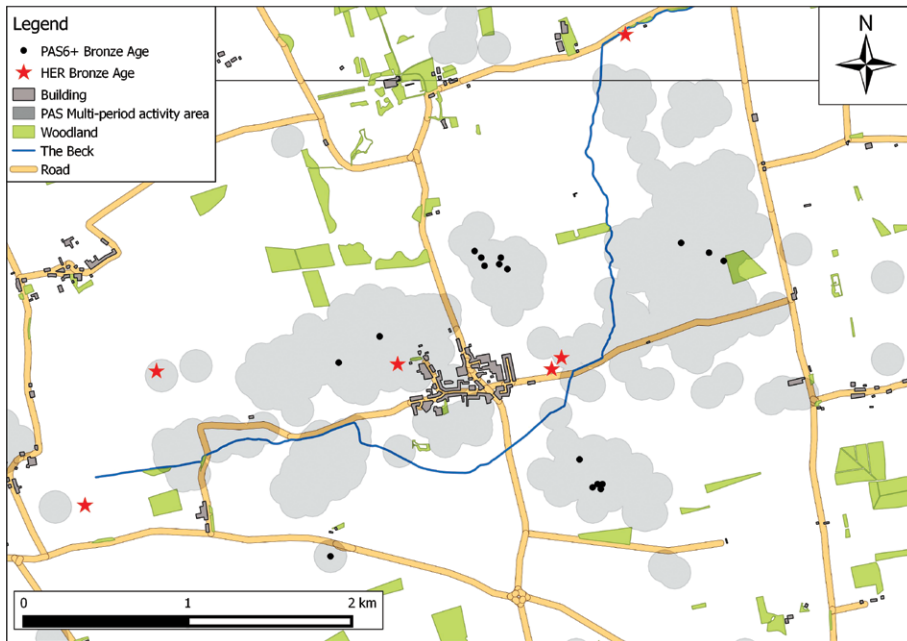*Figure 4.50. Iron Age PAS and HER data in the Osbournby area. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).*
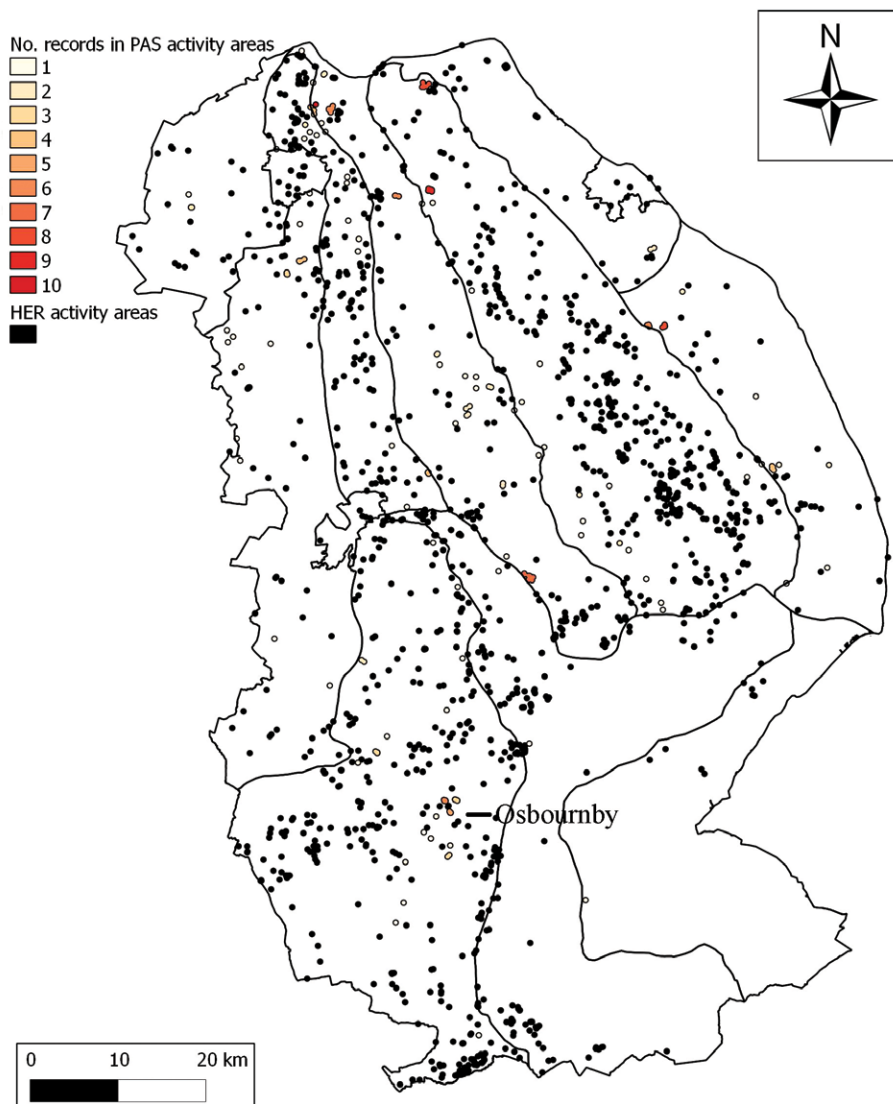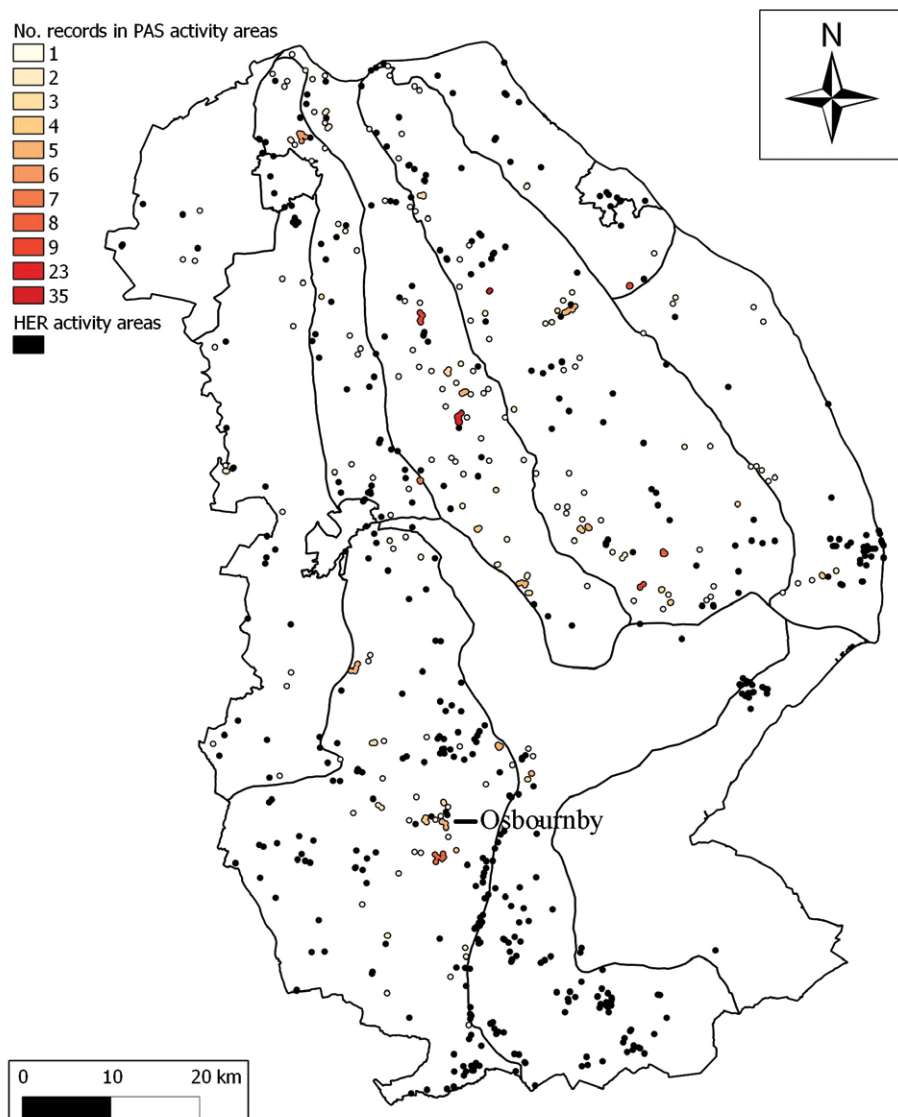
Figure 4.51. Density and distribution of Iron Age PAS new activity areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

further below).[34] For the time being, however, it is important to note that the physical properties of this part of the parish may well have had some degree of influence on the nature of activity, resulting in a distinctly structured use of the landscape over the longer-term.

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34 Around 50 first-century Roman coins were verbally reported to the museum in 1992 (LHER 60117). A project is currently underway to record the several thousand Roman coins from Osbournby, but specific information on the coins from the shrine is yet to be compiled.
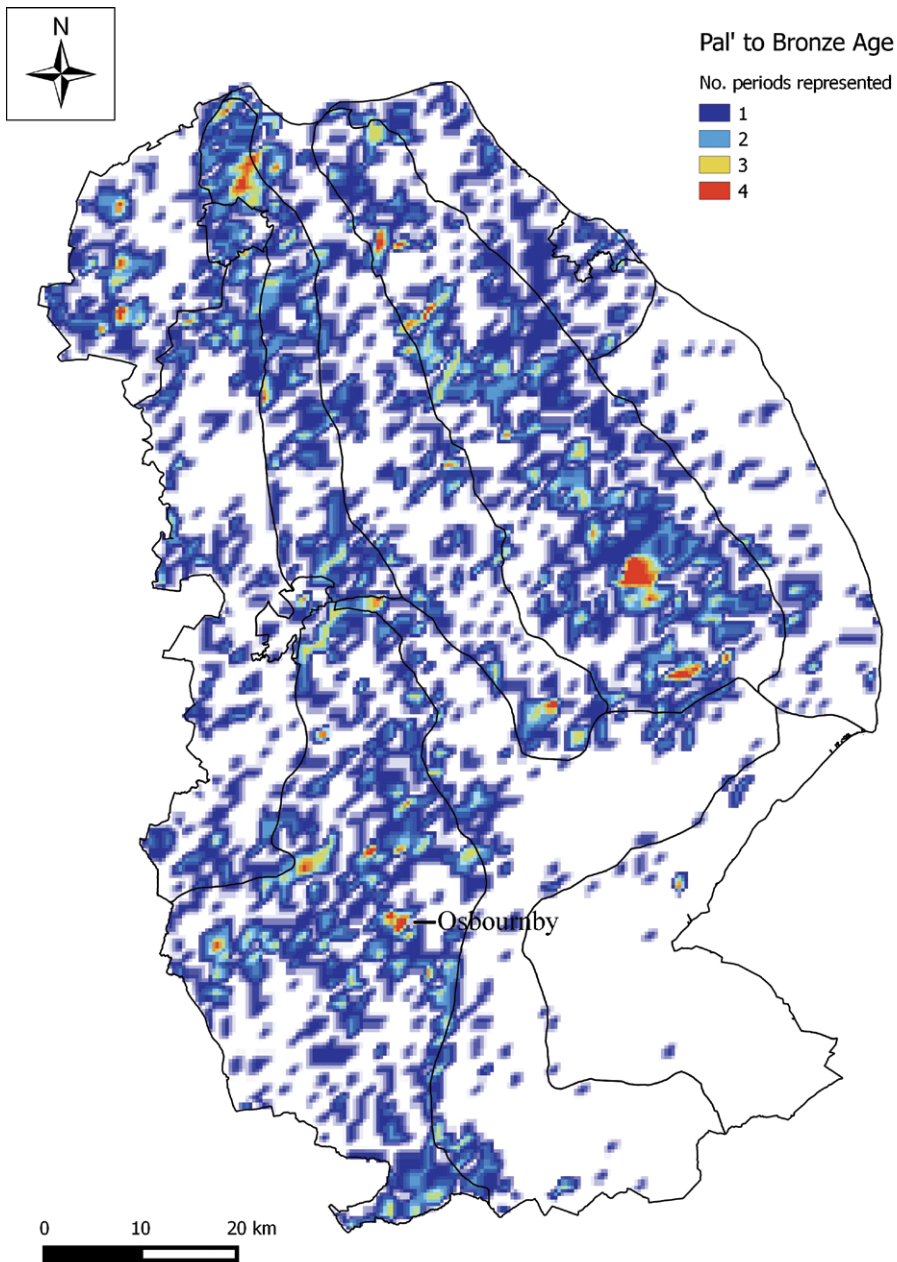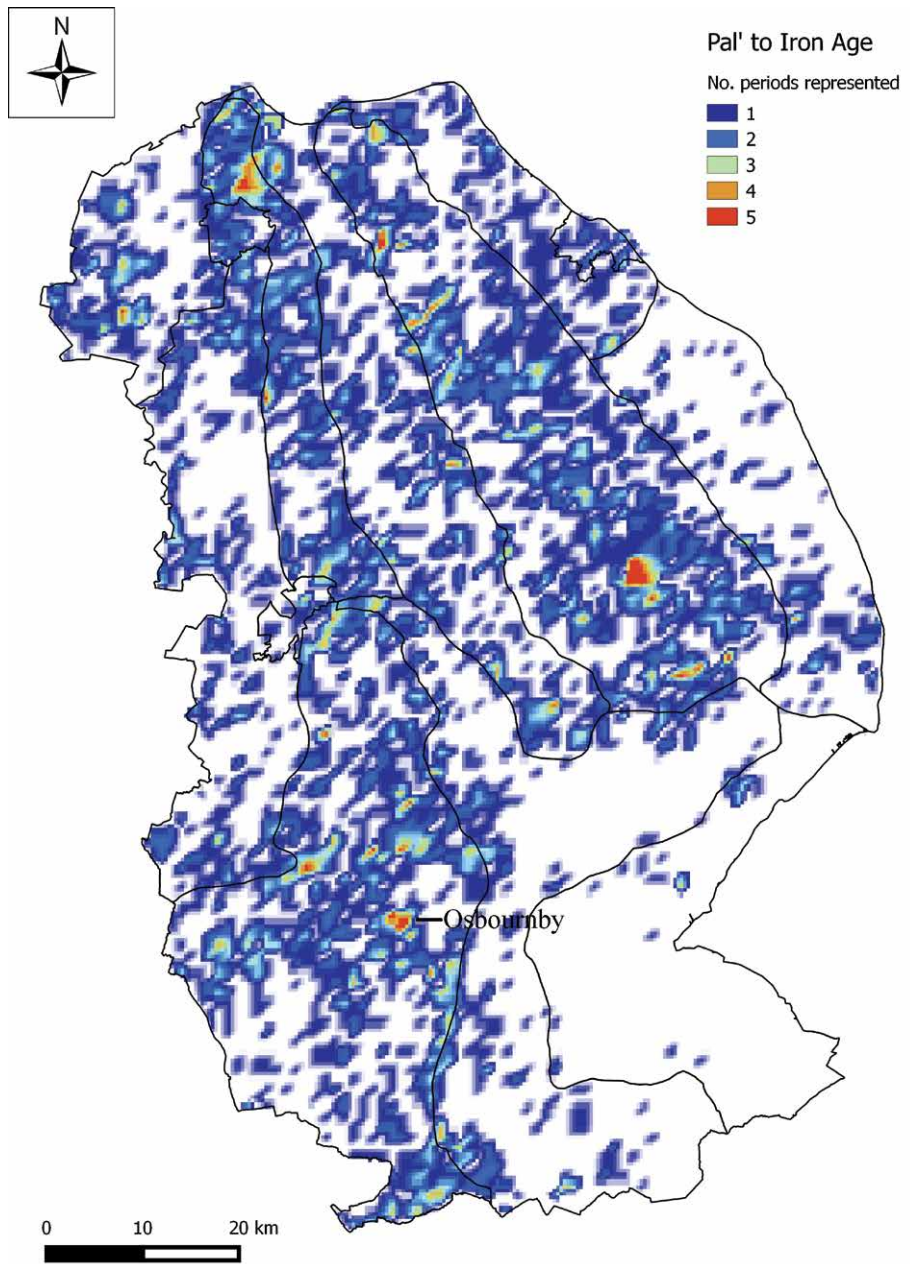
Figure 4.52. Temporal diversity: Upper Palaeolithic to Iron Age HER and PAS data merged.
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4.5.6. Roman

A strong sense of continuity is visible between the late Iron Age and Roman period at Osbournby; indeed, all areas that have produced Iron Age finds have also produced Roman finds (Figure 4.54). This reflects the county wide trend in PAS data; 73% of Iron Age activity areas contain Roman period data (Appendix 26), but it is to the Roman period that PAS contributes the fewest number of new activity areas (Table 3.4; Figures 4.55 and 4.56). There are 1497 activity areas represented by HER data, and PAS contributes another 386 activity areas at 300m, increasing the total by 26%. This most likely reflects the fact that many of the county's early Roman settlements had their origins in the late Iron Age (May 976: 21; Lane 1995: 21ff).

The evidence for Romano-British activity in the parish is widespread, and there has been a long history of discovery of Roman antiquities across the parish by farmers and labourers. Metal-detecting presents a similar picture, especially along the crop-mark complex in the east of the parish, where several hundreds of coins and artefacts spanning all four centuries of the Roman period have been found.[35] The artefacts include a large quantity of dress accessories, mounts, and other items of personal or domestic use, and these are also well represented in the north-west quadrant.

However, while most parts of the parish have produced a wealth of PAS data, the character of a number of Roman PAS finds joins with wider archaeological evidence that suggests that the structured use of the landscape seen previously continued into the Roman period. Unlike the north-east quadrant, the north-west contains evidence for at least two high-status stone buildings, one of which is probably a villa. Chance finds of pottery, coins, and brooches were regularly reported to the City and County Museum, Lincoln from the north-west quadrant between the 1950s and 1980s, particular from the fields close to the 'shrine', where large stones, tesserae, tile, and various small finds were being unearthed during ploughing (e.g. LHER 60455). Mahany's excavation revealed further evidence for Roman field-systems immediately to the north of the 'shrine', in addition to tesserae and hypocaust tile (Mahany 1977b) indicating the presence of a high-status building or 'villa' in the vicinity. Similarly, further fragments of stonework were found during the first water-main excavation in 1979 (LHER 64658, 64676, 60445). The second water-main excavation, undertaken in 2005, revealed a metalled surface of probable late Roman date (Mellor 2007: 9). This surface was interpreted as perhaps representing a road, but also possibly a yard surface, and may well be associated with the building. A substantial quantity of late Roman pottery was also found, but most of this had been redeposited in Early and Middle Anglo-Saxon features (Mellor 2007: 9). Subsequent metal-detecting in this area has revealed a substantial quantity of coinage from all four centuries of the Roman occupation, including a further stray coin from the siliquae hoard (Daubney 2011).

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35 The absence of evidence to the east of Mareham Lane is, however, poorly understood at present, but may simply be a product of bias. The metal-detector user has rarely ventured east of Mareham Lane, and the different geology found here may well be less conducive to crop-marks.

A second Roman stone-built structure was found in 1980 immediately to the south of Church Street, just 400 South West of the aforementioned structure. Geophysical survey undertaken in November of that year revealed a rectilinear structure, and field-walking produced Roman tile and pottery, including Samian ware (British Gas 1980). There was, however, an absence of pottery in the northern area of the site, close to the Beck, which was interpreted as bias owing to the presence of a band of alluvium thought to be of post-Roman date (British Gas 1980). PAS also has an absence of finds close to the Beck (Figure 4.54), corresponding with the band of alluvium shown in Figure 4.34. In spite of this, Early and Middle Saxon pottery and metalwork are found immediately adjacent to both Roman stone buildings (discussed in the next section).

Roman villas – loosely defined by the presence of features such as tesserae, hypocaust tiles, and painted wall plaster – are a well-known feature of river valleys such as Osbournby. Villas are often found close to Romano-British 'villages', some of which take the form of extensive crop-mark complexes and enclosures similar to those seen in the east of the parish along Mareham Lane (e.g. Clay 1985; Lewis *et al.* 2001: 70). Such 'villages' often have their origins in the late Iron Age and continued well into the Roman period (Hingley 1989, 1991; Millett 1990: 91-99; Taylor 2001).[36] Naturally, it has been hypothesised that villas may represent high-status estate centres which developed from, or ran alongside, neighbouring low-status rural settlements (Brannigan 1977; Jones 1986; Bedoyere 1993; Lewis *et al.* 2001: 70-71; Brindle 2014: 128).

The chronology of PAS data from both the villa site and the crop-mark complex at Osbournby – though largely coarse-grained – suggests that they were contemporary with one another, though this suggestion can only be refined through excavation. Nonetheless, PAS complement HER in suggesting that there existed a distinction in tenurial structure and status between the two nodes within the persistent place.

The character of several PAS finds from the 'shrine' area is notable in the light of the suggestion of ritual activity, and other these provide further evidence for continuity, both in ritual practice and high-status activity. Finds include a silver 'TOT' ring of a type now known to indicate a devotion to the Celtic god Toutatis (Daubney 2010a; PAS ref. LIN-B0B9D4), a mount in the form of a human head (PAS ref. LIN-2E5885), and a mount in the form of the Sun-god Sol (PAS ref. LIN-A65125; Worrell 2006: 439; Figure 4.53).[37] While several of these items are occasionally found on 'domestic' sites, they are also types that can be paralleled by examples from temples and other shrines elsewhere.

This biographical detail of the landscape may provide some context for the hoard of late Roman silver siliquae found some 250m to the north-west of the assemblage, at which several other items of a cult or votive nature have also been found (White 1980, 1981; Bland and White 1984; Daubney 2011). Artefacts

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36 Preliminary results of the Roman Rural Settlement Project for the East Midlands shows around 22% of villas occupy sites containing Late Iron Age activity. A distinct cluster of these is seen along the Fen Edge in Lincolnshire, and especially in the Osbournby region (Brindle 2013).

37 Parallels come from Cottenham, Cambridgeshire (Taylor 1985: p.31, no. 187, fig.13), and Uley, Gloucestershire (Henig *et al.* 1993: p.98, no.1, figs 82 and 85).
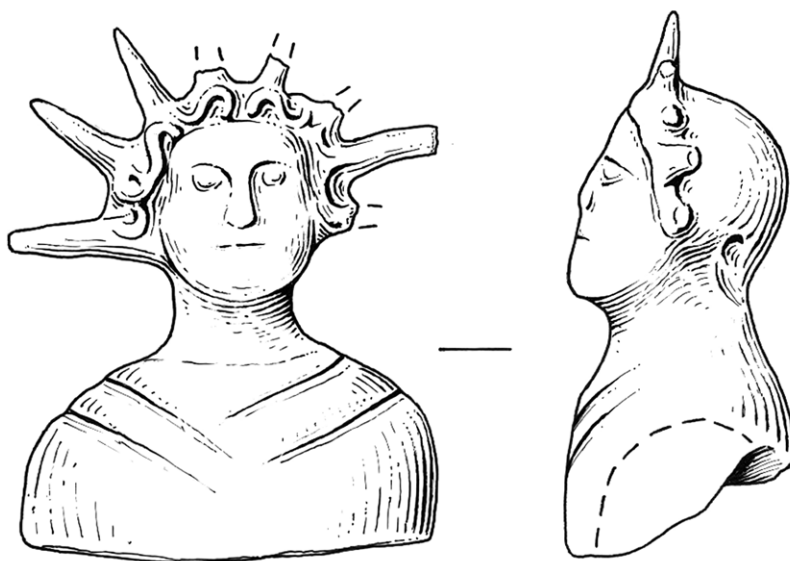
Figure 4.53. Roman copper-alloy mount in the form of Sol. Drawing by David Watt.
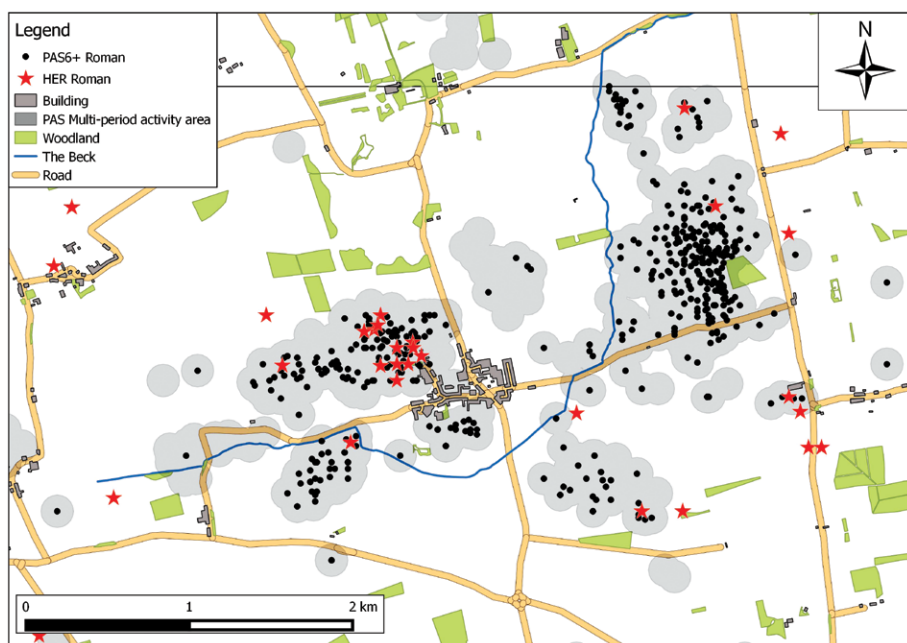
Figure 4.54. Roman PAS and HER data in the Osbournby area. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

include two small copper-alloy busts of Minerva (PAS refs. LIN-767F62, LIN-767165), and a mount in the form of an eagle (PAS ref. LIN-7645F7).[38] The

38   The eagle can be broadly paralleled by at least two examples found in the 'near Bury St Edmunds' hoard, which has been interpreted as a votive deposit (PAS ref. SF-D4D044).

late fourth century was a time when many hoards of precious metal were being deposited, though these are rare in Lincolnshire compared to the national distribution (Hobbs 2005: 203; Bland *et al.* 2013). Indeed, there are currently no siliquae hoards between Osbournby in the south, and the southern banks of the Humber in the north, an anomaly that is yet to be adequately explained. The distribution of these hoards is entirely peripheral in Lincolnshire – a trend that has also been previously noted for late Roman gold coins, interpreted as evidence of final phase military activity (Daubney 2010b). Hobbs too suggests that the flurry of hoarding in late Roman Britain may in part be due to the 'substantial level of gift giving to the army….which was attempting to maintain a system of coastal defences, and [to] civil servants, who were trying to run an ailing and increasingly unstable frontier province' (Hobbs 2005: 206).

A ritual motivation for the hoarding of some late Roman precious metal has, however, been suggested elsewhere (e.g. Higham and Ryan 2013: 49). For instance, the concentration of late Roman precious metal hoards – including siliquae – along the route of the Wansdyke has been interpreted as a boundary phenomenon, perhaps undertaken as a way of staking claim to disputed territory (Nurse 2002). Nurse's observation is intriguing in the light of the peripheral nature of the Lincolnshire siliquae and gold coin hoards, and furthermore appears to support Green's hypothesis that the Osbournby-Folkingham region formed the boundary to one of two people-groups within Kesteven in the sixth century (Green 2012: 189). While the exact reason for this 'rapid' depositional event cannot be attained, it nonetheless attests to high-status activity within this specific part of the parish, and hints that it might be possible to back-project the political landscape hinted at in the Early Anglo-Saxon period onto the late Roman period.

Five additional 'stray' finds of silver siliquae have been found in this part of the parish through metal-detecting, three of which have been clipped (Bland *et al.* 2013: 151-2, Appendix 1). Bland *et al.* have recently demonstrated that the clipping of coins became widespread after AD388 (Reece Period 21), becoming endemic after AD402 (Bland *et al.* 2013: 120). Heavy clipping, it is argued, is now understood to have probably been an official activity, perhaps carried out by the Roman or sub-Roman authorities (Bland *et al.* 2013: 120).

The suggestion that the north-west activity area was the focal point for official activity into the fifth century is further strengthened by the discovery of several items that might be seen as post-Roman 'British' types of artefacts. These include a British Class 1 penannular brooch/Fowler Type F (LIN-0C0594), a British penannular brooch of Fowler Class G, and a hanging bowl escutcheon (LIN-836777; Daubney 2012). These come from fields also containing evidence for sixth-century inhumations (see next section). The first two come from the north-west quadrant close to the 2005 pipeline excavation, while the latter comes from the area just south of the beck to the west of the village, where another cemetery is likely. This pattern of continuity is all the more interesting in the light of the paucity of post-Roman and Early Saxon evidence from the crop-mark complex along Mareham Lane, where only three items of sixth-century date have so far been recovered.

Figure 4.55. Density and diversity of Roman new PAS activity areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

So-called 'late Celtic' Hanging Bowls span the late Roman to Early Anglo-Saxon period, and are thought to have been high-status items of tableware manufactured between the fifth and seventh centuries, perhaps used in ritual contexts such as hand-washing (Bruce-Mitford 1993, 2005; Geake 1997). Around a third of the Lincolnshire examples have been found accompanying late sixth- to early seventh-century burials, though Green points out that these represent a secondary use of these vessels (Green 2012: 73). While semi-complete bowls are occasionally found through metal-detecting, more commonly it is the escutcheons and handles that
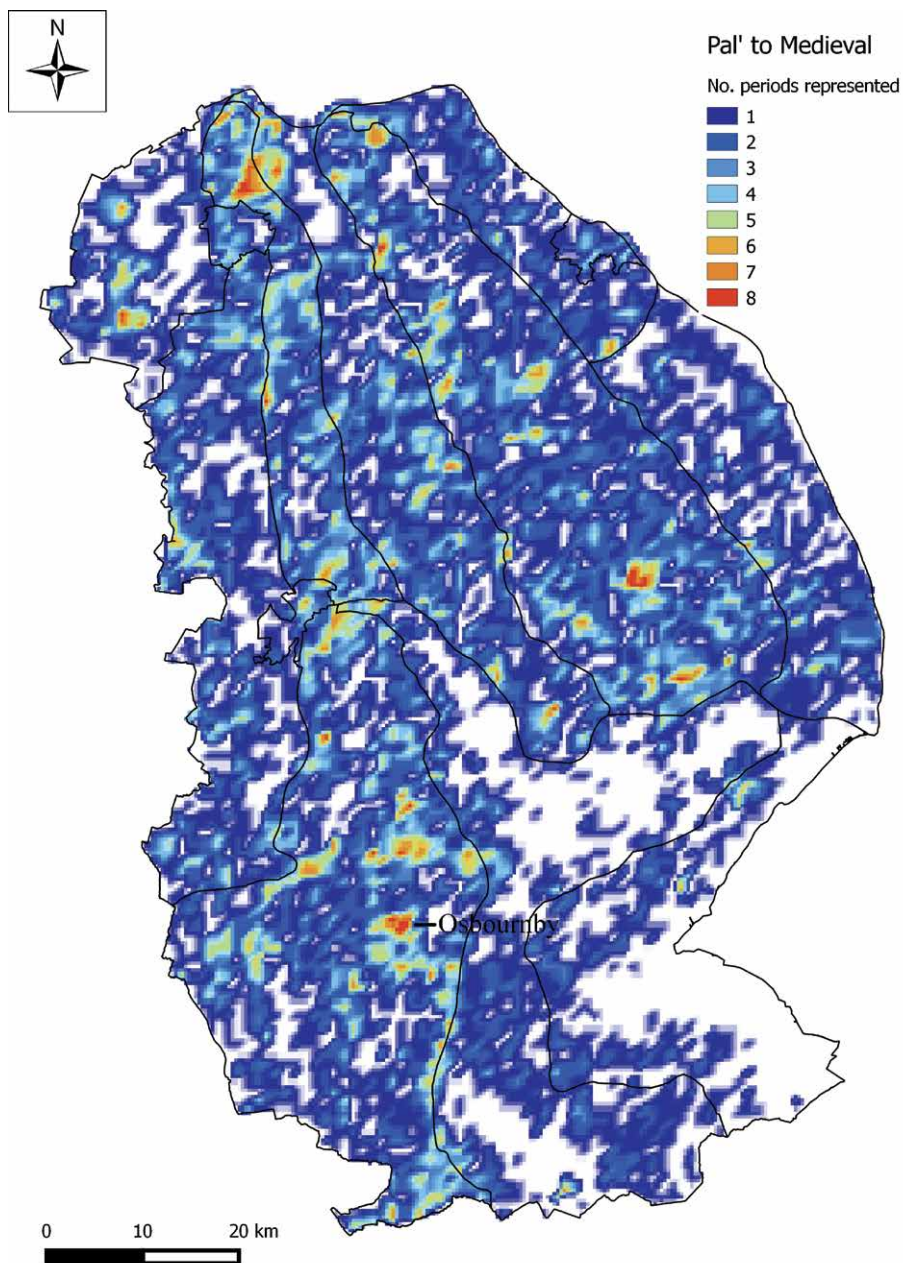
Figure 4.56. Temporal diversity: Upper Palaeolithic to Roman HER and PAS data merged.
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are found as stray items. Green has recently reviewed the evidence, and has noted a strong correlation between such finds and areas in which there is good evidence for high-status British-Anglian interaction (Green 2012: 69ff). Yet, while the Osbournby find may represent a later use, perhaps deriving from a Saxon burial, a ritual use should not be entirely ruled out. The most famous example of a hanging bowl from Lincolnshire, now unfortunately lost, was dredged out of the River

Witham. This bowl sits alongside a much wider tradition of high-status river-based offerings, and to this extent it might be possible to think of it alongside the siliquae hoard as some sort of boundary offering, if not just evidence for high-status post-Roman interaction (Everson and Stocker 2003b: 281).

The evidence for penannular brooch use may provide additional support for elite activity in the north-west quadrant. Similar to hanging bowls, Green has argued that late Roman/early post-Roman penannular brooches of Class 1 and Type G were worn by high-status individuals who wanted to express their British or Romano-British identity (Green 2012: 91; though see Hinton 2005: 18). Again, many such examples in Lincolnshire have been found in association with sixth-century inhumation cemeteries, and Green has accordingly suggested this may represent high level interaction between British elites and Early Anglo-Saxon immigrants (Green 2012: 91) – perhaps a 'testimony to the ultimate acculturation and assimilation of some members of the local British elite by the immigrants' ascendancy' (Green 2012: 92). Of course, the attribution of material culture to specific ethnicities and identities is a difficult and hazardous task, especially since the dating of such finds is currently rather problematic. Indeed, given that penannular brooches are often found within bags or purses within 'Anglo-Saxon' graves, rather than being placed on the body, it has been suggested that they may have been curated as items that demonstrate a respect for the authority of Rome, rather than primarily being dress accessories (Hinton 2005: 28). Unfortunately, these issues of interpretation cannot be solved through unstratified finds; their presence in the north-west quadrant is, then, not so much indicative of individual identities as they are an indication of persistent elite activity by individuals who used material culture as a way of engaging with the past in the past.

4.5.7. Early Medieval

The archaeology of Early Medieval Lincolnshire is widespread and varied, and covers a period which saw significant cultural and economic shifts, alongside varying degrees of change and continuity. As a whole, there are 528 activity areas represented by HER data. PAS data represent a further 339 activity areas at 300m, increasing the total by 64% (Table 3.4; Figures 4.60 and 4.61). Their distribution once again tends to complement and infill areas landscapes already evidenced by HER data, and this is certainly reflected at Osbournby, where scatters are found within, or close to, areas already seen through HER data (Figure 4.57). The aggregation of data into a single broad period clearly masks important social changes, and the following discussion therefore explores these data divided into 'Early' (c. AD410-720), 'Middle' (c. AD720-850) and 'Late' (c. AD850-1066) sub-periods, according to PAS dating conventions.

PAS data for the Early Anglo-Saxon period strongly clusters in the north-west and south-west quadrants, but few finds are known east of the village (Figure 4.57).[39] The assemblage from the south-west is rather neatly contained within one field immediately south of the Beck, and adjacent to the Roman stone

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39 Osbournby was a case study parish for VASLE, though at the time it was based on far fewer finds (Richards et al. 2009: 4.4.42).
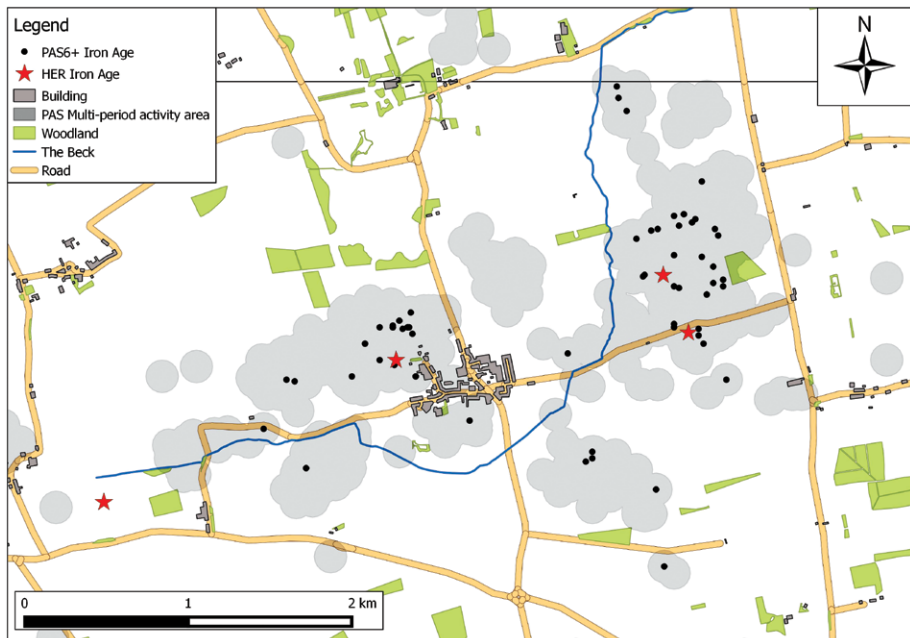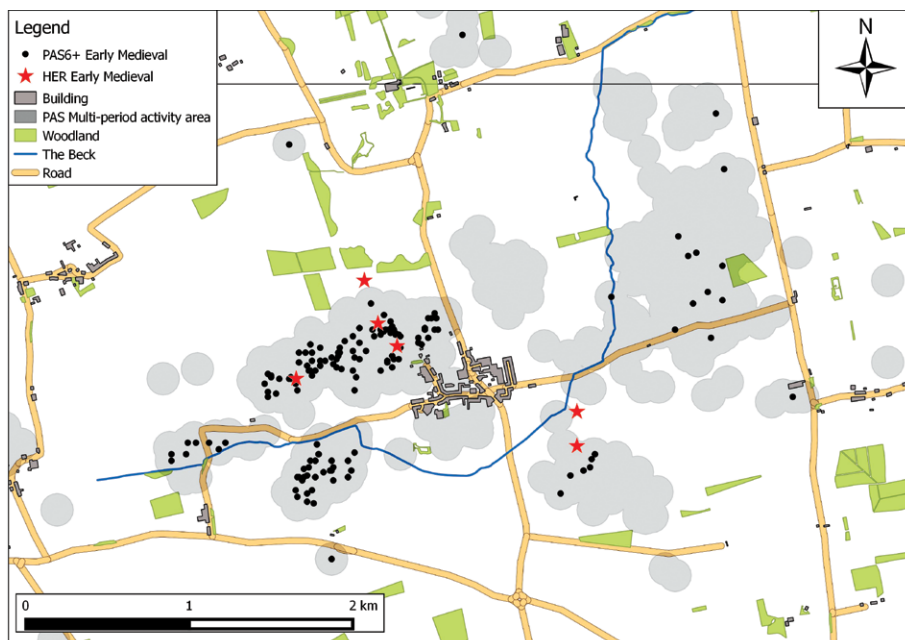
Figure 4.57. Early Medieval PAS and HER data in the Osbournby area. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

building. That from the north of the Beck is less well defined, however, and instead forms a largely homogenous spread of non-ferrous metal-work and other finds across most of the fields between the village and the DMV at Scott Willoughby. The assemblage comprises 80 items, including 39 sixth-century brooches, several beads, girdle hangers, sleeve clasps, and other items often associated with inhumation cemeteries. These finds correspond with several HER records for the same period. To the north-east of Scott Willoughby is a scatter of Early Saxon pottery (LHER 60838), and further scatters come from the area close to Highfield House, in and around the area covered by Mahany's excavation. This once again lies within the vicinity of the water-main excavation which found traces of Early Anglo-Saxon activity, though this was interpreted as indicating settlement nearby (Mellor 2007: 1).

No HER data corresponds with the cluster of sixth-century PAS data to the south of the Beck, however, in spite of the metalwork assemblage comprising 48 objects. The composition is very similar to that some 500m to the north; brooches, beads, girdle hangers, and sleeve clasps are all present. Quite whether these two probable cemeteries represent any sort of familial or group distinction is unclear; certainly, there appears to be little difference detectable in the assemblage itself.

A final scatter is seen in the south-west quadrant. This is a low-density activity area comprising five brooches and a girdle hanger. This activity area corresponds with a scatter of Early Anglo-Saxon pottery 'perhaps indicative of a settlement' (LHER 60112), but no archaeological excavation has taken place. The chronological signature allows us to speculate a little further. 96 Roman objects are known from the immediate vicinity, but no evidence for any sort of

high-status building has been recorded. Might this absence of earlier structural evidence have some reflection on the status and nature of Early Saxon activity? Certainly, the fact that the scatter is of markedly lower density may indicate some sort of difference. However, no Middle Saxon finds come from this site and as the next Chapter reveals, the combination of Roman, Early Saxon, and Middle Saxon finds is a feature of 'higher status' sites (see Chapter 5). As Chapter 5 reveals, this chronological trend occurs relatively rarely in Lincolnshire. It does, however, occur in the north-west quadrant.

Returning to the north-west quadrant, the spatial association between the two 'cemeteries' and the two high-status Roman sites can only be speculated at, but it would appear at face value that the nature of the Roman landscape stimulated the nature of land-use in the sixth century. Specifically, the wider landscape context of the material in the north-west quadrant appears to indicate a very intentional referencing and/or appropriation of visible ancient monuments and structures in the landscape – an aspect of Anglo-Saxon activity which is well attested elsewhere (e.g. Williams 2003, 2006; Moreland 2011; Crewe 2008, 2012; Semple 2013). Indeed, the Fields of Britannia project has recently revealed seveal instances where late Iron Age, Romano-British, and Early Saxon features all share the same orientation, suggesting a high degree of continuity (Rippon *et al.* 2013).

While the apparent reuse of a Roman site at Osbournby is not surprising, it nonetheless raises the question as to why this particular place was chosen for the dead, rather than the two Bronze Age barrows to the east; barrows are the most frequently reused monument in the Early Anglo-Saxon period (H. Williams 1997: 6).

Notably, the areas intensively used in the Early Anglo-Saxon period in the north-west quadrant appear also to have been intensively used into the Middle Saxon period – a trend revealed by both PAS and HER data (Figure 4.59). The water-main excavation revealed Early and Middle Anglo-Saxon pottery, but little in the way of occupation evidence. Indeed, the excavators suggested that the main core of settlement was located in the immediate vicinity (Mellor 2007: 9). This may actually be represented by Mahany's excavation to the south, which revealed at least one Grubenhaus and a relative abundance of Middle Saxon pottery (Marjoram 1974b: 24; Mahany 1977b: 26; Steedman 1994). The pottery scatter found by Mahany was shown to extend south into the sanctuary area, and subsequent metal-detecting here has also recovered several Middle Saxon pins in addition to three silver sceattas. This local trend is somewhat in contrast to the wider 'seventh-century shuffle', which saw the large-scale abandonment of earlier settlements (Lewis *et al.* 2001: 14). Yet, at Osbournby the plough-zone assemblages of these two periods are largely homogenous,[40] and little can be said of the spatial patterning within the modern fields themselves, especially in the light of artefact movement within the plough-zone. Parallels for Early to Middle Saxon continuity can be

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40 Indeed, many of the fills of Saxon features contained Roman pottery, and one in particular contained part of a human femur (Mellor 2007: 22, 32). The Anglo-Saxon occupants of this area must surely then have encountered the remains of Roman occupation – including burials – and there is the possibility that more prestige discoveries such as metalwork from earlier periods were reused or curated. Some degree of caution is required when interpreting find spots, then, as the case study of the Tattershall Thorpe metalworker's grave aptly illustrates (Hinton 2000).

cited from Davies' recent work in Norfolk, especially at East and West Rudham, where the palimpsest indicated a 'permanent Middle Anglo-Saxon settlement focus that replaced a possible Early Anglo-Saxon burial focus' (Davies 2010a: 207).

Further low-density scatters of Middle Saxon metalwork have been discovered to the west near Scott Willoughby, and to the south of the village, though Early Anglo-Saxon finds are not present within them. Again, their significance is difficult to assess, but the possibility remains that they represent small farmsteads or other foci of activity. HER reveals a similar pattern, with small scatters of pottery coming from fields to the south-east of the village close to the Beck (LHER 64650), and also in the far north of the parish at the foot of the limestone ridge (LHER 64673). The medieval settlement of Scott Willoughby is mentioned in Domesday, and contains a church of tenth-century origin (Pevsner and Harris 1989: 628-9). No Middle Saxon activity was found during systematic field-walking of this site in advance of ground-works to the water-main in 2005 (Taylor 2005); all that was found was a thin scatter of post-medieval artefacts. Different forms of plough-zone material do, then, appear to represent different chronologies here at least.

The assemblages that form each activity area are broadly of the same character and density, including strap-ends, hooked tags, pins, and the occasional silver sceatta. The profile complements the wider regional picture established by VASLE, discussed further in the next Chapter (Richards *et al.* 2009: 3.2.1). A more detailed analysis of the composition of Middle Saxon assemblages presented in the following Chapter also reveals that the patterning seen here at Osbournby is quite normal for activity areas of any size within the county.

There is, however, a lack of certain 'marker-finds' that would denote this as a so-called 'productive' site (discussed in Chapters 5 and 6); no styli have been found, nor have any inscribed rings or inscribed plaques (Ulmschneider 2000b: 65, though see discussion in Chapter 5 on material culture and status). Some insight into the possible character of activity can be gained through animal bone recovered during the water-main excavation. Although the sample is too small to draw conclusions from, the assemblage from the Early to Middle Anglo-Saxon period suggests a cattle-based economy, with smaller numbers of pig, sheep, goat and horse being kept (Mellor 2007: 155). The age at death profiles of the bones hints at 'some cattle being retained to an old age for dairy and traction, with others being slaughtered young for meat' (Mellor 2007: 155).

The archaeological significance of these different scatters is difficult to assess in the absence of excavation, though elsewhere such scatters have been shown to relate to settlement. Systematic fieldwalking in the parish of Brixworth in Northamptonshire, for instance, identified more than twenty small concentrations of Middle Saxon pottery, and subsequent excavations have shown associated archaeology, such as building remains, to lie below the plough-zone (Lewis *et al.* 2001: 15).

Further observations can be made about the archaeological significance of the clustering of Middle Saxon activity areas around the medieval/modern settlement of Osbournby, especially in regard to the process of settlement nucleation. First, attention has been drawn to the frequency with which settlements of the ninth to eleventh centuries coincide with the locations of later medieval villages (Vince

2001: 22; Lewis *et al.* 2001: 81). Such settlements are often assumed to be 'new', in that there is usually little evidence for pre-ninth-century settlement. However, Lewis *et al.* demonstrate that it is often the case that pre-ninth-century occupation is found in the immediate vicinity, or within later medieval village centres. This in turn suggests that the situation was usually one in which dispersed hamlets were abandoned, or in which they grew and merged to produce nucleated villages (Lewis *et al.* 2001: 82; Jones and Page 2006; Jones and Lewis 2012). No Middle Saxon finds have been recovered from the village core but this is likely to be a product of the lack of excavation undertaken here. The scatters of Middle Saxon metalwork around the medieval core of Osbournby may, then, be indicative of several areas of activity which were eventually abandoned during the process of settlement nucleation.[41] A similar patterning in PAS data is seen elsewhere at Benniworth, and at Keelby, as it is also seen at many other places in Norfolk, where the relationship between Middle and Late Anglo-Saxon material was taken to imply a degree of settlement 'nucleation' and stability from the eighth century at the latest (Davies 2010a, 2010b).[42] However, while this is suggested by the patterning of the Middle Saxon spatial palimpsests at Osbournby, the cumulative palimpsests do not illuminate this process on finer-scales of temporality.

Nonetheless, the density of Middle Saxon activity close to the present village may suggest that the Danish place-name from which Osbournby derives – 'Osbern's settlement' (Cameron 1998: 95) – may well simply reflect the renaming of a pre-existing nucleated settlement (c.f. Roffe 2000a). This is especially interesting given that the place-name is of a form that may be assigned to the earliest years of the Danish colonisation, that is, the late ninth or early tenth century (Roffe 2000a). It would seem, then, that Osbournby emerged from a relatively stable history (and perhaps pre-history) of land-use that is attested by PAS data in this particular part of the landscape.

Settlement nucleation might also be indicated by the distribution of tenth and eleventh century stirrup strap mounts, which form a halo around the medieval/modern settlements of Osbournby and Scott Willoughby further to the west (Figure 4.59). As their name suggests, stirrup strap mounts formed decorative elements to horse gear (Williams 1997), and given that they relate to equestrian activity they are considered to represent a military elite (Margeson 1996: 55; Richards *et al.* 2009: 3.4.2). Davies, in his study of early medieval identities in Norfolk, has suggested that losses of stirrup strap-mounts 'might well be seen to indicate conscious/subconscious displays of elite identity' in the eleventh century, and might be considered 'a material expression of increasingly formalised Late Anglo-Saxon aristocratic or thegnly secular status' (Davies 2010a: 105, with reference to Loveluck 2009: 151-2 and Senecal 2001: 251-66). Stirrup strap-mount

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41   It may also be prudent to note that the pattern seen in Middle and Late Saxon finds at Osbournby is in contrast to a more general trend seen in lowland areas of the county, where Middle Saxon finds are more frequently found more than 300m away from medieval HER data (Appendix 28). A similar trend was noted during the Fenland Survey, where Middle Saxon settlement was largely absent from the vicinity of medieval settlement. This led to the suggestion that settlement nucleation took place at a later date in the Fens than in other upland areas of the county (Hayes 1988; Lewis *et al.* 2001: 81). The broader spatial patterning of PAS data therefore provides tentative evidence to support this.

42   Davies also quotes Rippon (2009) for similar findings.
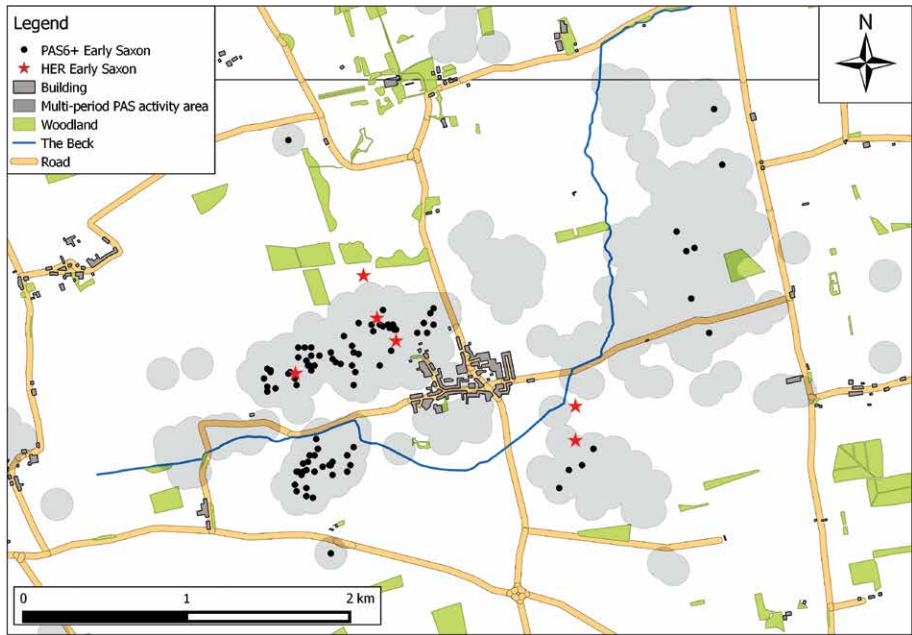
Figure 4.58. Early Anglo-Saxon finds. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
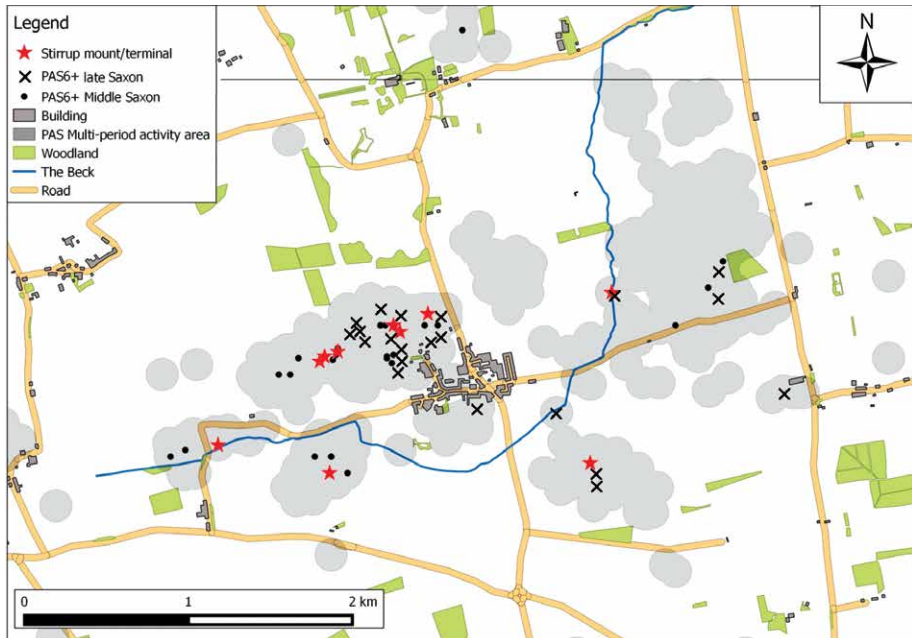
Figure 4.59. Middle and Late Saxon PAS data in the Osbournby area, with Late Saxon stirrup mounts shown. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
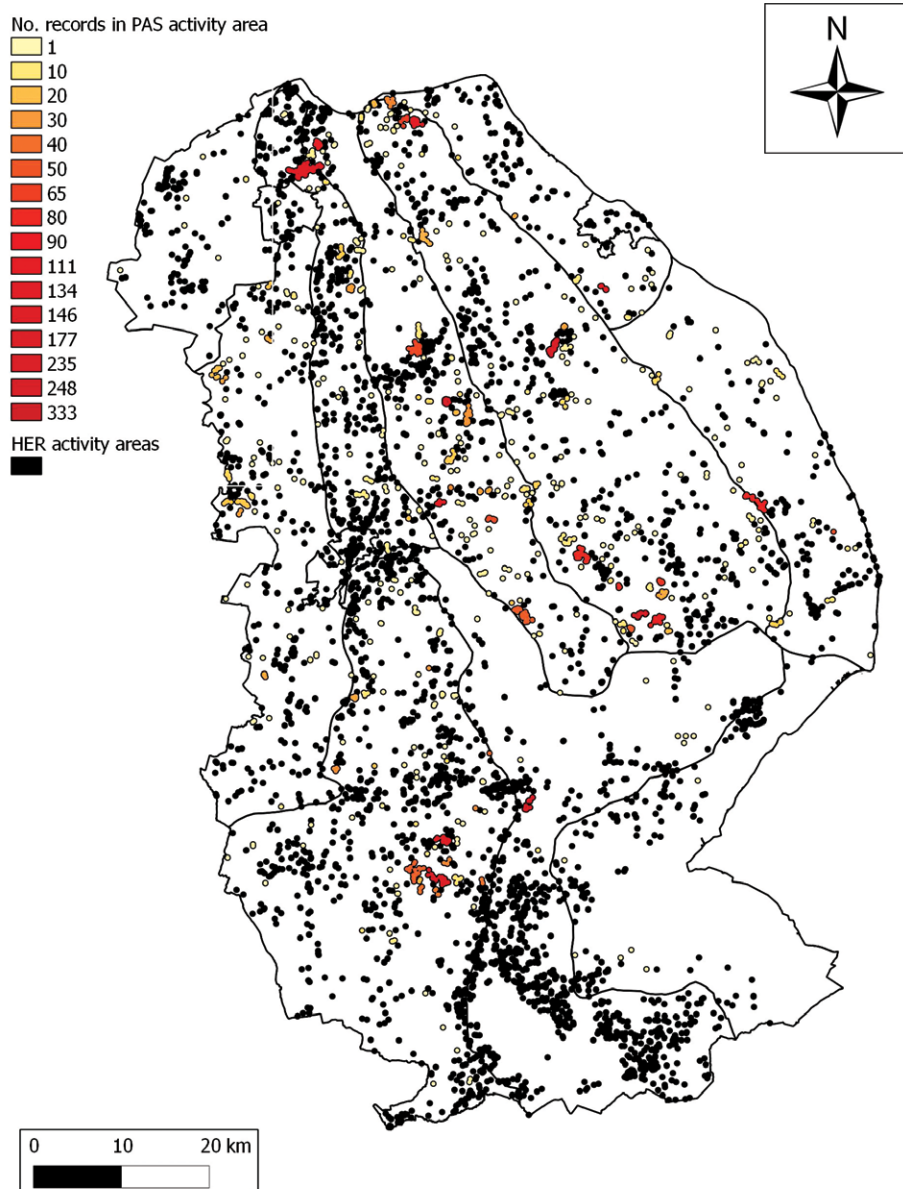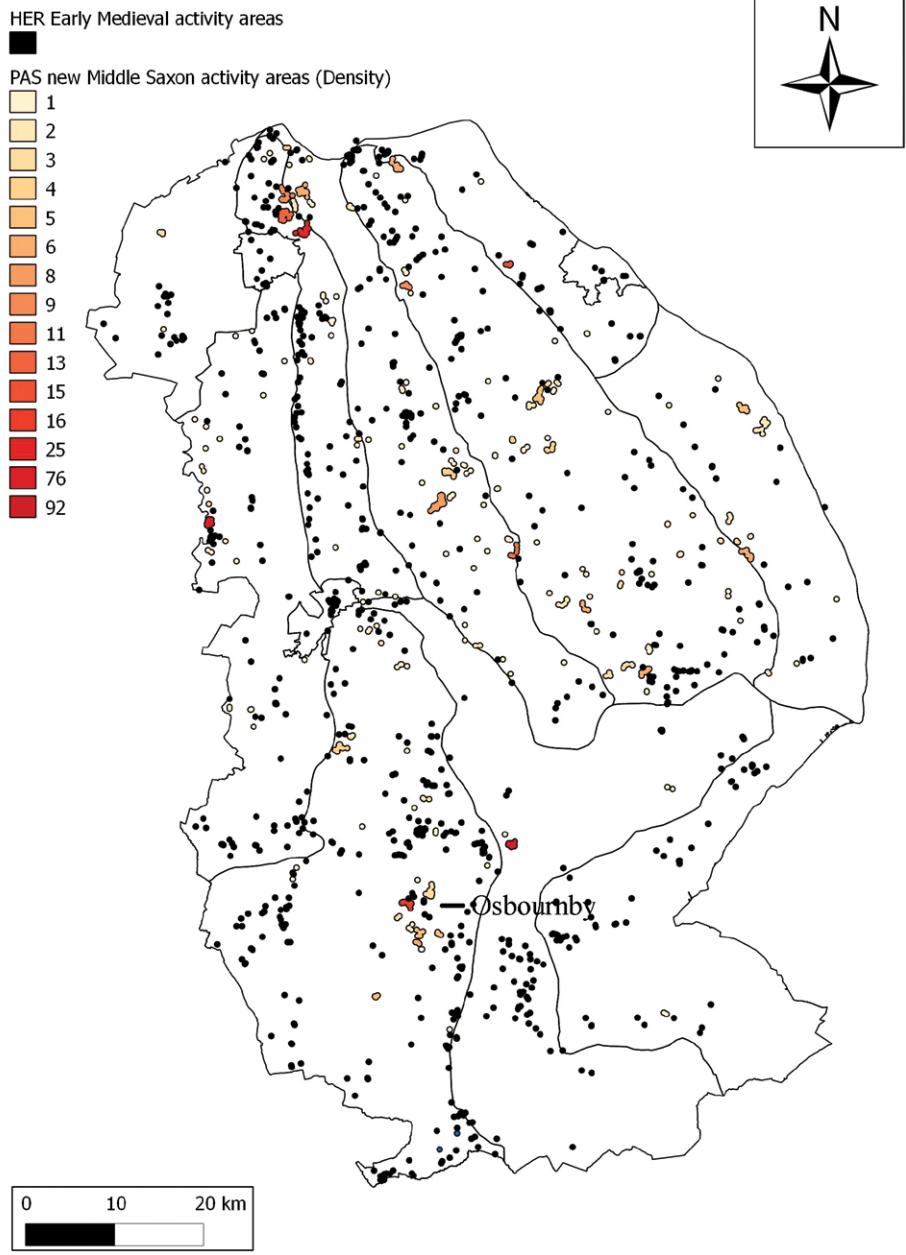
Figure 4.60. Density and distribution of Middle Saxon new PAS activity areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

are, however, absent away from medieval settlement in the parish, notably in the north-east quadrant where significant activity appears to have faded – in terms of settlement activity at least – following the withdrawal of official Roman support.
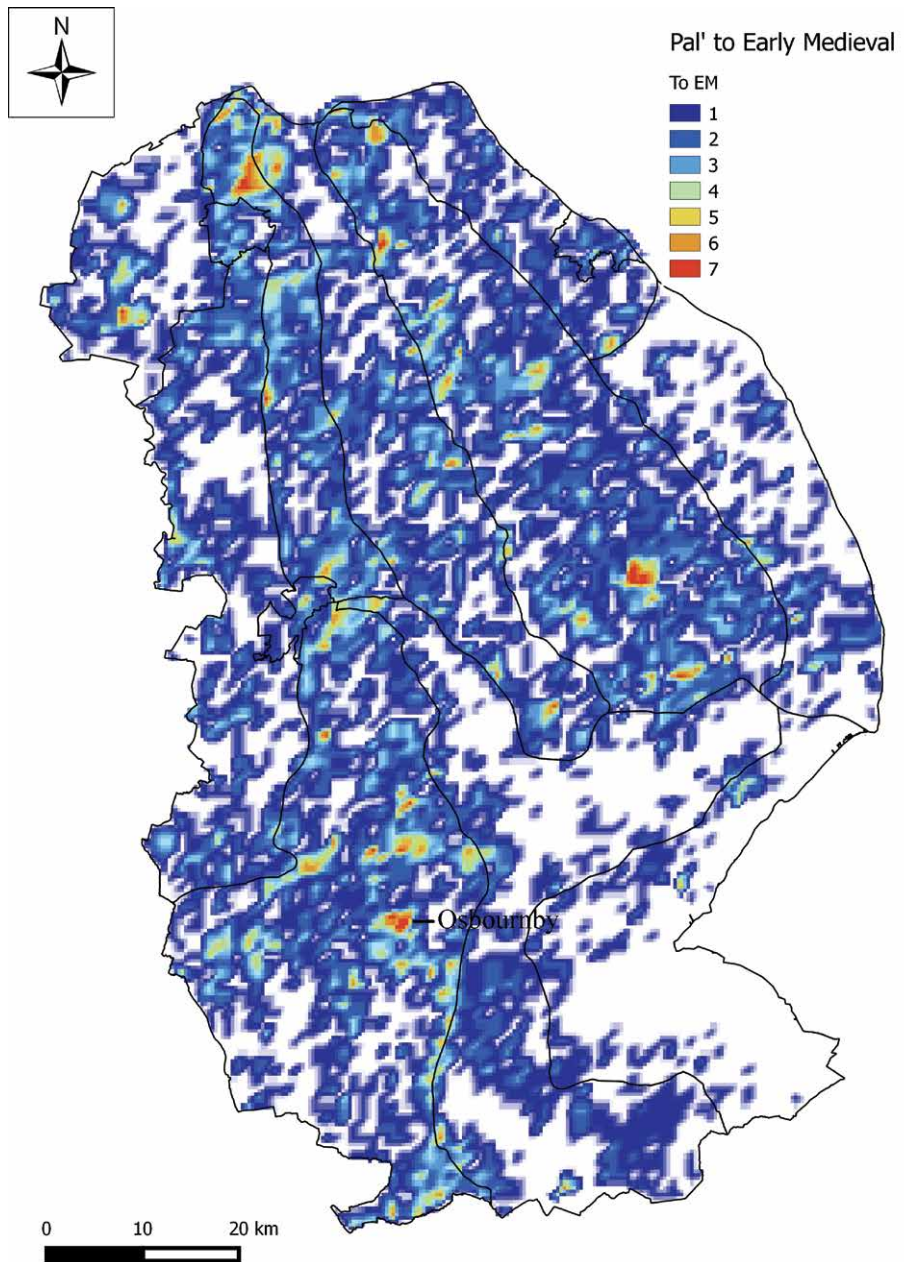
Figure 4.61. Temporal diversity: Upper Palaeolithic to Early Medieval HER and PAS data merged. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

Roffe has made further observations that might provide a further context for PAS data in the north-west quadrant. Roffe has argued that the pre-Danish settlement at Osbournby once formed part of the large Saxon estate of Folkingham, located 5km to the south, and that its subsequent renaming to take on a Danish element indicates its detachment from the estate. Moreover, Roffe argues that 'the penumbra of similar names on the periphery of this estate implies that many

holdings were created within its territory at the same time' (Roffe 2000a). Included in the vicinity are settlements such as Aswarby, Haceby, Spanby, Dembleby, and Scott Willoughby (Roffe 2000a).

Projecting this back into antiquity, Roffe notes that the Saxon estate of Folkingham may well be of ancient origin. He notes that Folkingham is itself an Early Anglo-Saxon place-name, and may well indicate an important territory from the pagan Saxon period (Roffe 2000a). It is perhaps not surprising, then, to find that PAS data also provide evidence for fifth century activity, in addition to sixth century inhumations at Folkingham.[43] Quite whether this form of estate structure can be pushed back into the Roman period is unclear; however, the presence of high-status fifth-century artefacts, in addition to the high-status nature of Roman and late Iron Age activity in the north-west quadrant certainly indicates that it acted as some sort of economic, religious and/or administrative focal point.

The pattern displayed here finds parallels elsewhere. Aston has noted that in some areas Roman settlements continued beyond the end of official Roman administration and continued to 'form the basic framework of medieval and modern villages and hamlets' (Aston 1985: 31). Moreover, Aston argues that in many cases it seems that the pattern of land holdings belonging to villas – that is, their estates – also had profound impacts on the nature of Late Anglo-Saxon and medieval estates (Aston 1985: 31; though see Chapter 5 where this is elaborated on). Aston's views support Green's hypothesis that the structure of Roman estate organisation might be 'potentially informative with regard to the social structure and centres of power within the Lincoln region in the fourth century' (Green 2012: 36), and beyond (Rippon *et al.* 2013). This does appear to be the case at Osbournby.

4.5.8. Medieval

HER data is exceptionally widespread across the county, and these data form 1891 activity areas (Figure 4.64). To this PAS contributes another 426, increasing the total by 23%. As was indicated by Middle and Late Anglo-Saxon finds from Osbournby, the broad pattern of settlement in the county is remarkably similar to that of the tenth and eleventh centuries, and it is clear that the medieval landscape evolved from complex periods of previous land-use. This included a variety of visible monuments such the Roman road network, settlements of Anglo-Saxon origin, and Danish-influenced forms of land-divisions such as Wapentakes (Everson 2000: 1). Indeed, this continuity is a characteristic common to both HER and PAS data; 72% of Early Medieval PAS activity areas were reused at some point in the medieval period; likewise 52% of HER activity areas (Appendixes 26 and 27; Figure 4.65).

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43   Green's claim that there was significant post-Roman activity in the Folkingham-Osbournby area is strengthened by his observation that of these four parishes – which abut one another – three have place-name elements that almost certainly pre-date c. 600; Threekingham contains an early group-name, while Walcot refers to Welsh-speakers (Green 2012: 206).

The settlement of Osbournby is first mentioned in Domesday, in which it is shown to be divided between two tenants-in-chiefs, Gilbert de Gant and Guy de Craon. At the time of the survey Osbournby held a church and a priest, and had a minimum population of 18 sokemen, 3 bordars and 7 villeins (LHER 64680). In 1334 the parishes wealth was listed as £6 0s 2d, around average for its wapentake (Glasscock 1964: 123).

Medieval finds from the plough-zone are a feature of all the plough-zone palimpsests in Osbournby, though a particular density of finds is seen in the north-west quadrant (Figure 4.62). HER data, on the other hand, cluster in and around the medieval settlement, and very few records relate to the outlying fields particularly in the north-east quadrant in the area of the late Iron Age and Roman crop-mark complex. In the far west of the multi-period scatter lies the deserted medieval village of Scott Willoughby, and this coincides with a cluster of Late Anglo-Saxon to medieval finds reported to PAS.

Ridge and furrow is seen through aerial photography in three fields to the west of the village. Two are located in the north-west quadrant, and the direction of the furrows in both fields run north-west to south-east (LHER 63996; 63996). The alignments of the modern field boundaries – which in turn reflect parliamentary planned enclosure of the eighteenth and nineteenth centuries, or even earlier enclosure – respect the direction of the furrows. This in turn appears to indicate that they preserve the more general pattern of the medieval landscape. The same is true of the modern field boundaries that enclose the ridge and furrow in the south-west quadrant (LHER 63996); however, here the alignment is north-south. One further area of ridge and furrow is located in the far north-east of the parish, and this again is enclosed by modern field boundaries set to the same alignment. No PAS finds come from this latter area, however. Excavation in advance of the water-main also found traces of medieval ploughing, and the alignment complements that mentioned above (Mellors 2007: 23).

The survival of older field patterns close to the medieval village core is largely unsurprising; indeed, this was a feature noted in the Leicester HLC project (Leicestershire County Council 2010: 209). Here, it was suggested that the preservation of medieval ridge and furrow within areas of Parliamentary planned enclosure could be 'attributed to the fact that following enclosure the land was given over to pasture and earthwork features became fossilised in the landscape' (Leicestershire County Council 2010: 212).
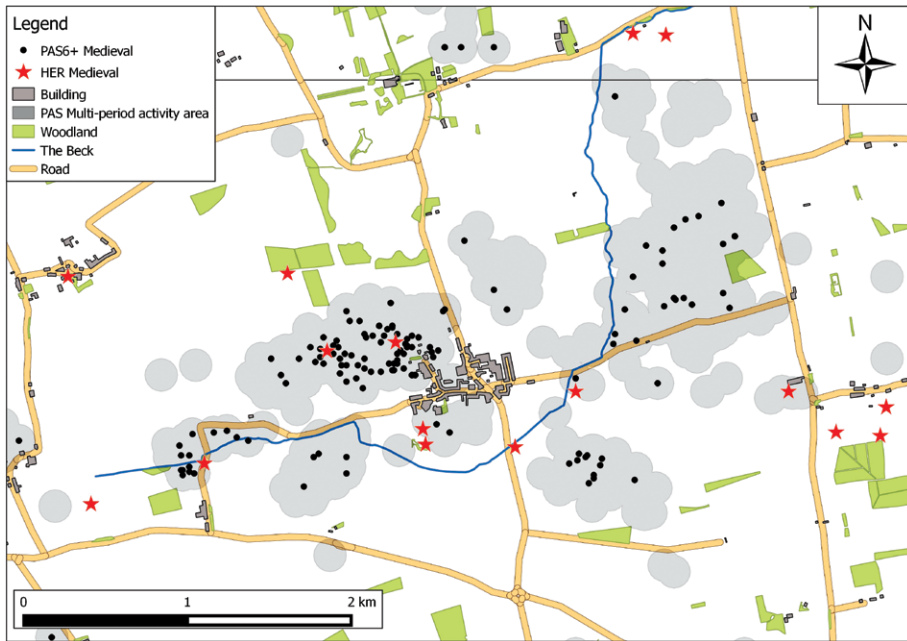
Figure 4.62. Medieval PAS and HER data in the Osbournby area. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
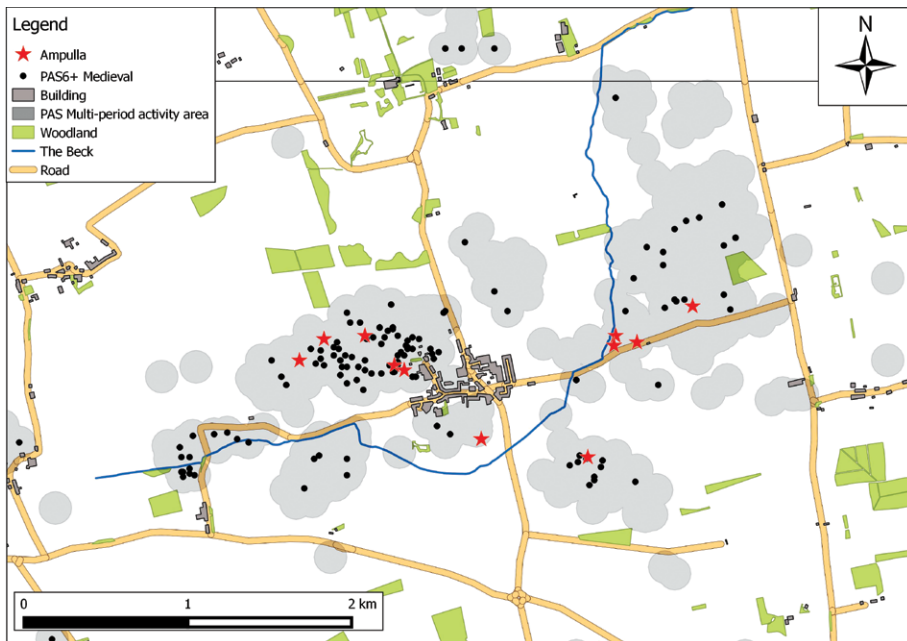
Figure 4.63. Medieval PAS data in the Osbournby area, with ampullae shown. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
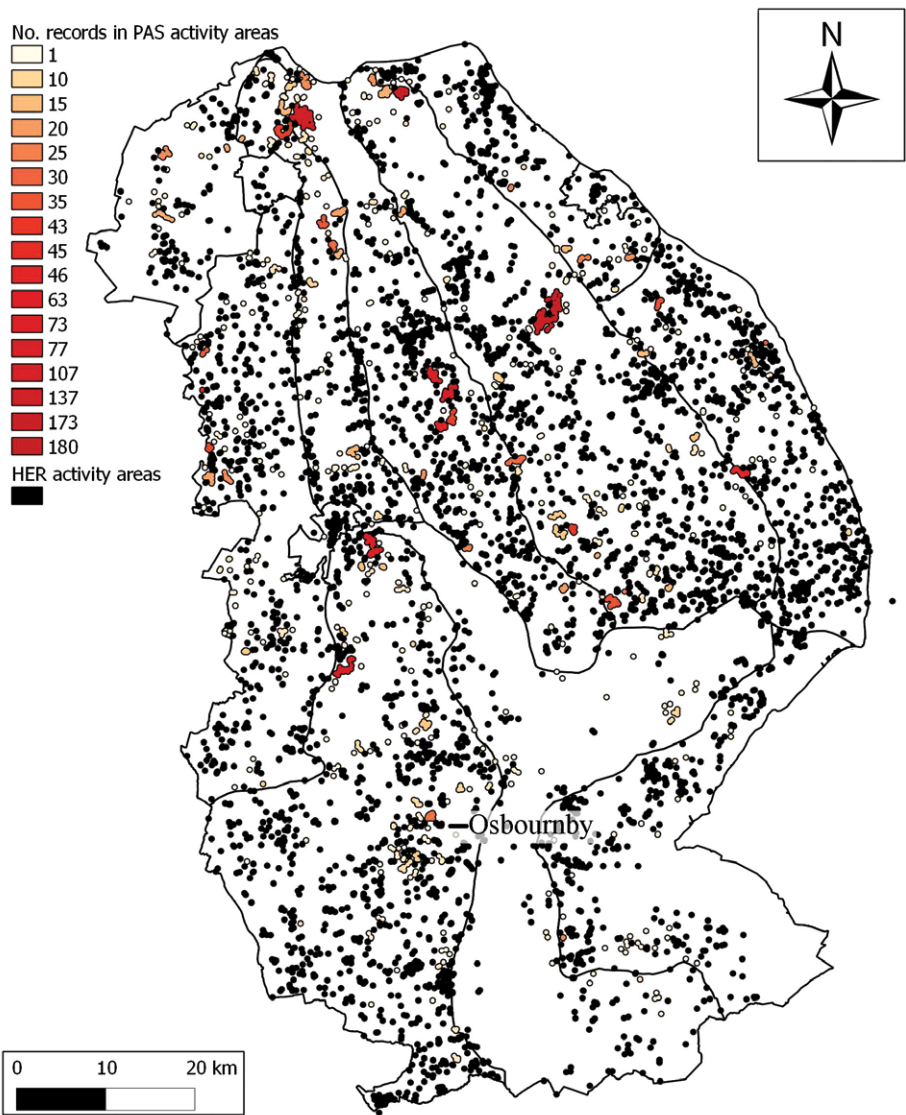
Figure 4.64. Medieval HER and PAS data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
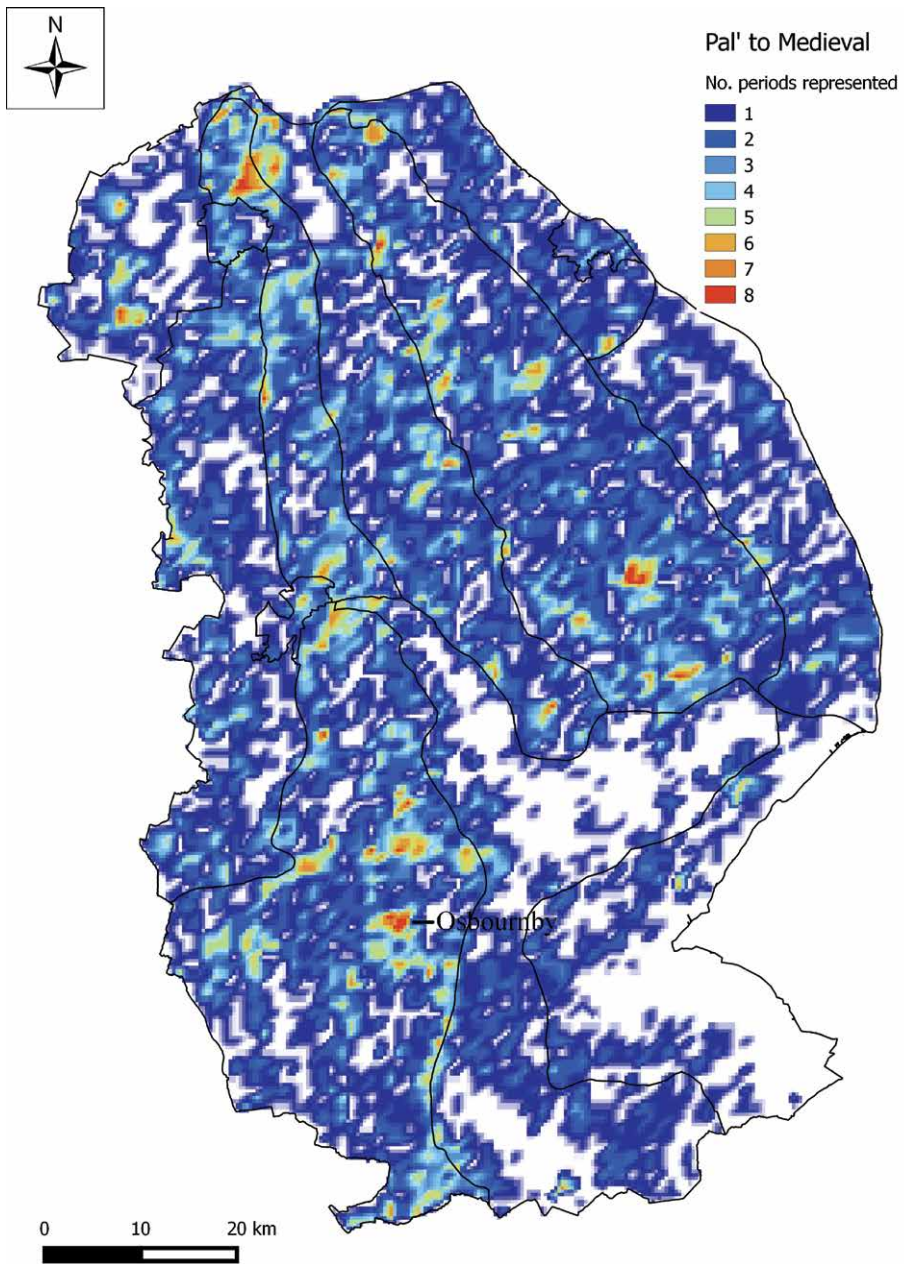
Figure 4.65. Temporal diversity: Upper Palaeolithic to medieval HER and PAS data merged.
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

The longer-term sense of non-settlement related activity may provide an interpretative context for the rather eclectic mix of finds discovered here: a later medieval buckle, a lead 'toy', a weight, a brooch, two harness pendants,[44] and a pilgrim's ampulla. Coins include a groat of Edward III and a halfgroat of Edward IV. These finds can hardly be used as settlement evidence per se; rather, they appear to be an indirect reflection of the range of activities seen within a village. Their biographies may include casual loss, dumping, and manuring.

The suggestion that medieval PAS data may largely be the result of manuring can be supported by pottery evidence recovered from the water-main excavation. Here it was noted that the medieval pottery of 13th to 15th century date was notably more abraded that the Saxon pottery from the site, and accordingly it was suggested that these finds were initially deposited through manuring, and then subsequently disturbed by ploughing (Mellor 2007: 32, 135). Moreover, the entire Anglo-Saxon site excavated by Mahany was also found to be sealed under medieval ridge and furrow (Mahany 1977b: 27).

Some additional insight on this might be gained via the distribution of pilgrim's ampullae (Figure 4.63). 11 examples have been found in the parish; five come from the north-west quadrant close to the village, and one of these comes from the area of ridge and furrow. Single finds come from the southern quadrants, the rest cluster along the northern side of the Drove in the east. None come from the area between the village and the Beck to the east. Lead ampullae are now common finds from the rural medieval landscape owing to the large quantities found through metal-detecting. Ampullae were purchased at shrines by pilgrims, and they were deemed as holding miraculous properties owing to the holy water that they contained (Hinton 2005: 193). Indeed, one contemporary story concerns a pilgrim who had his purse stolen in a crowd at the shrine. After having to beg for money to buy bread for the return journey, he later heard a rattle in the ampulla, and on further investigation four pennies were found to be contained within it (Webb 2000: 218).

Ampullae could be used for a variety of purposes, not least for the healing of the sick, but they were also used to heal or bless the land (Mitchiner 1986: 138; Spencer 1998: 3, 18). Ampullae might, for example, have been buried to reduce weeds and to enhance the harvest, or may have been fixed to stockyard gates to protect livestock (Hinton 2005: 211).

Following this, it has been hypothesised that many of the ampullae found through metal-detecting in rural areas may indicate the purposeful disposal of the item into the ground (Anderson 2010). This is, of course, in contrast to them being the product of manuring or dumping. Indeed, the ampullae from Osbournby have

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44 One of these is worthy of brief mention owing to its potential in highlighting the extreme range of depositional events that might be encountered within a palimpsest. Sometime shortly before 1973 a medieval enamelled copper-alloy harness mount was discovered south of the Drove, and was later recorded with PAS (PAS ref. LIN-494502). This item bears the heraldic device of Sir Walter de Gloucester or his son (also called Walter). The second Sir Walter lived at Heydour, not far from Osbournby, and while the item could plausibly have been lost during riding, Redshaw notes that De Gloucester's house was broken into on the 2nd September 1312, and the 'coffers and muniments stolen' (Redshaw 1973). Redshaw pondered whether this item was part of the stolen goods. While this is very speculative, it nonetheless illustrates that finds may enter the plough-zone in sometimes rather obscure circumstances.

Figure 4.66. GoogleEarth satellite image (copyright GoogleEarth 2016) of the two barrow crop-marks east of Osbournby, with the Enclosure Award Map of 1798 overlaid.
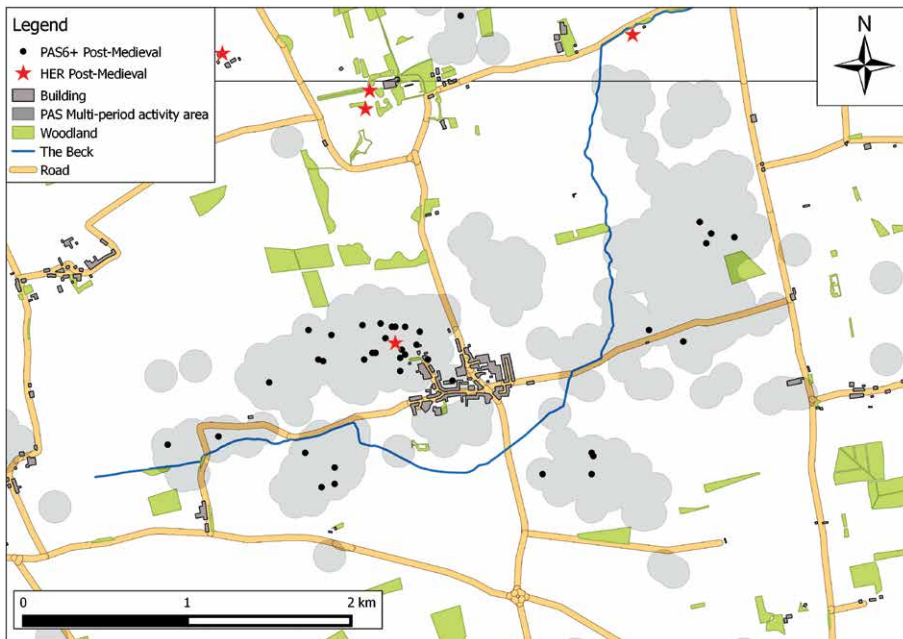
Figure 4.67. Post-medieval PAS and HER data in the Osbournby area. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

a different distribution to the general spread of medieval material, being more tightly clustered to roads, tracks, and the village core. In one sense this may suggest that blessings were made from the field-edge, but it may also imply that the two forms of material culture are subject to different forms of deposition, specifically that the other items that are found beyond the road/settlement margins are perhaps the result

of manuring or dumping. This tentative relationship between ampullae and medieval arable regimes suggested here does, however, require a much fuller analysis of the evidence, which is unfortunately beyond the scope of this present study.

4.5.9. Post-Medieval

During the period c.1500-1700 Lincolnshire was the largest county in England and Wales, with 5 boroughs, one city and 34 market towns (Field 2000: 1). This was a period of dramatic change in the character and use of the landscape both in towns and in the countryside. During the later sixteenth and seventeenth centuries the countryside was characterised by population decline, and many arable sites were converted to pasture (Field 2000: 2).

In spite of the turbulent history of this period, data for the post-medieval period is extensively spread across the county, and encroaches into many areas of former wetland (Figure 4.68). 1376 activity areas are represented by HER data, and PAS contributes another 429, increasing the total by 31%. Indeed, in spite of this period arguably being the most legible, over 80% of PAS data form new activity areas. Post-medieval PAS data provides the largest number of new activity areas than any other recorded on PAS (but not the largest proportional increase, which is for the Early Medieval period), and this is at stark odds to the assumption that the post-medieval period should be one of the most legible. Many settlements that existed in the medieval period flourished into the post-medieval period (Figure 4.69). However, the statistics for reuse of activity areas are rather low, especially in lowland areas of the county where widespread drainage occurred relatively late, effectively opening up new areas for settlement (Figure 3.28; Appendixes 26 and 27).

Returning to Osbournby, the character of settlement and land-use in the post-medieval period becomes much clearer through documentary evidence. The Diocesan Return of 1563 records 43 households in Osbournby, and this rose to 50-55 families resident in the parish by the late seventeenth/early eighteenth century (Hodgett 1975: 192). By 1801, there were 343 people living in the parish (LHER 64680), rising to 654 in 1841 before falling again to 392 by 1901 (LHER 64680).

Post-medieval PAS data shares a similar distribution to that from the medieval period, being scattered across former to present-day arable or pasture fields in the parish in low densities (Figure 4.67). These are, however, fairly undistinguished, homogenous assemblages in terms of their distribution and composition, though within this are several finds of more parochial significance. On the whole, however, they comprising the ubiquitous range of dress accessories, mounts, and coins that appear to be the mainstay of most fields surrounding post-medieval/modern settlements.

Again, the fact that these fields have remained in arable or pastoral use since the medieval period suggests they are not directly related to settlement. However, the question as to how these finds got there is not an easy one to approach. Accordingly, the archaeological significance of post-medieval finds recovered from the plough-zone appears to become primarily driven by the intrinsic properties of the object itself – its potential to comment on industry, trade, and society, for example – rather than being necessarily driven by its precise find spot. The silver hawking or hunting whistle found close to Scott Willoughby may well be associated with the
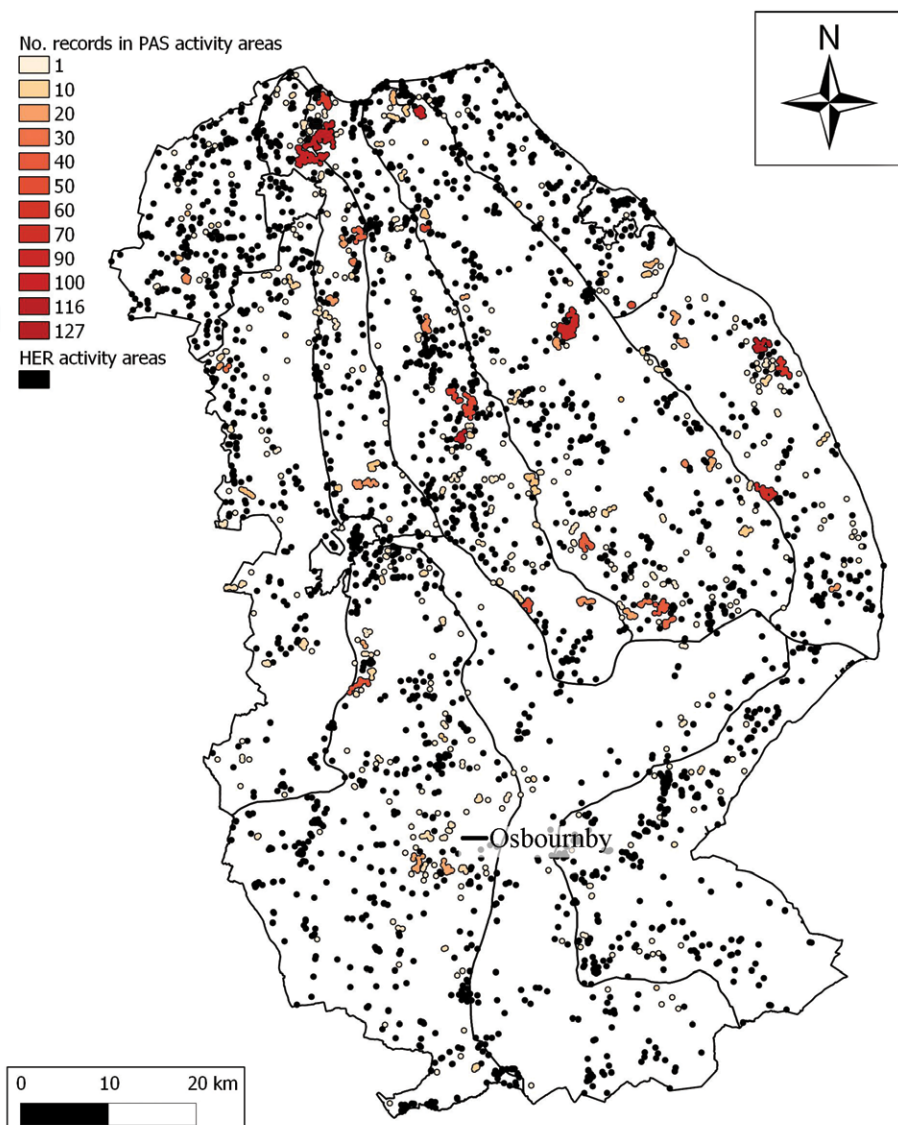
Figure 4.68. Density and distribution of post-medieval PAS new activity areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

manor at the same place, for example, but there is no way of telling how it entered the plough-zone. This is not to say that the spatial information regarding such finds should not be recorded in detail even though they appear to more frequently reflect secondary forms of deposition.

PAS data say little, if anything, about several sites recorded on the HER in the vicinity of the village. To the south lies Hall Close moated site, and while the site itself is scheduled, no post-medieval finds are included in the plough-zone palimpsest located in its vicinity. Likewise, a field to the south-west of the village contains a probable brick and tile production site (Taylor 2005; Smalley 2005); however, while PAS data provide excellent evidence for a 'new' sixth-century
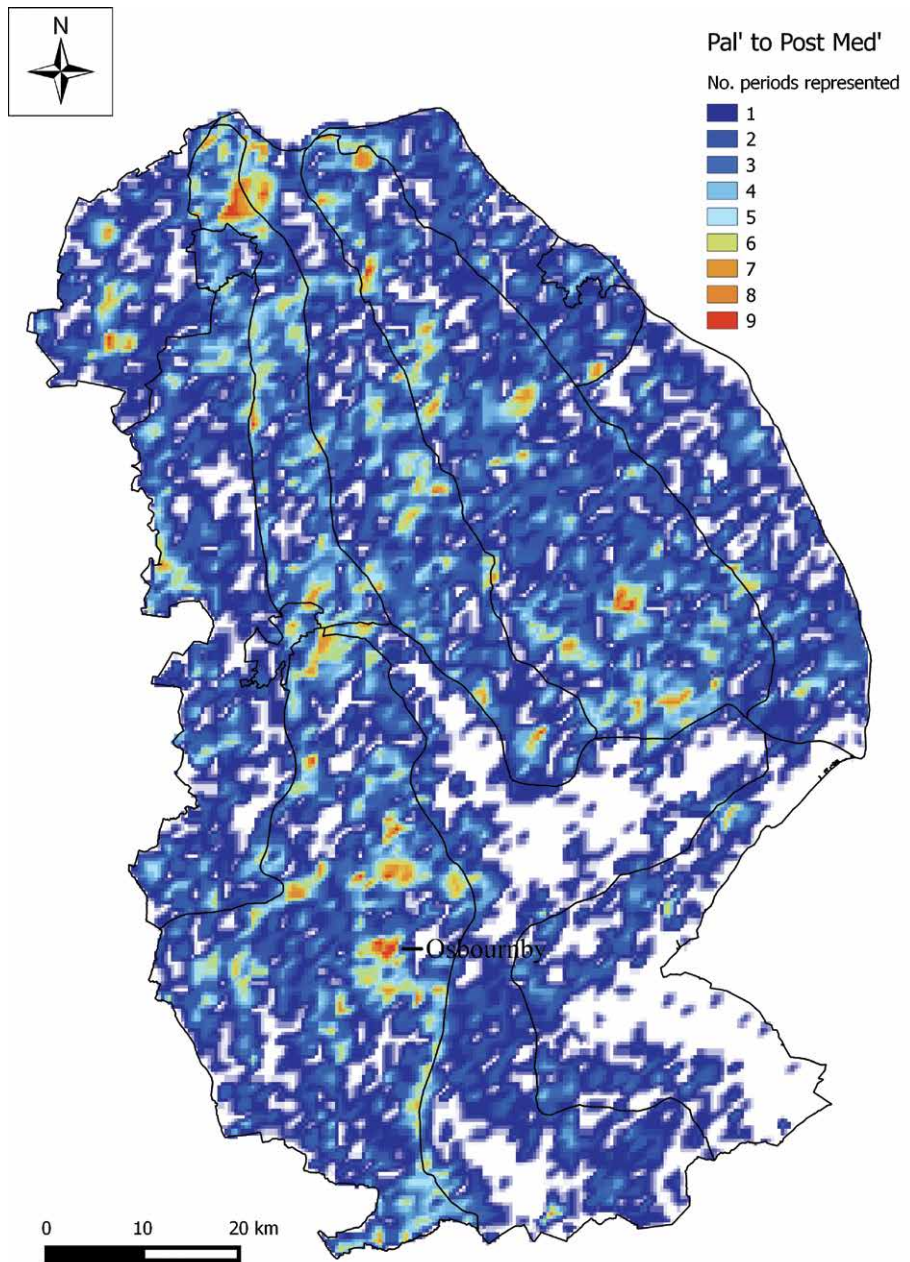
Figure 4.69. The development of persistent places: merged HER and PAS data from the Upper Palaeolithic to the Post-medieval period. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

inhumation cemetery, post-medieval finds only include a couple of seventeenth-century mounts, a furniture or casket fitting, a spur, and a couple of dress hooks.

Part of this may also be owing to the greater degree of subjectivity exercised over the recording of finds from this period. AD1700 is the widely accepted cut-off date for recording, and only the more unsual or locally significant finds after this date are recorded.

Nonetheless, features within the post-medieval landscape are illuminated by the narrative that has been constructed, not least the significance of the spring that stimulated votive behaviour in the late Iron Age and Roman periods, and which in the post-medieval period survived as a pond. In this respect this natural feature transcended multiple time periods, being variably perceived as a natural feature from which one could draw physical health (e.g. for the watering of crops or livestock in the post-medieval period), to a source of spiritual health in the late Iron Age and Roman period.

Similar aftershocks of the antecedent landscape are also possibly seen to the east of the village. The Enclosure Award Map of 1798 shows that the western field-boundary of both the Dean and Chapter's field, and that of John Bates, run broadly north-south immediately to the west of each barrow respectively (Figure 4.66). This might be evidence that the barrows were still visible in the late eighteenth century, and that they formed marker points in the landscape, though one might expect such features to form part of the field boundary rather than being incorporated into the field itself. Nonetheless, elsewhere in Lincolnshire barrows were frequently used as meeting places and boundary markers (Goodier 1984; Pantos 2001).

4.6. Conclusions

The technique of temporal mapping developed in this study has identified and visualised Osbournby as a persistent place – a place which displays far greater temporal depth to the surrounding landscape. Finer-scaled mapping of PAS data has further revealed this persistent place to be formed of several palimpsests, though in some instances these were artificially divided by post-medieval/modern features within the landscape. Accordingly, PAS data were found to be both cumulative and spatial palimpsest types, depending on the spatial scale at which they are being viewed. Each palimpsest is cumulative, in the sense that each contained substantial temporal depth owing to the repeated use of the place over long periods of time. At a wider, parish-scale of mapping, these palimpsests become more appropriately seen as spatial palimpsests, however, forming particular 'nodes' within the wider persistent place.

The biography that emerged from the study of these palimpsests at different scales has also revealed Osbournby to carry all the hallmarks of a persistent place. In some parts of the parish a relationship between the natural environment and human activity can be hypothesised; for example, the Bronze Age activity between the barrows in the south and the spring in the north – a choice of landscape that may have taken influence from natural and cultural monuments onto which were projected notions of life and death respectively. Likewise, ritual activity in the late Iron Age and Roman period appears to have been stimulated by the presence of a

spring. Moreover, the nature of this activity appears to have in turn stimulated a pattern of events that became engrained in the eventual nucleation of settlement and the establishment of 'Osbern's settlement'. These observations on the nature of human activity at Osbournby correspond well with Schlanger's observations on the nature of persistent places (Schlanger 1992). Furthermore, many of these observations are only visible by viewing the evidence at different scales of time and place – an observation in itself which underlines the theoretical approach being advocated here, in which the theoretical perspectives of Schlanger (1992) and Bailey (1981; 2007) are augmented.

As Bailey predicted, it became increasingly difficult to see temporally fine-grained depositional events within a cumulative palimpsest. While it was, for instance, possible to suggest a structured, votive, use of the area around the spring in the north-west quadrant in the late Iron Age and Roman periods, it was not possible to go beyond this to view the relationship between items within the assemblage deposited over the short-term, such as the coins and the artefacts. Likewise, it was not possible to see the finer-grained reasons for the presence of the three post-Roman 'British' artefacts – the two penannular brooches and the hanging bowl mount. Rather, at this scale of temporality one quickly reaches the limits of interpretation within a plough-zone palimpsest. Likewise, the temporal relationships between the palimpsests within the Osbournby persistent place were somewhat blurred on finer-scales of time (Bailey 2007: 207). This did not restrict the identification of different temporal characteristics across the landscape, however, and the teleological method of narrating the biography of land-use provided an interpretative context for the plough-zone palimpsests.

In many ways this answered the concern of the case study, which was to explore the temporal depth presented by the plough-zone palimpsest. However, a valid criticism can be raised over the relatively 'high-level' of interpretation that this approach inevitably results. Several of the shorter-scale events that were identified could have been explored in greater depth, for instance the nature of votive deposition. Clearly, PAS data have emerged from this case study as a resource that holds potential for informing us of the nature of the antecedent landscape, and also the way in which these same shorter-scale events had on the later structuring of landscape-use. Accordingly, the following two case study chapters move on to explore PAS data in greater detail for a much shorter-scale of time – the Middle Saxon period. This reveals how temporally finer-grained palimpsests are pertinent to our understanding of the antecedent landscape and the development of persistent places.

Chapter 5

Barda's 'Island' – The Contribution of Middle Saxon PAS Data to Persistent Places

5.1. Introduction

This Chapter – and also Chapter 6 – moves to the 'shorter-term' end of the temporal spectrum to explore PAS data grouped by sub-period – in this case the Middle Saxon period (c. 720-850). This brings into focus more 'rapid' forms of deposition evident within palimpsests, and allows us to contextualise their significance with regard to the antecedent landscape and the development of persistent places (e.g. Braudel 1980; Bailey 2007, 2008).

Middle Saxon PAS data have been selected partly owing to the manageable size of the dataset, but also to the fact that it is for the Early Medieval period as a whole that PAS data contribute the greatest proportion of new activity areas (64%); and, as will be seen, Middle Saxon data form a crucial component of this. Indeed, the Middle Saxon period has been difficult to spot through traditional archaeological means (Ulmschneider 2000b), and finds from metal-detector surveys now form an important source of evidence (Pestell and Ulmschneider 2003a; Leahy 2007; Green 2012). Furthermore, there has been a strong tradition of research into Middle Saxon PAS data in Lincolnshire on which these case studies can build (Ulmschneider 2000b; Leahy 1993, 1999, 2003, 2007; Naylor 2006; Richards *et al.* 2010; Green 2012).[45] It must be stressed, however, that the primary purpose of the case studies that follow is to explore the temporal dynamics of palimpsests through the lens of Middle Saxon PAS data; they are not intended as a comprehensive discourse on the nature of Middle Saxon settlement, though this inevitably comes into focus.

This Chapter approaches the sorts of questions that the multi-temporal view is more capable of commenting on: to what extent is the antecedent landscape visible in the pattern of Middle Saxon assemblages, and in what ways did it influence the nature of activity? How did Middle Saxon activity influence the use of the landscape in later periods, and is there any evidence of this engrained in the

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45 The case studies that follow will go some way in responding to the updated East Midlands Research Agenda for the East Medieval period, which states that there is an urgent need to assess the evidence for changes in settlement morphology and hierarchy 'in the light of information obtained from landscape features, air photography, sculpture, place-names *and data on metallic stray finds generated by the Portable Antiquities Scheme*' (Knight *et al.* 2012: 86, Research Objective 6C; my emphasis).

landscape today? Moreover, since it has now been established that PAS data often comprise low-density activity areas, we must question what potential these finds hold for developing our understanding of particular persistent places. Indeed, is it simply the case that one can only really develop a biography of a place through the lens of a large assemblage?

These questions are approached in two main ways. In the first half of this Chapter the county-wide dataset of Middle Saxon PAS finds is characterised according to density, distribution, assemblage composition, and temporal setting. These trends are contextualised within the broad current understandings of settlement patterns.

The second half of this Chapter explores low-density activity areas in greater detail through a case study of three assemblages on the 'island' of Bardney, located in the Witham Valley. High-density activity areas, in contrast, are the focus of Chapter 6.

5.2. Settlement and Economy

The subject of settlement and economy in Middle Saxon England has been extensively reviewed in recent years (e.g. Whyman 2002; Naylor 2004b; Loveluck and Tys 2006; Loveluck 2007; Hutcheson 2009; Davies 2010a; Hamerow 2012; Tester *et al.* 2014), and there is no need to repeat this here except at a broad level. Tradionally, explainations for the transformation of the English economy seen in the late seventh and early eighth-century have been sought in the emergence of emporia – centralised places of trade and production, established under royal control, and which stimulated urban growth (Hodges 1982). Emporia, it was argued, allowed royal elites to monopolise long-distance trade in luxury goods, in addition to exercising greater control of merchants engaged in international trade (Palmer 2003).

The emphasis given to the role of emporia in the development of Middle Saxon trade – termed the substantivist view – naturally overemphasised the role of the elite, and underplayed the significance of rural settlement (Skre 2008; Fleming 2009). This was, of course, partly owing to the lack of data on the rural landscape – a situation which has gradually been changing in the last twenty years owing to the increased amount of fieldwork being undertaken at rural sites by amateurs and professionals alike (Davies 2010a: 46; 2010b). Once 'notoriously invisible', rural settlements are gradually becoming more legible not least through collaboration with metal-detectorists; early medieval sites are 'not so much invisible as hitherto recognised' (Richards 2000: 27).

The wealth of data emerging from the rural landscape has presented a significant challenge to the substantivist approach (Naylor 2012), and there is now a large body of evidence to show a diversity of rural sites engaged in varying degrees of trade, exchange, production, and consumption (Whyman 2002; Reynolds 2003; Loveluck and Tys 2006; Naylor 2007; Davies 2010a; Moreland 2011). Material culture, particularly non-ferrous metalwork recovered through metal-detecting, has been a key element in exploring the diversity of rural sites now known (Richards 2000; Naylor 2007, Richards *et al.* 2009; Davies 2010a, 2010b; Richards and

Naylor 2010). Naturally, greater attention has been given to those sites at which there is wealth of data – sites that have become termed 'productive' owing to the richness of material culture found on them (Ulmnschneider 2002; Pestell and Ulmschneider 2003a). So-called 'productive' sites have variously been interpreted as rural trade or market sites that are indicative of an unregulated market; one in which people were 'active participants in foreign exchange' (Fleming 2009: 423), rather than one which was monopolised by the elite (Naylor 2004a, 2004b; Davies 2010b). The influence of the elite's ability to collect and distribute taxes and other resources has not entirely been ruled out, however; nor has the role of the early Church with similar abilities to control resources (Newman 2003: 97; Ulmschneider 2000b: 66-72; Blair 2005; Richards and Naylor 2010: 193; Moreland 2011).

So-called 'productive' sites are explored in greater detail in Chapter 6, but for now it is prudent to note that the diversity of 'status' seen across the rural landscape does in part owe to issues of legibility. Richards, for example, has demonstrated that the use of metal-detectors may artificially inflate the perception of a site in terms of its material richness (Richards 1999b); similarly Loveluck's discourse on the Anglo-Saxon settlement at Flixborough has suggested caution on using only material culture to interpret the character of a site (Loveluck 2007). It is, then, into this backdrop of rural settlement diversity and legibility that we can begin to contextualise Middle Saxon PAS data for Lincolnshire.

5.3. Middle Saxon PAS Data

Middle Saxon data were selected principally by using the 'SUB-PERIOD' field of the PAS data download. The PAS dating convention places this as c.720-850; however, several types of objects cross the boundaries at either end of the sub-period, and these finds present a problem as to whether or not they should be included. This problem was also encountered by VASLE, and for consistencies sake this present study follows several of their approaches. First, the early sceattas issued in the late seventh and early eighth century are included within the Middle Saxon dataset, being more appropriately seen as part of the 'long-eighth century' (Naylor and Richards 2005; Richards *et al.* 2009: 3.1). Second, artefacts are included which broadly date to the Middle Saxon period, but which may also cross over sub-period boundaries. This was most often encountered with strap-ends, many of which cannot be closely dated (Thomas 2003, 2004). The inclusion of such artefacts results in a somewhat temporally coarse-grained view of 'Middle Saxon' PAS data; it does, however, provide a pragmatic way of establishing broader trends which can be explored in detail through case studies of individual palimpsests. In many respects, then, the dataset is best understood as c. 650-c. 900 (c.f. Richards *et al.* 2009: 3.1; Naylor and Richards 2010: 194).

In order to establish broader trends, all finds recorded to six-Figure NGR or better were buffered to 300m (Table 5.1). This resulted in 214 activity areas. PAS data that fell within 300m of an HER record were classed as coming from an 'existing activity area', and those found more than 500m away from an HER record

Classification	Artefact density (metalwork)	Number of existing activity areas	Number of new activity areas	TOTAL
Low	1-10	22	183	205
Medium	11-20	2	2	4
High	21+	2	3	5
TOTAL		**26**	**188**	**214**

Table 5.1. Character of Middle Saxon activity areas.

were classed as 'new activity areas'. This resulted in 26 'existing' activity areas and 188 'new' activity areas.

Analysis was then undertaken to see if there was any difference in the character of PAS data according to whether they came from new or existing activity areas. Little difference was noted; both revealed similar profiles of density, which in turn mirror that seen in the parent dataset – that is, lots of low-density activity areas and a small number of high-density activity areas (Appendix 29). Similarly, little difference in the composition of the assemblages was noted.[46] It appears somewhat arbitrary, therefore, to continue to divide activity areas into 'new' and 'existing'; rather, PAS data are simply referred to hereafter as 'activity areas'.

Middle Saxon activity areas were then plotted according to the density of their assemblages (Table 5.1). Using the previously mentioned density curves for 'new' and 'existing' activity areas, PAS data were arbitrarily divided into three classes: low-, medium-, and high-density activity areas. Low-density activity areas are defined as those containing between 1 and 10 finds; medium as those containing between 11 and 20 finds; and high as those containing 21 or more finds (Table 5.1). This reveals the majority of 'sites' recorded on PAS are not 'productive'; 205 are of low-density, as opposed to four of medium density and five of high density. Within the 'high' range of activity there are a few 'special' assemblages that reach into the hundreds, and these are the subject of Chapter 6. Those of medium density come from Hanby, Hatton, Keelby, and Roxby cum Risby, while those of high density come from Appleby, Garwick, Little Carlton, Osbournby, and Torksey.[47]

Some general observations may be made on the current distribution of PAS data, though it is prudent to remind ourselves that more activity areas will undoubtedly come to light in due course (Figure 5.1). Perhaps the most notable aspect of the distribution of activity areas is that those of medium and high density tend to be located on or near HLC boundries and close to rivers and

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46 Some differences are seen in the proportion of coins, pins and weights, however, but these are largely down to the small number of high-density assemblages effecting the results. The assemblage from Little Carlton – found within an HER activity area – contains a vast number of pins. Similarly, the assemblage from Heckington – a 'new' PAS activity area – contains a vast number of coins. Gaming pieces are apparently more frequently found in HER activity areas, but again this is entirely due to the large number found at the Viking wintercamp at Torksey (Hadley and Richards 2013).

47 Using raw PAS data the Torksey assemblage appears on face value to be a high-density Middle Saxon assemblage given the broad dates assigned to many of the finds; however, it has been suggested that the majority of the material was deposited in 872-3 (Hadley and Richards 2013), thus placing Torksey just outside the temporal boundaries of this study. One further high-density activity area has been recorded on PAS since the main period of data collection, at Benniworth. Two further high-density assemblages are also rumoured to have come from Alvingham/Yarburgh, and Anwick.
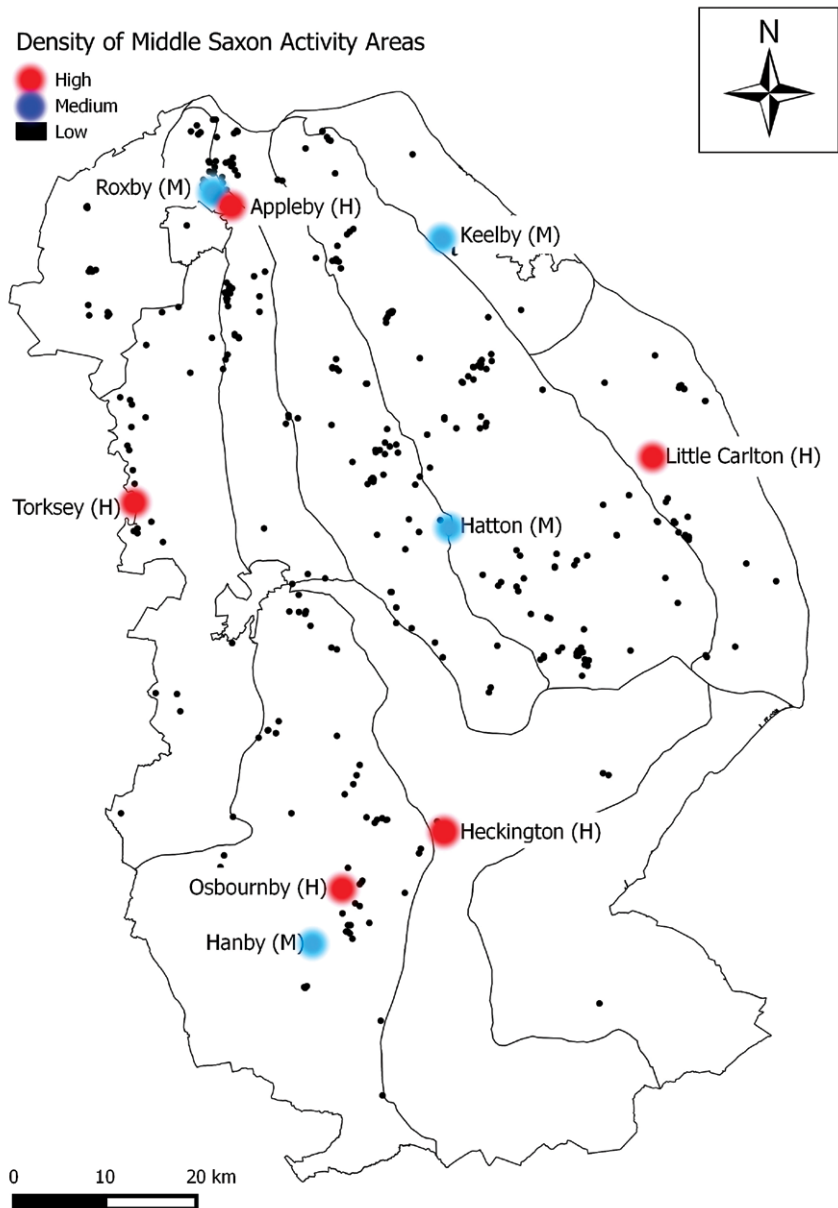
Figure 5.1. PAS Middle Saxon activity areas, plus other sites mentioned in the text (Flx = Flixborough; Ben'wth = Benniworth; Riby = Riby Cross Roads; Alv = Alvingham/Yarburgh). © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

roads. This follows the wider trend for so-called 'productive sites' to be located where different landscape zones meet, and also to be located close to major routes, owing to their involvement in regional and international trade (Pestell and Ulmschneider 2003b: 2; Metcalf 1984: 27).

Those at Keelby, Riby, Alvingham, and Little Carlton follow the 10m contour line dividing the Middle Marsh from the Outmarsh. Those at Flixborough, Roxby and Appleby are located in proximity of the Humber and the Trent. Osbournby

and Garwick lie on the Fen Edge, the latter also being close to the Car Dyke and the River Witham. Indeed, many of these 'nodes' had privileged access to maritime traffic, and many occupy sites that accordingly had been used over longer-periods of time (Brookes 2010).

Low-density activity areas, on the other hand, are far more widely dispersed across the interior of the county along the limestone, chalk and clay. The Fens and the Wash are largely void of activity areas, save for two parishes that lie on slightly higher ground at Sibsey and at Holbeach.

5.3.1. Assemblage Composition

Analysis was then undertaken to explore whether the composition of an assemblage has any relationship to its density. Subtle differences are seen within the composition of low-, medium-, and high-density assemblages (Appendix 30), and this broad classification by density furthermore appears to have some relationship to their longer-term setting (see further below). Turning to composition first, the general pattern of loss across activity areas of all sizes compares well with that established by VASLE (Richards *et al.* 2009: 3.2.1); assemblages are dominated by coins, pins, and strap-ends, with lower numbers of other dress accessories such as buckles.

VASLE further explored the regional character of PAS data by analysing the number of artefact categories that contain 20 or more finds, or 50 or more finds. This revealed there to be a greater number of artefact categories at 20 finds than at 50 finds (Richards *et al.* 2009: 3.2.1; 3.3.3.2).[48] Closer analysis of composition and density within the Lincolnshire dataset develops this finding further; statistical analysis reveals there to be a far wider range of objects found on low-density activity areas than on high-density activity areas. 30 different object types are recorded for low-density activity areas, while only about half of these are found on medium-density activity areas (13 object types) and high-density activity areas (18 object types). This is, of course, disproportionate to the total number of finds across these activity areas. This observation may suggest that medium- and high-density activity areas indicate sites at which a more restricted and specialised range of functions were undertaken, as opposed to low-density activity areas on which there is much greater variety – which might be expected should these be interpreted as debris from lower-status settlements.

The character of these finds also appears to reveal tentative trends in identity and activity. Low- and medium-density activity areas contain higher proportions of dress fittings, namely brooches, buckles and strap-ends. This is in contrast to high-density activity areas, which we might equate with so-called 'productive' sites (see Chapter 6). High-density activity areas contain greater proportions of objects suggestive of craft and economic activity; styli,[49] gaming pieces, weights

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48 The statistics quoted by VASLE for figures 63 and 64 are the wrong way round (Richards *et al.* 2009: 3.2.1).

49 Three styli are recorded on PAS that come from low or medium-density activity areas (PAS refs. PUBLIC-8D1F71, NLM-1F85D6, and LIN-2561C7). In all three cases the only part of a shank remains, and the identification is thus uncertain. The strong correlation between styli and high-density activity areas suggests that at least two of these are fragments of other objects. That from Hatton (PAS ref. LIN-2561C7) may well have come from a high-density activity area.

and metal-working waste are distinctive features of these assemblages. Styli are directly associated with literacy and as such have previously been noted as a type of object usually associated with high-status sites, though not necessarily exclusively monastic sites as has often previously been assumed (Pestell 2004: 40-48; Blair 2005: 210). The profile of pins is somewhat variable, though they are at present a feature more typical of medium-density activity areas.

These observations on craft-related material culture support those made by Ulmschneider over 10 years ago, who using a much more restricted range of metal-detector finds noted that so-called 'productive' sites often produced material indicative of trade, craft and exchange (Ulmschneider 2002; Pestell and Ulmschneider 2003a).

However, Ulmnschneider also noted that such sites were often typified by 'unusual' metalwork such as inscribed silver finger-rings and lead plaques (Ulmschneider 2000b: 65).[50] While this has remained true for lead plaques – for which PAS offers an additional example from Little Carlton (see Chapter 6) – it is perhaps not the case for silver finger-rings, a number of which have been found on low-density activity areas. Moreover, the fact that many of the types of objects found within high-density assemblages – often traditionally linked with 'high status' – are also found across low-density sites – often equated with low significance sites – appears to indicate that we should exercise some caution regarding using portable antiquities as indicators of wealth. Indeed, this observation mirrors other studies that have found that a high proportion of rural Anglo-Saxon settlements contain low numbers of 'high-status' material culture (Loveluck 2007; Hamerow 2012: 101). It may be, then, that our current understanding of 'high-status' rural settlements is largely based on factors such as preservation and methods of discovery and recovery (Richards 1999a, 1999b; Loveluck 2007).

High-density activity areas are also typified by the large proportion of coins that are found, and this again suggests one function being high-level trade and/ or taxation (Bonser 1997; Blackburn 1993, 2003). The profile of coins is notable, however, for they are found in equal proportions across low- and medium-density activity areas. While it is is entirely possible that some single finds of coins simply represent objects that have been disjointed from larger assemblages and re-deposited elsewhere, this patterning is more likely to indicate that coin use was widespread across most sectors of society, or that people of status enough to have coins were more widely distributed than once thought (e.g. Richards *et al.* 2009: 5.1). Indeed, this pattern of coin loss finds parallels with many other parts of Middle Saxon England (Naylor 2004a; Hutcheson 2009; Rippon 2010: 64; Naismith 2012). This is, of course, in contrast to traditional models that see coin use restricted to aristocratic or other 'high-status' sites – a view which appears to no longer be tenable (Naylor 2004a, 2004b; Davies 2010b).

The profiles of high-density activity areas are, of course, sensitive to the presence of dominant sites within this range. This is predictable, given the small number of sites in this category. Accordingly, the composition of high-density activity areas changes somewhat with Torksey removed from the analysis (Appendix 30). This

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50   Though see Blair 2005: 206-12.

raises the proportion of coins and pins, but drastically reduces the proportion of gaming pieces, weights, and metalwork debris, highlighting just how unique this particular site is.

5.3.2. Temporal Setting

Further statistical analysis was undertaken to explore the temporal character of the activity areas in which Middle Saxon assemblages are found. The aggregate picture is chaotic and rather impenetrable, not least because there are 502 potential chronological combinations of finds possible at any given persistent place. Indeed, a brief analysis of just a handful of Middle Saxon activity areas illustrates this would result in fairly meaningless patterns. The very high-density activity area from Torksey contained finds from six other archaeological periods; however those at Garwick and Little Carlton contained finds from just three other periods. On the other hand, the high-density activity areas at Osbournby and Appleby contained finds from seven other archaeological periods, while the medium-density activity area from Hanby contained five. A plethora of low-density activity areas share a similar variation, with some containing no other periods at all, and with others containing finds from six other archaeological periods. This diversity again reflects both bias and also the variety of place-uses that should be expected across large areas of landscape.

A significant temporal trend emerges, however, when Middle Saxon finds are analysed on shorter-scales of 'persistence', according to the frequency with they are found in association with Roman and Early Anglo-Saxon PAS data (Figures 5.2-5.4; Appendix 31). This reveals that very few activity areas are found in 'temporal isolation' (19%), and even fewer contain finds from the Early Anglo-Saxon period only (6%). Rather, 45% are found in association with Roman period finds, and 30% are found in association with finds from both the Roman and the Early Anglo-Saxon period. In total, then, Middle Saxon finds are most commonly found in association with Roman period finds (75% of the time), but they are relatively infrequently found with Early Anglo-Saxon finds (36% of the time).

Reassuringly, the relative infrequency with which Middle Saxon artefacts are found in association with Early Anglo-Saxon artefacts once again mirrors the wider trend established by HER data, and in particular by the RCHME's survey of West Lindsey. The Middle Saxon settlement at Goltho, for example, contained Roman finds but nothing of the Early Anglo-Saxon period. Similarly, the majority of Roman sites in West Lindsey were found to contain no evidence of Saxon activity, but medieval activity was often indicated (Everson *et al.* 1991: 7). The same trend was also identified by the RCHME survey at Linwood (Everson *et al.* 1991: 7), and subsequent metal-detecting appears to support Everson et al's observations; while Roman and Middle Saxon finds have been recovered from the deserted village, Early Anglo-Saxon finds are located much further away to the east, representing a distinctly different use of the wider persistent place.

This is, however, a feature of low-density Middle Saxon activity areas only. When the temporal analysis is repeated using only medium and high-density activity areas, this shows that every example includes finds from both the Roman and the Early Anglo-Saxon period. In other words, the trend seems to be that
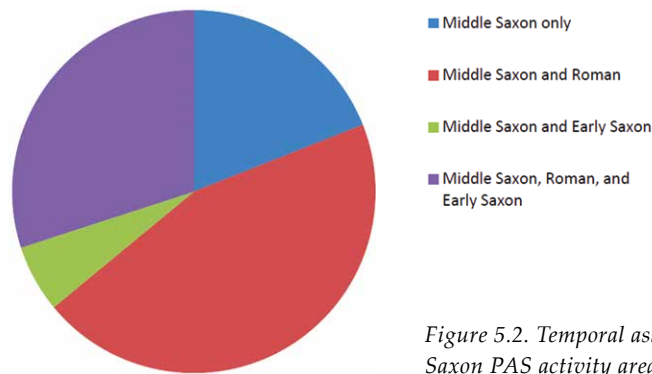
Figure 5.2. Temporal associations within Middle Saxon PAS activity areas (214 activity areas).
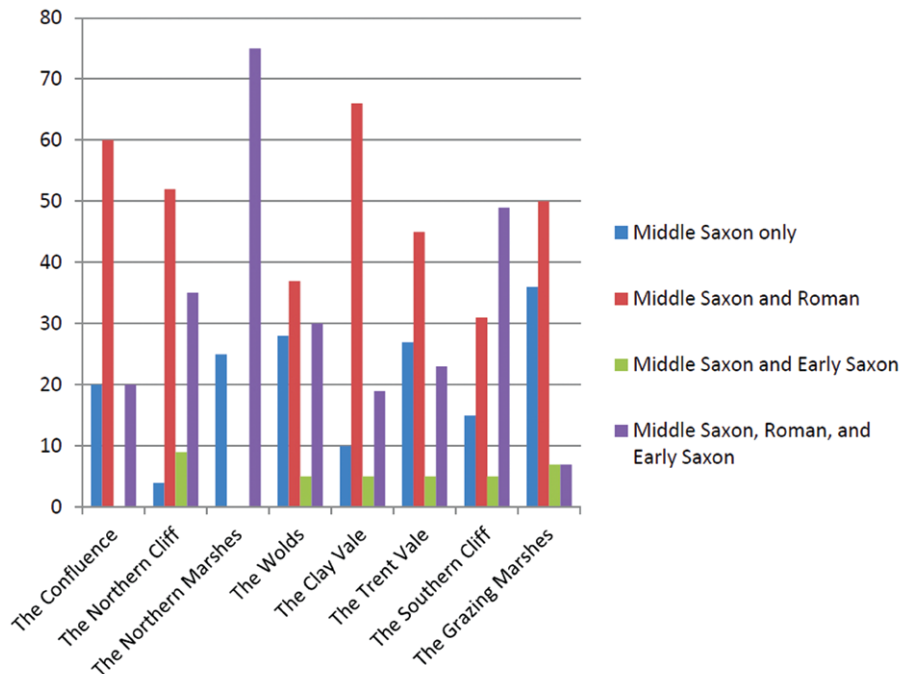
Figure 5.3. Chronological character of Middle Saxon activity areas according to HLC areas.

Middle Saxon sites that produce medium- and high-density assemblages evolved out of landscapes that were used in the Roman and Early Anglo-Saxon periods – a disticly different pattern of continuity to those places producing low-density Middle Saxon assemblages.

Further comments can also be made about the strong correlation between high-density Middle Saxon activity areas and Roman and Early Anglo-Saxon finds. Parallels for this trend can be found in several other regions of the country (e.g. Leahy 2000; Rippon 2008, 2010; Brookes 2010; Davies 2010a; Higham and Ryan 2010; Hamerow 2012). In Kent, Brookes found that high-status Middle Saxon sites occupy landscapes used in the Roman and the Early Anglo-Saxon period, and these were all located on important routeways or waterways (Brookes 2010: 71-4, 78). Brookes interpreted this as a form of 'habitat selection' – a sign of the
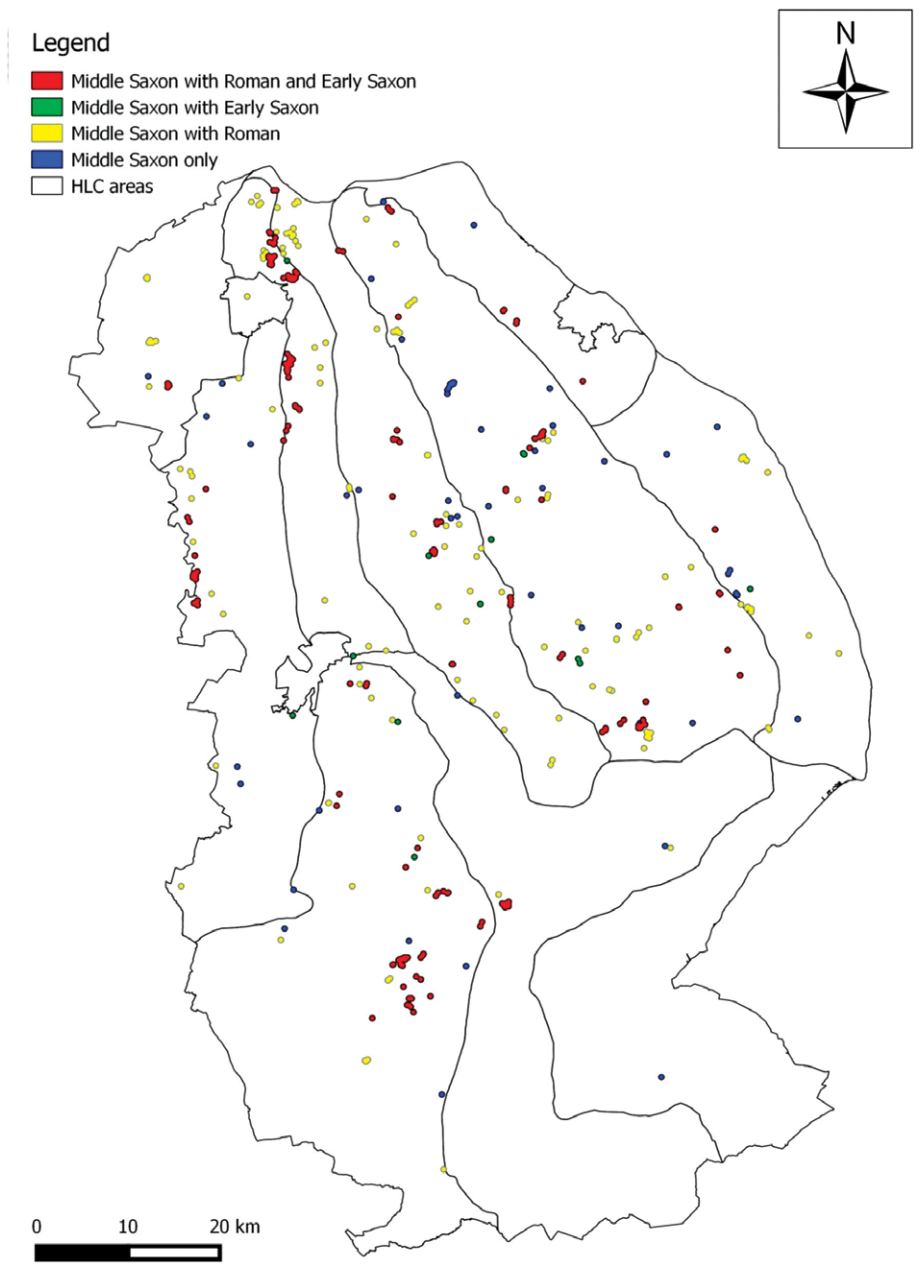
Figure 5.4. Distribution of Middle Saxon PAS activity areas according to temporal profile.
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reoccupation of 'prime' lands. Conversely, Brookes found many of the smaller settlements were located on marginal land that had a less persistent history of use. Such sites were argued to represent a secondary wave Middle Saxon settlement into more marginal areas (Brookes 2010).

A similar pattern in the antecedent landscape of high-density or so-called 'productive' sites is also visible in East Anglia and the East Midlands, with Middle Saxon material frequently being found in association with Early Anglo-Saxon and Roman assemblages (Leahy 2000; Pestell 2004). Davies has also identified a similar trend in Norfolk, suggesting that the presence of Early Anglo-Saxon finds represent sites with 'longer lived foci with more organic histories of settlement development' (Davies 2010a: 367, 379; Davies 2010b).

While the longer-term use of 'productive' sites has often been linked to the economic potential that a particular topography offers, the role of religion has also been identified as a reason for the repeated use of a place. Many of the earliest monastic sites in England made use of former Roman settlements, being 'either converted to a Christian purpose or founded anew during the course of the conversion' (Hoggett 2010: 79). A similar process has been suggested for several sites the Witham Valley, where a conversion on the scale of a landscape has been suggested (Everson and Stocker 2003a: 12; discussed further below). That this conversion stimulated repeated activity at the same place beyond the Middle Saxon period is also attested across the Witham Valley (Everson and Stocker 2003b), and beyond (Pestell 2003). In Norfolk, Pestell has noted several instances where aspects such as medieval church dedications, monasteries, parish boundaries, and estate structures mentioned in Domesday appear to illuminate the antecedent landscape (Pestell 2003). Medieval monasteries were, for example, frequently placed on or near Middle Saxon 'productive' sites. While in some cases this trend is attributable to topographical convenience, Pestell was also able to identify deeper-rooted issues of religious identity that resulted in persistence of place (Pestell 2003).

Naturally, the continuity often seen between Middle Saxon sites and the antecedent landscape in many parts of the country has led to speculation regarding the degree to which Middle Saxon settlement patterns reflect earlier boundaries. One of the first to suggest this was Jones, who in his 'multiple-estate model' suggested that the boundaries of Middle Saxon estates were relic features of Celtic organization, and in turn can be used to imply earlier forms of political structuring of the landscape (Jones 1976). This notion has been developed by Hamerow (2004, 2012), and more recently by Green (2012) for Anglo-Saxon Lincolnshire, both of whom suggest that Middle Saxon settlement patterns were strongly influenced by the locations of Early Anglo-Saxon 'central-places' (Green 2012). Such central-places, it is argued, represented the territories of people-groups, and in some cases these may in turn have evolved out of centres that were politically and economically important in the late Iron Age and Roman period (Green 2012). Fleming has suggested more benign reasons for the development of boundaries; rather than being the 'handiwork of elites', boundaries may at times have evolved out of the repeated use of a place, owing to activites dictated by ecological reasons (Fleming 2011). Fleming notes that the territories centred on Woking and Godalming, Surrey, for instance, may have evolved out of 'millennia-old patterns of transhumance, which linked summer and winter pastures' (Fleming 2011: 19-20).

The temporal relationship between boundaries and Middle Saxon estates is, however, a contested issue (e.g. Unwin 1988), and questions have been raised over whether it can be pushed back into the Roman period, or be back-projected from

the medieval period (Goodier 1984; Hadley 2000: 26, 88-90; Rippon 2010: 61-2). Indeed, in some cases it may be that patterns in the landscape are erroneously projected beyond the temporal limits that the data afford. There is, of course, a danger in chasing boundaries, especially if the identification of boundaries is the objective of the research:

> *…you [ ] can reconstruct an early Saxon multiple estate which, if it contains an archaeological site of the right date, 'is almost certainly Roman in origin'* (Roffe 2000c).

Rather, some of the more intriguing insights into landscape boundaries – and indeed the potential perception of them – have emerged from studies that do not specifically seek them out, but rather which emerge as the result – often unintendedly so – from the consideration of multiple forms of evidence for the longer-term use of particular places. Such was the case at Barlings, Lincolnshire, where Everson and Stocker hypothesised an early estate that had roots perhaps reaching as far back as the Roman period (Everson and Stocker 2011). This hypothesis was not born out of just the physical traces within the landscape, but also a consideration of the possible role that ritual practice and memory played in the formation of persistent places:

> *…continuity, that is, not in the narrow technical sense that might be useful in dealing with a single site, or site type, but in a broader, landscape sense: where memory and custom, that is people's perceptions inform the power of place* (Everson and Stocker 2012: 65).

This view does not downplay the important role that the topography of a place played in the choice of past human activity; rather it argues that the issue is far more complex than where the 'best' landscapes are – a view which is often traceable in those approaches influenced by behavioural ecology (e.g. Brookes 2010). In some ways this view complements the broader concepts of the persistent place offered by Schlanger (1992); that repeated use of landscapes may be determined – initially at least – by the availability of natural resources and its location within wider social networks, but which evolved through a longer-term process of engagement or dwelling (e.g. Ingold 2004; Daehnke 2009). Such an approach may, then, help to explain those landscapes which are not perceived as being 'prime-lands', but which nonetheless contain a signal of high temporal diversity.

While high-density activity areas undoubtedly offer greater potential for study owing to the richness of data, further elaboration is required on the character and temporal setting of low-density activity areas, especially since they form the bulk of Middle Saxon PAS data.

First, the abundance of low-density activity areas recorded through PAS appear to mirror the pattern now established through field-walking; while the landscape contains several 'major' sites, such as Flixborough, the hinterland contains an abundance of thin scatters of pottery (Pestell 2004: 28; Hinton 2005; 90; Davies 2010: 369). Several of these have produced related below-ground archaeology (Addyman and Whitwell 1970; Vince 2006), and caution must therefore be exercised against assuming these to be manuring scatters.

Second, the general absence of Early Anglo-Saxon finds on sites producing low-density assemblages of metalwork should be seen as a trend and not a rule (Crowson *et al.* 2005). Excavation of a settlement at Chopdike Drove, Gosberton revealed evidence for a timber building founded in the Early Anglo-Saxon period, with associated pits possibly indicating hemp retting taking place (Crowson *et al.* 2000: 112ff). The building was rebuilt or modified in the Middle Saxon period, and environmental and animal bone evidence suggests the landscape shifted from wetland to dryland, with an associated shift to livestock rearing (Crowson *et al.* 2000: 112ff). No metalwork was found, however. A similar site with Early Anglo-Saxon precedents was found close by at Mornington House, Gosberton (Hayes and Lane 1992; Lane 1993; Crowson *et al.* 2000: 116ff). Metal-detecting was undertaken on the topsoil prior to excavation, but this produced just one item of possible Middle Saxon data – an iron knife (Crowson *et al.* 2000: 116).

Third, the statistical analysis of PAS data indicates that not all places were used in their near-recent past, and one might speculate as to whether these sites represent 'pioneer' settlements (Leahy 2000; Davies 2010: 73). Such sites, hinted at through PAS data, are represented through archaeological excavation, especially along the Fen Edge, where evidence for specialist forms of production is hinted at (Cope-Faulkner 2003; Crowson *et al.* 2005: 70). There has, accordingly, been some speculation over whether these sites were established to meet changes in demands for surplus (Hamerow 2002: 121-3).

At Boston, Lincolnshire, for example, two eighth-century sunken floored buildings or 'Grubenhäuser' were discovered on what would have been a dryland rodden (Palmer-Brown 1996). The site included a large amount of animal bone, predominantly cattle, but also sheep and chicken, along with fish indicative of inshore fishing. There was a complete absence of finds before or after the eighth century, and one of the structures appears to have been destroyed by fire at the end of its life (Palmer-Brown 1996). A similar fenland site is known at Fishtoft; here the settlement was found to date between the late seventh and early tenth-century, but no finds cover earlier periods (APS 2003). Interestingly, only three Middle Saxon finds from this site were found using a metal-detector, and provides some warning against assuming low-density plough-zone assemblages of this period to be the result of manuring or casual loss. Quite whether PAS activity areas that contain no pre-Saxon evidence can be seen as pioneer settlements is difficult to answer; such a hypothesis may be projected in certain cases with due caution.

5.3.3. Conclusions

This overview of Middle Saxon PAS data has served two main purposes regarding how material culture can – and cannot – be approached at the smaller scales of mapping presented in the case studies that follow. First, it has provided a warning against necessarily assuming the composition of an assemblage to directly relate to status; post-depositional factors may well influence what is legible. This does not, of course, negate the importance of studying plough-zone assemblages; rather, it underlines the importance of understanding the character of the landscape from which they derive.

Second, this overview has identified several trends that appear at different scales of time and place, and which offer potential for further discussion at a smaller scale of place. At face value these trends would appear to have some archaeological significance, and several interpretative possibilities have been offered for the varying temporal backdrop seen in the parent dataset. However, the broad interpretations offered above are about as far as one can go at this scale of mapping, and in order for more nuanced understandings to emerge one must look at individual activity areas in detail. Accordingly, the rest of this chapter, and that which follows, move our scale of analysis down to explore particular persistent places and the nodes that form them in much greater detail. The rest of this Chapter concerns low-density Middle Saxon activity areas, while Chapter 6 concerns two high-density activity areas.

5.4. Case Study: Barda's Island

This first case study explores the landscape setting of three low-density Middle Saxon activity areas, or 'plough-zone palimpsests' that form nodes within a persistent place on the 'island' of Bardney, located in the Witham Valley. The narrative occurs in three stages. First, the wider pattern of longer-term activity in the Witham Valley is established, and this provides an interpretative context for Middle Saxon PAS data. The case study then zooms in to the 'island' of Bardney, a landscape identified through temporal mapping as a persistent place, and which is formed of three distinct palimpsests. Middle Saxon activity is then contextualised within this, and a landscape biography is constructed that shows how these finds contributed to the re-use of particular places.

5.4.1. Bardney in Context: The Witham Valley

The biography of the Witham Valley frequently comes back to the same few 'temporally-sticky' places, often in spite of localised landscape change; a biography in which people remain tethered to the landscape, and in which forms of ritual activity appear to repeat themselves albeit under different theological and social frameworks. Yet, although several studies have explored the ritual aspects of the Witham Valley, none have yet incorporated PAS data.

The Witham Abbeys Zone (as defined by HLC) covers some 77km2 along the northern edge of the Witham Valley (Figures 5.5 and 5.6). The River Witham forms its western boundary, and to the east the land rises gently to the 10m contour line to meet the densely wooded Lincolnshire Limewoods Zone – home to the greatest concentrations of small-leaved lime surviving in Britain.

The pattern of historic/modern settlement in the Witham Abbeys Zone today is rather mixed. Nucleated settlements are set back from the water, being located on the gravel terraces around 6 or 7m OD. A few of those in the north of the zone have now expanded much beyond their historic cores (Lord and MacIntosh 2011b: 45). The southern part of the zone is characterised by ribbon settlements consisting of scattered homesteads and farmsteads set along roads (Lord and MacIntosh 2011b: 45). Isolated farmsteads are distributed across the area as a whole (Lord and MacIntosh 2011b: 45).
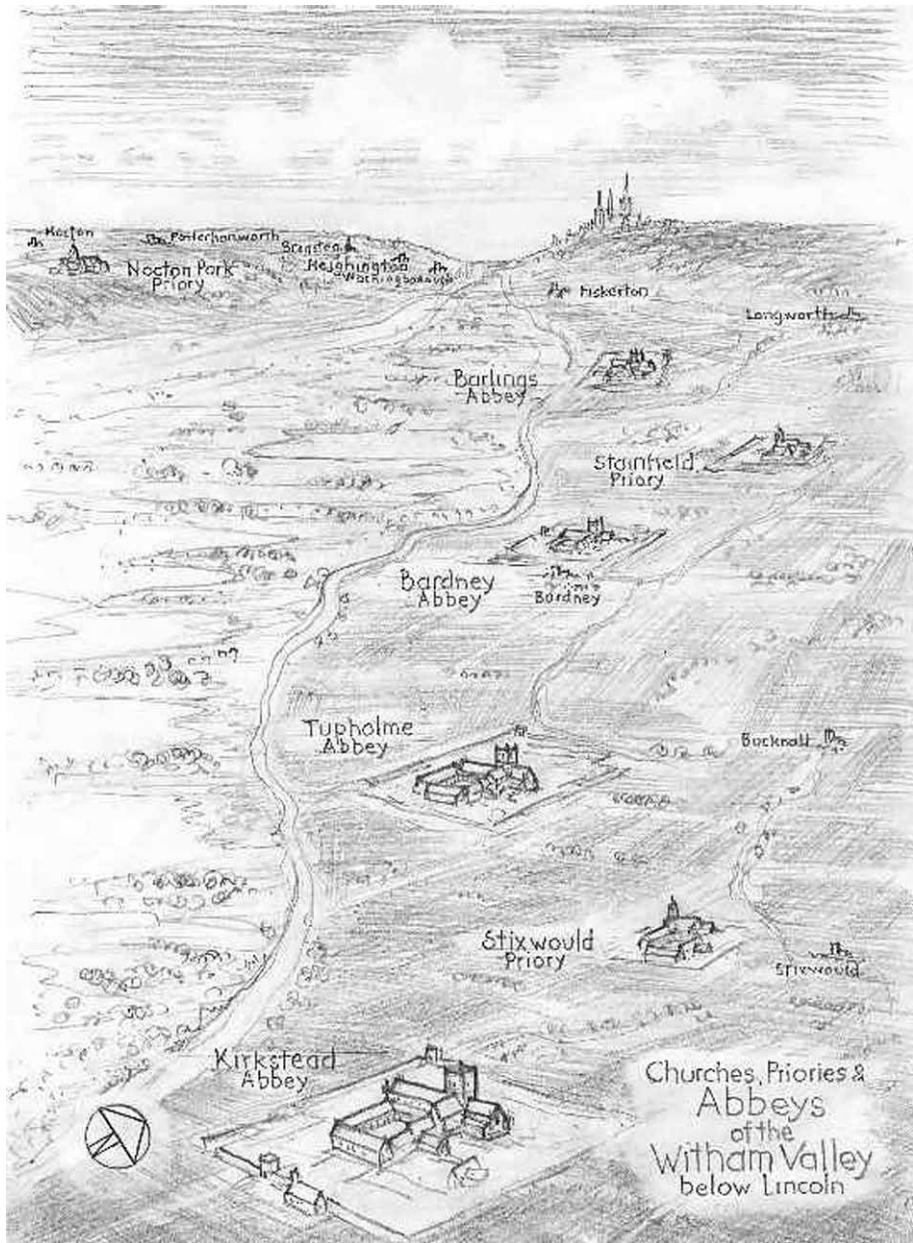
Figure 5.5. The Churches, Priories & Abbeys of the Witham Valley, drawn by David Vale.
© John Ketteringham. Reproduced by kind permission.

The Witham Valley contains some of the most spectacular archaeology in the county, from prehistoric timber causeways to medieval abbeys, and provides some of the clearest evidence for persistence of activity, ranging from ritual practice to inhabitation (Everson and Stocker 2003b; 2011). It is a dynamic landscape, both environmentally owing to the lowland setting, and culturally owing to the persistent use of many parts of the landscape. Many of these places have roots going into the late Bronze Age at least, and in certain places – such as at Bardney –

Figure 5.6. Photograph of the Witham Abbeys Zone from Bardney. Looking north-west towards Lincoln. Photo: Author.

reaching back into the Mesolithic (Catney 2003). The focus of prehistoric activity in the Valley clearly focusses on the River Witham, with large quantities of prestige metalwork being found in the eighteenth and nineteenth centuries when works on the course of the river were undertaken (Catney and Start 2003; Everson and Stocker 2003, 2011; Field and Parker-Pearson 2003). Indeed, the sheer volume of finds uncovered marks the Witham as having produced the largest quantity of prehistoric metalwork from any English river outside the Thames (Everson and Stocker 2003; Field and Parker Pearson 2003).

Metalwork is, of course, just one aspect of the valley's spectacular archaeology; works on the river have also led to other major discoveries, including numerous prehistoric log boats, timber causeways, and not least the sites at Fiskerton and Washingborough (Catney and Start 2003; Field and Parker-Pearson 2003; Allen 2009). Several barrow cemeteries are known in the Valley, and these display a strong association with the ancient course of the river. Cemeteries are known in the north at Barlings and Stainfield (Everson *et al.* 1991; Everson and Stocker 2003b), and further barrows are known immediately north of Bardney Abbey (LHER 53840, 53842), and possibly at Stixwould.

The earliest structure in the Witham Valley known thus far is the raised platform at Washingborough, where human activity is suggested to have begun between 1430 to 1260 BC (Allen 2009: 1). Here, evidence for grain processing, feasting, metalworking and ritual deposition have been found, much of which indicates repeated use over several hundreds of years (Allen 2009). During the earlier first millennium BC the raised platform site at Washingborough was abandoned as the

course of the river adversely encroached on the site, and the focus of activity appears to have shifted to higher ground but still close to the river (Allen 2009: 142).

This localised shift in activity appears to have been triggered by the generally wetter conditions and rising sea levels that began in the late Bronze Age (c.f. Lane and Trimble 2010: 149). Many low-lying sites in the Witham Valley and along the Fen Edge were abandoned, and the rapid formation of extensive areas of peats eventually buried much of the prehistoric landscape (French and Rackham 2003; Rackham *et al.* 2004; Allen 2009: 1). By the Early Iron Age peats had formed to levels of 0.5 to 0.75m OD (Rackham *et al.* 2004; Allen 2009: 1) and this continued to the eighteenth century at which point the river was no longer navigable (Allen 2009: 6).

In spite of a localised shift, it was the marginal areas of the landscape at which ritual activity persisted.[51] Around 457 BC a timber platform at Fiskerton was constructed (located a few miles east along the river from Washingborough) and this remained in use for the next 150 years, with at least nine episodes of rebuilding that are suggested to have coincided with solar events (Field and Parker Pearson 2003). The finds from this causeway mirror the high-status depositions made elsewhere, and include swords, spears, awls and other metal-working tools. This site too was eventually abandoned, though there is some evidence to suggest that deposition continued in one form or another into the Roman period (Field and Parker Pearson 2003). The large expanse of wetland in the Witham Valley did, of course, create a natural boundary, and similar to the Wash further to the south, the valley appears to have acted as 'special' place, enriched with social, political and ritual meaning, in addition to it acting as a conduit for the movement of people and goods (Evans 2002; Pryor 2001, 2002; Bradley 2007: 157).

The medieval landscape is equally spectacular as that of the prehistoric. The Witham Valley contains one of the densest concentrations of medieval abbeys in Europe, and these include Bullington Priory, Stainfield Priory, Bardney Abbey, Tupholme Abbey, Stixwould Priory, Kirkstead Abbey. All of these chiefly survive as earthworks, and all are located within or close to the Witham Abbeys Zone. The Limewoods Zone to the east contains many of their associated granges and land holdings (Lord and MacIntosh 2011b: 45), in addition to several areas of medieval settlement. On the opposite side of the Valley to the west lie two further abbeys at Nocton and Catley.

The majority of abbeys share a similar landscape-setting, being found on dry islands within the marsh, and at the end of a causeway that is likely to be of prehistoric origin (Everson and Stocker 2003; Field and Parker Pearson 2003). Moreover, hoards of prehistoric metalwork also tend to occur at the point where the timber causeways meet the ancient course of the river, close to the areas later used or in contemporary use by the abbeys (Everson and Stocker 2003). That many of these transitional places were persistently used is indicated by the discovery of Viking and medieval caches of weaponry – a phenomenon that appears to suggest

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51   The pattern seen here in the Witham Valley is mirrored in the Welland Valley where a correlation between votive deposition and rising water levels is perceptible (Evans 2002). These depositions might have held a local resonance as a 'stress-related' response in the form of ritual deposition in order to 'stop the waters' (Evans 2002: 36).

votive deposition continuing well into more recent times. Between these places are long stretches of landscape from where no finds have been reported (Everson and Stocker 2003: 281), and this led to much speculation as to the relationship between votive deposition, the causeways, and the medieval abbeys (Everson and Stocker 2011).

Naturally, there was an element of topographical convenience; the routes of the causeways offered in many cases the quickest and safest way across the fen; indeed, in many cases it was the responsibility of the abbey to maintain the causeway, who essentially acted as ecclesiastical guardians (Everson and Stocker 2003a, 2003b; 2011: 398). Yet, the remarkable continuity in both the location of these places and the nature of 'transition' rituals led Stocker and Everson to argue that these early church sites reflect a conversion of the landscape, including the possible Christianisation of earlier pagan river-based rituals. In sum – they perceive a Christian conversion at a landscape scale (Everson and Stocker 2003a: 12). Everson and Stocker furthermore point to documentary evidence that may hint of a conversion pre-Christian river-based rituals. The monks of Bardney were permitted to fish the river at Barleymouth for one day on the vigil of St Oswald, and the act of throwing nets into the water on a specific day has been suggested to possibly reflect a Christianised version of a much earlier practice that involved deposition of items into the water (Everson and Stocker 2003b: 279). A similar hypothesis was, in fact, expressed by Oliver in paper presented in 1842, and published four years later:

> The devotional attachment of the people to this river may be estimated from the fact, that even after its transmission from father to son for many ages, it still remained so strong as to induce the erection of twelve religious houses on the sites of the old superstition upon its banks…(Oliver 1846: 31).

Given the strong sense of continuity seen at various points within the Witham Valley, it is pertinent to ask what PAS data may contribute.

5.4.2. HER and PAS Data in the Witham Valley

Temporal mapping of the Clay Vale HLC Area shows several persistent places to be located within the Witham Abbeys HLC Zone, especially along its western end close to the River Witham (Figure 5.7). Finer scaled mapping of HER data for this Zone reveals the majority of abbeys and medieval villages to be situated in landscapes used over substantial (though possibly punctuated) periods of time (Figure 5.8). The distribution of multi-period PAS activity areas largely complements this pattern of persistence. Reassuringly, no PAS data come from the 'blank' areas of activity seen in HER data (Figure 5.8), and regarding the area close to the river this reaffirms Everson and Stocker's observation on the distribution of artefacts (Everson and Stocker 2003: 281).

PAS multi-period activity areas have a far more restricted distribution than HER data, and largely cluster on two areas of higher ground – at Bardney in the north and Stixwould in the south – separated by an embayment that reaches inland to Tupholme (Figures 5.9. and 5.10). There is, of course, a stronger degree of environmental determinism at play in PAS data than in HER data; the locations
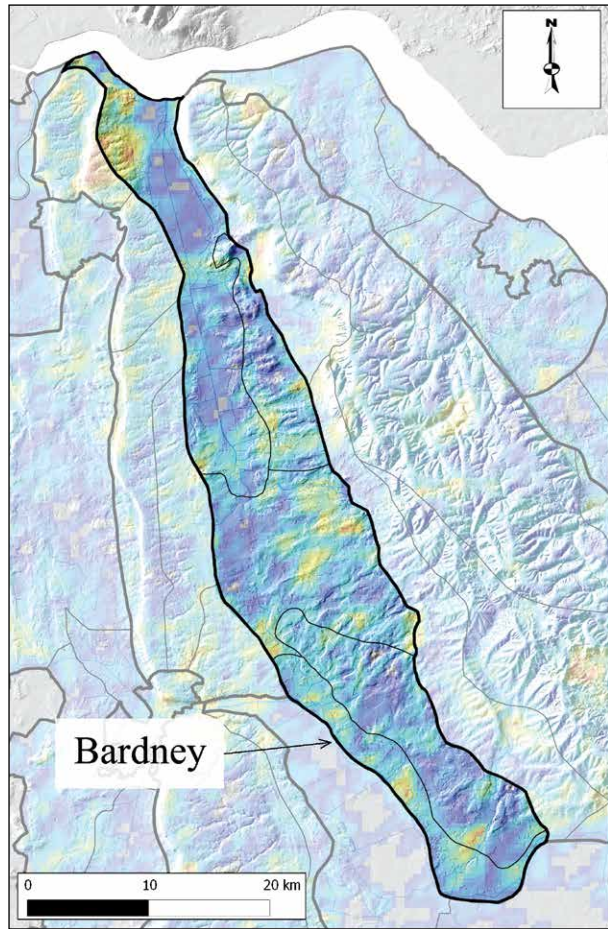
Figure 5.7. Temporal diversity in the Clay Vale HLC Area (merged HER and PAS data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

where plough-zone finds have been recovered are located on bands of river terrace deposits or glacial till – deposits that formed 'islands' of higher ground with improved drainage. Between these places are bands of alluvium, which would have restricted the range of human activity possible – and also which undoubtedly masks the evidence for earlier prehistoric activity (Figures 5.11). This is not the case for HER data from these areas, however, which are largely known from deep excavation works undertaken to the river.

A degree of bias in both HER and PAS data also results from the presence of woodland. Southrey Wood and Birch wood cover some 22 acres between the village of Bardney and the hamlet of Southrey in the south. On this point it is interesting to note that many of the woodlands seen today in the area are classed as Ancient Woodland.[52] While it is hazardous to suggest these areas of woodland are

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52 The Forestry Commission's 'Ancient Woodland Inventory 2011' adopts a baseline date of AD1600 for ancient woodland.
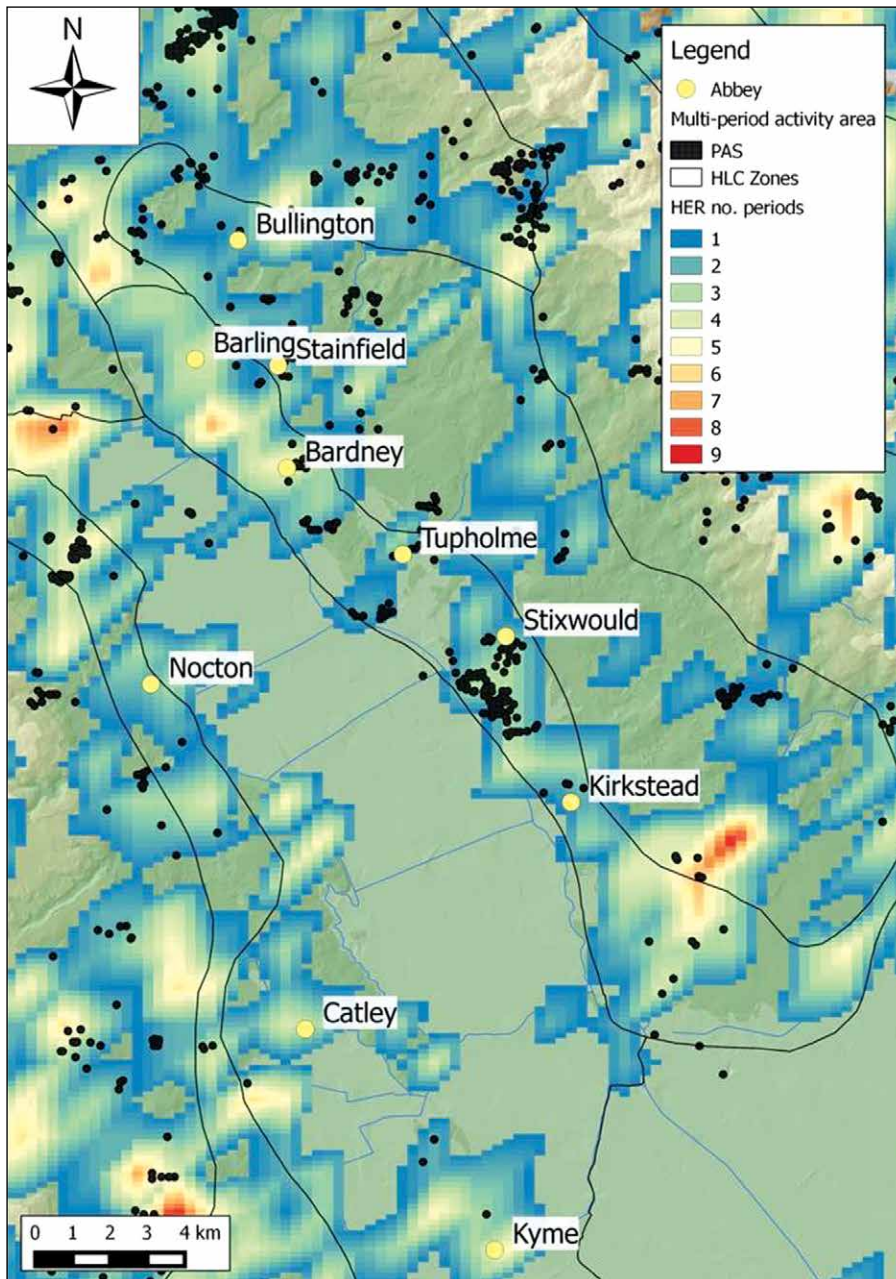
Figure 5.8. Temporal heat-map of HER data for the Witham Valley, with PAS multi-period activity areas shown. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
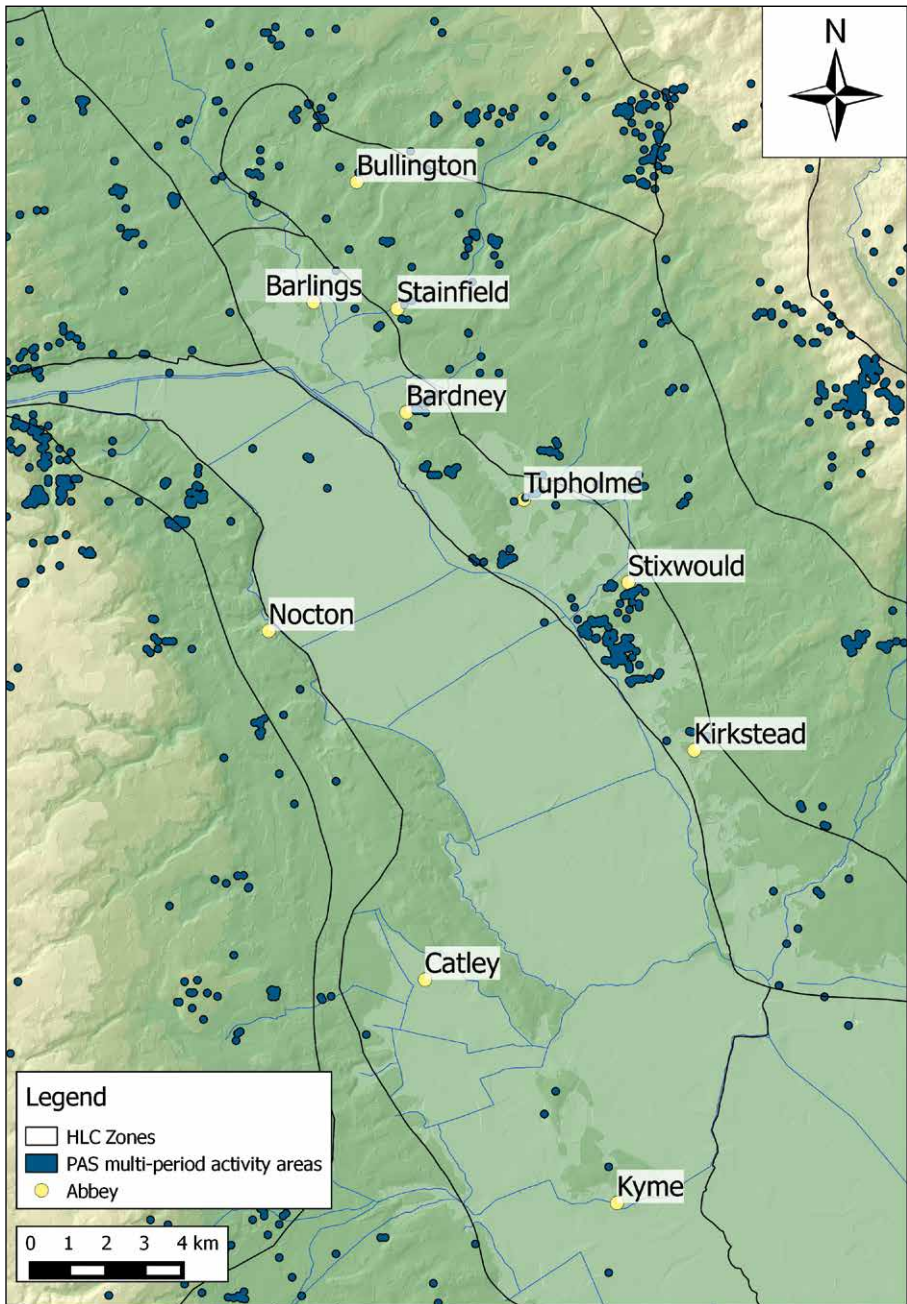
Figure 5.9. The abbeys of the Witham Valley, alongside PAS multi-period activity areas.
© Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
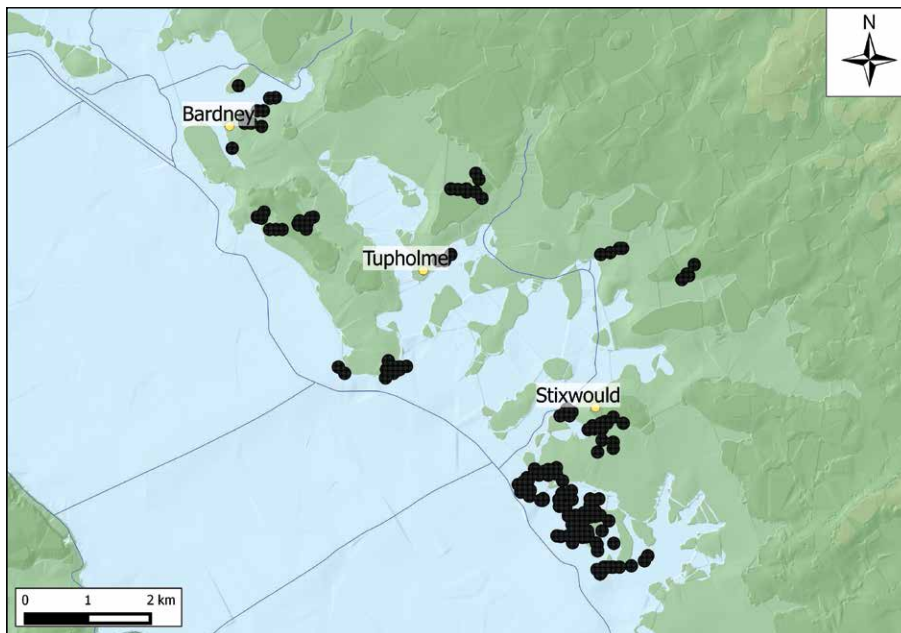
Figure 5.10. Multi-period PAS activity areas around the Tupholme embayment (land below the 5m contour line shaded in light blue to emphasise the 'island' and embayment). © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
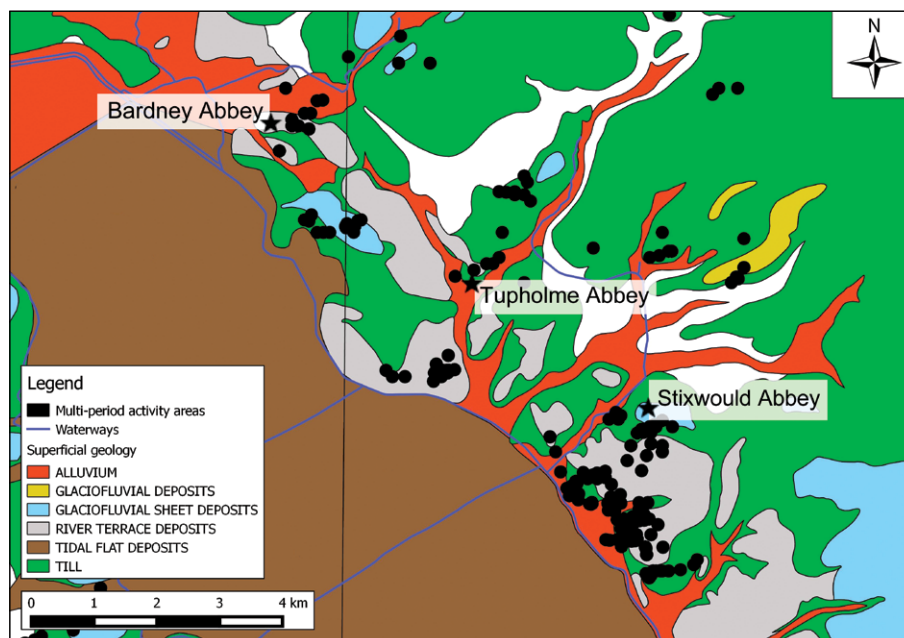
Figure 5.11. Superficial geology and multi-period activity areas around the Tupholme embayment. . © BGS 1:25,000 Superficial Geology. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
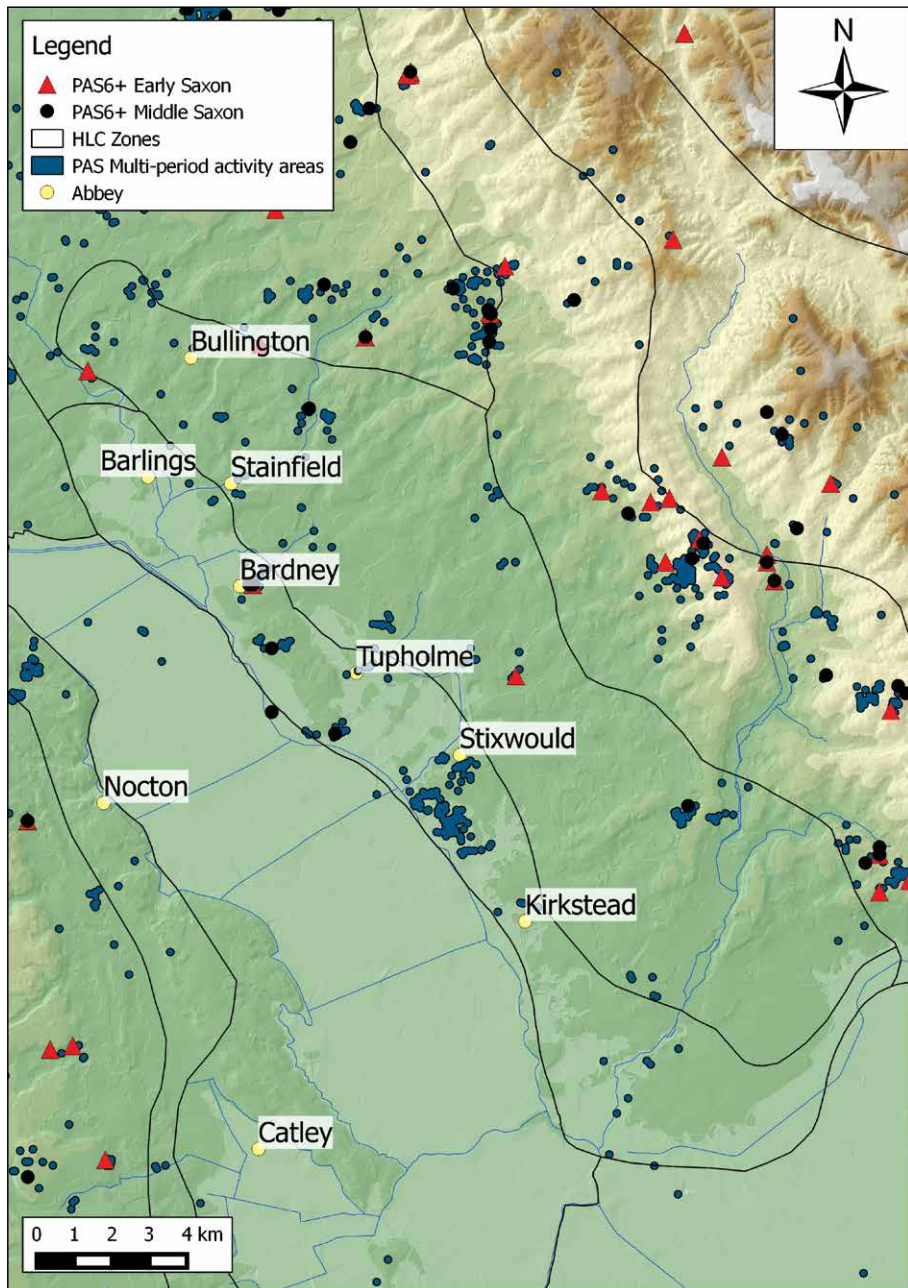
Figure 5.12. Multi-period PAS activity areas, with Early and Middle Saxon PAS data in the Witham Abbeys region. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

of even greater antiquity, it is perhaps prudent to view them as being important historical constraints.[53]

The concentration of finds at Stixwould is the result of the large three-day metal-detecting rally that took place in 2008, in addition to several finds being reported from independent finders searching prior to the rally. All broad periods from the Neolithic are represented, and several finds complement the wider pattern of ritual activity close to the water's edge; these include several single finds of Bronze Age metalwork (PAS refs. LIN-7850F7, LIN-0DF9A3, LIN-0D10B5, LIN-E7CDA0, LIN-3087B5), in addition to a hoard of fragmentary spears and swords (PAS ref. LIN-CEDC78; Mörtz 2014), and a hoard of late Iron Age gold staters (PAS ref. LIN-23ADA8).

The distribution of Middle Saxon finds act in a different way to the parent dataset, however. In spite of the level of searching that has taken place here, only one item – a silver finger-ring of ninth-century date – has been found off the island (PAS ref. SWYOR-3BC897). Rather, all other finds of Middle Saxon date have been found within the present-day parish of Bardney (Figure 5.12). Indeed, a wider analysis of finds shows Middle Saxon PAS data to be almost completely absent from the neighbouring Limewoods Zone, within a large area bounded by the A158 to the east, and the River Bain in the south east.[54] The potential significance of this wider landscape – termed hereafter the 'Bardney Region', is discussed later.

5.4.3. The 'Island' of Bardney

The parish of Bardney is located on the north-eastern side of the River Witham, some 15km south-east of Lincoln. The present-day parish boundary is 'L'-shaped and extends from the River Witham in the south-west to the higher ground of the Limewoods in the north-east (Figure 5.12). The place-name derives from the Old English Bearddan igge, meaning 'B(e)arda's island of land' (Ekwall 1960: 24; Cameron 1998: 9).[55] The Old English 'ēg' means 'an island, dry ground surrounded by marsh' (Cameron 1998: 114), and the extent of this island is clearly shown by a digital elevation model of the area (Figure 5.13). Accordingly, the digital elevation model is useful in more accurately portraying the landscape of 'Bardney' as it was likely to have been perceived by its Early Medieval inhabitants.[56]

Heatmapping of HER data reveals the northern end of Bardney to be a persistent place, and closer analysis suggests the 'island' is formed of three palimpsests or 'nodes' within the wider pattern of persistence (Figures 5.14 and 5.15) – places that might be understood at face value as being the 'physical settings for social interaction' over the longer-term when compared with the backdrop of persistence (Tilley 2010: 39). One is located at the northern tip of the island close to the

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53 The woods at Southrey are probably those referred to in Bishop Alnwick's visitation of Bardney Abbey in 1440, where the 'present forester appropriates for himself much timber in Horsley and Southwood' (Thompson 1918: 33).

54 This is also the case for Early Anglo-Saxon PAS data, but not for Roman period PAS data.

55 Though see Everson and Stocker (2012: 72) who raise the intriguing possibility that the first part of the place-name may be cultic, being equated instead with Old English bār, meaning 'boar'.

56 The 'island' is more accurately described as an isthmus – meaning 'a narrow strip of land, bordered on both sides by water, connecting two larger bodies of land' (Cambridge Dictionary). However, in keeping with place-name evidence it is referred to as an 'island' throughout this case study.
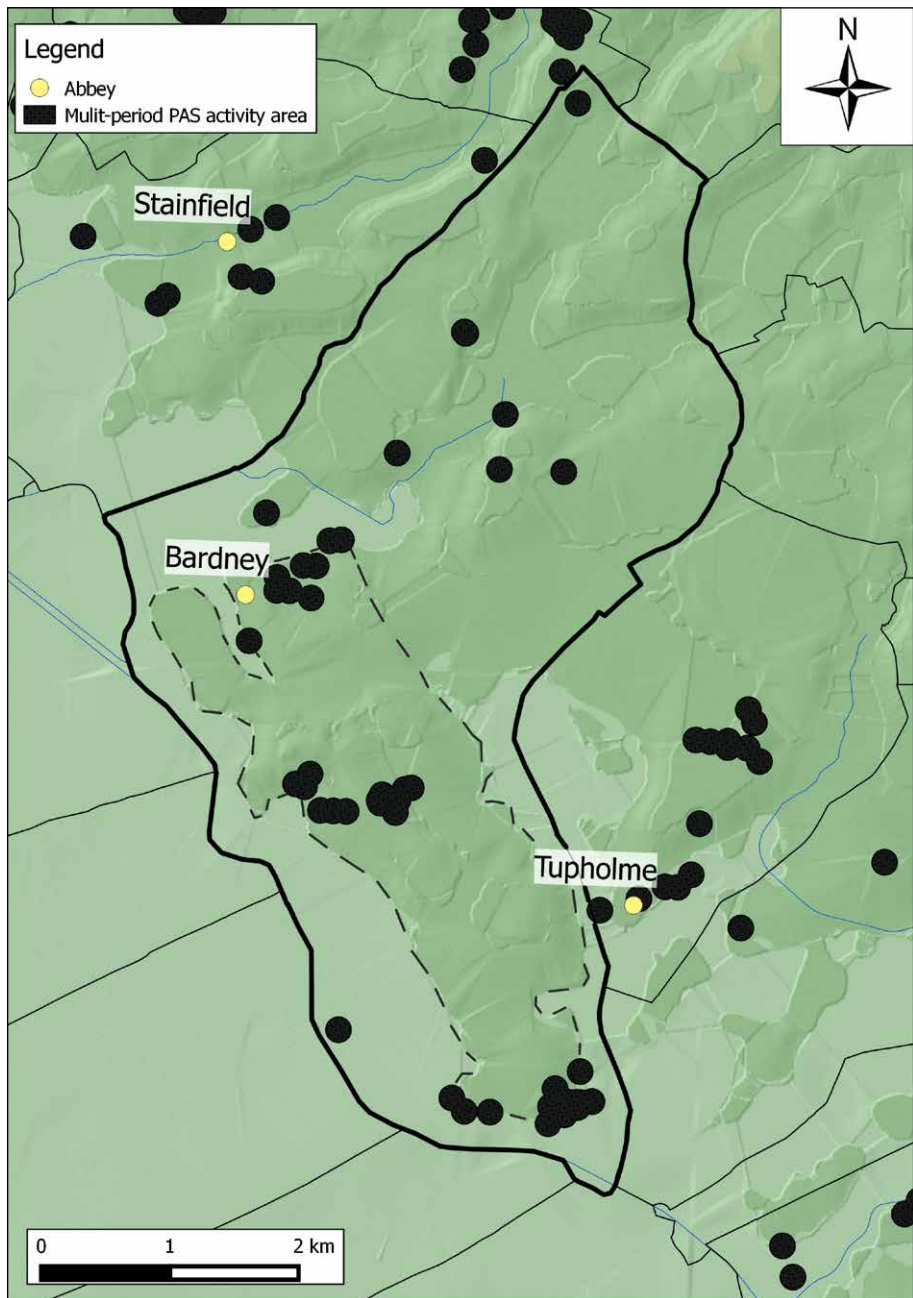
Figure 5.13. The boundary of Bardney parish compared to that hypothesized for the 'island' (dashed line) suggested by the place-name. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
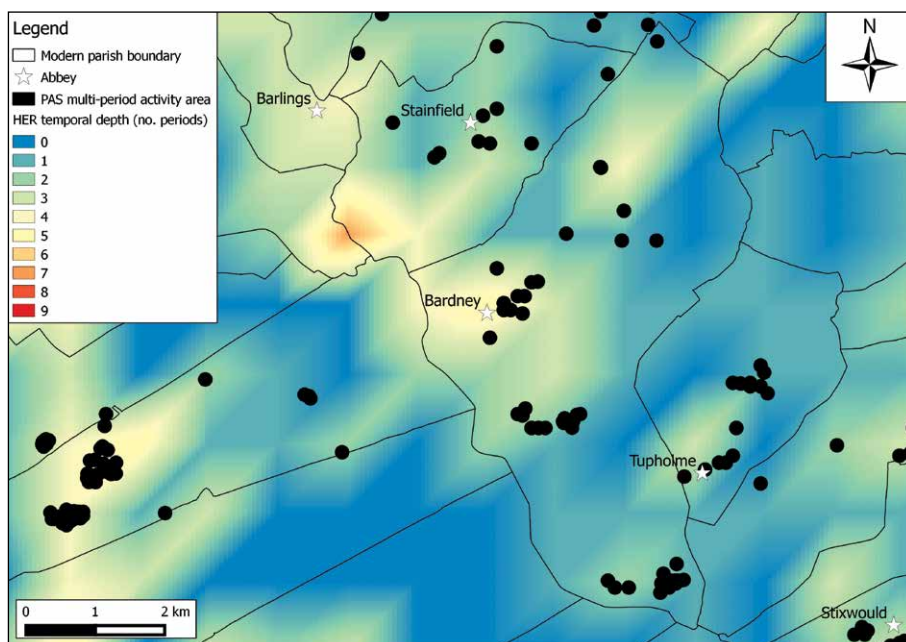
Figure 5.14. Persistent Places in the Bardney region. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

medieval abbey, another is located some 1km to the south in the vicinity of the medieval/modern village, and the third is in the far south of the island at the medieval/modern hamlet of Southrey.[57] Multi-period PAS activity areas also pick out these three places, which are hereafter referred to as the 'Abbey', 'Village' or 'Southrey' palimpsests. All three palimpsests are relatively small; that at the Abbey comprises 66 finds, while those of the Village and Southrey comprise 53 and 23 artefacts respectively.[58] Unlike Osbournby the assemblage as a whole has been reported by at least 42 individuals, with 44% of the assemblage being reported to FLOs other than the author.[59]

Chronological profiling reveals each of the three palimpsests to have different signatures (Figures 5.16-5.21).[60] The abbey assemblage is dominated by Roman period finds (49%), with Early Medieval and medieval finds being represented in fairly even numbers (17% and 14% respectively).[61] The assemblage from the village, on the other hand, is dominated by medieval and post-medieval finds (31%

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57 'Southrey', from the Old English 'sūther' or 'sūtherra', meaning 'southern' (Cameron 1998: 114). This place-name confirms the extent of the 'island' suggested by the Digital Elevation Model.

58 By 1.1.2015 this increased to 91 finds (Abbey), 63 finds (Village), 30 finds (Southrey).

59 The total number of finders is undoubtedly higher than this. One particular rally organiser compiles a list of items found and records these with PAS under his name; the number of finders may be some 30 people greater than the database suggests.

60 A fresh download of data captured on 1.1.2015 – a little over 2 years after the initial download of 1.12.2012 – does not significantly alter the chronological signatures of any of the assemblages. This is in spite of the Abbey and Southrey assemblages increasing by 25%, and the Village by 15%. This indicates that although each assemblage is still rather small in terms of what one would hope for as a sample dataset, they appear to be representative samples nonetheless.

61 Based on 1.2.2015 data.
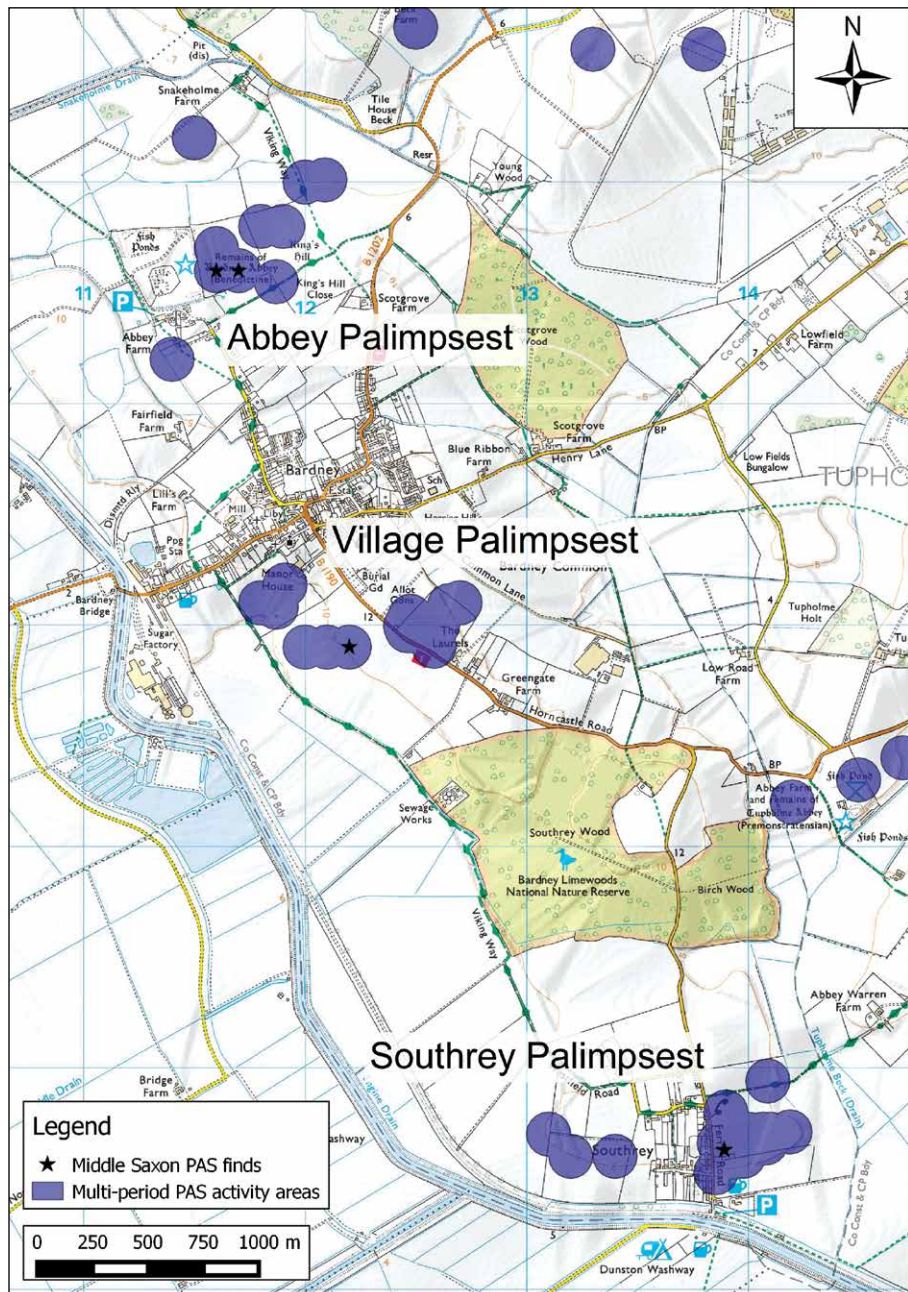
Figure 5.15. The three PAS palimpsests on the 'island' of Bardney. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

and 23% respectively), with only 1% pertaining to the Early Medieval period, and 7% for the Roman period. That at Southrey is the smallest assemblage, but demonstrates a more even chronological profile, with Roman, medieval and post-medieval period objects being found in similar proportions. Overall, the Abbey persistent place presently holds the greatest proportion of Early Medieval data.

Abbey

- Iron Age
- Roman
- Early Medieval
- Medieval
- Post-Medieval
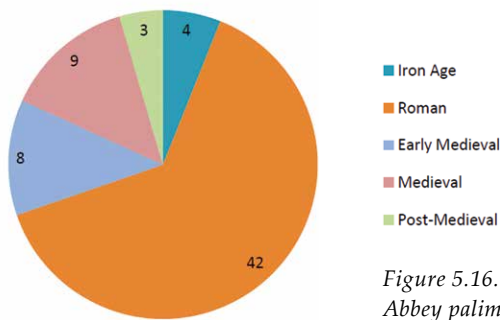
Figure 5.16. Chronological profile of PAS data for the Abbey palimpsest (as of 1.12.2012).

Village

- Roman
- Early Medieval
- Medieval
- Post-Medieval
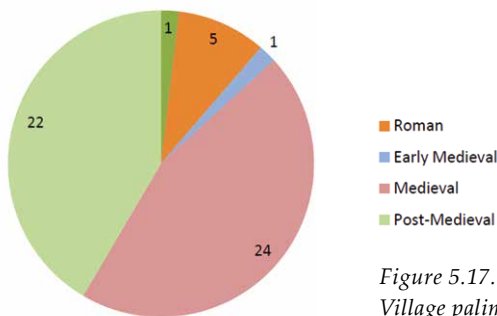
Figure 5.17. Chronological profile of PAS data for the Village palimpsest (as of 1.12.2012).

Southrey

- Bronze Age
- Iron Age
- Roman
- Early Medieval
- Medieval
- Post-Medieval
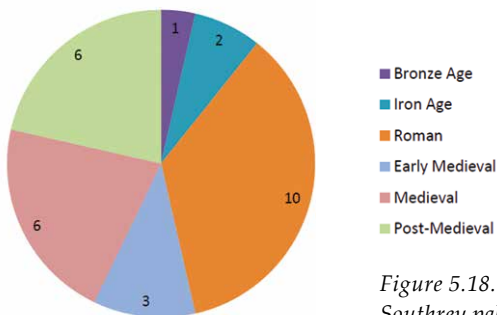
Figure 5.18. Chronological profile of PAS data for the Southrey palimpsest (as of 1.12.2012).

5.4.4. The Abbey Assemblage

The abbey assemblage is located in one of the most deeply rooted persistent places in the entire Witham Valley. Mesolithic, Neolithic and Bronze Age flints have been found to the west of the abbey, close to the River, along with three Bronze Age dug out boats, Iron Age and Viking swords, a late Iron Age gold stater, a Viking axe, and also a medieval sword with a 'magical' inscription (Everson and Stocker 2003). Several Bronze Age barrows are located immediately to the north of the abbey. Fieldwalking along the spur of high ground immediately to the west of

Abbey

- Iron Age
- Roman
- Early Medieval
- Medieval
- Post-medieval
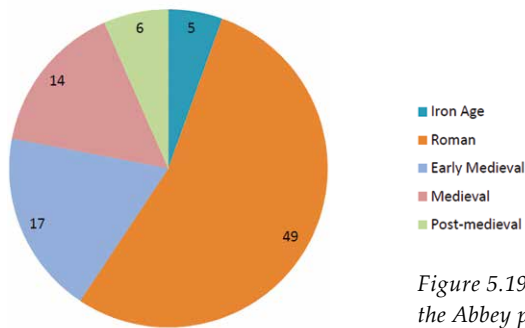
Figure 5.19. Chronological profile of PAS data for the Abbey palimpsest (as of 1.2.2015).

Village

- Neolithic
- Roman
- Early Medieval
- Medieval
- Post-medieval
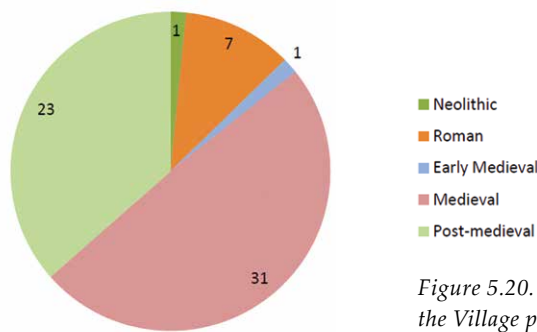
Figure 5.20. Chronological profile of PAS data for the Village palimpsest (as of 1.2.2015).

Southrey

- Bronze Age
- Iron Age
- Roman
- Early Medieval
- Medieval
- Post-medieval
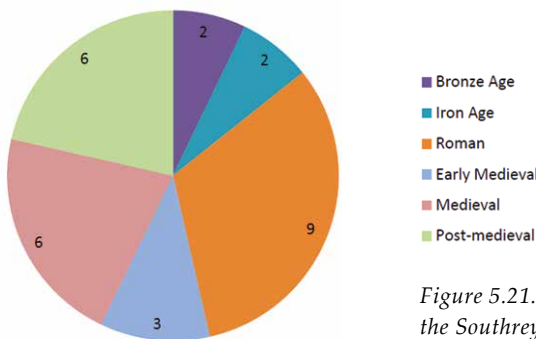
Figure 5.21. Chronological profile of PAS data for the Southrey palimpsest (as of 1.1.2015).

the abbey, adjacent to the river, has also produced a palimpsest finds. Mesolithic, Neolithic, and Bronze Age flints have been recovered, along with Roman pottery and tile, including greyware and amphorae sherds (Bardney Heritage Group 2012). Medieval and post-medieval pottery has also been recovered. No Early Medieval finds were recovered through fieldwalking, but a metal-detecting rally undertaken a few months before the completion of this present study revealed several Middle Saxon artefacts immediately to the south of the zone walked by the Bardney Heritage Group (discussed further below). In addition, the discovery of

a late Iron Age stater and several Roman coins appears to confirm the presence of Roman activity attested through fieldwalking (e.g. PAS refs. LANCUM-9F63FF; LANCUM-ACED06; LANCUM-ACB5DD).

PAS data enhance this picture of persistence to the east of the abbey with several late Iron Age mounts, a large quantity of Roman finds, two fragments of Anglo-Saxon cruciform brooches and one girdle hanger, and a range of medieval finds. Middle Saxon finds concentrate here too, though they form a low-density scatter (see further below for discussion). There is, of course, a blank area in PAS data in the immediate area of the medieval abbey owing to it being a Scheduled Ancient Monument. The blank area to the north of the abbey coincides with an ancient creek, which undoubtedly remained wetland until relatively recent times. The presence of two Bronze Age barrows within this landscape does, nonetheless, show that it was utilised in this period; the extent of 'persistence' is, then, somewhat masked when viewed through PAS data alone.

The abbey was founded in 1087 first as a priory, and was later raised to the status of an abbey in 1116. The abbey was excavated by the vicar of Bardney in 1909, during which a great deal of stonework was uncovered, along with several medieval burials (Figures 5.22 and 5.23). The medieval structure was, of course, the focus of Laing's excavation, but during this he did also uncover 'prehistoric' and Roman pottery (Brakspear 1922; Crowder 1925).

A seventh-century monastery,[62] presumed to have been of royal foundation, is known to have existed in the parish. A date of founding before AD 679 is often cited, making it likely to be the earliest in the county (Stocker 1993). Its location has, however, been the subject of some debate, especially since Laing's excavation found no evidence for it. Nonetheless, a short article by Rev. Laing in the London Standard, published 19th July 1909, indicates he was of the opinion that the seventh-century monastery lay beneath the abbey – a view which apparently reflected 'local legend'. This memory was not apparently held by the medieval monks of the abbey, however, who claimed it was located 'about a mile away at a dairy or grange' (Leland Collecteana, VI, 300-1). The 'dairy' mentioned by the monks is now lost, though the place-name 'Bardney Dairies' survives in the present-day landscape several miles north-east of the abbey and has naturally become associated with it.[63] However, the claim that this is also the site of the seventh-century monastery is dubious on several accounts.

First, while fieldwalking in advance of a pipeline at Bardney Dairies recovered a single sherd of Middle Saxon Ipswich ware – a form of pottery traditionally associated with high-status consumption – such pottery is now known to be found in smaller quantities on many 'normal' sites too (Pestell 2004: 28; Hinton 2005; 90; Davies 2010: 369). Indeed, this mirrors the pattern of metalwork seen within Lincolnshire PAS data, where the majority of low-density scatters are formed by

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62   The term 'minister' is now preferred to 'monastery' when describing pre-tenth century contexts (Cambridge and Rollason 1995; Blair 2005).

63   Documentary evidence reveals that 'after the battle of Lincoln, 19th May, 1217, the Earl of Chester sent for young Henry, who during that interval, lay privately in a cow-house belonging to Bardney Abbey' – what is now called Bardney Dairies (Thompson 1913-14: 28, quoting Pegge (1787) *Archaeologia* VIII, p. 207). One wonders if this cow-house is the same place to which the monks were projecting their memory of the Saxon monastery.

Figure 5.22. Reverend Laing (seated centre) with fellow excavators at Bardney Abbey.
© Courtesy of The Collection: Art and Archaeology in Lincolnshire.

Figure 5.23. The Dean of Lincoln conducting a re-internment service, 17th October 1911.
© Courtesy of The Collection: Art and Archaeology in Lincolnshire.

objects once thought to be 'high-status', but which have since been shown to not necessarily be the case (e.g. Richards 1999a, 1999b).

Second, early monasteries were typically founded on dry islands surrounded by marsh (Stocker 1993; Williamson 1997: 27ff), and the landscape setting of Bardney Dairies simply does not fit the established trend. Third, a document of

probable ninth-century date mentions that both Aethelred and his wife Osthryth were enshrined at 'Bardney, beside the River Witham' (Thacker 1985: 2; emphasis mine); Bardney Dairies is located off the 'island' previously argued for, and is set well away from the river. Topography alone therefore argues for the present abbey site – or its peninsula to the west – as the original location of the monastery (Sawyer 1998: 65; Leahy 2007: 122; Hadley 2000: 266).

Fourth, Bardney Abbey is of Benedictine foundation, and there is a tendency for Benedictine houses founded after the Norman Conquest to be placed on the sites of Anglo-Saxon monasteries (Sawyer 1998: 145), and with royal influence (Pestell 2004: 228). Additionally, Stocker has argued that the relative abundance of late medieval churches in Bardney might be indicative of the locations of Middle Saxon foci; to this extent it may well be significant that the original medieval parish church of Bardney is thought to be that described in the thirteenth century as being 'hard by the monastery' (Stocker 1993: 109-110). Finally, the dedication of the refounded twelfth-century abbey to the Saints Peter, Paul, and Oswald 'perpetuates a memory of the primary dedication' (Cambridge 1999: 243). In sum, it seems then that we can discount Leland as reciting a corrupted memory.[64]

PAS data appear to support this hypothesis. While Middle Saxon metalwork is entirely absent within HER data for the island, this is not the case for PAS data. Three clusters of Middle or Middle/Late Anglo-Saxon finds coincide with the three persistent places marked by HER data, and the largest of these form a halo around the abbey. Finds from the arable fields to the east of the abbey include a Northumbrian styca of Aethelred II (844-848) (NCL-24A8B3), and a penny of Baldred (823-825) (PAS ref. LIN-C999B4). Artefacts include a silver strap-end of the late ninth or tenth century, four eighth or ninth-century strap ends, two Middle Saxon pins, and a fragment of a triple-linked pin-set similar to that discovered in the River Witham at Fiskerton in 1826 (BM ref. M&ME 1858,11-16,4). A further strap-end is was found on a field immediately south of the abbey (PAS ref. LIN-C68A11), and several other notable finds have been found on the spur of high ground to the west of the abbey adjacent to the river. These include a penny of Offa (757-96) (PAS ref. LANCUM-AA972C), a silver ingot of probable Middle Saxon date (PAS ref. DUR-1835E7), and also an Anglo-Frisian gold solidus dated circa 825-50, imitating a solidus of Louis the Pious (814-40). None of these finds – individually or together – are useful in helping to identify the site of a Saxon monastery; indeed, this practice is widely thought of as a rather hazardous pursuit (Pestell 2003: 137; Pestell 2004: 26). Rather, it is their historical and topographical contexts that provides the range of interpretative possibilities for the plough-zone palimpsest (c.f. Cramp 1976b; Blair 1992, 2009).

The archaeological significance of these finds can only be hypothesised in the absence of excavation. However, three main scenarios are possible. First, they may relate to some form of lower-status settlement entirely unrelated to a monastic establishment (e.g. Richards 1999a). Second, these finds might be indicative of domestic occupation, light industrial activity, or commercial/taxation activity associated with a secular or ecclesiastical establishment. Such was the case at

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64   Though see Stocker 1993 for an alternative suggestion.
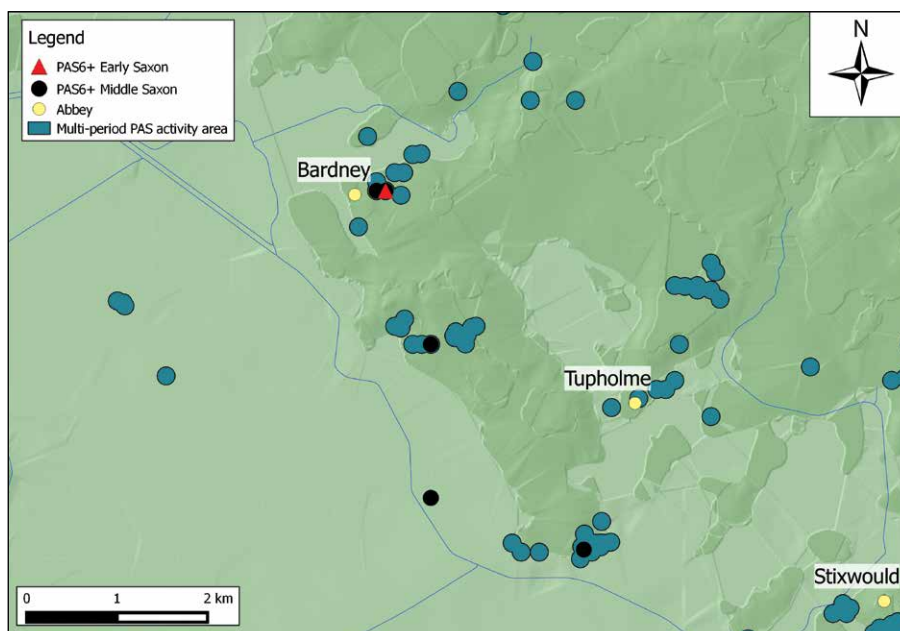
Figure 5.24. Early and Middle Saxon PAS data in the Bardney region, set against the distribution of PAS multi-period activity areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

Lyminge, where a 'swathe of Middle Anglo-Saxon occupation' was found within the middle and outer precincts of the monastic complex (Thomas 2010). Third, and perhaps more likely, these finds may be peripheral to a high-density core area of Middle Saxon activity – perhaps now covered by the medieval abbey itself.[65] This observation rests on two aspects of the assemblage that emerged through the characterisation of the parent dataset.

The first concerns the density of the assemblage. Using the classification devised in the first part of this chapter, this assemblage is currently classed as being of low density. While it is therefore too small to draw trends from, one can provisionally observe there to be a high proportion of coins in relation to dress accessories – a trend which fits more comfortably with high-density assemblages in the region. Second, the temporal setting of the assemblage further supports the suggestion that these finds are a halo scatter around a high-density activity area. In the first half of this Chapter it was noted that all medium- and high-density activity areas coincide with places used in the Roman and the Early Anglo-Saxon period, and it is perhaps no coincidence, then, that the only place where this occurs in the entire Witham Valley is in the field immediately to the east of the abbey (Figures 5.12 and 5.24).

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65   The relatively small size of the abbey need not be a concern. Indeed, the 300 or so PAS finds from Little Carlton come from an area smaller than the abbey site, as do the finds from Garwick (both sites are discussed in the next chapter).

The evidence is slight at present – currently comprising two incomplete sixth-century cruciform brooches and a fragment of a girdle hanger – but their presence is compelling, as indeed their general absence from the wider Bardney region. Three finds can hardly be classed as a cemetery assemblage, but it is certainly of note that several other Middle Saxon monasteries were placed close to Early Anglo-Saxon cemeteries, probably owing in part to the presence of pagan sites (Vince 2006: 170-1).

Parallels for the temporal setting of the abbey assemblage are not difficult to find among other monastic sites; the tenth-century Benedictine houses at both Ely and Peterborough, for example, contain migration period cemeteries, along with evidence to show they were also important places in the Roman period (Pestell 2004: 131); both, it is argued, were also 'historically the centres of political control over wider regiones' (Pestell 2004: 131). Closer to home the situation is hazier owing to the locations of many early churches being hypotheses rather than knowns. Nonetheless, their hypothesised locations provide further evidence for continuity. The suggested site of the monastery at Crowland is located in a landscape containing a Bronze Age barrow and also Roman pottery (Stocker 1993).[66] No sixth-century material is yet to be reported, though this is perhaps owing to a lack of metal-detecting; there are only 3 finds reported from this parish, all of which were found prior to 2000 and none of which come from near the monastery. The full chronological sequence is found at Partney, however, where the suspected location at the Saxon monastery beneath the medieval hospital occurs within a landscape containing prehistoric flint scatters, a Bronze Age round barrow cemetery, Roman settlement including a shrine, and a sixth-century inhumation cemetery (Stocker 1993: 110).

The suspected site of the seventh-century monastery at Barrow upon Humber is similarly located on a marsh-island at which Roman, Middle and Late Anglo-Saxon finds have been discovered (Stocker 1993: 114). It is PAS data that completes the sequence, however, by providing evidence for the sixth century (PAS ref. NLM-0E03C2). Flixborough provides some caution, however (Loveluck 2007). While having some religious associations, the site varied in function over time, but also shares a similar landscape signature, sharing a topography that includes prehistoric and Roman settlement, along with an Anglo-Saxon inhumation cemetery that appears to have been in use from the sixth century to the Late Anglo-Saxon period (Buckberry 2004: 361; Hadley and Buckberry 2005: 128).

The nature of the Roman period settlement to the east of Bardney abbey is difficult to comment on from the plough-zone assemblage alone, but some tentative hypotheses can be put forward in the light of the wider evidence for the conversion, or 'legitimation', of the landscape through the act of occupying key sites used in earlier times. Among the spread of Roman period PAS data found in the fields to the east of the abbey is a copper-alloy axe-headed pin of fourth-century date. This form of pin falls into Cool's Group 18, Sub-group C – a sub-group that may not have been for use as a hair pin, but rather used for their religious significance, perhaps as votive offerings (Cool 1990: 168; Johns 1996: 143; Bird 2004; though

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66   Though see Pestell 2004 for a commentary on the religious foundation of Crowland (Pestell 2004: 132-33).
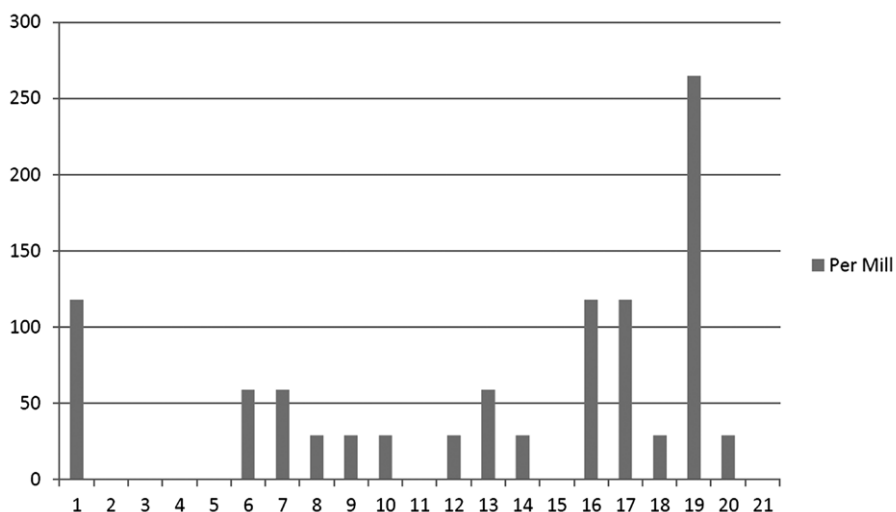
Figure 5.25. Reece analysis of 34 coins from the abbey assemblage (per mill).

see also Kiernan 2009: 119-121). Axe-headed pins are often found on temple sites, and Green suggests that they may have had links with a cult of a Celtic Sky-Deity (Green 1981: 256). Given the persistent ritual use of this particular landscape, and indeed the aforementioned observations on the conversion of the landscape, we might speculate if the late Roman occupation included some sort of shrine.

Indeed, Roman numismatic evidence from the fields to the east of the abbey also tentatively supports this hypothesis (Figure 5.25). A Reece analysis of the coins (per mill) reveals a peak in Period 19 (AD364-78), in comparison to lower quantities in the late third and early to mid-fourth century. A peak in Period 19 coinage has been found to be a feature of sites containing temples (Davies and Gregory 1991: 71-5; Moorhead 2001: 93), and Walton's more recent analysis of PAS data suggests this may also be the case, though it could also simply indicate a typical rural Roman settlement (Walton 2012: 15). Walton does, however, make the point that the labelling of a coin assemblage as 'temple' is over simplistic, and that temple complexes are 'often associated with settlements of varying sizes and complexity' (Walton 2012: 22). The assemblage does, however, also display an unusually high rate of coin loss in Period 1. This is a feature that has also been associated with late Iron Age votive deposition (Walton 2012: 68). Indeed, Walton noted there to be a concentration of such assemblages in the area south-east of Lincoln, particularly in the parishes of Branston and Mere, and Stixwould, within the Witham Valley, where Walton postulates them to represent water-based ritual activity (Walton 2012: 68). The assemblage from Bardney, then, appears to conform to this wider trend in early coin use, especially given that two late Iron Age gold staters are included in the group (PAS refs. LANCUM-9F63FF, NCL-7C00A5). The numismatic sample is, however, unsatisfactorily small, comprising just 34

Figure 5.26. Lincoln Cathedral from Bardney Abbey. The Cathedral is on the horizon to the left of the pylon, shown in this picture as a grey turret. On a clear day the Cathedral is highly visible. Photo: Author, taken 25.01.2015.

coins, and these interpretative possibilities must remain speculative in the absence of further fieldwork.[67]

We cannot be sure, then, about the nature of late Roman activity near the abbey, but a degree of ritual activity would fit well with Stocker's observations on seventh- and early eighth-century churches in Lindsey, whose locations were sometimes chosen deliberately for their pre-Christian ritual significance (Stocker 1993: 119). Not all sites held prior ritual interest, however; others were used for more functional reasons, though whether this was the perception of their Saxon occupants is impossible to say. Many of the earliest missionary stations in East Anglia were sited within former Roman enclosures, including signal stations (Pestell 2004: 58; Hoggett 2010; Cramp 1976b; Blair 1992). Such may also be postulated for some of the other early churches in Lincolnshire, whose suspected locations also coincide with Roman material that show no clear ritual associations, as indeed it does elsewhere such as at the Anglo-Saxon monastery of Lyminge, Kent, constructed over a building of Roman origin (Thomas 2010). In this context it is more than intriguing to note during Laing's excavation at Bardney Abbey, a stone cross-base was discovered, which had criss-cross tooling of a Roman type (Everson and Stocker 1999: 99). Although the surface decoration was not distinctive enough to provide a clear date, Everson and Stocker speculated that the presence of Roman style tooling indicated 'either reuse of Roman stone or the deployment of Roman masonry skills that are likely to have been available in the early years of the monastery' (Everson and Stocker 1999: 99).

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67   However, this is in excess of the 20 coins used as the minimum sample in Walton's study of Roman coins recorded by PAS (Walton 2012).

The Roman site at Bardney provides much scope for speculation, then, particularly owing to the exceedingly strong inter-visibility that it held with the fort-cum-Colonia-cum-walled town situated at the top of the hill at Lincoln (Figure 5.26), which incidentally also contained a stone church built after 628 when Paulinus baptised the 'praefectus' of Lincoln, Blaecca (Everson and Stocker 1999: 10; Jones 2002: 127). Indeed, it has previously been argued that the monastery at Bardney held a special relationship with Lincoln (Stocker 1993), and more recently it has been argued that Lincoln and Bardney formed twin axes of an ancient, coherent land block (Everson and Stocker 2011, 2012).[68]

There is, nonetheless, a complete lack of evidence dating between circa 410 and the beginning of the sixth century. This absence is not wholly unexpected, however, given that this period is difficult to trace archaeologically (Green 2012: 35-37). Yet, the long-term view clearly shows the landscape as being somehow important immediately prior to and after this apparent hiatus, and in this context it is difficult to envisage any sense of abandonment. Indeed, in order for sacred places to be reused over long periods of time there must be not only a degree of continuity in maintenance, function and ownership, but also a maintenance in memory, status, perception and consciousness (Coomans 2012: 221). In quite what form the persistence of memory took is unclear, but the presence of Roman and Saxon finds suggests a very intentional and structured reuse of the landscape, and in its simplest form we might suggest that it was the transmission of oral history that kept the site alive in the landscape. We might also envisage some sort of low-status building persisting on the site either in use or as a ruin, which served as a persistent marker in the landscape.

It is in this context the three items of sixth century date may be best understood; while at present they are tentative evidence of activity in this period, they do nonetheless fit the wider trend for important migration period sites being placed on or close to sites that were significant in earlier times (Pestell 2004: 58; Crewe 2012; Semple 2013). Indeed, the almost total lack of sixth-century material from the hinterland – in some cases stretching as far back as the present day route of the A158 – might in itself be reflecting the central role that Bardney once held within its local landscape. Indeed, the lack of sixth-century material is not just a phenomenon of plough-zone assemblages. Excavation also paints a similar picture (e.g. Bassett 1985; Beresford 1987), and there is also a complete lack of evidence recorded on the East Midlands Corpus of Anglo-Saxon pottery (Vince and Young 1990-1).

In spite of the evidence for continuity at the Abbey, clearly by the time of Leland the memory of the antecedent landscape had become deeply corrupted, with all consciousness of the seventh-century monastery and its associated legends now being projected further eastwards. Curiously, a similar corruption of memory – traceable to

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68   Today, one can stand in the ruins of the abbey and clearly see the Cathedral. The cathedral in turn marks the *forum* of Roman Lincoln, and is also situated close to the probable early Saxon stone-built church mentioned by Bede (Jones 2002). In one sense, a visual link might be envisaged between the administrative and spiritual heart of the area – an area which Green has argued convincingly to have been part of the British Kingdom of the *Lindēs* until the mid-sixth century (Green 2012).

Figure 5.27. Excavation of Kings Hill, Bardney. Photo: Daily Graphic, 31st August 1912.

more recent times – is noted in the supposed resting place of Ethelred, former King of Mercia, and abbot of the monastery between 712 and to his death in 716.

In August of 1912 Rev. Laing's attention focussed on a large oblong mound located 600m to the east of the abbey, known locally as 'the Kings Hill', and which was locally held to be resting place of Ethelred (Allen 1834: 62; Figure 5.27). On the 26th, 27th and 28th of that month Laing and others excavated a large trench down the middle of the mound, finding nothing but a few small fragments of human skull. The excavators noted that the mound was chiefly constructed of soil and gravel (White 1983), and that a high degree of mixing had occurred, suggesting to the excavators that it had previously been entered. Furthermore, Laing also noted that the monument was originally larger and more rounded than the present-day shape suggests. The excavation was subsequently backfilled and made good. Sadly for Laing and his parishioners, the archaeological evidence failed to provide an association with Ethelred.

The projection of a memory – albeit a corrupted one – onto Kings Hill in Bardney can in this instance be traced to a misinterpretation of a field-name by Marrat in 1816 (White 1982). Andrew White noted that Marrat set this legend in motion in his 'History of Lincolnshire', in which he notes that a post-dissolution survey describes a close of pasture in the area of the mound as called 'Coneygarthe'. Wrongly equating Coney with Keonig (King), Marrat sets the scene for the place-

PORTABLE ANTIQUITIES, PALIMPSETS, AND PERSISTENT PLACES

name 'Kings Hill' (White 1982: 110). White suggests that this tradition was then taken up by J. Conway Walter in his book Records of Woodhall Spa (1899), in which he claims that the 'coney-garth' or King's enclosure is the supposed resting place of Ethelred (White 1982: 110). White, however, suggests that the place-name actually suggests a connection with rabbits, and that accordingly the mound is a warren of medieval date (White 1982: 110; Cameron 1996: 234). The association with Ethelred, then, was probably less than 100 years old at the time of Laing's excavation.

It is interesting, then, to note how rapidly the source of a legend is lost; indeed, an article in the Sheffield Daily Telegraph of Thursday 22nd August 1912 claims that the Ethelred legend had 'come down from unrecorded time grey', in spite of it being slightly less than 100 years old. In this context we may begin to understand how persistent traditions may arise, and indeed how the medieval monks came to project the location of the Saxon monastery on to the cow shed at Bardney Dairies.

Moving forward in time, several Late Anglo-Saxon and Scandinavian style objects are also known from the abbey persistent place. At a very basic level of interpretation, the presence of finds ranging between the ninth and eleventh centuries in the vicinity of the abbey suggests that activity persisted in some form. Indeed, Kershaw's recent survey of Scandinavian and Scandinavian-style jewellery has noted several instances where associated archaeology has been found through excavation (Kershaw 2013: 183ff). In the absence of excavation we must turn to the landscape for further context.

First, it was traditionally held that the monastery was 'laid to waste' during the Viking raids in 870, during which about 300 of its monks were slaughtered (Dugdale 1819: 394; Allen 1834: 62, 287). However, Oswald's relics were not moved to their final resting place at Gloucester until 909 (ASC 909), and this suggests that the monastery persisted in one form or another beyond its apparent 'destruction' (Foot 1999; Hadley 2000: 266; Sawyer 1982: 104).[69] Furthermore, a small quantity of tenth- to eleventh-century stone sculpture from the site of the abbey has been recorded (Everson and Stocker 1999: 72, 98). Finally, a degree of continuity has also been suggested by the lack of Scandinavian place-names surrounding the monastery. It is widely understood that in the post-Viking period the territories associated with monasteries/minsters became fragmented, and this formed the basis of the parish and parish church system visible in the landscape today (Cambridge and Rollason 1995: 87). Accordingly, the lack of Scandinavian place-names surrounding the monastery has been taken to suggest that the estate associated with Bardney survived relatively late (Sawyer 1982: 104; Richards 2007: 61; though see

69 Indeed, Foot argues that 'most accounts of the savage destruction of monastic houses and the murder of their inmates…date after the Norman Conquest and are of no historical value' (Foot 1999: 190). The silence of the archaeological and historical evidence should not, therefore, be assumed to represent a demise of both the physical structure nor indeed the fading of collective memory (Foot 1999: 190). Foot argues that the movement of the Bardney relic to Gloucester reflects the wider trend seen, in which 'the relics of luminous saints venerated in the Mercian past' became important parts in the process of building new *burgs* in areas of West Saxon hegemony (Foot 1999: 192).

Hadley 2000: 266).[70] None of these sources of evidence are sufficient on their own, but together they do appear to suggest a degree of continuity.

The discussion has largely centred on the antecedent landscape. A final theme for discussion is, therefore, the subsequent use of these areas with regard to the development – or indeed failure – of the abbey persistent place. Unlike Osbournby, the abbey took a different trajectory, becoming a place of private dwelling surrounded by rural arable fields, rather than progressing to become a significant place of inhabitation today. Today the landscape is characterised by a few isolated farm buildings and large arable fields; the main area of occupation developed 1km to the south at the present day village core.

The reasons for this are likely to surround the specialised nature of the persistent place. The abbey flourished during the Middle Ages, and within the abbey complex stood the parish church of St Peter, St Paul, and St Oswald. The main area of settlement was, however, located to the south at the present-day village, and it was to here that the major focus for community activity shifted. Documentary evidence reveals that the parishioner's attendance at the parish church at the abbey was poor, owing to the land surrounding the abbey being boggy in the winter months. Moreover, the monks of the abbey also complained about the intrusion of the parishioners, particularly that they were interrupting their prayers. Regardless, the church collapsed around 1434, and shortly after this a new parish church dedicated to St Lawrence was rebuilt in the centre of the village (Stocker 1993). Ridge and furrow to the east of the abbey highlights another aspect of the wider nature of land-use, and this provides an interpretative possibility for the narrow range and thin scatter of PAS finds; this period is represented by just three medieval silver pennies; dress accessories and domestic items are completely absent.

Religious life came to an end at the abbey following its dissolution in 1538, and the land was subsequently acquired by Sir Robert Tyrwhitt. Tyrwhitt proceeded to demolish the church and convert some of the other monastic buildings into a grand house. Other buildings were left to ruin. Tyrwhitt's buildings too were in ruin by the early eighteenth century, and the site was eventually deserted by 1753, with only occasional 'digging for the sake of the stones' taking place (Stukeley 1776). A farm complex was constructed in the nineteenth century to the south of the ruins, and the area around the abbey remained in cultivation.

Tyrwhitt's ownership of the abbey did not cause the total abandonment of its immediate environs, but it certainly did restrict the nature of occupation, and this directly affected the nature of persistence. As was the case at many abbeys in the sixteenth century, the new owners of the confiscated lands were 'not interested in the sacred meaning of the place, but in its secular meaning as a place of power and decision-making' (Coomans 2012: 232). It is this conversion of meaning and perception that led to a shift in the focus of persistence from the abbey in the north, to what was to become the present-day village to the south. This shift is visible not

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70 Indeed, Sharpe and Karn suggest that while Bardney was assessed at only two carucates in *Domesday*, the fact that it had sokes and £30 in 'exactions' may indicate its former status (Sharpe and Karn 2014: 3). However, Sharpe and Karn also suggest that the fact that the 12th century historian Henry of Huntingdon says nothing about the Saxon monastery indicates that it had 'long since decayed' (Sharpe and Karn 2014: 3).

only in the archaeological evidence from the village, but also in the character of the plough-zone palimpsest recovered from the fields immediately to the south of the village. Indeed, here the chronological signature is almost the inverse of that seen some 1km to the south at the second persistent place – the Village.

5.4.5. The Village Assemblage

The village palimpsest is mainly composed of medieval and post-medieval artefacts found on the fields immediately south of the present-day village. Bardney is mentioned in Domesday, and the village is set around a triangular plot of land, which was possibly the site of the market place granted to Bardney Abbey in 1232 (Everson *et al.* 1991; Figure 5.28). Dress accessories, mounts, coins, and other domestic items are included in the assemblage, illustrating the wide range of material culture one would expect from the periphery of a settlement.

Unlike the abbey assemblage, earlier periods are poorly represented, however, with just a few early Roman coins and just one coin of the Middle Saxon period – a silver penny of Offa (PAS ref. NCL-AF9BE4). The greater proportion of medieval and later finds, along with the relative lack of earlier finds, more or less reflects what is currently known about the archaeology of the village. The village is undoubtedly of Late Anglo-Saxon origin at the latest, but no Roman or post-Roman finds are yet to emerge from the core itself. Indeed, the only find to emerge from the village that pre-dates the Late Anglo-Saxon period is a single Neolithic worked flint (LHER 51159). Given the close proximity between the PAS palimpsest and the village core, the assemblage almost certainly contains items redeposited through manuring or dumping. Little more can be made of this palimpsest in the absence of further fieldwork, but its character is notably different
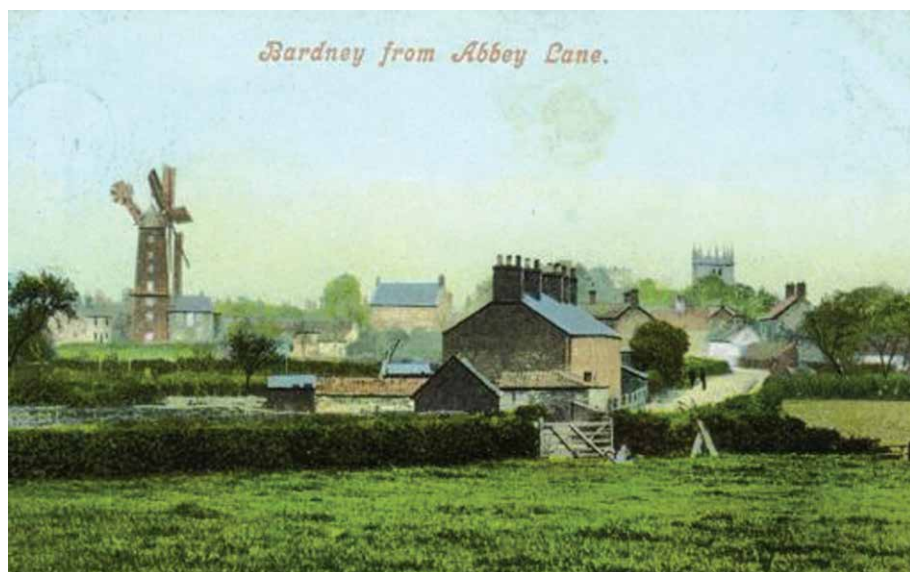
Figure 5.28. Bardney village as seen from Abbey Lane, 1904. The parish church of St Lawrence is visible in the background. © Courtesy of The Collection: Art and Archaeology in Lincolnshire.

to that at the Abbey, and at Southrey (see below). The nucleated character of Bardney village is, however, distinct from the pattern of dispersed post-medieval/ modern farmsteads seen elsewhere in the parish, especially in the east, where their presence may be attributable in part to the distribution of medieval hamlets.

These are the hamlets of Butyate and Osgodby, both mentioned in Domesday, and which lie roughly 1km from one another in the far east of the parish. Both are, however, located off the 'island', and both were converted to monastic granges in the twelfth century (Everson *et al.* 1991: 64). Both have revealed little in the way of activity prior to the Late Anglo-Saxon period, and their trajectories moved towards arable productivity, rather than settlement or votive activity as was the case at the village and the abbey. PAS data attests to medieval activity at Butyate, and two late Roman coins provide the only evidence for earlier periods. Late Anglo-Saxon and medieval finds are also attested by PAS data at Osgodby, though in small quantities. At Osgodby it is thought that there were two settlement nuclei, suggested to represent a dispersed eleventh-century settlement pattern of sokemen (Everson *et al.* 1991: 64). This dispersed form of settlement is furthermore thought to have reasserted itself in the pattern of scattered post-medieval farmsteads (Everson *et al.* 1991: 64). These palimpsests may, then, represent the sorts of low-temporal diversity landscapes that Nord describes as 'vague-places' (Nord 2009: 33).

5.4.6. The Southrey Assemblage

Somewhat more can be made of the Southrey assemblage, though again the interpretations rest on unsatisfactory low numbers of finds. Nonetheless, tentative hypotheses can be made in the light of their landscape setting.

The chronological signature presented by HER and PAS data at Southrey is somewhat similar to that seen at Bardney abbey (but not at the village), and once again the finds recovered from the southern tip of the island suggest a degree of ritual and/or high-status activity. This in turn may suggest that the northern and southern terminals of the island were important foci over the long-term, with the village being a relatively 'recent' node on the map of persistence. Indeed, the link between the northern and southern ends is perhaps best illustrated by their relationship in the medieval period. At the northern end of the hamlet of Southrey is 'Seney Place' – a medieval retreat house for the monks of the abbey. However, Stocker notes that detached retreats were a feature of important pre-Viking monasteries and to this extent the links between the two places may extend into the seventh century (Stocker 1993: 108). PAS data may suggest some sort of link was of much deeper antiquity.

Many of the finds recovered from this area are unusual in the absence of wider contemporary assemblages, and this may hint at a structured or specialised use of the landscape. To the west of the hamlet, close to the river has been found a Roman copper-alloy mount in the form of a sitting bird, probably a duck (PAS ref. LIN-6EC4F7). Water birds such as ducks are thought to have associations with a Celtic water-cult, and many such mounts are appropriately found on copper-alloy ritual vessels (Green 1978: 24). A ritual connection to this particular mount can only be tentatively suggested, but a consideration of the wider assemblage may hint at some form of repeated ritual activity occurring on the southern tip

of the island. In the same field is a post-medieval buckle – about which very little can be said – however also included in the assemblage is a Viking dagger guard decorated with Ringerike decoration (PAS ref. LIN-7FE604). To the east of the hamlet is a small number of late Roman copper-alloy nummi, in addition to two silver denarii. These finds also coincide with a Bronze Age axe, an Iron Age gold stater, and a Middle Saxon lead weight containing a styca. Finally, there is also a copper-alloy ansate brooch. These are difficult to interpret owing to the small size of the assemblage; however, it may be pertinent that we once again have a riverside assemblage containing high-status deposits of Bronze Age, Iron Age, Roman, and Viking objects, which may tentatively be suggested to complement the wider pattern of landscape use for ritual purposes. Future archaeological work here may well prove fruitful.

Indeed, the Research Design for the Witham Valley makes the point that archaeologists have traditionally been reluctant to attribute post-Roman and medieval finds as votive deposits, principally owing to the perception that this is not compatible with Christianity (WVARC 2005: 2). However, this may not necessarily be the case; Stocker and Everson have begun to show the possible votive associations of medieval finds from the Witham Valley (Stocker and Everson 2003a, 2003b) and a growing body of evidence now suggests that in some instances Viking metalwork should also be considered as potential votive deposits too (Raffield 2014). In this context the Southrey guard might join the wider body of votive material from this particular part of the landscape.

5.5. Conclusions

The technique of temporal mapping developed in this study has revealed the 'island' of Bardney to be a persistent place, displaying greater temporal depth than the surrounding landscape. Finer-grained mapping of the evidence reveals this persistent place to be formed of at least three palimpsests – a trend that was evidenced through both HER and PAS data independently. These palimpsests were defined as being both cumulative and spatial palimpsest types, depending on the scale of mapping at which they are viewed. Similar to Osbournby, the Bardney palimpsests formed part of a wider persistent place, and thus could in the first instance be seen as spatial palimpsests. As Bailey predicted, however, at a wider, parish-scale of mapping the temporal relationship between these nodes was somewhat blurred, even though their temporal signatures overlapped in certain instances.

Further observations were made by viewing these palimpsests in isolation, as cumulative palimpsests. While it was not possible to view rapid-scale events within the plough-zone palimpsests with any temporal certainty, several instances were found where shorter-scale events apparently helped to stimulate the longer-term pattern of activity, and also a structured use of the landscape. This was perhaps clearest at the Abbey palimpsest, where the rise and decline of activity appears to have mirrored the intensity of religious practice on the island. Closer analysis of this assemblage revealed a degree of ritual continuity in spite of a conversion of the landscape; votive deposition at the water's edge was replaced by new forms of

Christian devotion, and to this extent the assemblage furthermore revealed itself as a palimpsest of meanings.

Moreover, this case study has revealed that biographies need not depend on high-density artefact scatters. All three palimpsests were of low density, but careful contextualisation at their landscape settings rendered them important observational tools in the wider discussion on landscape change and continuity nonetheless. Indeed, in this context the interpretation of plough-zone palimpsests is only made possible by exploiting the fullest range of archaeological and historical evidence available; in other words, they are only enriched when placed within their landscape context. This observation strongly agrees with a comment made by Everson and Stocker's in their approach to Barlings, where they claimed that 'the potential [of the range of resources] is only fully exploited when the complex interrelationship with each other, and with a landscape and its resources, is understood' (Everson and Stocker 2012: 61).

Many of the interpretations presented in this Chapter are relatively uncontroversial. The close relationship between abbeys and places used over long-periods of time has been previously commented on (Everson and Stocker 2003, 2011), and most would agree that there is a close relationship between what we presently can see in the landscape, and the nature of the superficial deposits in the area; these have acted as a magnetic force that pulls certain forms of activity – such as votive deposition, while at the same time pushing others – such as settlement – to higher ground. Similarly, these same superficial deposits ensure that the majority of what we know about finds from these areas derives from deep excavation, be it archaeological or for drainage; the plough-zone is important in regard to recovering finds dislodged through such activities, but it cannot be seen as an altogether representative source of evidence.

Perhaps of greater controversy is the interpretation of the degree of 'relatedness' between phases of occupation within the cultural landscape. For Barlings, Everson and Stocker argued that 'the canons [ ] were, knowingly and purposefully, emblematically as well as practically, custodians of this landscape, forming one phase in a sequence that stretched back into prehistory and forward into the early modern era' (Everson and Stocker 2012: 61). Quite whether this was the case at Bardney is hazy through the lens of PAS data, but a consideration of the wider body of evidence appears to suggest some very intentional behaviours coinciding at very specific places within the 'island', and which appear to link to previous forms of land-use.

This case study has, however, reached the limits of speculation in the absence of further archaeological fieldwork, and one must concede where the interpretative boundaries of plough-zone palimpsests lie. Accordingly, this study now progresses to the final case study Chapter to explore two 'new' Middle Saxon assemblages, from Garwick and Little Carlton. In contrast to Bardney, these are both 'high-density' activity areas. As such, an additional question is explored in the following Chapter – does the presence of a greater number of finds proportionally increase our understanding of palimpsests and persistent places? Together with Bardney, these case studies reveal the complex relationship between Middle Saxon archaeology, palimpsests, and persistent places.

Chapter 6

Productive Sites and Persistent Places – The Biography of Two Middle Saxon Assemblages

6.1. Introduction

This final case study Chapter explores two high-density Middle Saxon activity areas -activity areas that we might equate with the so-called 'productive' sites briefly discussed in the previous chapter. The discussion continues the contextualisation of shorter-scale events into their longer-term landscape settings, and similar questions to those posed in previous chapters are also applied here.

The two assemblages selected for this case study Chapter come from Garwick (Heckington parish) in North Kesteven District, and Little Carlton in East Lindsey.[71] These were chosen for several reasons; both contrast sharply with Bardney, in that they are data-rich, each having produced in excess of 200 artefacts/coins dating between the eighth and ninth centuries. Analysis at either end of the quantitative spectrum will therefore help to illuminate the dynamics of activity areas further. Garwick and Little Carlton also form components of larger palimpsests reported by finders who have worked very closely with PAS, but who have used different standards of recording methodology. They do, therefore, present a good opportunity to explore how different palimpsests can be used to infer persistence of place.

Moreover, both contrast in their history of discovery. That from Little Carlton is entirely 'new', save for a fragment of Late Anglo-Saxon grave slab found in 1993 during the demolition of St Edith's church (Stocker and Everson 1999: 221ff). That from Garwick is also 'new' in the sense that no Middle Saxon finds were previously recorded on the HER. However, this latter site has for many years been known only as the hitherto elusive and infamous 'South Lincolnshire Productive Site' (Ulmschneider 2000a, 2000b; Blackburn 2003: 25, 36; Vince 2006: 175) – a site about which the late Alan Vince urged for its 'identity to be established as a

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71 Two further high-density activity areas have come to light since the main period of data collection, at Benniworth and at Alvingham/Yarburgh. These are mentioned where appropriate. The Benniworth assemblage comprises over 70 Middle Saxon finds, and includes a large quantity of pins, hooked tags, and strap-ends, all recorded on PAS. The coins mainly comprise sceattas, although a penny of Aethelred II has also been found. Two gold tremisses have apparently also been found by others in the past but these have not been reported to PAS. The Alvingham collection has similarly not been shown to PAS, but reliable reports state that a large quantity of the 'typical' productive site material has been found, including pins, strap-ends and coins.

matter of priority and the site investigated archaeologically to establish its nature, setting and history' (Vince 2006: 175).

6.2. 'Productive' Sites

Garwick and Little Carlton stand out from the background of Middle Saxon PAS data owing to the vast number of finds they comprise, being assemblages that are typically referred to as coming from a 'productive site'.[72] The term 'productive' site was originally used in the 1980s to loosely describe sites that yielded large quantities of coinage (Ulmnschneider 2002; Pestell and Ulmschneider 2003a).

The term 'productive' site persists in the literature today, though its use has been found to be unhelpful (Richards 1999b; Ulmschneider 2000a; though see Pestell 2004: 31). First, the term may simply be a reflection of the different rates of recovery between excavation and metal detecting (Richards 1999a: 79). Second, the term masks the wide range of rural settlements, from large trade sites with ecclesiastical or aristocratic associations, to a range of smaller rural seasonal markets which provide evidence for neither an ecclesiastical connection nor specialised production but which appear to have been involved in trade (Scull 1999: 17; Palmer 2003: 52-55).

A third difficulty, which arises when viewing these sites from the perspective of the 'persistent place', is that the term suggests these sites were homogenous throughout their period of 'productivity' – a term which is overly simplistic; persistence in use may well have been punctuated, and recent studies have demonstrated many 'sites' were poly-focal in layout and with functions that changed through time (Richards 2000; Loveluck 2007; Haldenby and Richards 2009).

The general dissatisfaction with the term 'productive' site has led to an increasing use of a range of other descriptive terms, such as central-places, markets, fairs and trade sites, and, especially where styli are recorded – terms such as 'monastery' or 'ecclesiastical centre' (Palmer 2003: 52, though see Hinton 2005: 96; Pestell 2009: 125, 128). These too can bring with them a range of unhelpful assumptions, especially when using plough-zone assemblages to explore the character of a 'site'. Indeed, the argument that has been sustained throughout this study that plough-zone assemblages are palimpsests demands us to reject the notion that all material culture deriving from a particular place should be seen according to a particular function. The process of deposition is speedy, and interpretative difficulties arise when characterising sites using coarse-grained depositional events (Foxhall 2000). Accordingly, much of the recent discussion on 'productive' sites has shifted from exploring what 'type' they are, to exploring how these 'sites' evolved over time within their landscape setting (e.g. Wrathmell 2012; Tester *et al.* 2014). This is, of course, a central theme to the concept of the persistent place being advocated in this present study.

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72   The possible fundctions of productive sites have been discussed extensively (e.g. Pestell and Ulmschneider 2003a; Hutcheson 2009), and there is little need to repeat this here other than to give a brief overview. Rather, the focus of this Chapter is on the biographies of Garwick and Little Carlton as persistent places, in which Middle Saxon finds are a key component.

6.3. 'Productive' Sites in Lincolnshire

The assemblages from Garwick and Little Carlton are part of a wider body of 'productive' sites in the county (Ulmschneider 2000b; Leahy 2007; Loveluck 2007. 2012; Green 2012). Lincolnshire has long been known for its wealth of 'productive' sites, particularly in Lindsey, which has been claimed to have been one of the wealthiest regions of England in the eighth and ninth centuries (Blackburn 2003; Leahy 2007). As was touched upon in the previous chapter, there is a strong correlation between 'high-density' sites and the Roman road network, which complements the trend already known for 'productive' sites in other regions to be located on major routes (Ulmnschneider 2003a, various papers; Naylor 2004b). Second, it is immediately apparent that the 'productive' site at Garwick (Heckington parish) is the only one known in Kesteven.

Leahy's study of Middle Saxon metalwork, published in 2003, suggested that Middle Saxon Lincolnshire was divided into three zones: a northern-zone where finds are common and which contains some 'productive' sites; a south-western zone where Middle Saxon metalwork is also common, but without 'productive' sites; and a south-eastern zone where finds are rare (Leahy 2003: 140). Leahy argued that these zones may be taken to equate to the historic parts of Lincolnshire; Lindsey in the north, Kesteven to the southwest and Holland to the southeast. The absence of 'productive sites' in Kesteven was suggested to have been due to its heavy soils and higher level of woodland. Leahy also suggested that a lack of political cohesion in this region – being on the edge of Mercia – may have also played a part (Leahy 2003: 143). Similarly, the lack of finds from the southeast owes in part to the nature of the wetland landscape (Richards *et al.* 2009: 2.5.2.1), but earlier chapters of this study have also shown this to be a less intensively metal-detected landscape. Moreover, the traditional perception that there was a lack of Middle Saxon settlement in the Fens is being increasingly challenged (Crowson *et al.* 2005; Green 2012). It appears that the issue is one of legibility, not necessarily presence.

A decade of recording has not significantly challenged Leahy's observations; sites producing Middle Saxon coinage tend to follow the major arteries into the county including the Roman road system (Leahy 2003: 143), and many are located on the junctions between two different landscape types. That at Garwick is on the Fen Edge, and that recently recorded at Benniworth is on the eastern edge of the Wolds. The productive site reputedly located at Dunstan Hill in Alvingham shares the same landscape setting as Little Carlton, being situated just below the 10m contour line, close the coast, and next to a major waterway. In the case of the site at Alvingham this is the River Lud, while at Little Carlton it is the Great Eau, and together these sites complement a wider picture of riverbank trading centres in region (Vince 2006: 175).[73] The assemblage at Little Carlton – while

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73   It may be prudent to note that two of the three high-density assemblages to have been recently reported to PAS come from places that contain the place-name element *-ingas* or *-ingaham*, an element which has been claimed to represent Anglo-Saxon people-groups (e.g. Cameron 1998: 2, 13; Fenwick 2007: 153). A close correlation between Middle Saxon assemblages and the *-ingas* place-name was also found recently by Hutcheson in his study of Middle and Late Anglo-Saxon settlement in Norfolk (Hutcheson 2009: 16).
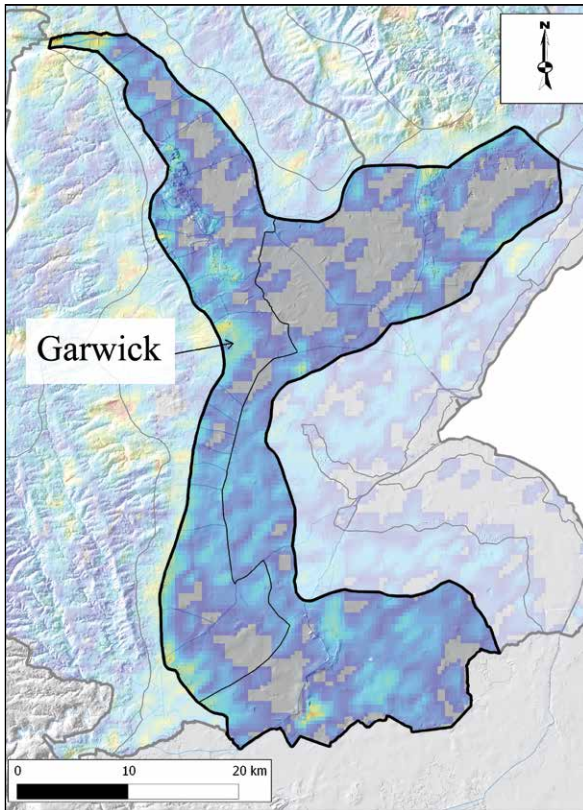
Figure 6.1. Temporal diversity in the Fens HLC Area (merged HER and PAS data). © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
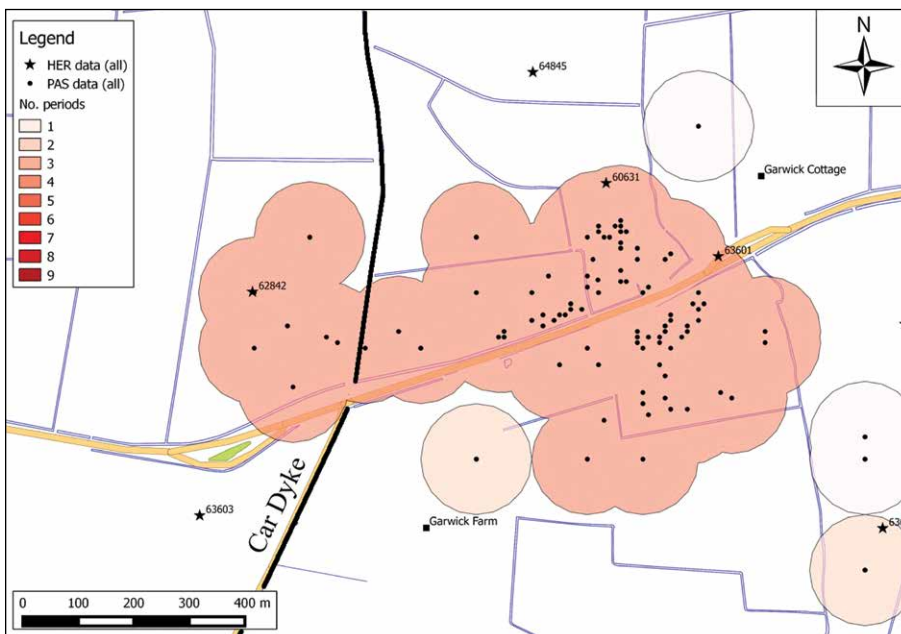
Figure 6.2. Multi-period activity areas in the Garwick area. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

being unique for its immediate landscape – reflects a stronger presence of coin-producing activity areas in the wider landscape of East Lindsey near Louth.[74]

Turning to 'blank' areas of landscape, the continued absence of PAS data from other parts of the county strengthens Leahy's observations; there are still relatively few other coin-producing sites in Kesteven than in Lindsey, with notable exception of the 'South Lincolnshire productive site' at Garwick, seven miles east of Sleaford.

6.4. Case Study: Garwick

The technique of temporal mapping developed in this study has allowed the area around Garwick, a hamlet in the parish of Heckington, to be identified as a persistent place (Figure 6.1). The persistent place contains a high-density Middle Saxon activity area, and the Middle Saxon assemblage within it forms a component of a larger palimpsest spanning the Roman to post-medieval periods.

Garwick is located adjacent to the Car Dyke, on the Fen Edge within the north eastern part of North Kesteven. The assemblage derives from what is today a highly arable landscape located some 3km to the east of the medieval/modern settlement of Heckington. The assemblage was one of the first to be presented for recording to the author, and further finds were recorded up until the death of the finder, David Panton, in 2011. David did not own a GPS but instead printed out colour maps of his sites from GoogleEarth and meticulously plotted his finds after each session of metal detecting. Each find was then photographed, numbered and cross referenced to his maps, which he then presented to me. Recording usually took place twice a year. The last visit to see David was made on January 6th 2011; David passed away unexpectedly just one month later.

6.4.1. The Multi-Period Assemblage

The Middle Saxon scatter is a major component of a larger palimpsest, which when buffered to 100m creates an irregular polygon that broadly follows the alignment of the present day A17 (Figure 6.2). This activity area contains 185 finds from four archaeological periods: Roman, Early Medieval, medieval and post-medieval (Figure 6.3); smaller activity areas containing one and two periods lie to the north and south east of the main assemblage.

Just four HER records fall within the multi-period activity area. In the west of the activity area is a scatter of Roman pottery and building debris (LHER 62842), and this is situated immediately to the west of the Roman Car Dyke. Possible Romano-British enclosure crop-marks are noted in the north-east of the scatter. Finally, in the east and within the area containing the densest PAS scatter is the medieval hamlet of Garwick. Garwick is first mentioned in document of late thirteenth-century date (Cameron 1998: 49). By the mid-eighteenth century at the latest the hamlet had disappeared and the land was set as meadows (Russell and Russell 1987). There are no HER records pertaining to the Early Medieval records within the PAS multi-period activity area.

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74 Several sites listed as 'near Louth', or as 'Louth A, B, C…etc' are listed on the EMC, but it their locations are unknown.
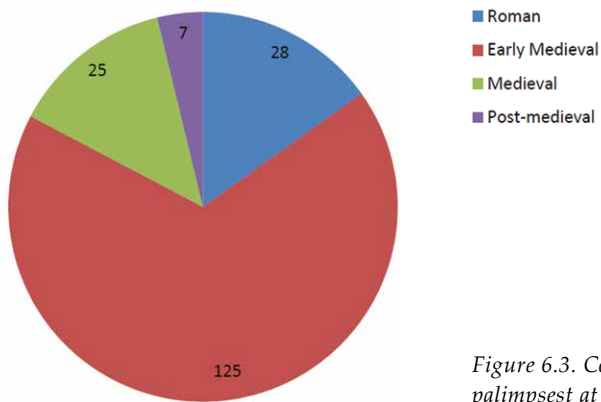
Figure 6.3. Composition of the PAS palimpsest at Garwick.
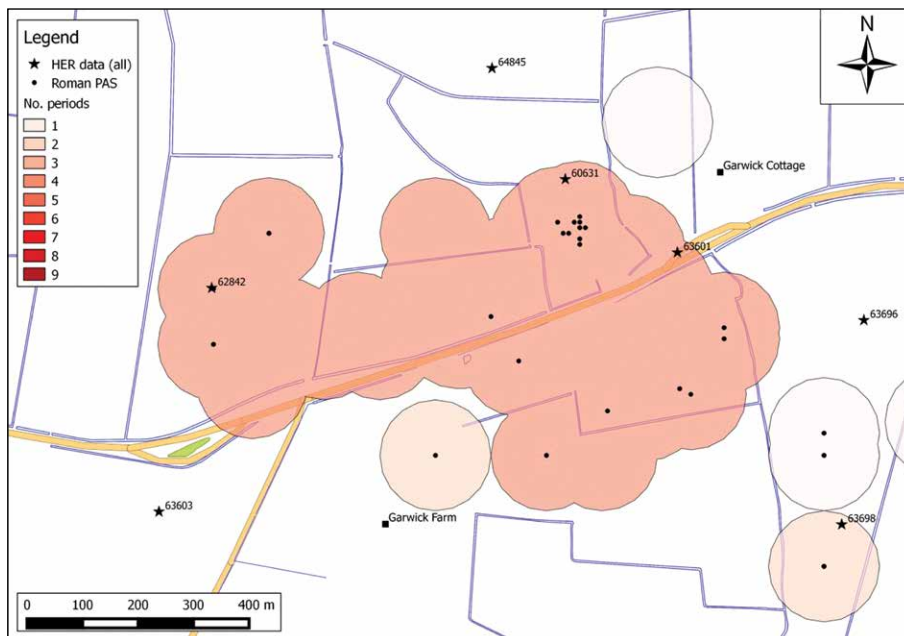
Figure 6.4. Roman period PAS data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

The spatial patterning of periodised PAS finds within the multi-period activity area is somewhat difficult to interpret owing to years of arable cultivation, but a few broad observations can be made (Figures 6.4-6.7). First, the main cluster of Roman period PAS data corresponds with probable Romano-British crop-marks and Roman pottery in the north-east (LHER 60631). Further thin scatters are seen in the south and west. The assemblage comprises just 17 coins, the majority of which are the usual types of fourth century nummi that are so common across rural sites.[75] The assemblage is at present too small to draw any conclusion from, however. The Early Medieval data is distinctively different, clustering within several fields north and south of the A17, in the vicinity of the medieval hamlet of

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75   No further Roman coins were contained within the fresh data download taken 12.1.2015.

PORTABLE ANTIQUITIES, PALIMPSETS, AND PERSISTENT PLACES
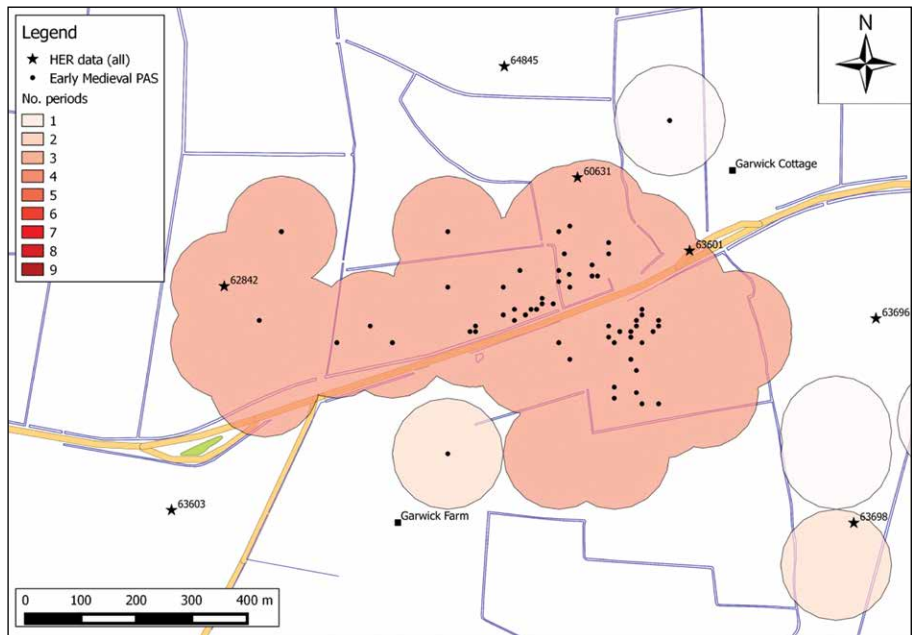
Figure 6.5. Early Medieval PAS data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
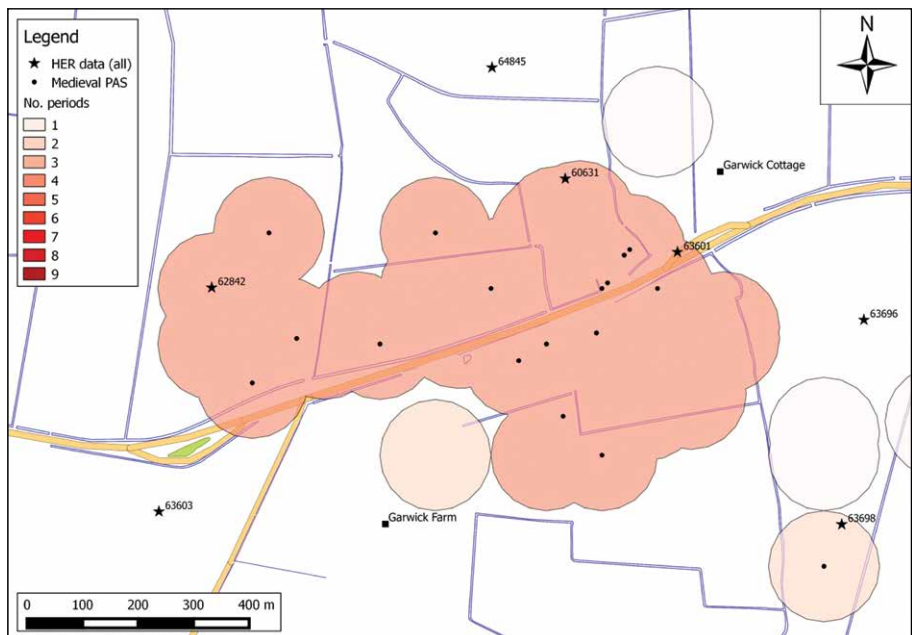
Figure 6.6. Medieval PAS data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
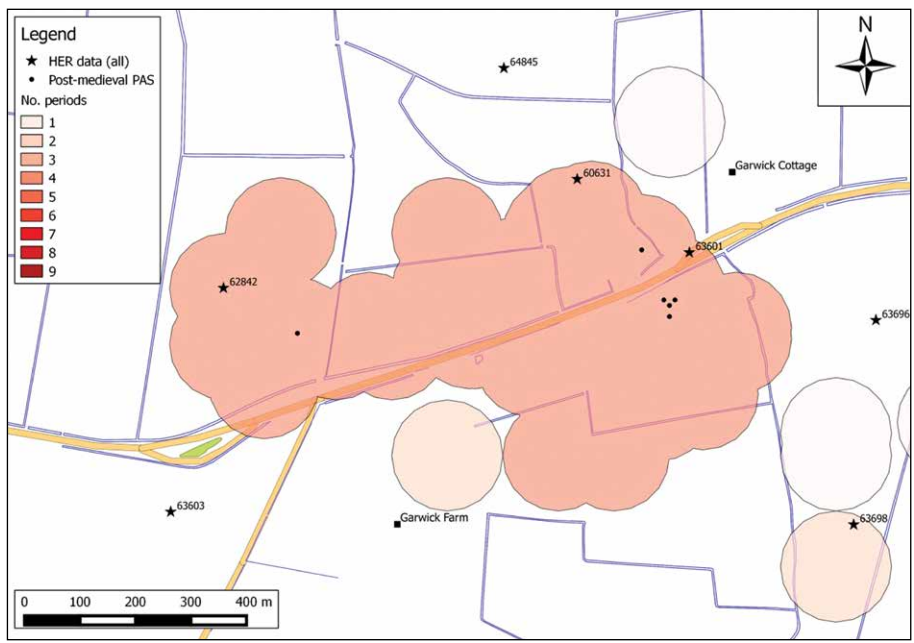
Figure 6.7. Post-medieval PAS data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
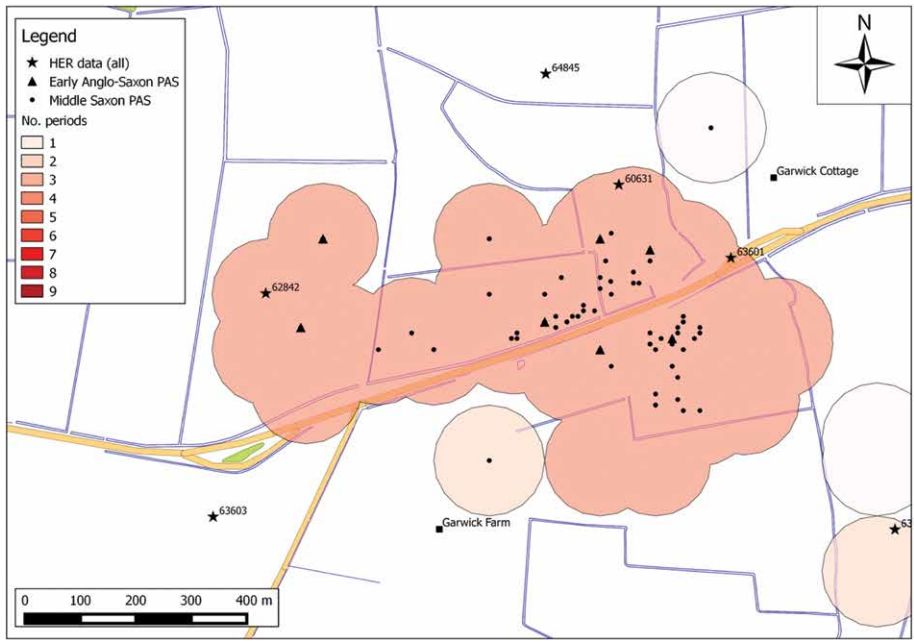
Figure 6.8. Early and Middle Saxon PAS data. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

   PORTABLE ANTIQUITIES, PALIMPSETS, AND PERSISTENT PLACES

Garwick.[76] Medieval finds, however, are thinly spread across much of the area, and those of the post-medieval period cluster almost exclusively around the hamlet.

Finer grained temporal patterning within the Early Medieval dataset shows a degree of intermixing, with hints of structuring within this. Fourteen of the 125 Early Medieval finds date to the sixth century, of which eight are cruciform or small-long brooches.[77] While the sixth-century material is found among the spread Middle Saxon material, five of the eight brooches are found immediately to the west of the Car Dyke – an area of the palimpsest from where no Middle Saxon finds have been recovered. In the absence of excavation it remains unclear from what context – grave or settlement – these brooches derive; however, the presence of a seventh-century inhumation to the east of the Car Dyke (LHER 65797) potentially suggests a degree of cemetery shift. A similar sort of structuring within the landscape was found at Sheffield's Hill, where the sixth-century cemetery was situated adjacent to, but not overlapping the seventh-century cemetery (Leahy 2007: 74). This is, however, about as far as we can go with this hypothesis in the absence of excavation.

6.4.2. The Middle Saxon Assemblage: General Observations

Within the multi-period activity area is one of the county's largest assemblages of Middle Saxon finds discovered through metal-detecting, comprising 89 coins and 23 artefacts of the types commonly found on so-called 'productive' sites – brooches, hooked tags, tweezers and strap-ends (Leahy 2000: 75; 2003: 147; Figure 6.10).[78] These finds were almost exclusively reported to the author by the late David Panton. While coins are a defining feature of so-called 'productive' sites, the relative lack of artefacts is perplexing. David often commented that he rarely found artefacts on the site, and he felt this was a true reflection of the character of the site rather than the result of others finding the larger artefacts before him. Indeed, David's observation mirrored reports given to the EMC from previous detector users, who said they too rarely found artefacts (Vince 2006: 175). The low proportion of artefacts is certainly perplexing and may be indicative of the site having been used for specialised activities (discussed further below). Yet, it may be prudent to handle this interpretation with some caution; the lack of artefacts may also be indicative of particularly attritional ploughing or land-use regimes that are not immediately apparent.

David's search permission area was much wider than this distribution (Figure 6.9), and while he regularly reported finds from other places, he was especially fond of this particular hotspot. This 'hotspot' is significant in that it represents the only 'productive' site in North Kesteven, which also happens also be one of the 'richest' in Lincolnshire as a whole. It does, however, form one node in a series of 'productive' sites situated on the fen-edge around the Wash

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76   It is to the place-name 'Garwick' which I refer in *Medieval Archaeology* 51 (2007), 221-2, not 'Heckington' as has been erroneously suggested (Hutcheson 2009: 264).

77   No further sixth-century material was contained within the fresh data download taken on 12.1.2015.

78   Contained within a fresh data download taken 12.1.2015.

Figure 6.9. Heckington Parish: All PAS finds (red dots) and David Panton's search area showed shaded in yellow. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).
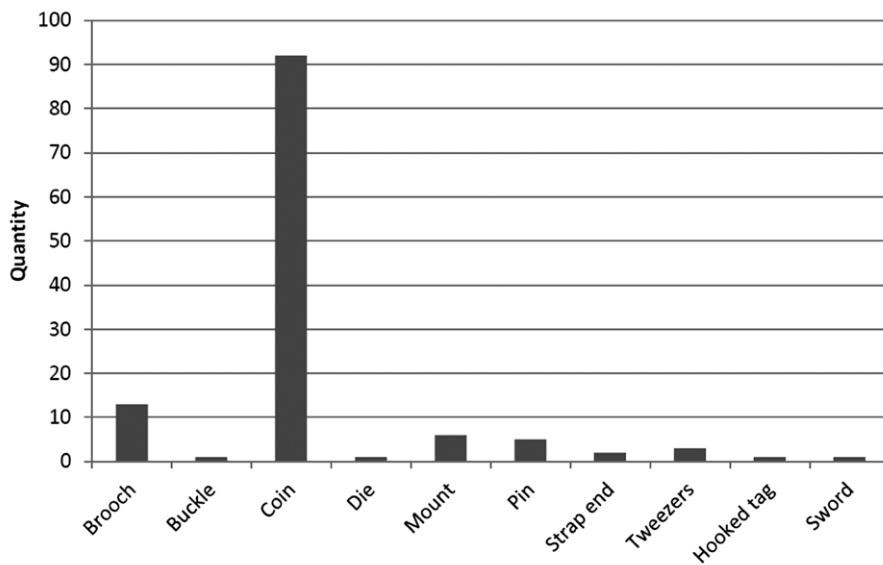
Figure 6.10. Object classification for Early Medieval finds from Garwick.

(Hutcheson 2009: 264; Loveluck 2012), and to this extent its presence is not altogether surprising.

Spatial patterning within the Middle Saxon assemblage suffers the same problems of horizontal displacement, and it would be hazardous to attempt to use them as indicators of settlement shift, especially in the absence of geophysics and/ or excavation (Figure 6.8). However, one observation can be made. Prior to PAS,

Vince noted that the information gained about the character of the site via the EMC – lots of coins but few artefacts – was not consistent with any type of site of which he was currently aware, unless the coins were from a scattered hoard (Vince 2006: 175). This problem could not be answered by the data recorded by the EMC due to the lack of location information; however, PAS data clearly show they are unlikely to have formed a hoard, particularly as they are found on at least three different fields, separated by man-made boundaries either side of the A17. More appropriately, these finds complement the widespread distribution of sceattas that characterise many other so-called 'productive' sites (Ulmschneider 2002: 336).

Numismatic evidence alone indicates activity between the seventh and mid-eighth centuries, with a peak in coin-loss coinciding with the main period of sceatta-use in the first half of the seventh century (Table 6.1). A quick comparison with the dates of the artefacts highlights the danger of relying on coin evidence alone; coin-use dramatically declines after about AD 750, after which activity is primarily indicated by artefacts. The tenth century is poorly represented by both coins and artefacts, but a low number of coins and artefacts indicate some activity continuing into the eleventh century. We must concede, then, that our view of persistence is hampered in the absence of information derived from ceramics and other sources of evidence.

Indeed, one must be cautious about the archaeological significance of these trends. While the concentration of coins at Garwick is unusual, especially for the first half of the seventh century, the general temporal pattern is mirrored at both national and regional levels (Blackburn 1993; Blackburn 2003: 32; Figure 6.11 & 6.12). Indeed, while early coin-rich sites were once rare, Garwick fits an emerging picture that is not in part owing to the reporting of finds from metal-detecting (e.g. Rendlesham in Suffolk (Naylor 2012: 257), Coddenham in Suffolk (Fleming 2009: 418), Drayton in the upper Thames, and Eastry in Kent (Blair pers. com).

Likewise, the decline in the number of artefacts at the end of the ninth century seen at Garwick is a common feature of 'productive' sites in Lincolnshire and beyond, many of which decline following the disruptions to long distance trade networks caused by Vikings and the breakdown of the Carolingian Empire (Leahy 2003: 143; Naylor 2004b: 55; Richards *et al.* 2009: 5.1). This is, however, a period in which metallic small-finds are relatively scarce anyway, so issues of legibility must also be considered (e.g. Loveluck and Evans 2011: 19).

The Coins

Arriving at the total number of coins reported from Garwick to various bodies is not an easy task (c.f. Naylor and Richards 2005: 85-7; Richards *et al.* 2009: 3.1.2). The EMC lists 73 coins from the site, and while this includes some of David's coins, it also includes examples reported by metal-detector users searching the site prior to David, but which are not recorded on PAS. Blackburn's article on the site, published in 1993 (prior to the establishment of the EMC in 1997), includes information on 141 coins (Blackburn 1993, reproduced in Figure 6.13), and this certainly does not include any examples recorded by David. Recently, Michael Metcalf has produced a list of 190 coins from the site; this includes the
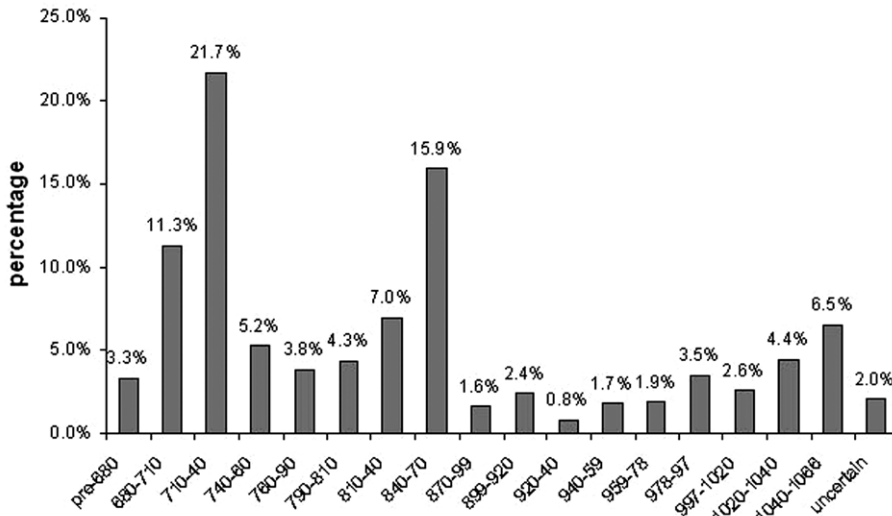
Figure 6.11. The coinage 'fingerprint' for the VASLE National dataset (reproduced from Richards et al. 2009: Figure 65).
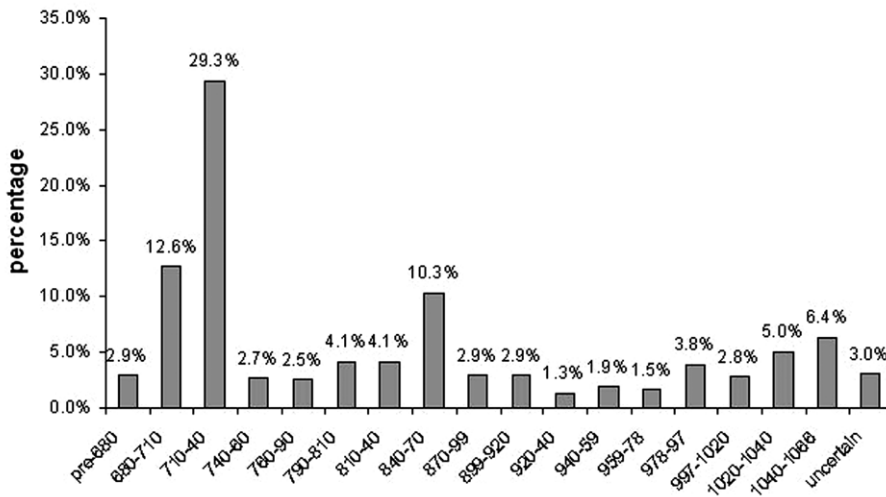
Figure 6.12. The coinage 'fingerprint' for the VASLE east central England dataset (reproduced from Richards et al. 2009: Figure 80).

73 examples from the EMC, and probably also includes some of those recorded in Blackburn's article (Blackburn 1993). The total number of coins reported may well then be in excess of 200.

Regardless of the total number, the profiles derived from these three sources are consistent with one another (Figures 6.13-15). All demonstrate the presence of gold coinage after circa 600, and both reflect a proliferation of Frisian sceattas in use during the opening decades of the eighth century, during which decade there
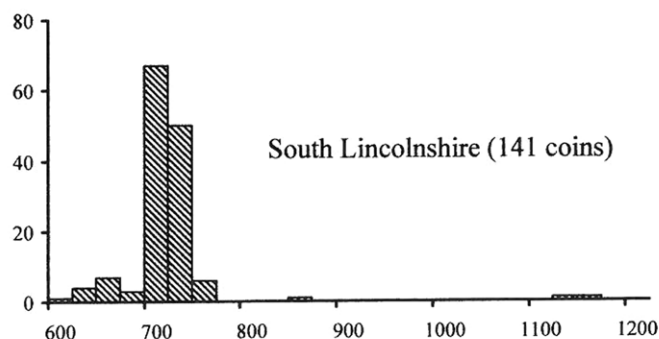
Figure 6.13. Histogram of coins from the 'South Lincolnshire' productive site (reproduced from Blackburn 2003).

Histogram of EMC search results
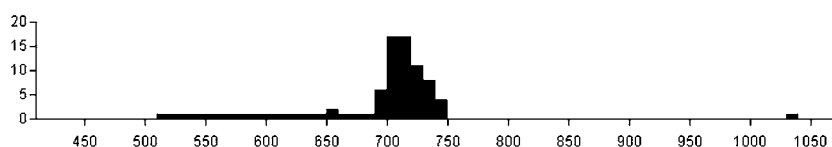
Figure 6.14. Histogram of coins from Garwick: Source – EMC.

Naylor Group	Date range	No. coins	Proportion of assemblage
1	Pre-680	6	7%
2	c. 680-c. 710	52	60%
3	c. 710-c. 740	28	33%
4	c. 740-c. 760	-	-
5	c. 760-c. 790	-	-
6	c. 790-c. 810	-	-
7	c. 810-c. 840	-	-
8	c. 840-c. 855	-	-
9	c. 855-c. 870	-	-

Table 6.1. Garwick: Early Medieval coins by Naylor groups (86 coins, not including three unidentifiable sceattas).

was a massive influx of silver coinage into England from the Continent (Blackburn 1993: 80).[79]

Before turning to examine several aspects of the coin assemblage in detail, an overview of the types and dates of the coins can be gained using Naylor's chronological groups (Table 6.1) – a method of categorising Early Medieval coins in a similar way to which Reece did for Roman coins (Naylor 2007; Reece 1987: 71-80).[80]

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79   Minor variations seen in the histograms around c. 700-750 are caused by dating conventions applied to the sceatta series. Sceattas are a difficult group to distinguish between the sub-categories within primary, intermediate and secondary types, and the majority of PAS records await validation.

80   Naylor places long-lived types of coins into the group which contains the longest portion of the issue (Naylor 2007: 46).

Viewing coins this way quickly establishes the main period of coin-use to occur in Group 2 – Primary and Intermediate phase – which Naylor identifies as being indicative of centres of economic importance, which were involved in long-distance trade (Naylor 2007: 47, 59). Naylor groups also reveal there to be a high proportion of early gold coins – a feature which is particular to Garwick when seen in its regional context (see below). Finally, there is a complete absence of coinage after Group 3, which in spite of a decline in coinage during this time, is still an unusual feature of the assemblage when viewed in its regional context (Figure 6.12). Further observations can be made by exploring groups of coins in further detail.

Gold coins, circa 600-700

As with the majority of coins of this period in England, the gold coins from Garwick derive from Merovingia. The six examples recorded on PAS include an example from an unlocated mint in Loiret or Sarthe (North-Central France), a tremissis of the Nietap type from Frisia, dating to circa 630-40 (PAS ref. LIN-58A436; Figure 6.15), and a tremissis, stylistically in the remit of the typical gold tremisses of the 'National' Series which date c.580-670 (PAS ref. LIN-DDE216). The EMC also records three gold Merovingian tremisses from 'South Lincolnshire' which complement the date ranges of the examples provided by PAS, but unfortunately these have no spatial information (EMC ref. 2000.0533, 2009.0021, 2000.0536). Curiously another tremissis of the Nietap type was recently reported to the EMC as coming from the parish of Heckington (EMC ref. 2012.0120). Again, no spatial information is known for this coin; however it is unusual given that all 230 or so Early Medieval coins from Garwick have come from just two fields that currently only one person has permission to search. The assemblage also includes a contemporary forgery of a Merovingian coin, a likely sign of commercial coin use (e.g. Fleming 2009: 418).

The gold coins alone highlight the regional importance of the assemblage; there are seven gold tremisses recorded on PAS as coming from Lincolnshire, and all but one is from Garwick. This highly restricted distribution supports a similar observation made by Naylor in 2004, who at the time was using a much smaller dataset (Naylor 2004b: 128). The coastal distribution of gold coins in Kent led

Figure 6.15. Gold Merovingian tremissis of the Nietap type from Frisia (PAS ref. LIN-58A436). Photo: Author.

1 cm

Naylor to suggest that the coins represented special payments – such as those used for the purchase of slaves – and which was probably fuelled by international trade (Naylor 2004b: 128). Interestingly, in the same publication Naylor notes that the same was suggested for the 'unlocated site in Lincolnshire…which could have been the location of a slave market' (Naylor 2004b: 128). This site, of course, is Garwick (Metcalf 2011).

Silver sceattas, circa 680-750

80 sceattas are recorded on PAS, and their break-down is given in Figure 6.16. The assemblage is dominated by sceattas of Frisian origin. Frisia played a major role in the 'commercial zone' of North West Europe and acted as an intermediary between the Continent, England and Scandinavia (Metcalf 1984; Heidinga 1999: 11; Campbell 2003: 16-19). The dramatic increase in coinage at Garwick indicates the strength of the trade links with the continent and its importance as a key social, economic and political site within the East Midlands (c.f. Naylor 2007: 59). Of particular importance is a cut primary silver sceatta of series C2, struck circa 680-710 (PAS ref. LIN-586D76). The coin has been cut into approximately one-third of its original size, and has a mass of one-third of its standard weight – 0.46g. The cutting of sceattas is a highly unusual practice and indicates trade.

The picture of trade that emerges from the coin is also supported by Blackburn's wider study of Middle to Late Anglo-Saxon coinage which suggests that single finds of coin reflect 'monetary activity' in the broad sense – that is, the more money there was on a site, the greater the chance of those coins being accidently lost (Blackburn 1993; Blackburn 2003: 34). Indeed, the wide spread of coins across multiple fields suggests poly-focal activity, rather than one or more dispersed hoards.
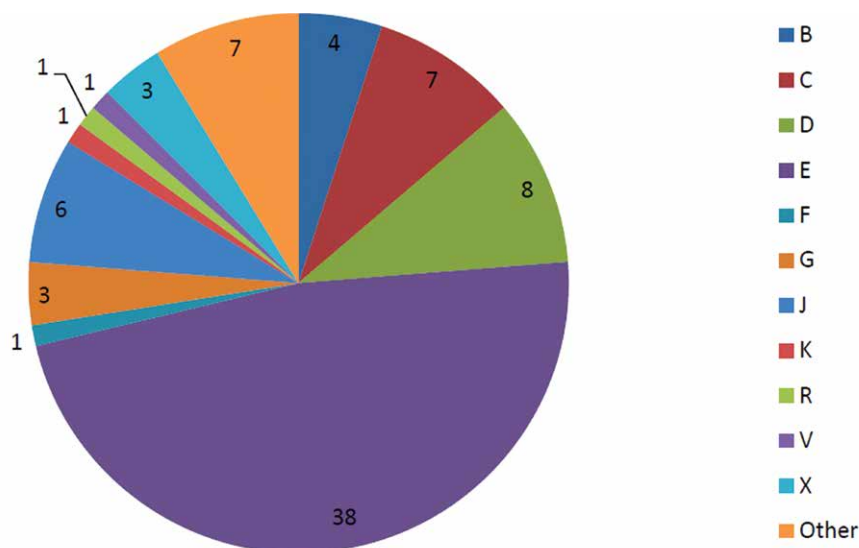
Figure 6.16. Garwick: sceattas by series.

Unlike the earlier gold coins, sceattas are found across Lincolnshire. Coinage was circulating well beyond coastal and inland trade sites, markets and central-places, indicating that the flow of money was not tightly controlled by the ruling elite (Metcalf 2011: 22). Indeed, many of the low-density PAS activity areas contain single or low numbers of sceattas, but these – like the high-density scatters – are often associated with routes of communication.

Pennies

Only three coins are recorded after the introduction of the broad penny c. 750 until the Norman Conquest. These coins include a silver penny of Aelfred 'Edward the Elder' type, struck 871-899 (PAS ref. LIN-4E3E27), a silver penny of Cnut, struck 1029-1035/6 (PAS ref. LIN-9709E5), and a silver cut halfpenny of Edward the Confessor 'Expanding Cross type', struck circa 1042-1066 (PAS ref. LIN-424414).

This absence in part reflects the decline in the number of coin finds around the mid-eighth century throughout southern England (Blackburn 1993: 83), and while there is a genuine absence of Northumbrian stycas of the middle part of the ninth century at Garwick, this is not of any consequence given that only two of the 86 stycas recorded on PAS come from Kesteven. It is even less surprising given that Kesteven was for the most part under Mercian control; it appears that Northumbrian stycas rarely crossed south of the River Witham. Equally, coin finds dating between c. 875 and 975 are scarce in England (Blackburn 2003: 83), and so the presence of just one coin at Garwick for this period cannot be read as indicating a lack of activity.

However, Naylor has identified several sites in Northumbria where coin loss after the mid-eighth century declines to below-expected levels – a trend which he suggests indicates not just the decline in international networks that also occurs during at this time, but also a 'restructuring of the markets and tolls', and a 're-focusing of economic activity to local matters' (Naylor 2007: 58). To this extent it may well be notable that the coin sequence at Little Carlton – the second case study in this Chapter – is almost the inverse to that seen at Garwick. Nonetheless, the evidence from PAS data other than coins from Garwick indicates that economic activity did nonetheless continue, albeit in a different guise (see below).

The Artefacts

While the number of artefacts discovered at Garwick is exceedingly low compared to most other 'productive' sites, several items warrant particular mention. Some hint at high-status activity, while several others hint at a persistent tradition of cutting down precious metals, apparently beginning in the sixth century and continuing into the ninth, perhaps for their use as non-monetary forms of exchange (Naylor 2004b: 129). All, however, complement the emerging pattern of high-status production and consumption marked by the coinage, and the presence of cut precious metal objects finds parallels with other sites containing gold coins, such as Coddenham, Suffolk (Fleming 2009: 417).

The first is a copper alloy pressblech die used for making gold foil mounts in Style I decoration (PAS ref: LIN-4F6CE7) – one of only two examples recorded on PAS for Lincolnshire. The gold foil mounts that were produced using these dies are a distinctive feature of high-status sites in England and within the North West commercial zone (Watt 1999). No examples of these foil mounts have been recorded from Garwick, but it appears that one was found by David many years ago. David mentioned that during one of his first few times out metal detecting he discovered a clump of gold foil, which he assumed to be modern foil and subsequently threw into a nearby dyke. Years later he realised this was in fact a gold bracteate. When questioned over its current whereabouts, David said that he was reluctant to go back and search for it owing to the large population of rats that inhabit these dykes.

Gold bracteates originate in Scandinavia in the fifth and sixth centuries and local copies belonging to the sixth century are known in England as both single finds and as grave goods (Ager 2004: 81). Bracteates are also well known high-status objects on 'productive' sites, and examples have been found across North West Europe (Fabech 1999: 41; Behr 2007). They were worn by high-status women, and the objects themselves are thought to have acted as 'amulets, status markers, and symbols of power' (Gaimster 2011: 880). The identification of the object as a bracteate will only be confirmed on its rediscovery, but the context of the site would support the anecdotal evidence. Regardless, high-status activity around this period is also represented by a copper-alloy 'cocked hat' sword pommel dating to the sixth or early seventh century (PAS ref. LIN-7B7528). The absence of gold casing – commonly seen on other items with a bronze core (TAR 1998-1999, no. 60; TAR 2003: 85, no. 117) suggests the item may have been stripped for its bullion value.

Direct evidence for the purposeful fragmentation of precious metal objects in this early stage in the development of Garwick is also tentatively seen in a silver lozenge-shaped brooch dating to the sixth century or earlier (PAS ref. LIN-EDD8D2; Figure 6.17). Lozenge-shaped brooches appear to have been developed on the Continent from Roman models in the Early Medieval period, and are occasionally found as 'imports' in England (c.f. PAS ref. SWYOR-DB3CC5; Ager 2011). Their dating may be earlier that the sixth century, but in England at least one is known from a sixth century Anglo-Saxon inhumation (Parfitt and Brugmann 1997: 45, Figure 39).

The potential use and trade of precious metal at Garwick is further indicated by three fragmentary gold artefacts of eighth-century date (Treasure ref 2009 T562a-c). Two are small gold mounts or 'buttons' with applied decoration; the third is a flat piece of sheet gold decorated with filigree swirls and circles, now roughly triangular in plan with each edge probably having been cut to size. Similar decorative features are also seen on plated sword pyramids (e.g. Newark, Notts TAR 1998-9, no. 62). A cut fragment of a pin head or square brooch of Frisian type also provides tentative evidence of reworking precious metals (PAS ref. LIN-EDD8D2 with ref. to SWYOR-DB3CC5). The date of the object depends on the identification, but ranges from the mid sixth to eighth century.
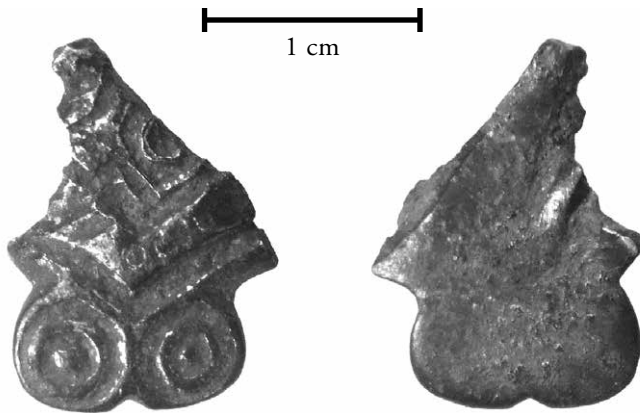
Figure 6.17. Silver lozenge-shaped brooch. Photo: Author.
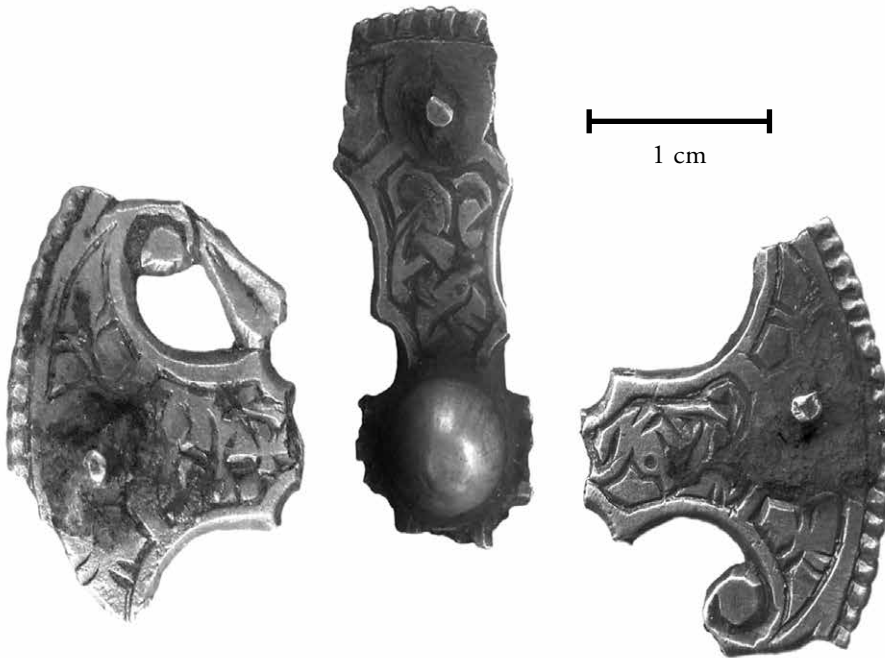
Figure 6.18. Fragment of a ninth-century openwork silver disc brooch (Treasure ref. 2004 T162; 2009 T368). Photo: author.

Three fragments of the same ninth-century silver openwork disc brooch have been discovered widely distributed in the same field (Treasure ref. 2004 T162a-b, 2009 T368; Figure 6.18). While their dispersal in the same field may indicate recent horizontal displacement, the presence of cut marks suggests purposeful – not accidental – fragmentation. This observation is also supported by the mass of the fragments which are 1.5g, 1.6g and 2.8g (i.e. almost twice the amount as the first two).

The archaeological significance of these items can only be speculated; however, it is intriguing to note that the majority appear to correspond to the period c.760-870 during which there was a substantially reduced circulation of coinage (Davies 2010b). Davies notes that this period of reduction coincides with 'Naylor's Phase 3 of coin circulation', characterised by greater royal control' (Davies 2010b: 98,

referencing Naylor 2007: 59. To this extent we might hypothesise that these cut items represent the re-emergence of a gift-exchange economy (Davies 2010b: 99).

This brief overview of the palimpsest does, then, suggest the presence of a high-status Middle Saxon site which emerged from a longer-term biography of activity extending back into the Early Anglo-Saxon and Roman periods. Similarly, while activity appears to have continued into the ninth century and beyond, the nature of this appears to have changed from one which saw high-level engagement with international trade, to one which perhaps took on a more regional or local focus, or even a period of decline or abandonment (e.g. Richards *et al.* 2009: 4.4.54). The relatively coarse-grained nature of the palimpsest does, however, reduce our ability to comment on finer-scale depositional events in the absence of excavation. Accordingly, in order to contextualise the palimpsest further, we need to turn to the wider landscape.

6.4.3. The Landscape Setting

LiDAR data shows that the assemblage is situated within a spur of high ground projecting out from the Fen Edge (Figure 6.19). This spur represents the closest piece of high ground between Kesteven in the west and Boston Haven in the south-east, and these two places are now linked by a modern road, which is raised slightly from the surrounding low-lying land. This perhaps hints at the strategic location of the site – a common feature of 'productive' sites (Pestell and Ulmnschneider 2003a). This trend led Ulmschneider to suggest that 'productive' sites were heavily involved in the exploitation of natural resources, utilising a variety of landscapes for activities such as hunting, fishing, animal husbandry, farming, and salt-production – commodities which could easily be sold or exchanged (Ulmschneider 2003: 78; Hamerow 2004: 137).

Further interpretative possibilities are seen within elements engrained in the historic landscape. The palimpsest comes from an area of land that was later to become the site of the medieval and post-medieval hamlet of Garwick (Figure 6.20). Only two traces of the hamlet survive in the modern landscape; the first is in the name of a farmhouse, and the other in the name of a roadside café.

The place-name is first documented in the late thirteenth century, where it is seen as 'Gerewic' (Cameron 1998: 49).[81] Cameron proposed that the first element of the place-name Gara- might be the Old English personal name 'Gaera', and that the second element -wic might be taken to mean a dwelling, specialised building, a

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81   Only one other similar place-name is recorded in Lincolnshire, at Stow near Torksey. Here, a 'Gorwick' lane forms the north-south boundary of the medieval deer park (HER 50418). The name 'Gorwick' is first recorded in the thirteenth century and has been interpreted as meaning 'dirty farm' (HER 52514); however the fact that the lane encloses a large triangular plot of land might suggest that the etymology should be understood in the same manner as 'Garwick'. Stow was the location of an Anglo-Saxon minster during the Middle Anglo-Saxon period, and although the site of the minster is some distance away, the location of 'Gorwick' lane at Stow deer park might be significant. Bond has pointed out that records of 'hays' and 'leapgates' in Anglo-Saxon charters show that some forms of land-use connected with the management and trapping of deer existed well before the Norman Conquest (Bond 2004: 174). It is also worth noting a potential association with the 24 Early Medieval coins that are recorded on the EMC as coming from 'Stow' or 'Sturton by Stow' (EMC; Blackburn 1993:89; HER 52509). The assemblage includes four sceattas, a styca, a penny of the eighth century, six of the tenth and twelve of the eleventh century.
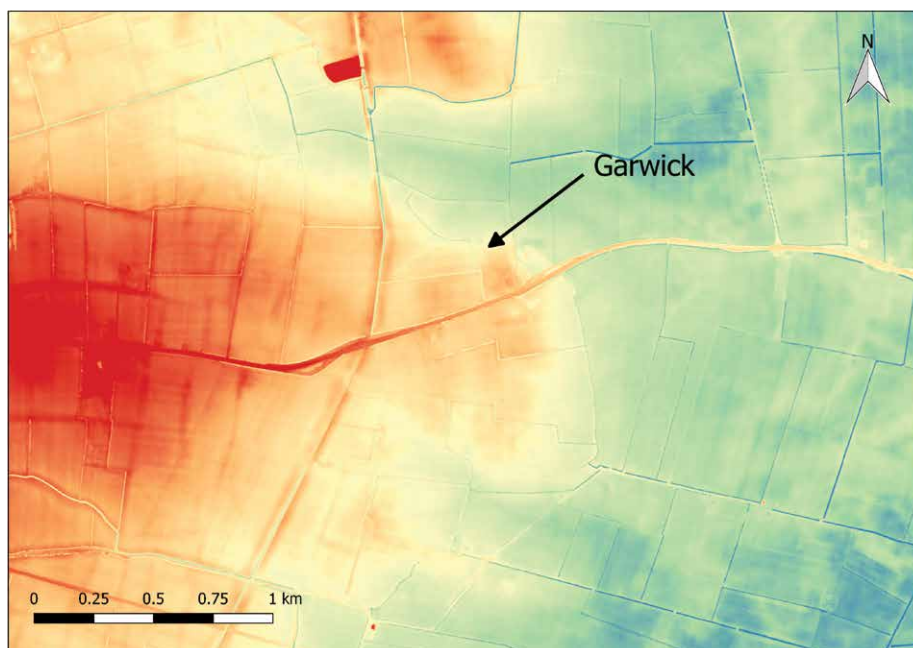
Figure 6.19. LiDAR image showing the landscape setting of Garwick.
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farm or dairy farm' (Cameron 1998: 49; Ekwall 1960: 192), perhaps as a dependent economic unit (Draper 2011: 94).

The temporal and archaeological significance of wic is variable, but a close correlation with Roman sites has often been noted (Draper 2011: 94-95). The palimpsest from Garwick continues this trend, being an assemblage containing a large quantity of Roman finds found adjacent to a stretch of the (probable) Roman Car Dyke (Simmons and Cope-Faulkner 2004). Other Roman features lie close to the Middle Saxon assemblage; a Romano-British saltern is situated to the southeast, and a substantial Romano-British cropmark complex lies to the north. Draper concedes that it is 'dangerous to argue a point from spatial coincidence' (Draper 2011: 95), but his observation of a link between Latin-derived Old English place-names and settlements with high-status (and possibly, ritual) function might be of significance regarding the antecedent landscape at Garwick. Indeed, his suggestion that the place-name element may also indicate a dependent economic unit resonates with Green's suggestion that the Middle Saxon site at Garwick may have served as the trade element of a multiple estate dependent on Sleaford (Green 2012; discussed further below). Before considering this argument, some comment needs to be made on the first element Gara-.

While a derivation from a personal-name is possible, Ekwall suggested this may alternatively derive from the Old English Gara, meaning a triangular piece of land (Ekwall 1960: 192). This latter interpretation is interesting in the light of features engrained within the modern landscape that may reflect some sort of 'triangular' division of the land. As was the case at many other sites in Lincolnshire, the Car Dyke appears to have formed a boundary in the landscape in the Anglo-Saxon
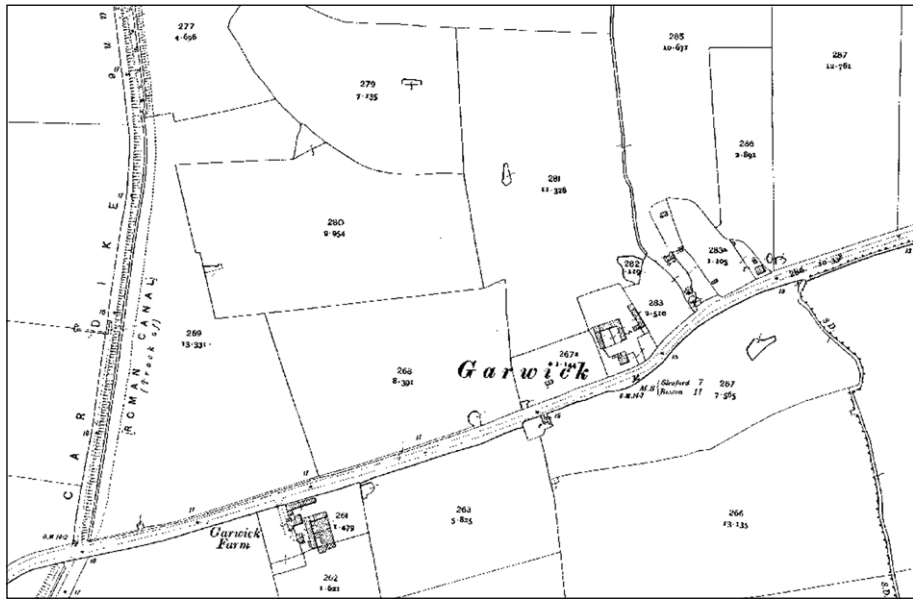
Figure 6.20. The place-name Garwick as shown on the OS Map of 1905. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

period (Cope-Faulkner 2004: 31). At Garwick, it appears to separate a probable sixth-century inhumation cemetery to the west, and the Middle Saxon assemblage to the east. Curiously, although the parish boundary between Heckington and Great Hale follows the Car Dyke to the south of Garwick, it dog-legs around the main concentration of Middle Saxon activity, and instead picks up the north-south alignment again to the east of the concentration (Figure 6.21).

David's search permissions did not extend southwards or eastwards beyond the parish boundary, and this observation must be treated with due caution. However, while medieval parish boundaries are later than the assemblage, a close relationship between the two has also been noted at the 'productive' sites at South Newbald and Melton Ross. Here it has been suggested that the earlier political or administrative boundary used by the site had an aftershock in the later political or administrative division of the landscape (Leahy 2003: 149; Leahy 2000: 54-5). Lewis *et al.* found a similar relationship, demonstrating that in some cases medieval territorial boundaries, including parish and township boundaries may preserve the outline of boundaries of much earlier date (Lewis *et al.* 2001: 71).

The landscape evidence for Gara- meaning 'triangular plot of land' is circumstantial, and can be duly criticised for selectively choosing attributes within the landscape that fit the theory. However, this interpretation has not been made in isolation; a similar suggestion was made for the Early Medieval meeting-place by the name of 'Gore' at Hovenden, Middlesex. Here, the place-name 'Gore' is lost on contemporary maps, and is preserved only in the Hovendon Maps of 1597 where the place-names 'Gore fields' and 'Gore lane' are seen. In this instance the map shows a wooded triangular piece of land next to Gore field, which is likely to be where the hundred met (Brookes and Baker 2011).
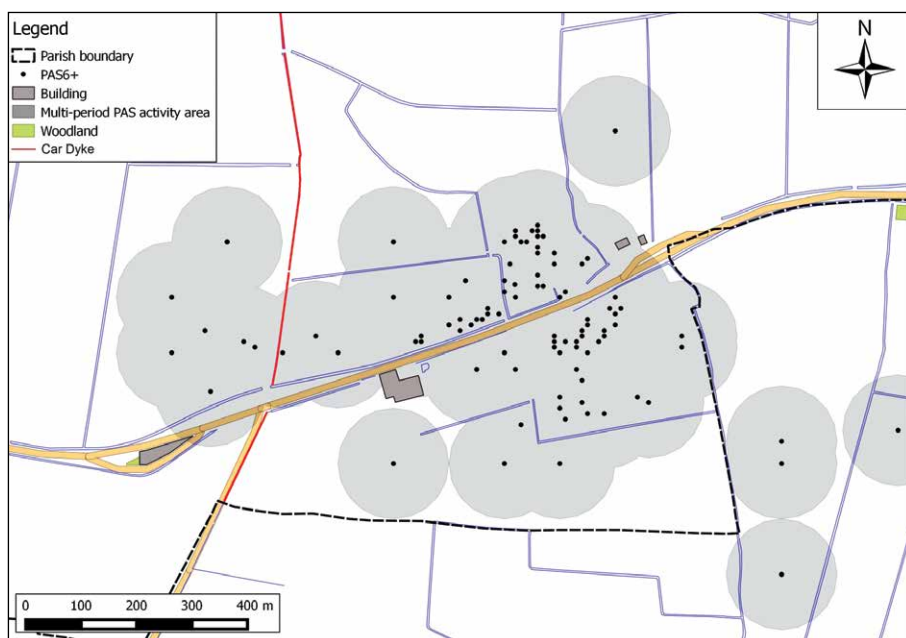
Figure 6.21. Garwick, showing parish boundary and Car Dyke. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

The significance the Garwick palimpsest in its wider landscape setting has been the subject of a recent study by Green, who used both the antecedent and the post-Saxon landscape to illuminate the nature of Middle Saxon activity (Green 2012: 192ff). Essentially, Green has argued that Middle Saxon Garwick acted as the provision for the aristocratic centre at Sleaford. The present town of Sleaford lies some 12km to the west, and is thought to have been an important centre in the late Iron Age and Roman periods (Green 2012: 192), a suggestion which owes in part to its early place-name – the 'ford over the Sliowa' (Cameron 1998: 112) – and also the discovery of late Iron Age coin moulds (May 1976: 177).

Green argued that the important regional status that Sleaford held in the Roman period continued into the sixth century, an observation made not just on the clustering of Anglo-Saxon cemeteries in the North Kesteven, but also on the basis that the town contains one of England's largest sixth-century inhumation cemeteries, including some 600 graves (Green 2012: 192ff; Sawyer 1998: 217).[82] Turning to the topography of the wider area, Garwick would, then, have probably formed the first high ground from the Wash, and this may have stimulated its existence as a trade-centre.

Turning to the post-Saxon landscape, Green suggests that 'echoes' of Middle Saxon activity are found within the Domesday book, where Sleaford is mentioned as a soke-centre, with dependent estates scattered across several parishes to the

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82   Indeed, both Green (working on Lincolnshire) and Hutcheson (working on Norfolk) have recently noted that many early Anglo-Saxon 'central places' in the region were located on – or were close to – sites which were significant in the late Roman period and indeed in the post-Roman period (Hutcheson 2009; Green 2012).

east, including Heckington (Green 2012: 192ff; Roffe 1979, 15-17; Roffe 2000b). That Sleaford was also a pre-Viking estate centre is suggested by a ninth-century charter (Kelly 2009: no. 9), and while Green notes that it is hazardous to assume 'all Domesday sokes reflect earlier estates', he suggests there is evidence nonetheless that the medieval estate structure is of some antiquity (Green 2012: 193).

Indeed, this suggestion complements a hypothesis put forward by Roffe in 2000, several years before finds from Garwick began to be reported to PAS. Roffe suggested that the lands immediately to the east of Sleaford, in which Garwick is located, were previously grouped as a multiple estate, which provided tribute to Sleaford (Roffe 2000b). Traces of this multiple estate are visible in the medieval landscape, as they are also in the landscape today, where place-names within the multiple estate lands east of Sleaford suggest that it composed several sites with defined functions. Roffe points to Kirkby 'the settlement of the church'; Quarrington, 'the settlement of the millers' (Taylor *et al.* 2003); and 'Burg', 'the defended settlement of the estate' (Roffe 2000b). Green's suggestion that Middle Saxon Garwick acted as a high-status trade site, therefore, fits into the wider emerging picture of structured land-use within a territory centred on Sleaford (Green 2012: 193).[83] Indeed, parallels can be seen in the hinterland of Ipswich, a town which is argued to have begun as a polyfocal settlement containing a series of discrete market areas (Fleming 2009: 410-417). Within ten kilometres of the town are found sites involved in craft production and trade, including the 'productive' sites of Coddenham, and Barham (Richards *et al.* 2009: 4.4.2, 4.4.14; Fleming 2009: 417).

The suggestion that Garwick formed one node in the territory of Sleaford gains further credence when considering Hutcheson's observation that the 'South Lincolnshire Productive Site' may have operated as a trading focus within an estate – an observation made without knowing the exact location of the site (Hutcheson 2009: 266). Hutcheson made this suggestion based on the similarity of the Garwick coin profile to that from Bawsey in Norfolk (Hutcheson 2009: 266). Hutcheson saw Bawsey as essentially having some functions which would in a later period be characterised as urban, such as the conversion of agrarian wealth into portable wealth through taxation (Hutcheson 2009: 266). Bawsey also shares a similar landscape setting to Garwick, and given that both are littered with large quantities of animal bone it may well be that they were involved in large-scale specialist meat-salting, as were several other sites near the Wash (Palmer 2003: 54; Hutcheson 2009: 266).[84]

Similar to many other Fen-Edge 'productive' sites, economic activity appears to have been impacted by the collapse of international trade networks following the Viking incursions (Richards *et al.* 2009: 5.1). However, it appears that regional trade was also reduced to a minimum, and this requires further speculation, particularly regarding the role of the Car Dyke, which as we have seen, formed

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83 Blair has also recently postulated whether Sleaford, Quarrington, Burton Pedwardine, South Kyme and Garwick were all part of the same ecclesiastical complex, hinted at by the aforementioned charter of the 850s, which showed *Medeshamstede* (Peterborough) to hold extensive properties in the area (Blair pers. com.).

84 The animal bone from Garwick is yet to receive scholarly attention.

the western boundary to Middle Saxon activity at Garwick. Blair has hypothesised that the Car Dyke may have stimulated Garwick as serving as some kind of transit-point between inland communications and the Wash water-system. Following Blair, we can also observe that the Car Dyke linked Garwick to Peterborough – the site of Medeshamstede, a monastic establishment which is likely to have held Sleaford (and in turn, following Green and Roffe, perhaps also Garwick) as part of its pre-Viking estate (Sawyer 1998: 82). Indeed, many of the Lincolnshire holdings of Peterborough Abbey prior to the conquest include lands which are traversed by the Car Dyke (Cope-Faulkner 2004: 31).

In support of the Car Dyke acting as the stimulus for Middle Saxon trade at Garwick is the strong pottery-link between Quarrington and Northamptonshire (Taylor *et al.* 2003) – a trade that would surely have been water-bourne via the Wash (Blair pers com).[85] In this light we might wonder at what point the Car Dyke became silted-up to the point that it became unnavigable. While it is now understood to have been formed of several sections (Cope-Faulkner 2004) – which undoubtedly were modified or went out of use at different times – excavation along the Car Dyke at Baston suggested that it was navigable until at least into Early Anglo-Saxon times, eventually silting up completely in the post-Roman or medieval period (Zeffertt 1991: 12). It may be, then, that the Viking incursions coincided with a period in which the Car Dyke became unnavigable – a sort of 'perfect storm' which led to the rapid demise of its role as a trade-centre.

By the medieval period Garwick was little more than a hamlet, and PAS data reveals only a small cluster of associated finds, distributed tight to it. Rather, the main area of activity appears to have shifted westwards to what was to become the present day settlement of Heckington. This was apparently also the fate for the neighbouring settlement of 'Burgh' (Roffe 2000b). Kirkby and Quarrington fared better, though both were modest settlements at the time of Domesday.

By 1765 the hamlet of Garwick had disappeared entirely, and the fields on which the Middle Saxon activity took place were simply known as 'Garwick North Meadow' and 'Garwick South Meadow' (Russell & Russell 1987: 90; Figure 6.22). The Parliamentary Enclosure Award map of 1765 shows these two fields to be divided by a lane that appears to be the predecessor of the current route of the A17 from Sleaford to Boston. These field names too became lost on later editions of maps, with twentieth century maps only hinting at the former hamlet through the name of a farm and a roadside café. The pattern of field systems visible on the 1765 map does, however, show that the fields on which the Middle Saxon assemblage is located was already defined as 'old enclosures', as opposed to being open fields and commons, perhaps reflecting upon the deserted hamlet (Smith 2012: 150). Curiously, the lower half of these 'old enclosures' appears to form the remnants of a triangle, perhaps providing further evidence for the hypothesised place-name.

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85   It has been suggested elsewhere, however, that the Car Dyke served as a catch-water drain rather than as a navigable waterway (e.g. Simmons 1979: 189). For the full discussion the reader is directed to Simmons and Cope-Faulkner 2004.
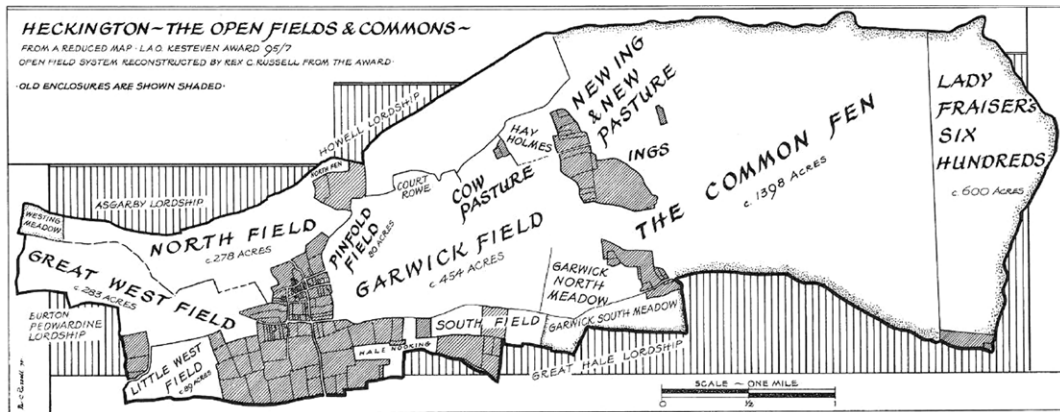
Figure 6.22. 1765 Award Map for Heckington (Reproduced from Russell & Russell 1987).

6.5. Case study: Little Carlton

The second case study palimpsest comes from Little Carlton, near Louth (Figure 6.23). The parish of Little Carlton is located in the Lindsey Marsh, presently some 9km from the coast. The medieval/modern settlement of Little Carlton itself is situated on the 10m contour line where glacial till meets alluvium, and is one of much longer string-line of extant settlements that contain Anglo-Saxon or Scandinavian place-name elements; these include Manby, Reston, Great Carlton, Grimoldby, South Cockerington and North Cockerington.

The medieval/modern settlement lies between the two waterways – the Beck and the Old Eau. These waterways merge at the northern end of the site to form the Long Eau. The Long Eau then meanders some 12 km north-east towards the coast where it meets the Great Eau and then, originally, would have flowed out to the North Sea at Saltfleet Haven. While the site is relatively close to the coast, Fenwick's model of coastline change demonstrates that the landscape was habitable from the Bronze Age at least (Fenwick 2007; Figure 6.24).

Temporal mapping of merged HER and PAS data shows Little Carlton to be a clear persistent place within the Lindsey Marsh (Figure 6.23), displaying a far greater temporal depth than the surrounding landscape. Finer-scale mapping of PAS data shows it to be formed of two palimpsests on high ground surrounded by marsh, though in reality these should probably be seen as one palimpsest that is artificially divided by post-medieval/modern settlement (Figure 6.25). Given that the Little Carlton persistent place is formed by just one palimpsest, it is most appropriately understood as a cumulative palimpsest (Bailey 2007: 204-205).

6.5.1. The Multi-Period Assemblage

Similar to Garwick, the PAS assemblage forms a high-density multi-period activity area (Figure 6.25). At the time of second data collection (12.1.2015), the PAS assemblage included 420 records pertaining to 1,112 individual finds, reported
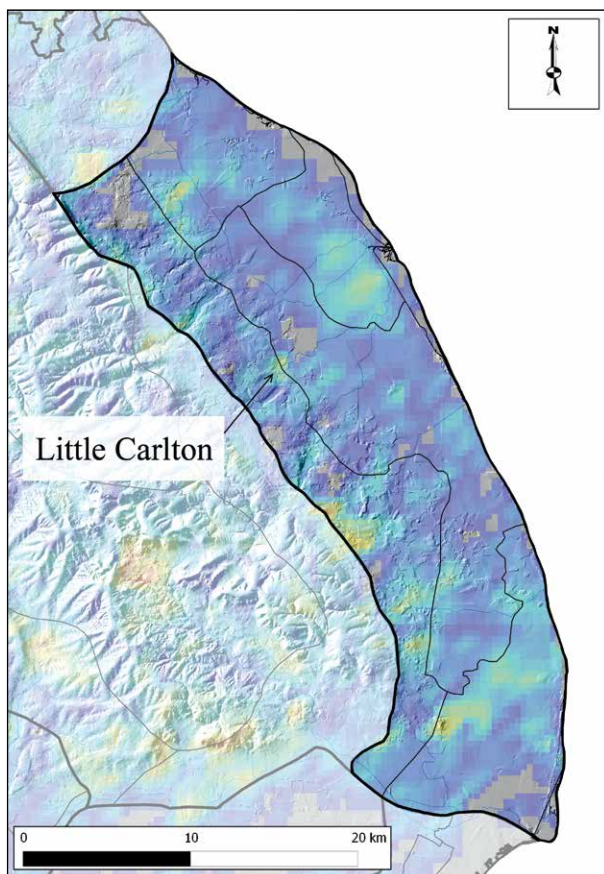
Figure 6.23. Temporal diversity in the Grazing Marshes HLC Area (merged HER and PAS data). © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

Figure 6.24. Suggested coastline, Bronze Age (A), late Iron Age/Roman (B), Saxon (C), medieval (D), showing the settlements of Alvingham (Alv'hm) and Little Carlton (LC) (Reproduced from Fenwick 2007: Figure 7.20). Aby is situated off the map to the south.
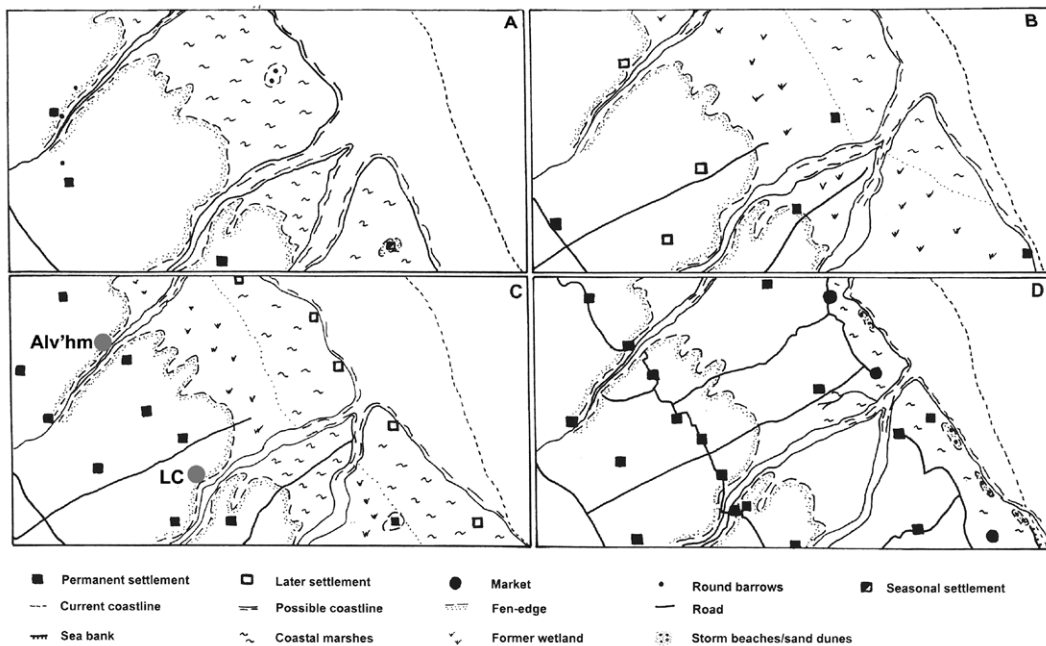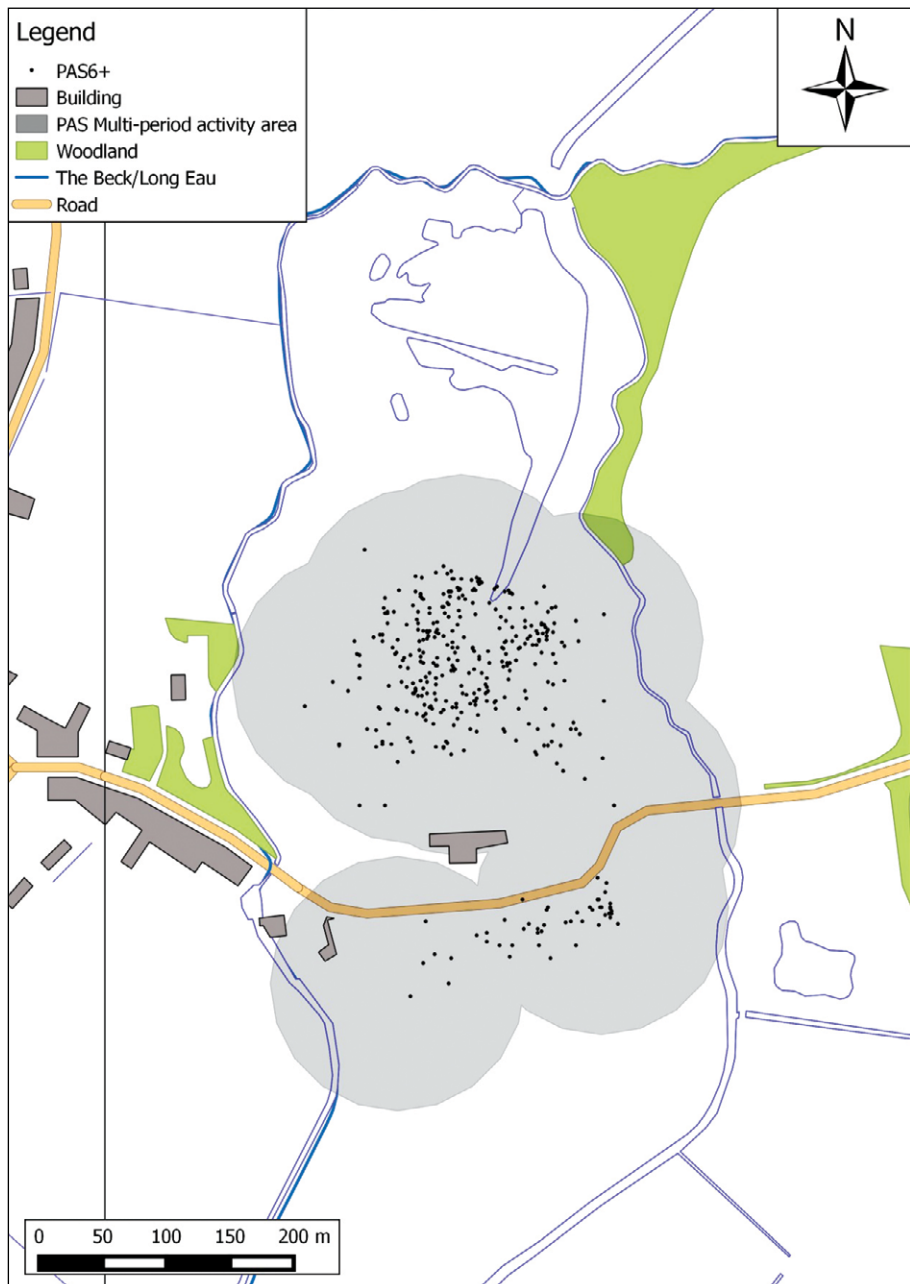
Figure 6.25. Multi-period activity area and PAS6+. The church of St Edith is situated north of the road, close to the 'T-shaped' building between the activity areas. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

by two metal-detector users.[86] All finds come from just two fields; one is located to the north of the church of St Edith, and the other to the south, though the majority come from low-lying marsh ground north of the parish church.

The Beck and the Old Eau merge at the northern of the ground. 419 finds have been reported by Graham Vickers using a GPS, while the remaining object – a Late Saxon strap-end – was recorded in 2003 by a different finder. These finds represent the late Iron Age, Roman, Early Medieval, medieval, and post-medieval periods, though similar to Garwick, the assemblage is dominated by Middle Saxon artefacts (Figure 6.26). Indeed, the assemblage has only recently been found, but is proving to be one of the most 'productive' of all Middle Saxon sites in the county, not just in terms of the density of finds, but also their range and quality.

The finder has diligently recorded each item using a GPS, and this shows a distinct concentration in the northern half of the field. Inevitably, however, there is a degree of horizontal displacement, though perhaps not on the scale that might be expected given the relatively small size of the field. Of more concern is the recent large-scale movement of earth undertaken to improve flood defences. GoogleEarth imagery shows that at some time between 31.12.2003 and 17.4.2005 a large quantity of soil was excavated from the northern part of the site to make a large wetland area (Figure 6.27). Much of this soil was used to raise a bank along the eastern edge of the Long Eau, and the scooped out area was created into a wetland habitat. While the majority of soil was used to form the banks, it is unclear whether additional soil was levelled out over the southern half of the field where the finds are located.

No prehistoric material has been found at Little Carlton, but the assemblage does include a small and rather eclectic group of Roman finds, comprising two early copper-alloy brooches, a silver finger ring of late first or second century date, a worn sestertius, two House of Constantine nummi, a spoon bowl, and a silver snake bracelet. The Roman assemblage is somewhat of an enigma. The dates of these artefacts are somewhat haphazard, representing all four centuries of the Roman period but in very small quantities, and the inclusion of two silver items, sestertii, and a spoon bowl are indicative of higher-status activity. No Roman sites are known in the vicinity; however, the area to the south is presently masked by several buildings, and therefore may mask the Roman site proper. Indeed, it may also be the case that Roman occupation layers are now deeply buried by sediment, with the finds being brought up through ditch and drain digging, and through dredging. Of course, these could all be finds accidently imported with topsoil, but the range of finds seems unlikely. There is also the possibility that the Roman finds do not represent activity in the Roman period at all, but instead represent items curated into the Early Medieval period. Such was the case at Tattershall Thorpe, and further parallels for the curation of Roman artefacts into the Middle Saxon period come from the 'productive' site at Coddenham in Suffolk, where Roman metalwork was converted into base-metal clothes fasteners and belt-stiffeners (Plunkett 2001: 64, 77, 81; Fleming 2009: 419).

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86   22 finds are undateable. The larger number of finds as opposed to records is due to one record for several hundred Middle Saxon pottery sherds, discussed further below.
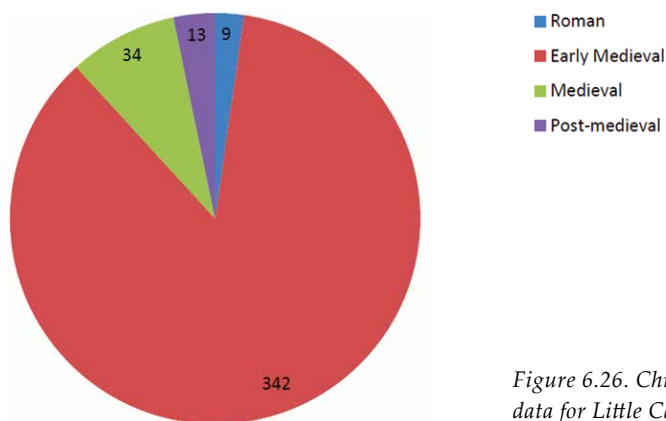
Figure 6.26. Chronological profile of PAS data for Little Carlton.

Figure 6.27. The Middle Saxon fields at Little Carlton in 2015, showing the wetland habitat in the north. Copyright 2015 University of Sheffield.

Two finds warrant special mention, as they provide potential evidence for continuity into the early post-Roman period, and in turn suggest the 'Roman' assemblage is contemporary with the Roman period. From within the heart of the Middle Saxon scatter has been found two items that indicate high-status activity in the late Roman and early post-Roman period. The first is an amphora-shaped strap-end dating between the fourth and early fifth centuries (PAS ref. LIN-0C5BF1; Bishop and Coulston 1993: 173-179; Figure 6.28).

The second is a British penannular brooch of Fowler's type G, dating to the fifth or early sixth century (PAS ref. LIN-35B2BE; Figure 6.29), which as we have previously seen is a type of object that may be indicative of high-status British-Anglian interaction (Green 2012: 71). This particular item is unusual in that it has enamelled terminals. Although rare, it can be paralleled with an example found in

Figure 6.28. Late Roman or early post-Roman strap-end (PAS ref. LIN-0C5BF1). Photo: Author.
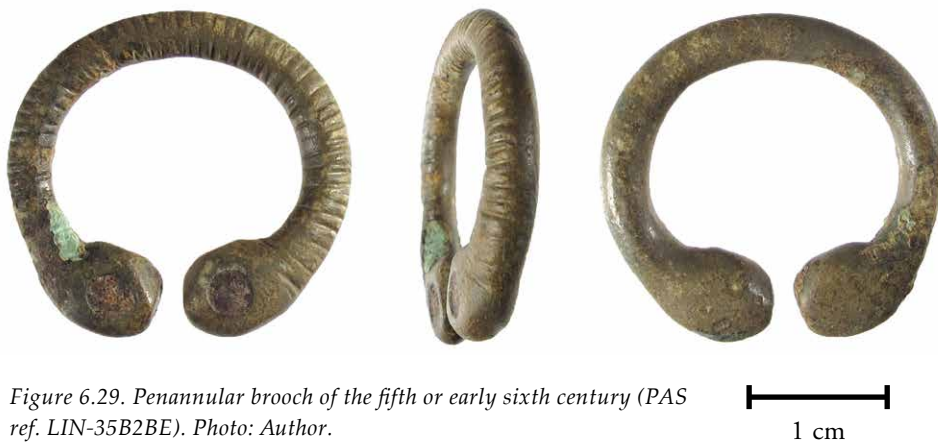
Figure 6.29. Penannular brooch of the fifth or early sixth century (PAS ref. LIN-35B2BE). Photo: Author.

a sixth-century grave at Fairford, Gloucestershire (Dickinson 1982: Figure 4, 13). Only one sixth-century Anglo-Saxon brooch has so far been found within the Middle Saxon activity area, however, and while little can be made of this at present, it may well prove significant in the light of the biography that is emerging.

6.5.2. The Middle Saxon Assemblage

Little Carlton lies within a lowland landscape in which Middle Saxon finds are limited when compared to other areas of Lincolnshire (Fenwick 2007: 147). Several years on from Fenwick's observations and the trend still holds true today. This is also the case for HER data, which has only one other record for Middle Saxon activity in the surrounding area – this being an assemblage of Torksey ware discovered in a pit in the neighbouring parish of Manby (HER 43636). Indeed, prior to PAS nothing was known of Middle Saxon activity at Little Carlton, though a later tenth- or eleventh-century Anglo-Saxon grave-cover was known from the parish church of St Edith (LHER 43417; Stocker and Everson 1999: 221ff).
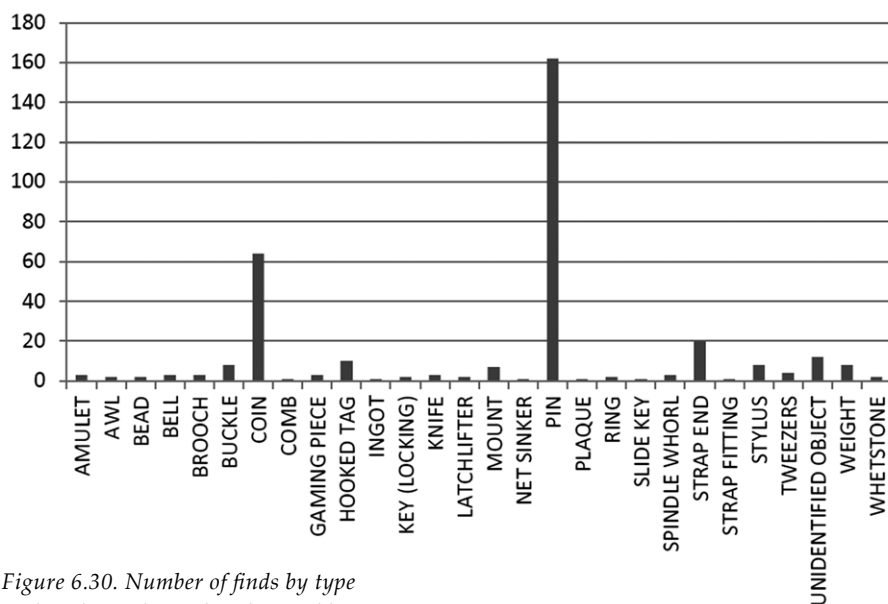
Figure 6.30. Number of finds by type within the Early Medieval assemblage at Little Carlton.

The Middle Saxon PAS assemblage includes a large number artefacts of the types that typify 'productive' sites: pins, hooked tags, tweezers and strap-ends are found in abundance, in addition to 64 coins (Figure 6.30).[87] However, the assemblage includes an unusually large quantity of styli – eight in total, including one example in silver – in addition to other unusual high-status finds such as bells, glass mounts and an inscription in lead.

Much of the assemblage is difficult to date precisely, but in general the artefacts and coins indicate activity spanning the late seventh to the end of the ninth century (Table 6.2). In contrast to Garwick, activity appears to begin slightly later, perhaps around the beginning of the seventh century rather than the sixth; no gold coins have been found at Little Carlton thus far. The quantity of artefacts from Little Carlton aligns the assemblage more closely with other 'productive' sites in the region such as South Newbald (Leahy 2000). Moreover, the character of the artefacts – which includes high-status finds such as glass settings and an inscribed lead plaque – bears more resemblance to Flixborough in North Lincolnshire (Loveluck 2007).

Before discussing several of the more significant coins and artefacts, it might be prudent to mention a number of anecdotal claims of finds being made on the site prior to it being searched by a responsible metal-detector user.

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87 A large quantity of ironwork has also been recovered, but this is largely undateable. Indeed, while iron is a common find on 'productive' sites, an entry in the Bailiff's accounts for the manor of Little Carlton, AD 1471-2, provides evidence for the abundant use of iron in later times. Here, the construction of one house required 1,000 stake nails, 300 medium nails, 2,000 lathnails, 8 great nails, 4 gudgeons, 4 iron plates, and 4 iron clasps (Owen 1996: 54).

These reputedly include a gold Anglo-Saxon finger-ring (Sotheby's sale LN8739 "European Sculpture and Works of Art", London 16 December 1998) and a silver-gilt pin comparable to an example found in South Norfolk (PAS ref: NMS-E6A365). The gold ring belongs to the late tenth century and is decorated with two bands of scrolls and granules. The silver-gilt pin head bears filigree spiral decoration of Margeson's 'Early' group dating to the eighth and ninth centuries (Margeson 1995). A second gold finger ring dating to the later Early Medieval period was also allegedly found on the site by previous detector users. No photograph of this ring has been shown to the author however it has been described as being the 'Kings Ring'. Both objects are, however, types that are found on high-status 'productive' sites (Ulmschneider 2000b: 65). Furthermore, it is possible that some of the coin-rich sites recorded on the EMC as 'Louth A, or Louth B', or 'near Louth', relate to Little Carlton, However, the lack of spatial data makes any associations with Little Carlton impossible.[88]

The Coins

The assemblage includes 64 coins, comprising 49 sceattas (c. 680-c.790), 14 pennies (c. 760 onwards), and one styca (c. 790-866). The remaining item is a lead coin, provisionally identified as a seventh-century forgery based on either Merovingian or Anglo-Saxon prototypes (PAS ref. LIN-A4A5A5).[89] An overview of the coin assemblage according to Naylor Groups is given in Table 6.2 below (Naylor 2007).

It is immediately apparent that the numismatic evidence is almost the inverse to that from Garwick. There are no coins from Groups 1, and those from Group 2 are exceedingly scarce. Rather, the peak lies in secondary sceattas of Group 3, and coin use over the following century and a half is relatively well represented. In general, then, coin-use began somewhat later at Little Carlton than at Garwick. Nonetheless, similar to Garwick, the large number of sceattas probably illustrates the elite status of the site and its potential role as a node within the wider network of long-distance trade and contact. Indeed, the relatively high proportion of Series J sceattas is intriguing in the light of Naylor's hypothesis that these coins were probably issued somewhere in Lindsey (Naylor 2006; Figure 6.31).[90]

By viewing these coins by Naylor Groups, we are able to make several further observations. The large number of Group 3 coins, with small numbers in the adjacent Groups, is unusual. Naylor notes that the trend for Northumbria at least should be one in which Group 3 coins are found in similar proportions as Group 2, with a large increase in coin loss in Group 4 (Naylor 2007: 54). This trend was identified by Naylor at several other sites in Northumbria, including Kilham, 'near

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88   The EMC lists 33 coins from various sites known only as 'near Louth' with the further distinction of 'site A, B, C, D, E or H'. These include seven sceattas with the rest being broad pennies from the late eighth century onwards.

89   Naylor points to a similar find made in the 1980s recorded as coming from 'near Louth', Lincolnshire (see EMC ref. 1987.0034). This is of similar design and proportions, and was assigned to this earlier period (Naylor, J. notes within PAS record online).

90   27 Series J sceattas are recorded on PAS from Lincolnshire; the next densest concentration is the five coins from Garwick.

Naylor Group	Date range	No. coins	Proportion of assemblage
1	Pre-680	-	-
2	c. 680-c. 710	6	10
3	c. 710-c. 740	43	67
4	c. 740-c. 760	1	2
5	c. 760-c. 790	2	3
6	c. 790-c. 810	5	8
7	c. 810-c. 840	3	5
8	c. 840-c. 855	2	3
9	c. 855-c. 870	1	2

Table 6.2. Little Carlton: Early Medieval coins by Naylor groups, 63 coins (plus 1 illegible sceatta).
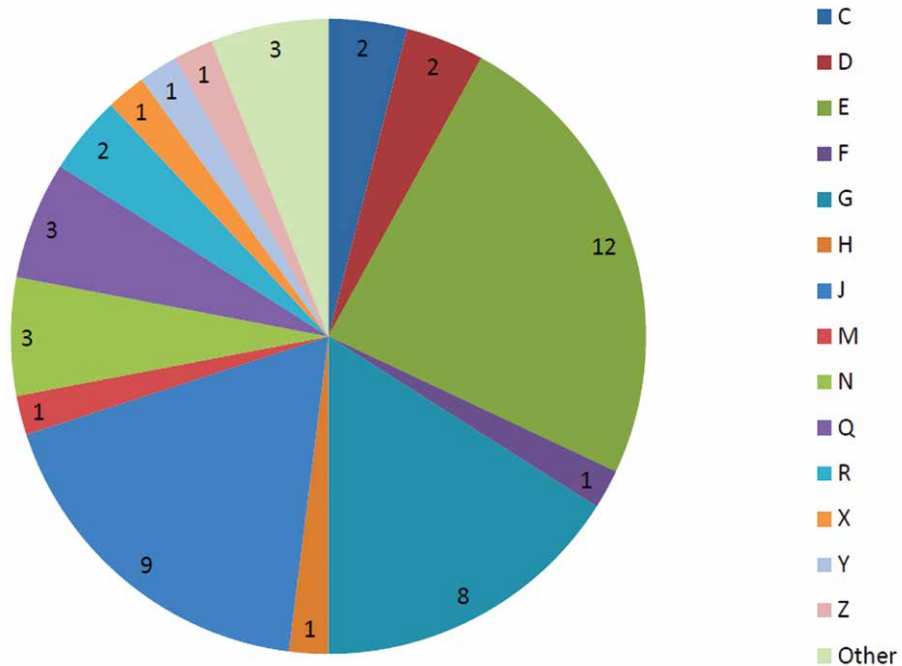
Figure 6.31. Little Carlton: sceattas by series.

Malton, Fishergate, and Whitby Abbey (Naylor 2007: 55), where such sites were interpreted as indicating a regional economy that 'based itself around smaller-scale markets or toll stops, regulating traffic moving along the major communication routes from the coast' (Naylor 2007: 55). In this respect the coin assemblage almost certainly reflects upon the landscape setting of Little Carlton, located along two waterways leading to a major coastal inlet.

The 14 coins that represent the second half of the eighth century and beyond are equally of interest, though the sample is at present too small to draw conclusions from, other than noting that the pattern of coin-loss suggested by the sample follows the national trend to a large degree (Naylor 2007: 54ff). The assemblage comprises a penny of Cynethryth, wife of Offa (765-796), one of Eadberht of Northumbria (737-8), and five pennies of Offa of Mercia (757-796). The ninth

century is represented by two pennies of Ecgberht of Wessex (c. 802-839), one coin of Burgred of Mercia (852-874), one of Aethelwulf of Wessex (839-858), one of Aethelstan of East Anglia (c. 825-845), one of Coenwulf of Mercia (796-823), and a copper-alloy styca of Aethelred II of Northumbria (844-50). The probable origins of these coins present a rather mixed picture, and should this pattern be reinforced by further finds, it may indicate that Little Carlton was an important site that had a wide sphere of influence (c.f. Naylor 2007: 51).

The Artefacts

While much of the Middle Saxon assemblage fits the wider pattern of material culture known from productive sites (e.g. pins and strap-ends), several artefacts require more detailed comment, beginning with the styli. More styli have now been reported from this single field than from Lincolnshire as a whole (eight of eleven examples). Quite whether these items were used for religious or secular purposes – or both – is unclear. The presence of styli on sites has often been used as evidence for a monastic establishment, but Pestell points out that only a minority of styli have actually been discovered on monastic sites and they could equally point to secular literacy (Hinton 2005; 96; Pestell 2009: 125, 128). This view sharply contrasts with Blair (2011), who argues there is abundant evidence for their ecclesiastical use, and little evidence for their use for secular account-keeping (Blair 2011: 101-8). Perhaps supporting an ecclesiastical use is the example from Little Carlton dating to the eighth or ninth century, which is decorated with crucifix motifs (Figure 6.32).

Literacy is also evidenced by the discovery of a lead tablet – perhaps used in a funerary context – inscribed with the Old English female personal name 'Cudburg' (PAS ref. LIN-66AD26; Okasha 2014; Figure 6.33).[91] According to Okasha, the script used is of a form that seems consistent with a date preceding the early tenth century, and could well have been done by someone accustomed to writing on vellum (Okasha 2014). Styli and inscribed lead plaques are, of course, objects that Ulmschneider preliminarily identified as being indicators of unusual or 'productive' sites, and this observation appears to be strengthened by the Little Carlton finds (Ulmschneider 2000b: 65).

An array of other spectacular finds has been discovered at Little Carlton, and some of these provide stronger association with Christianity. Two spectacular domed bi-chrome glass mounts have been found in the plough-zone, and both can be dated to the mid-eighth to ninth century (PAS refs. LIN-C31CD7, LIN-252D32; Figures 6.34 and 6.35). Similar glass domed studs are known to have decorated the now lost hanging bowl found in the river Witham and the Ormside silver bowl, and parallels for the settings come from Whitby Abbey (Cramp 1976a; Webster & Backhouse 1991, no's 134, 107 l.i), and the Anglo-Saxon monastery at Monkwearmouth, County Durham (Cramp 2006: 261).

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91 A number of inscribed lead crosses and lead plates are known, presumed to be funerary objects on the basis of their texts (Okasha 2004 no. 212, pp 228-9 and figs; see also no's 229 and 230).

Figure 6.32. Copper-alloy stylus (PAS ref. LIN-01A6A1). Photo: Author.

Figure 6.33. Lead block with inscription (PAS ref. LIN-66AD26). Photo: Author.

Figure 6.34. Glass setting (PAS ref. LIN-252D32). Photo: Author.

Further potential links between Christianity at Little Carlton are seen in a small brazed iron bell from the site (PAS ref. LIN-B17DA7; Figure 6.36). The bell is made from a single piece of iron that has been folded in two and brazed with copper alloy, which is a manufacturing process well known on early Christian bells of Ireland, many of which have been found on monastic sites (Bourke 1980). Those known from Scotland – which are also assigned a seventh- or eighth-century date – have been interpreted as evidence for the activity of Columban monks and the influence of the Columban church (Bourke 1983: 466). The use of bells within Christian contexts is also well documented in this period where particularly the larger bells may have been used for summoning Christians to worship, and also in liturgy (Ottaway 1995: 6; 2009a).

Figure 6.35. Glass setting (PAS ref. LIN-C31CD7). Photo: Author.

In England Anglo-Saxon bells have been found on a variety of high-status sites and also within graves, and the series demonstrates a greater range of sizes to those from Ireland and Scotland (Ottaway 1995: 7; Hinton 2000: 44; Richards and Roskams 2013). The present bell is smaller, but similar in form to one discovered in the grave of an Anglo-Saxon smith at Tattershall Thorpe, Lincolnshire, dated to between circa 660-670 (Hinton 2000: 44, Figure 30). The condition of the Tattershall Thorpe bell suggested that it was already old at the time of deposition, and the location of the item in the grave demonstrated that it belonged with other tools rather than with the scrap metal. Iron bells have also been found in association with iron tool hoards elsewhere, however, at Flixborough (Ottaway 2009b: 256) and Mastermyr (Arwidsson and Berg 1983: note 15, 28-9), and other examples from graves have all been dated to the seventh or early eighth centuries (Hinton 2000: 45; Geake 1997: 102). Several parallels have also been found at Brandon, Suffolk (Tester *et al.* 2014: 274).
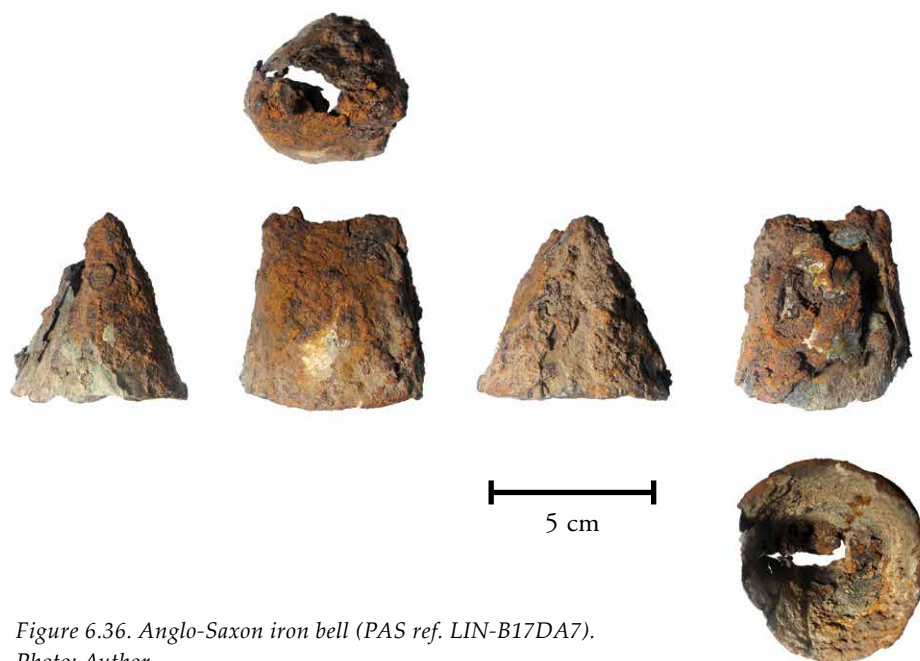
Figure 6.36. Anglo-Saxon iron bell (PAS ref. LIN-B17DA7).
Photo: Author.

The social and religious context in which smaller Anglo-Saxon bells were used is unclear at present. Those from Brandon were suggested to have been used as animal bells; however, their frequent occurance in graves would seem to suggest they held deeper social and religious significance. Indeed, bells have been found accompanying males, females and children (Hinton 2000: 47), and an example from Flixborough decorated with a pair of incised crosses may indicate a sacred significance (Ottaway 2009: 256a).

While several items from Little Carlton indicate religious activity, then, it would be hazardous to draw interpretations much further from the plough-zone palimpsest. Indeed, while many of the items discussed can be paralleled by finds from Brandon in Suffolk – a site which previously had been identified with a monastery – excavations have revealed a palimpsest of occupation, which also includes trade and settlement aspects (Carr *et al.* 1988; Pestell 2004: 224; Tester *et al.* 2014). Such was also the case at Flixborough (Loveluck 2007).

The metal-work from Little Carlton does, nonetheless, complement the evidence for high-status activity and long-distance trade displayed through the ceramics recovered from the site.

The Pottery

The Little Carlton assemblage is particularly unusual owing to the exceptional quantity of Ipswich ware and continental imports found on it – of which only a small proportion has been sampled by the finder. This small sample already comprises some 15,180g of pottery dating from the mid-eighth century onwards, however. 9834g of this is Ipswich ware dating c. AD720-850, and included in the assemblage are also three sherds of Badorf-type ware (Blinkhorn 2014).

The Ipswich ware now represents the largest assemblage outside East Anglia apart from the wic of London (Blinkhorn 2014). Ipswich ware is uncommon in large quantities in Lincolnshire, though a notable quantity has been recovered from Flixborough, which before Little Carlton represented one of the largest assemblages outside East Anglia (Blinkhorn 2009: 358). In one sense the topographical location of this assemblage is not unusual; the East Midlands Anglo-Saxon Pottery Project demonstrated Ipswich ware to be distributed across much of East Lindsey and the Fens, but with continental imports being restricted to sites within circa 10km of the coast and the Humber, with pottery from Lincoln being the exception (Vince and Young 1990-1). Such coastal sites have been argued to have royal, ecclesiastical and/or market connections (Blinkhorn 2009: 358), and this suggestion would appear to resonate with the wider Little Carlton palimpsest. The presence of Badorf ware also supports the picture that is emerging from the metalwork; many inland sites that produce Badorf ware come from 'lordly' settlements, or from sites that have ecclesiastical associations (Blinkhorn 2014).

6.5.3. The Landscape Setting

The 'signal' that the palimpsest emits suggests an important Middle Saxon site which emerged from a longer-pattern of land-use that may have included military and/or official activity in the late Roman period. Undoubtedly, more could be discussed regarding material culture. However, following the themes established by previous case studies, this Chapter turns to the landscape setting of the palimpsest to further illuminate its archaeological significance.

The topographical setting of the Little Carlton assemblage complements the wider pattern for sites or 'major estate centres' containing large coin assemblages to be located some 10-15km inland from the coast, and often close to a major navigable river (Loveluck 2012: 131; Naylor 2012: 239). Indeed, the two waterways at the northern end of the field at Little Carlton merge to form the Great Eau, and this meanders to the coast at Saltfleet – a site which developed into a major port in the medieval period. In this respect the site at Little Carlton is not unusual, sitting alongside other medium-density activity areas in the Lindsey Marsh at Alvingham and Aby. Nor is the chronological signature unusual; the Little Carlton palimpsest mirrors the wider trend identified in PAS data, being a high-density activity area that has emerged from a Roman form of land-use that may have included some sort of official or military presence.

It is in this context of persistent and apparent high-status use of the site that we might consider the field-name on which the majority of finds have been discovered. During a meeting with the finder and the landowner, the author was shown the Tithe Award map of 1820 for the parish, which revealed that the field producing the Middle Saxon assemblage was once known as the 'Bruff' (Figure 6.37).[92] This field-name probably reflects a local pronunciation of the

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92 'Bruff Farm' also occurs at North Kelsey, though in this instance it is not known if it has any archaeological significance (Cameron 1991: 181). It might be of interest, however, that the village place-name denotes a dry island surrounded by marsh – similar topographically to the site at Little Carlton.
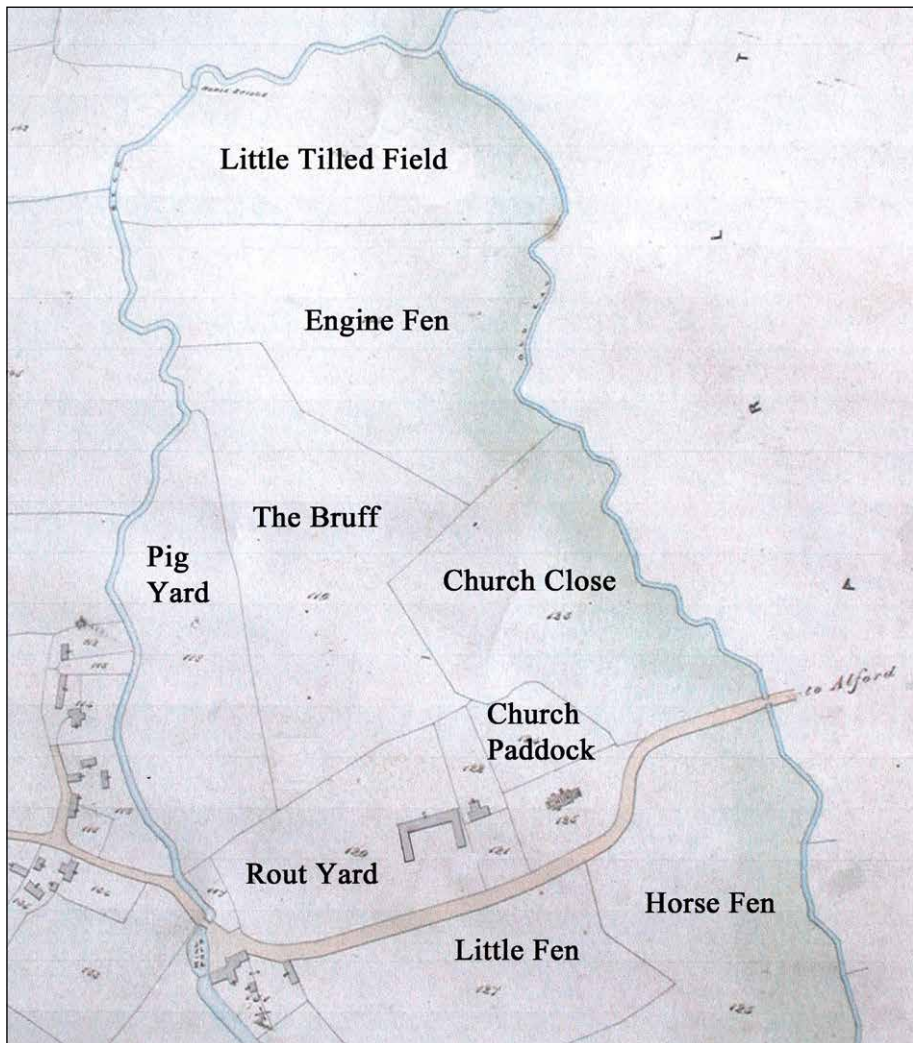
Figure 6.37. Little Carlton Tithe Award map of 1820 with field-names inserted. Photo courtesy of Graham Vickers.

word burh, which in turn derives from Old English burh – a 'defended site' (Sawyer 1998: 85). In some instances in Lincolnshire it occurs at places that are not known to have prehistoric or Roman fortifications, such as at Gainsborough (Vince 2006: 176), and others such as at Washingborough, and Stallingborough, where the first element incorporates a folk-name that hints at pre-Viking origins (Vince 2006: 176). Indeed, the relationship between burh and Bruff is also seen at Brough in Nottinghamshire, where the Old English element was spelled Bruff in the seventeenth century (Green pers. com).

Quite what the 'Bruff' refers to at Little Carlton is unclear, but it is possible that it was a local term used to describe a field on which there were earthworks. One can only speculate on this, but the presence of a late Roman military belt fitting, a post-Roman high-status British penannular brooch, and an abundance of Middle Saxon finds from this field is intriguing. Furthermore, it is of interest

to note that the Middle Saxon assemblage found some 7km to the north on the Alvingham/Yarburgh parish boundary also contains the burh element. In common to both places is, of course, their location on major waterways offering direct access to the North Sea. Indeed, Sawyer has suggested that place-names such as Burton upon Stather, Flixborough, Gainsborough, and Gate Burton may indicate Middle Saxon forts intended to control landing places on the Trent (Sawyer 1998: 85); likewise Washingborough for controlling access to Lincoln from the Witham (Sawyer 1998: 85).

The concentration of finds at the Bruff, which represents the high-point in the landscape, also suggests activity centred in an 'island' surrounded by marsh – as was the case at Bardney. The field-names to the north and south also attest to their low-land character; Engine Field (listed as pasture in 1820), and the Little Tilled Field (listed as meadow) are located to the north, while Little Fen is located to the south. This observation provides some assurance that the palimpsest does indeed derive from the Bruff field, rather than having being imported during the recent works on the flood defences.

Moving further out around the Little Carlton region, several other features embedded within the landscape provide tentative clues to the nature of Middle Saxon activity. Adjacent to Little Carlton is the hamlet of Castle Carlton, so-called because of the large twelfth-century motte and bailey castle that once stood there. The building has since fallen to ruin, and only the moat and mound survive. However, in the early nineteenth century it was claimed that the castle mound was the remains of a Roman signal station (Owen 1992: 21). This claim appears to have been solely made on the basis that the mound 'commands an uninterrupted view to the North Sea' (Owen 1992: 21). While this attribution is clearly fictitious, it is important to note that the distribution of medieval castles in Lincolnshire has been demonstrated largely to reflect the geography of pre-Conquest interests, which in turn supports the notion that the land around the Carltons – Castle, Great and Little were of some importance during the Middle and/or Late Anglo-Saxon period. Even more tantalising in the light of the Little Carlton assemblage is Owen's remarks made in 1992 that Castle Carlton was the possible location of the seat of the Anglo-Saxon bishops of Lindsey (Owen 1992: 17). It would be hazardous to use PAS data to speculate further on this, however.

Turning to the wider landscape again, it is equally tantalising to find a cluster of medieval churches dedicated to St Edith in the Little Carlton region (Figure 6.38). Examples are known from the surrounding parishes of North Reston, South Reston and Grimoldby, the latter of which is known to have had a Saxon thatched church as a predecessor. These in turn join with another at Little Grimsby, and together seem to be peripheral to Louth – the site of an Anglo-Saxon minster (Stocker 1993: 114; Jones 2007: 171, fig. 22; Green 2012: 62).

The cluster of dedications to St Edith in the Little Carlton region has traditionally been attributed to Edith of Wilton, daughter of the tenth-century King Edgar of England (Yorke 2003: 39, 77-8). St Edith of Wilton was made patron saint of her community at Wilton Abbey in Wiltshire following her death in 984, and a number of churches in Wiltshire are dedicated to her. The date at which the clustering of dedications was made is unclear, but Blair suggests that

Figure 6.38. Medieval churches dedicated to St Edith in the Little Carlton region. © Crown Copyright and Database Right 2015. Ordnance Survey (Digimap Licence).

pre-conquest dedications of churches were very rarely to indigenous saints (Blair pers. com). Rather, most are likely to date to the fifteenth or early sixteenth century when there was a fashion for them (Blair pers. com).

Clusters of dedications to St Edith are, however, known in two other places in England – at Polesworth in Warwickshire and at Tamworth in Staffordshire. Similar to the possible relationship seen between the St Edith churches and the Anglo-Saxon minster at Louth, those from Polesworth and Tamworth also cluster around Anglo-Saxon cult centres. The identity of the saint at these latter sites has traditionally been assigned to Edith, sister of King Aethelstan of Mercia (c. 930), or his daughter, also called Edith (Yorke 2003: 78). However, Yorke has argued that St Edith of Polesworth might be identified with a Mercian saint of the seventh or eighth centuries (Yorke 2003: 39, 77-78). Indeed, Mercian interests in royal saints persisted into the eighth and ninth centuries, and many became the objects of cult centres (Thacker 1985: 1). That this honour was also extended to members of other royal families is shown by sites such as Bardney, where the Northumbrian king Oswald was honoured at a time when Lindsey was part of Mercia (Thacker 1985: 1).

Curiously, Jones's suggestion of a possible relationship between the Little Carlton region churches and Louth was made with no knowledge of PAS data. Topography raises a further possible link; the name of the saint to which Yorke refers is included in the Anglo-Saxon Secgan where the saint is grouped with other saints buried near rivers. The topographical correlation between the Middle Saxon assemblage and confluence of two waterways at Little Carlton may not then be inconsequential. However, as with the significance of St Edith, this must remain speculative.

While the degree to which these features in the landscape are a backprojection of the situation in the Middle Saxon period is questionable, Domesday book does nonetheless suggest that the landscape of the Little Carlton region – in which the St Edith dedications are found – once formed components of a larger estate prior to the Conquest. In 1066 the parishes of Little Carlton, and North and South Reston were held under the same Lord – Alsi son of Godram. Curiously, Alsi also held land at Coates by Stow, located some 60km to the west, which once formed part of the estate of the Middle Saxon minster at Stow itself, and which also contains one of the few other dedications in the county to St Edith (Owen 1980: 16).[93] Moreover, Owen has previously suggested that North and South Reston parishes formed a single community prior to the conquest (Owen 1992: 21), and it is therefore of interest to find that the settlement of Little Carlton is recorded in Domesday book as being part of the Manor of North Reston (Field 1994: 1).

This form of argument is not without its precedents. Pestell presented a similar argument for Burham, and Rudham, in Norfolk, where the structure of medieval ecclesiastical and political land-use was suggested to be a back-projection of the situation in the Middle Saxon period (Pestell 2003: 128). More closely, a similar argument was presented for Bardney, where the clustering of dedications to St Andrew has been suggested to perhaps reflect the poly-focal nature of the pre-Viking monastic community (Stocker 1993: 109). Stocker in turn supports this argument by observing the concentration of dedications to St Andrew in the Tyne Valley, which are attributed to the influence of the abbey of St Andrew at Hexham (Stocker 1993: 109; see also Owen 1988).

One final area that is worth mentioning, but which can only be speculation, is the possibility that the Little Carlton site was a former meeting place. The site not only lies on a parish boundary, but also on a wapentake boundary. Recent research has shown that meeting places within hundreds were often located at marginal sites away from settlements, and often focussed on landscape features such as fords and bridges, and close to major route-ways such as Roman roads and waterways (Brookes and Baker 2011). Either way, PAS data greatly enhances our understanding of the biography of Little Carlton; a landscape nestled between two waterways, and which appears to have held political, religious and strategic importance over a long-period of time. Nonetheless, similar to Garwick, the fate of Little Carlton was to become a relatively low status settlement by the medieval period. The Lindsey Survey shows it to have been a modest settlement, comprising just two Lord's plough-teams, and four men's plough-teams. The situation was not to improve much; the Lay Subsidy Rolls for 1334 show Little Carlton to be the third lowest taxed of the 31 parishes in the wapentake of Louthesk (Glasscock 1964: 131). Today, the settlement survives as a typical rural village in the Lindsey marsh in which there is very little surviving that would hint at its former status. Memory, nonetheless, is embedded within it.

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93   Curiously, the remaining dedication to St Edith in Lincolnshire comes from Anwick near Sleaford. As was the case with Garwick, the place-name element -*wic* is intriguing, especially in the light of the frequent reports of unrecorded Middle Saxon artefacts and coins from this parish.

6.6. Conclusions

The technique of temporal mapping developed in this study has allowed two further persistent places to be identified – at Garwick, and at Little Carlton. Both display a greater temporal depth within their HLC Areas, and both were also the locations of significant quantities of Middle Saxon artefacts. By viewing the nature of persistence through the lens of the Middle Saxon palimpsest it has once again been possible to make inferences on the biography of these landscapes.

At both Garwick and Little Carlton evidence has been found engrained within the landscape that helps to interpret the plough-zone palimpsest, such as field boundaries, field names, and parish boundaries. Likewise, the plough-zone palimpsest helps to explain the presence of these and other features within the landscape, such as the clustering of dedications to St Edith, and the relationship between Garwick and Sleaford. There is, then, a symbiotic relationship, in which PAS data and the historic landscape come together to enhance exponentially our understanding of the longer-term use of places.

Unlike Bardney and Osbournby, the persistent places at Garwick and Little Carlton were found to be comprised of just one large palimpsest. Accordingly, these were interpreted as being cumulative palimpsests, formed by repeated episodes of activity in the same place (Bailey 2007: 204-205). As Bailey predicted, shorter-scale events were difficult to see within these palimpsests; nonetheless, detailed analysis of the assemblages revealed several finer-grained nuances, both in character and temporality. The palimpsest from Garwick suggested a slightly earlier start-date to economic activity than at Little Carlton, though both appear to have been important inland and coastal nodes respectively within the wider network of international trade. In this respect their appearance within the landscape through PAS data is not surprising; both sites follow the wider trend being established (e.g. Pestell and Ulmschneider 2004; Naylor 2007). However, both persistent places were found to have a unique trajectory – a biography to which PAS data makes important contributions.

Quite whether these finds can be confidently used to comment on 'types' of sites – a practice which is currently seen as rather controversial – remains blurred. For instance, the issue of whether Little Carlton held any religious significance is hinted at by the finds, but this was found to be a question that is less suited to the 'signal' that PAS data emit. Such is also the case with questions surrounding finer-grained levels of continuity, site morphology, and settlement shift. In the absence of excavation these issues are somewhat hazardous to approach through plough-zone palimpsests, and to this extent the limitations owing to the relative lack of excavation – identified by Ulmschneider more than 10 years ago (Ulmschneider 2002: 338), and reiterated in 2010 by Naylor and Richards (Richards and Naylor 2010) – are yet to be satisfactorily resolved.

Finally, a note of caution must be given regarding the interpretation of features in the landscape. Constructing biographies of places using diverse sources of evidence drawn across a wider temporal spectrum but which relate to the same place is naturally a hazardous task. The risk of unintentional misuse of the evidence is ever present, and it is to be expected that some of the hypotheses presented in this Chapter will be challenged by specialists in a particular area. St Edith may

turn out to be an entirely medieval construct; 'Garwick' may contain a personal-name element; Little Carlton may eventually produce Early Anglo-Saxon gold coins. This does not negate the exploratory approach taken here; indeed many likely trends identified here would have been entirely missed by avoiding multi-period evidence. The hypotheses presented for the interpretation of these trends have, however, been constructed using a careful analysis of the evidence, and where possible, linking trends to others established outside the study area. They do, therefore, provide a range of interpretative contexts for PAS data, and these will hopefully stimulate further discussion.

Chapter 7

Conclusions – Portable Antiquities, Palimpsests, and Persistent Places

This study has used a multi-scalar and multi-temporal view of PAS data in order to assess their contribution to our understanding of the archaeology of Lincolnshire. This Chapter reviews the major contributions, and discusses their implications for the wider research context in which this study is located.

A significant and overarching finding of this study is that there is a spatial relationship between portable antiquities, palimpsests, and persistent places. Essentially, at a regional scale of mapping it is possible to use PAS data to identify persistent places from the general backdrop of activity, according to the temporal parameters set by the research context. By moving into finer scales of mapping – demonstrated here to be at the parish-level – one is able to identify the individual palimpsests or 'nodes' that come together to form a persistent place. Likewise, by moving along finer scales of mapping still – demonstrated here to be broadly at the level of the 'field' – one is able to identify the individual find spots that come together to form palimpsests. Purely in terms of spatial distribution it is, however, difficult to go beyond this in an interpretative sense owing to the degree of horizontal confusion that resulted from successive episodes of arable cultivation.

In the same way, a more nuanced understanding of persistent places and palimpsests emerged by moving along the temporal spectrum. In some ways it is a strange paradox that a better understanding of shorter-term episodes of deposition should emerge when viewing them in their longer-term context; likewise the significance of palimpsests when viewing their formation through the lens of shorter-scale episodes of deposition. Each scale of observation has been demonstrated to be interrelated, however, and PAS data have emerged as important components of constructing biographies of place at all scales of time. It is, accordingly, to these three key areas – portable antiquities, palimpsests, and persistent places – that this study has made its major contributions.

7.1. Contributions to Portable Antiquities

The systematic approach taken to Lincolnshire PAS data – broadly following Robbins's framework – has addressed several gaps in knowledge regarding the character of these data.

First, is has been shown that sources of bias in PAS data conform to Robbins' seven key areas. At a broad level, Lincolnshire PAS data mirror the patterns of bias seen elsewhere across England; these data are subject to all seven key areas

identified by Robbins (2012), and an understanding of these factors is crucial to anyone wanting to use PAS data as a research tool.

The systematic analysis of bias also confirms Robbins's observation that sources of bias are highly regionally variable. The relationship between PAS data and the landscape in Lincolnshire has been demonstrated to be particularly dynamic, owing to the wide range of topographies and environmental zones contained within it. Principally, a notable upland-lowland divide has emerged, both in terms of density of finds, and temporal diversity.

By exploring Lincolnshire PAS data at a variety of temporal and spatial scales, several important characteristics of these data have emerged. First, it has been shown that metal-detected finds were largely underrepresented in HER data, principally owing to the turbulent relationships had between metal-detector users and archaeologists in the county in the 1970s and 80s – a legacy which continued well beyond the establishment of PAS in the county. This in turn led to a situation whereby the types of finds commonly found through metal-detecting were not routinely being used in planning or in research, unless PAS data were specifically being consulted.

The potential impact of this lack of integration was highlighted by the spatial analysis of HER and PAS data as periodised datasets. This revealed that the majority of PAS data are found 300m or more away from the nearest related HER record. This is significant for all periods, especially prehistory, where 80% or more finds are found away from sites known through the HER. For the Roman, Early Medieval, medieval, and post-medieval periods this is 56%, 77%, 63% and 86% respectively (Appendix 18).

By buffering these data into 300m and 500m 'activity areas', it was furthermore possible to establish the number of 'new' areas of activity that PAS data provide. This revealed that PAS data significantly increase the number of activity areas for every archaeological period. This was most significant for the Early Medieval period, for which PAS data increased the total number of known areas of activity by 64% (Table 3.4). Ironically, PAS data contributed the greatest number of activity areas (rather than proportion) for the post-medieval period – a period which one would expect to be highly legible.

Simply from a planning perspective, then, PAS data have been shown to be an important additional source of information on the archaeological record. While HER data often attests to activity within particular landscapes, PAS data tend to 'fill-in' the blanks, bringing new areas of activity into focus within 'known' landscapes. In addition, the dramatic way in which PAS data provide information on 'new' areas of activity – but are infrequently found within 'existing' areas of activity – seems to imply that metal-detector users do not, in general, target known archaeological sites but instead are governed by issues of access. This observation mirrors those also presented for PAS data from other regions (Robbins 2012: 88; Munday 2013; Brindle 2014: 90).

Analysis of the density of finds within activity areas did, however, reveal that the majority of palimpsests (at 100m radius) are formed by ten or fewer finds, while a small number contain high-density assemblages. This trend applied to all archaeological periods, suggesting that a common source of bias may be present. Manuring, soil movement, dredging, and time spent metal-detecting were all

suggested as potential sources of bias, but while these sources were demonstrated to varying degrees through the case studies – such as the Osbournby hand-axes and the Wickenby medieval finds – the case study from Bardney revealed that the interpretation of low-density scatters is far more complex. Issues of site character and function inevitably come in to play, as do issues of 'constraints', which may suggest low-density scatters being in some cases peripheral to a larger site. Such was the hypothesis at Bardney, where it was argued that the Scheduled Ancient Monument combined with environmental constraints to mask the core area of Middle Saxon activity.

This issue of constraints was further illuminated through the case studies of Middle Saxon activity areas presented in Chapters 5 and 6, which inferred there to be a relationship between assemblage density and the character of the modern-day landscape. In contrast to the Bardney abbey, that from Little Carlton came from arable fields that extend right up to the parish church. Similarly, the high-density assemblage from Garwick came from a site that appears to be wholly under arable cultivation. The legibility of the archaeological record does, therefore, appear to be a major factor in the narrative of activity displayed by PAS data. This highlights the importance of merging HER and PAS, and also serves to underline the importance of taking a landscape approach to PAS data, not least in areas such as Lincolnshire where there is a variety of drift deposits that variably mask archaeology.

To this extent the methodology of grouping data into 'activity areas' has provided a pragmatic way of assessing large and complex datasets. The flexibility that it allows in setting a variety of buffer-zones at different temporal scales has meant that it could be applied to data grouped by sub-period, broad-period, and as multi-period artefact scatters. The resultant maps have, however, been consistently used as a tool for interpretation, and not an interpretation in itself. Indeed, it has been acknowledged that map making is a subjective practice that may imply both environmentally and socially deterministic reasons for the patterning seen within them (Fisher 1999; Mlekuz 2004: 3.0; Oliver 2011: 76). The acknowledgement of these limitations has, however, allowed both the 'activity areas' and the temporal heat-maps used throughout this study as a 'place to think' about artefact scatters and landscapes (Gillings & Goodrick 1996).

This process of thinking about the character of PAS data has resulted in further observations on bias; principally that bias and trends become more visible depending on the scale of time and place at which one is observing the data. This, of course, conforms to the hypotheses presented by Bailey (1981; 2007) and Fahlander (2001). This relationship between spatial scale and bias was initially underlined through the analysis of grid-reference accuracy, which revealed the districts of Boston, South Holland, and North East Lincolnshire to be most affected by poor standards in reporting. The somewhat turbulent relationships between metal-detector users and archaeologists in Lincolnshire prior to PAS were also found to have had a negative impact upon the legibility of the archaeological record in the Grantham area, where a greater proportion of finds recorded to four-figures or less was encountered. The impact of these issues is, however, more acute for the study of landscapes at the parish or district level, rather than at a regional level.

A relationship between temporal scale and bias was also evident in the data. As predicted, it was found that PAS data represent 'productive' periods such as the Roman and medieval periods better than others, such as the Early Medieval period. The same is true for certain sub-periods, such as the late Roman period which is well represented by coins, as opposed to the fifth century which is largely unrepresented by PAS data. The same was also found to be the case for HER data, though these had a more even temporal distribution owing to the wider range of sources from which they derive. Unsurprisingly a broad relationship between the chronology of PAS data and topography was found, with lowland landscapes representing the medieval and post-medieval periods more strongly. Compared to HER data this was shown to be a trend that is overly stated by PAS data, undoubtedly owing to the highly restricted method of recovery that it represents. Other aspects of the natural environment were not deemed to be significant factors, however, such as slope and aspect. This again broadly mirrored the trend discovered by Robbins for several other regions (Robbins 2012).

The spatio-temporal distribution of finds was not solely a product of archaeological legibility, however; several other trends affected patterning within the sample. Random sampling of finders' search habits revealed that few finders travelled more than 40km to a site, reflecting the national trend established by Robbins (2012). Furthermore, it was found that there is a relationship between the density of finds and number of finders reporting to PAS, and the modern road network; those parishes with better access from main roads appear to be searched more frequently and by a greater number of people.

7.2. Contributions to Palimpsests

The dynamic relationship that was found to exist between spatial and temporal scale, and the patterning within PAS data, allowed a more nuanced understanding of these data when grouped together as multi-period artefact scatters – or 'plough-zone palimpsests'. This, of course, provided a basis for addressing the second area where a current gap in the knowledge was identified – the significance of multi-period PAS data.

Careful analysis of these data at multiple scales of place revealed that multi-period PAS data are an additional and important source of information on the longer-term use of particular places. The interpretative potential of these data does, of course, very much rely on the application of an effective methodology, coupled with an appropriate theoretical framework. To this extent the combination of temporal mapping and the concepts of palimpsests and persistent places has proved effective.

Analysis of plough-zone palimpsests revealed the majority conform to Bailey's 'spatial palimpsest', or 'cumulative' palimpsest types, or a combination of the two depending on the spatial scale at which they are being viewed (Bailey 2007: 203-208). Specifically, at a wider scale of mapping – demonstrated here to be around the parish-scale – PAS data could be viewed as a series of discrete palimpsests that together infer wider patterns of persistence. At this scale of mapping, these assemblages conform to Bailey's spatial palimpsest type (Bailey 2007: 207). Yet, while in many instances there was found to be an overlap in temporal signatures

between palimpsests, the relationships between them on shorter-scales of time proved to be difficult to establish. Plough-zone palimpsests simply do not offer the fine-scales of temporality that are necessary to make firm links between palimpsests, in the majority of cases at least.

On smaller scales of mapping it was possible to view individual palimpsests in greater detail – as cumulative palimpsest types (Bailey 2007: 204-205) – but the closer analyses provided through the case studies indicated that they are not intrinsically different to spatial palimpsests other than in how they manifest themselves on the ground. Indeed, it was often found to be the case that so-called spatial palimpsests were simply cumulative palimpsests that had been artificially divided by natural, historic, or modern features in the landscape, such as woodland, villages, and roads. This was especially the case at Bardney, where features ranging from drift deposits to woodland appear to have provided 'masks' to activity that might be better understood as having occured in various intensities across the entire island. In this sense the temporal heatmap – as an indicator of persistent use of the landscape – can only be used as coarse-grained 'way-in' to complex datasets at a relatively wide scale of mapping. More nuanced understandings of the evidence and its ability to infer longer-term use of place can only be gained through micro-scale analysis.

Similar to cumulative palimpsests, the temporal signatures contained within cumulative palimpsests were found to vary rather widely, reflecting Purtill's observation that one should expect a variety of palimpsests across the landscape, owing to the unique sets of environmental and cultural factors at work over the long-term (Purtill 2012: 2). While this observation would appear to bring a degree of support to the observation that palimpsests are more useful for seeing longer-term processes rather than short-term events (Binford 1981: 197; Bailey 1981: 109; Foley 1981), the careful analysis of palimpsests presented through the case studies has shown that it is indeed possible to take the focus down to shorter-scale events, though usually not to the level of 'rapid' or 'living floor' events. In this way, it has been possible to contextualise the actions of individuals and communities within the longer-term processes at work within the landscape.

At Osbournby, for example, the development of persistent activity close to what was later to become the village core appears to have been initially stimulated by ritual activity in the late Iron Age. This may in turn have been stimulated by purely environmental factors – namely, the presence of a pool or grove. The 'snowball' effect that this activity had was demonstrated through careful analysis of the plough-zone palimpsest, which contained evidence for a Roman estate centre, in addition to high-status interaction in the post-Roman and Anglo-Saxon period.

Osbournby demonstrated that spatial palimpsests could be discerned at the parish-level, with data grouped into 100m palimpsests. However, just as the temporal resolution was limited insofar as it was difficult to see the actions of the individual – so-called 'rapid'-scale events – it was similarly difficult to see discrete patterning of objects on very fine scales of place. Artefact scatters from different periods but contained within the same field-boundaries often formed largely homogenous patterns, principally owing to the level of 'internal confusion' caused by repeated episodes of ploughing. Nonetheless, distinct areas of activity

are visible across multiple fields, once the spatial resolution was extended to the parish-level. By doing so, it was possible to hypothesise structured uses of the landscape resulting from the nature of the antecedent landscape. The significance of these trends is discussed in the next section, in which the contribution to the theory of 'persistent places' is assessed.

In the meantime, it is important to highlight a key finding that emerged regarding the interpretative potential of PAS data – that being that while there was broad symmetry between HER and PAS data, the latter often revealed information on additional phases of occupation that were not reflected in the excavated evidence. This is not to say that HER or PAS data are more reliable than one another, but rather that there is the potential for different biographies to emerge when using just one source. This, of course, implies the value of taking an integrated approach to the study of landscapes.

At Sudbrooke, for example, numismatic evidence from the plough-zone represented more than a century of activity to which the excavated evidence offered little or no information; likewise at Wrawby. The same was also true at Bardney, where PAS data suggested the presence of a late Roman rural settlement with possible associated shrine or sanctuary – an aspect of settlement to which HER data was silent. Similarly, PAS data provide the sole archaeological evidence for Middle Saxon activity around the medieval abbey.

A final key understanding to have emerged from the study of palimpsests is in regard to the use of quantitative thresholds to distinguish 'sites' from 'background-noise'. It was previously noted that many studies of palimpsests incorporated this form of methodology; indeed, quantitative thresholds were similarly applied here, placing Middle Saxon assemblages into small (1-10 finds), medium (11-20 finds), and large (21+ finds) assemblages. However, the temptation to label 'small' assemblages as 'background-noise' was resisted, and through the case study of palimpsests within the 'island' of Bardney it was possible to show that low-density scatters did indeed relate to distinct patterns of activity. Naturally this case study highlights the inherent dangers of writing off low-density scatters as background noise.

On a related note, a clear positive relationship was found between density and temporal diversity, though in some cases this was found simply to relate to the amount of time spent metal-detecting. The situation is far from simple, however, in so far as not all activity areas emitting a signal of high temporal diversity were formed of high-density assemblages. Indeed, the case study of Bardney highlighted an anomaly in the trend, where a low-density PAS scatter derived from a landscape emitting a signal of high temporal diversity. Analysis of the temporal setting of this assemblage did, nonetheless, indicate that it was peripheral to a core area – an observation that could only have been made by taking a multi-period view of the data.

7.3. Contributions to Persistent Places

Throughout the case study chapters, plough-zone palimpsests were used to explore the degree to which they infer persistence of place – an approach which took initial inspiration from Schlanger (1992), and later writers on the subject (Holdaway *et al.* 2004; Holdaway and Wandsnider 2006; Littleton and Allen 2007; Thompson 2010; Moore and Thompson 2012; Purtill 2012).

This theoretical application of PAS data has provided new information on the contribution of PAS data. First, the case studies have shown that persistence is a thoroughly localised phenomenon, and one which can only be understood in the context of wider cultural and environmental factors. Each persistent place encountered in this study has its own idiosyncrasy – its own biography, and a distinct trajectory. The study of such places is therefore a deeply personal and localised task that requires an element of looking in, but also being in, in order to reveal a wider range of observations (Tilley 1994; Nord 2009: 34ff).

This finding complements other studies of persistent places (e.g. Purtill 2012). In this sense PAS data are a fundamental part of the cultural landscape, and the signal they emit is best understood within the context of what went before and what came after, and in the context of its natural environment. This includes a consideration of the communities who shaped, destroyed and altered their environments (Fairclough 2003: 296), and the range of processes that have transformed – and continue to transform – the modern-day landscape. PAS data are, demonstrably, useful for what Anschuetz *et al.* call the 'ongoing examination of the relationships between nature and culture and in how communities transform physical spaces into meaningful places' (Anschuetz *et al.* 2001: 158).

The analysis of these relationships was made possible through micro-level analysis of landscapes. While the case studies were duly limited in scope, they nonetheless revealed aspects of the relationship between PAS data and persistent places. First, they revealed that persistent places need not always be equated with settlement. Rather, they are the embodiment of a plethora of activities from ritual practice to arable cultivation, undertaken within places whose meanings and social status changed over time. To this extent PAS data hold the potential to be palimpsests of meanings. The nature of persistence at Bardney Abbey was, for instance, shown to be very different to that at the Village, taking different trajectories owing to both short-term and long-term processes at work. Once again, the sliding-scale approach to temporality has been the key to unravelling complex palimpsests. This application of the concept of the 'persistent place' provides a pragmatic and relatively value-free way of looking at past human activity; indeed, it somewhat contrasts with the 'dominant vehicle employed in archaeology today' – which is to view palimpsests through the lens of settlement patterns (Wandsnider 2004: 52).

Second, they revealed that a multi-temporal view of plough-zone palimpsests holds the potential for identifying structured uses of the landscape. At Osbournby this allowed a particular structured use of the landscape to emerge that was not readily visible within HER data, with the location of Middle Bronze Age activity apparently taking influence from the barrows in the south and the spring in the north. These elements in the landscape may in turn have reflected notions of death and life respectively. This was, however, in contrast to high-status activity in the late

Iron Age, which appears to have shifted to the North West of the village, and which appears to have stimulated the eventual development of the present-day village.

A similar structured use of the landscape was also revealed at the Bardney persistent place, though several of these trends were already established by HER data. Nonetheless, PAS data were shown to make important contributions. PAS data revealed persistence on the 'island' to be formed by three palimpsests, each having a different chronological signature and a different character of time-averaged activity. Structuring of the landscape was, however, more difficult to spot within the larger assemblages at Garwick and Little Carlton. This was in part due to the largely homogenous pattern that the plough-zone palimpsest created, but also from the relatively restricted amount of land on which searching had taken place – two or three fields, rather than an entire parish, as was the case at Osbournby. This implies that in order for a more nuanced picture of persistent activity to emerge, the sample area ideally needs to cover a considerable area.

Third, the analysis of the relationship of 'physical spaces and meaningful places' revealed that in some cases, significance can be drawn from the temporal signature present within the parent-dataset. This was particularly notable in the analysis of palimpsests containing Middle Saxon assemblages, where their presence with finds from both the Roman and the Early Anglo-Saxon period appears to imply some form of status and significance of place. This was the situation at Bardney abbey, where a low-density 'halo' scatter of Middle Saxon finds coincided with not just Roman finds, but also the only sixth-century material from the wider landscape. Just as Cherry predicted, it was, however, difficult to use the plough-zone palimpsest to determine aspects of internal organisation and function (Cherry 1983: 379). Nonetheless, it was possible to use the temporal and spatial patterning of the abbey assemblage to suggest significance of place in relation to the wider landscape.

This leads to the final key contribution to have emerged, which is that the significance of palimpsests and persistent places – while being a thoroughly localised phenomenon – require contextualising into their wider spatio-temporal setting. Thus, Osbournby was shown to be one of a string of persistent places situated along the Fen Edge; Bardney was one of a series of persistent places located on gravel terraces in the Witham Valley; and Little Carlton was shown to be one of the few places in the Lindsey Marsh where activity over the longer-term could have taken place. This process of contextualisation into the wider landscape need not be restricted to topography; at Garwick the Middle Saxon activity area appears to have emerged out of a much longer pattern of land-use that may have had its focus on Sleaford. The same appears to be true of Little Carlton – a site which appears to have had significant activity in the late Roman period. Again, both sites reveal the distinctive Roman-Early Saxon-Middle Saxon chronological signature that appears to indicate 'special' sites in the landscape: 'persistent places' (Schlanger 1992), as opposed to 'vague places' (Nord 2009). Likewise, the palimpsests at Osbournby may be explained in part by its relationship with Folkingham, and the possible estate of Early Anglo-Saxon people-group. It is the combination of all these elements that results in a picture of persistence – a picture to which PAS data make a substantial contribution.

7.4. Reflections and Recommendations

An additional 20,000 finds have been recorded on PAS for Lincolnshire since data compilation for this thesis ceased. As long as PAS remains in operation there will, therefore, always remain scope for further observations to be made, and further testing of the hypotheses presented here. What has become very apparent, however, is the value of precise find-spots. Biographies of landscapes and persistent places simply cannot be undertaken using finds with less than a six-Figure NGR (100m2 or less). While the rejection of spatially restricted data sometimes results in bias (e.g. Chapter 2 and 3), this is a necessary part of promoting the best recording and, indeed, the values of the Portable Antiquities Scheme. Indeed, while there is legal distinction between metal-detector users who search with permission, and those who do not, the end-result of the former who report 'parish-only' spatial data is the same as the latter – the erosion of the archaeological record.

This latter point highlights a limitation of the concept of the persistent place, especially when viewed through the lens of PAS data; specifically, given that the PAS do not record 'negative' data, how should so-called 'blank' areas interpreted? While general comments on these latter areas have been made within the case studies – for example, the presence of alluvium and peat north and west of Bardney abbey – only further fieldwork, along with detailed questioning of finders can progress our understanding of boundaries of persistent places. Quite how the latter might be undertaken by FLOs in a systematic way is unclear at present, but there does appear to be an increasing need for this sort of 'negative' data, especially by landscape studies.

In a similar way, a constant source of frustration has been the lack of archaeological context – a situation which requires geophysical survey at least, and excavation if possible. Where this has taken place – at Tattershall Thorpe, Wickenby, Sudbrooke, and Wrawby – the results have provided much needed context, and also highlight in greater detail the contribution that PAS data make. Indeed, the former case studies have also indicated there sometimes to be a discrepancy between the narratives provided by excavation, and those provided by plough-zone palimpsests. Such was the case for the late Roman coin assemblage from the Sudbrooke Roman Villa, as it was also the case for the majority of medieval and post-medieval assemblages, which on face value appeared to derive from manuring or other 'off-site' activities. This study has, accordingly, identified a pressing need for further fieldwork to be undertaken on plough-zone palimpsests.

On a related note, the 'teleological' approach taken in this study has inevitably forced the consideration of a wide range of evidence, from finds to field boundaries, and the challenge has been in satisfying the balance between scales of analysis. This has not been an easy task, though the structure of the opening chapters and the case studies has provided a measured response to this problem. Nonetheless, this study might be duly criticised for being too broad in its scope, and several hypotheses that have been offered could have been pursued in greater detail. Indeed, the long-term view demands the consideration of a body of material that inevitably forces the researcher into unfamiliar territory. Accordingly, it is acknowledged that several of the areas of speculation presented in this study – such as place-names, and also the relationship between Roman, Saxon and medieval estate boundaries – could

have been argued more eloquently by specialists in the related fields. This limitation of a PhD thesis, where sole authorship is required, is duly noted. This study does, nonetheless, provide a range of possible avenues for further research into palimpsests, persistent places, and portable antiquities in an interdisciplinary way.

To conclude, this study has contributed new knowledge on the character of PAS data, in particular in the way that they form palimpsests across the landscapes, and to the way in which these palimpsests can be used to make inferences about persistent places. Crucially, the study has affirmed previous studies of persistent places, not just in the sense of the natural and cultural factors that lead to their establishment, maintenance, and afterlife, but also in underlining the importance of understanding 'place' – defined elsewhere as being 'the entity from which all of the defining characteristics of societal structures derive, such as identity, kinship, economics, and social connectedness' (Daehnke 2009: 59). It is within this sense of 'place' that PAS data find their most secure context, in spite of being divorced from the landscape in a stratified sense. PAS data have a story to tell about the biography of landscapes, but they can only do so when recorded accurately. PAS data enrich the biography of places, and, as the public interest in major finds has shown, these finds can be potent agents in creating a sense of local identity and a certain degree of 'pride in place'. Frome is now famous for its hoard of Roman coins (Moorhead *et al.* 2010); likewise Hallaton for its Iron Age ritual depositions (Score 2011). Osbournby, Bardney, Garwick, and Little Carlton have no such impressive hoards to speak of, but the assemblages nonetheless create a narrative that will undoubtedly stimulate a greater sense of community identity. In this way the agency of palimpsests, persistent places, and PAS data continue to resonate in the landscape today.

Appendices

HLC Landscape Character Area	Code	HLC Landscape Character Zone	Area (km2)	% of LCA	% of total area
The Confluence	C1	The Don Floodplain	61.3	19.2	0.88
	C3	The Isle of Axholme	49.7	15.5	0.71
	C2, C4	The Axholme Fens	209	65.3	3
The Northern Cliff	NC1	The Normanby Scarp	58.9	17.5	0.84
	NC2	The Broughton Woodlands	49.3	14.7	0.71
	NC3	The Cliff Edge Airfields	104.9	31.2	1.5
	NC4	The Northern Cliff Farmlands	79.3	23.6	1.14
	NC5	The Lincoln Satellite Settlements	44	13.1	0.6
The Northern Marshes	NM1	The Humber Bank	112.4	39.9	1.61
	NM2	The Grimsby Commuter Belt	128.3	45.6	1.82
	NM3	The Immingham Coastal Marsh	40.4	14.4	0.58
The Wolds	W2	The Brocklesby Heath	116	10.3	1.66
	W1	The Caistor Spring-Line	112.4	10	1.61
	W3	The Upper Wolds	313.7	27.9	4.5
	W5	The Dry Valleys	255.9	22.7	3.67
	W4	The Western Wolds Foothills	167.2	14.8	2.4
	W6	The Spilsby Crescent	160.6	14.3	2.3
The Clay Vale	CV1	The Ancholme Carrs	186.1	29	2.67
	CV2	The Kelsey Moors	66.9	10.4	0.96
	CV3	The Central Clay Vale	176	27.4	2.52
	CV4	The Limewoods	136.8	21.3	1.96
	CV5	The Witham Abbeys	77	12	1.1
The Trent Valley	TV1	The Northern Cliff Foothills	317.9	46.6	4.6
	TV2	The Fosse Way	46.4	7.7	0.7
	TV3	The Valley Fens	160.8	26.8	2.3
	TV4	The West Granthan Farmlands	76.8	12.8	1.1
The Southern Cliff	SC1	The Southern Cliff Heath	441.9	37.8	6.33
	SC2	The Kesteven Parklands	484.7	41.5	6.95
	SC3	The Fen Edge Settlements	241.3	20.7	3.46
The Grazing Marshes	GM1	The Salterns	64.1	11.8	0.9
	GM2	The Saltfleet Storm Beach	52.3	9.6	0.8
	GM3	The Mablethorpe Outmarsh	163.6	30	2.3
	GM4	The Middle Marsh	160.4	29.4	2.3
	GM5	The Skegness Holiday Coast	93	17.1	1.3
The Fens	F1	The Witham Fens	390.5	37.1	5.6
	F2	The Eastern Fens	661.8	62.9	9.5
The Wash	W1	Townlands	379.7	57.5	5.44
	W2	Bicker Haven	13.97	2.12	0.2
	W3	The Reclaimed Coastal Fringe	88.22	13.36	1.26
	W4	Reclaimed Wash Farmland	138	20.9	1.98
	W5	The Tofts	19.37	2.93	0.28
	W6	Cross Keys Wash	18.67	2.83	0.27

Appendix 1. HLC Areas and Zones (after Lord and MacIntosh 2011a, 2011b.

PAS_all		
Grid ref. precision	Objects	Records
No grid-reference or invalid grid-reference	6115	6003
4 figure	8590	6583
6 figure	25,644	20,515
8 figure	7164	6623
10 figure	5241	3888
12 figure	83	81
TOTAL	52,837	43,693

Appendix 2. Grid-reference accuracy and visual guide to datasets used in this thesis.

Region	No. finds	No. records
Lincolnshire	42,737	34,822
North Lincolnshire	9504	8288
North East Lincolnshire	596	583
TOTAL	52,837	43,693

Appendix 3. PAS_ALL finds and records by modern administrative boundaries.

Region	No. finds	No. records
Lincolnshire	38,398	30,531
North Lincolnshire	7965	6811
North East Lincolnshire	359	348
TOTAL	46,722	37,690

Appendix 4. PAS4+ finds and records by modern administrative boundaries.

Region	No. finds	No. records
Lincolnshire	30,587	24,694
North Lincolnshire	7208	6087
North East Lincolnshire	337	326
TOTAL	38,132	31,107

Appendix 5. PAS6+ finds and records by modern administrative boundaries.

	PAS_ALL		PAS4+		PAS6+	
Broad Period	**Objects**	**Records**	**Objects**	**Records**	**Objects**	**Records**
Palaeolithic (700,000 – 10,000 BC)	18	18	18	18	14	14
Mesolithic (10,000 – 4300 BC)	843	448	836	441	631	338
Neolithic (4500 – 1500 BC)	1685	1034	1602	951	1152	716
Bronze Age 2500 – 700 BC)	491	297	461	267	272	239
Iron Age (700 BC -AD 43)	2467	2399	751	683	620	552
Roman (43 AD – 410)	22,891	17,478	21,351	15,975	17,607	13,366
Early Medieval (410 – 1066)	3616	3385	2949	2744	2349	2145
Medieval (1066 – 1500)	11,565	11,048	10,249	9752	8221	7860
Post-Medieval (1500-1800)	7056	6063	6419	5444	5311	4586
Modern (1800+)	1297	932	1289	925	1230	866
Unknown	908	591	797	490	725	426
TOTAL	**52,837**	**43,693**	**46,722**	**37,690**	**38,132**	**31,107**

Appendix 6. PAS_ALL, PAS4+ and PAS6+ by period (dates are circa and follow the PAS dating convention). Bronze Age data includes lithics and ceramics, in addition to 361 finds of metalwork contained within 180 records.

	Lincolnshire		North Lincolnshire		North East Lincolnshire	
Discovery method	**Objects**	**Records**	**Objects**	**Records**	**Objects**	**Records**
Not recorded	104	71	279	278	15	15
Agricultural or drainage work	50	45			0	0
Building work	10	10	1	1	1	1
Chance find during metal detecting	2570	1045	386	295	1	1
Archaeological investigation	1	1	61	12	0	0
Field-walking	134	54	973	577	22	22
Gardening	92	31	61	49		
Metal detector	39,909	33,723	7620	6959	555	542
Metal detector during controlled archaeological investigation	8	6	68	68	1	1
Other chance find	156	129	55	49	1	1
TOTAL	**42,737**	**34,822**	**9504**	**8288**	**596**	**583**

Appendix 7. Method of discovery: PAS_ALL.

	Lincolnshire		North Lincolnshire		North East Lincolnshire	
Land use	Objects	Records	Objects	Records	Objects	Records
Not recorded	4640	4129	793	783	40	40
Coastland	19	19	8	8	4	4
Cultivated land	36,249	28,939	8181	7032	531	519
Grassland, Heathland	117	84	87	40	0	0
Open fresh water	17	17	0	0	0	0
Other	1688	1627	434	424	21	20
Wetlands	0	0	0	0	0	0
Woodlands	7	7	1	1	0	0
TOTAL	42,737	34,822	9504	8288	596	583

Appendix 8. Land Use: PAS_ALL.

HLC LANDSCAPE CHARACTER AREA	AREA km2	% OF STUDY AREA	No. PAS RECORDS	No. HER RECORDS (CERTAIN)	No. HER RECORDS (PROBABLE)	PAS RECORDS/km2	HER RECORDS/km2 (CERTAIN)	HER RECORDS/km2 (PROBABLE)
THE CLAY VALE	642	9.2	6399	1752	2836	10	3	4
THE NORTHERN CLIFF	336	4.8	3270	1208	2695	10	4	8
THE SOUTHERN CLIFF	1168	16.7	10,008	3316	6486	9	3	6
THE WOLDS	1126	16	7314	2843	5807	6	3	5
THE GRAZING MARSHES	544	7.8	2875	994	1444	5	2	3
THE TRENT VALLEY	682	9.7	3281	1245	2282	5	2	3
THE NORTHERN MARSHES	281	4	1108	684	1595	4	3	6
THE CONFLUENCE	320	4.6	721	598	1721	2	2	5
THE FENS	1052	15.1	738	1568	2242	1	1	2
THE WASH	657	9.4	481	978	1318	1	1	2

Appendix 9. HER and PAS4+ according to Landscape Character Areas (excluding data from urban areas).

Year	Site name/code	Description
1993	Fenland Management Project	Topsoil Metal detector survey on Saxon sites as part of the Fenland Management Project
1997	Meadow Drove, Bourne (BMD97)	Metal detecting as part of evaluation of route of pipeline. Only 20th century material recovered.
2002	Land off Foxby Lane, Gainsborough	Metal detector survey of possible battlefield site prior to proposed development; nothing of archaeological interest found.
2004	Sleaford Town Football Club, Ewerby and Evedon (SFC04)	Metal detector survey prior to development
2004	Blackhills Farm, Wickenby (WILI04)	Metal detector survey and evaluation of site identified through metal detecting.
2004	Chapel of St James, Skendleby (SKEN05)	Metal detector survey as part of evaluation of possible site of the Chapel of St James
2004	Fiskerton (FISK04)	Metal detector survey as part of ongoing investigation of the Iron Age causeway
2005	Roman Villa, Scothern Lane, Sudbrooke (SUD05)	Metal detector survey of potential site of Roman Villa.
2008	Lincoln Eastern Bypass (LNEB08)	Post-medieval artefact scatter found
2009	Eastfield Rise Farm (EFCW09)	Metal detecting of trenches; fragment of Bronze Age sword found

Appendix 10. Lincolnshire HER events that include metal detecting as a methodology.

PARISH	No. PAS6+ (Records)
Roxby cum Risby	1509
Osbournby	1430
Thonock	914
Barton upon Humber	912
Wickenby	904
Bigby	681
Middle Rasen	601
Ancaster	561
Owersby	538
Folkingham	522
Navenby	455
Claxby With Moorby (Pluckacre)	448
Linwood	437
Swinhope	430
Wellingore	424
Winteringham	423
Kirton in Lindsey	402
Skidbrooke With Saltfleet Haven	367
Kirkby La Thorpe	351
Lenton Keisby And Osgodby	334
Keelby	331
North Rauceby	315
Scawby	311
Walcot Near Folkingham	303

Appendix 11 (part 1). Top 100 parishes by density of records (PAS6+). Rally sites are highlighted in grey.

PARISH	No. PAS6+ (Records)
Stainton le Vale	288
Winterton	276
Revesby	266
Fenton	264
Hibaldstow	262
Aunsby And Dembleby	260
Heckington	253
Lissington	253
Brampton	250
Binbrook	246
Washingborough	246
Branston and Mere	238
Saltfleetby St Clement	231
Belton	225
Lusby With Winceby	223
North Carlton	216
East Kirkby	211
Barnetby le Wold	210
South Somercotes	207
Great Hale	206
Stixwould And Woodhall	206
North Thoresby	204
Aby With Greenfield	203
Haxey	198
Nettleton	182
Alford	175
Welbourn	168
Bardney	165
Appleby	162
Legsby	158
Boothby Graffoe	155
Burgh Le Marsh	152
Wood Enderby	151
Burwell	150
Mareham On The Hill	149
Bullington	143
Gainsborough	143
Saltfleetby All Saints	138
Fulstow	136
Little Carlton	134
Edlington With Wispington	132
Crowle	130
Newball	128
Rigsby With Ailby	128

Appendix 11 (part 2). Top 100 parishes by density of records (PAS6+). Rally sites are highlighted in grey.

PARISH	No. PAS6+ (Records)
Billingborough	125
Brigsley	118
Hatton	117
Sudbrooke	117
Aswarby And Swarby	113
Thimbleby	111
Gate Burton	110
Grange de Lings	108
Threekingham	107
Saltfleetby St Peter	104
Leasingham	98
Lea	96
East Barkwith	94
Ruskington	94
Sleaford	94
Tetney	93
Epworth	93
Apley	92
Ulceby With Fordington	91
Pinchbeck	90
Scotter	89
Market Rasen	87
Corringham	85
Greetwell	84
Canwick	82
Torksey	82
Haconby	75
Ludford	72
Muckton	71
Welton	71
Ewerby And Evedon	70
Irnham	70

Appendix 11 (part 3). Top 100 parishes by density of records (PAS6+). Rally sites are highlighted in grey.

Superficial geology	Approx. km2	PASD/km2 (records)	PASD/km2 (finds)	HER/km2
Blown Sand	273	11	16	6
Glacial sand and gravel	102	11	14	6
Minimal (upland)	1541	10	12	6
Clay	56	8	9	6
Till	1424	8	10	4
River Terrace sand and gravel	454	6	7	5
Alluvium	2875	1	1	2
Peat	261	1 per 5km2 (0.2/km2)	1 per 5km2 (0.2/km2)	2

Appendix 12. PAS and HER records and finds per km2 according to drift geology.

	300m certain	300m certain and uncertain	500m certain	500m certain and uncertain
Upper Palaeolithic	0	0	0	0
Mesolithic	3 (2%)	8 (2%)	4 (4%)	9 (4%)
Neolithic	30 (5%)	60 (4%)	44 (9%)	62 (9%)
Bronze Age	12 (1%)	26 (2%)	18 (3%)	34 (5%)
Iron Age	16 (5%)	44 (4%)	25 (10%)	72 (11%)
Roman	248 (17%)	254 (16%)	193 (25%)	195 (25%)
Early Medieval	60 (11%)	85 (10%)	88 (21%)	116 (19%)
Medieval	320 (17%)	368 (17%)	251 (28%)	246 (29%)
Post-medieval	147 (11%)	204 (11%)	182 (21%)	224 (22%)

Appendix 13. Number and proportion of HER activity areas in which PAS records fall.

Period (no. of HER activity areas at 300m)	No. HER activity areas in which PAS data are found	Maximum number of finds	Minimum number	Mean	Median	Mode
Upper Palaeolithic (13)	0 (0%)	0	0	0	0	0
Mesolithic (121)	3 (2%)	1	1	1	1	1
Neolithic (663)	30 (5%)	31	1	3	1	1
Bronze Age (801)	12 (1%)	7	1	2	1	1
Iron Age (321)	16 (5%)	21	1	5	1	1
Roman (1497)	248 (17%)	568	1	4	5	1
Early Medieval (528)	60 (11%)	114	1	8	2	1
Medieval (1891)	320 (17%)	282	1	8	3	1
Post-medieval (1376)	147 (11%)	31	1	3	2	1

Appendix 14. Character of PAS6+ where found within 300m radius of HER certain data.

Period (no. of HER activity areas at 300m)	No. HER activity areas in which PAS data are found	Maximum number of finds	Minimum number	Mean	Median	Mode
Upper Palaeolithic (53)	0	0	0	0	0	0
Mesolithic (359)	8 (2%)	52	1	7	1	1
Neolithic (1452)	60 (4%)	31	1	7	2	1
Bronze Age (1522)	26 (2%)	7	1	2	1	1
Iron Age (1132)	44 (4%)	35	1	4	1	1
Roman (1620)	254 (16%)	568	1	25	4	1
Early Medieval (814)	85 (10%)	114	1	7	2	1
Medieval (2168)	368 (17%)	350	1	9	3	1
Post-medieval (1810)	204 (11%)	60	1	5	2	1

Appendix 15. Character of PAS6+ where found within 300m radius of HER certain and uncertain data.

Period (no. of HER activity areas at 500m)	No. HER activity areas in which PAS data are found	Maximum number of finds	Minimum number	Mean	Median	Mode
Upper Palaeolithic (10)	0 (0%)	0	0	0	0	0
Mesolithic (105)	4 (4%)	3	1	1	1	1
Neolithic (497)	44 (9%)	33	1	4	2	1
Bronze Age (551)	18 (3%)	8	1	2	1	1
Iron Age (258)	25 (10%)	30	1	5	1	1
Roman (787)	193 (25%)	781	1	44	7	1
Early Medieval (423)	88 (21%)	161	1	7	2	1
Medieval (891)	251 (28%)	649	1	18	5	1
Post-medieval (884)	182 (21%)	73	1	8	3	1

Appendix 16. Character of PAS6+ where found within 500m radius of HER certain data.

Period (no. of HER activity areas at 500m)	No. HER activity areas in which PAS data are found	Maximum number of finds	Minimum number	Mean	Median	Mode
Upper Palaeolithic (46)	0 (0%)	0	0	0	0	0
Mesolithic (256)	9 (4%)	74	1	10	1	1
Neolithic (700)	62 (9%)	54	1	6	2	1
Bronze Age (684)	34 (5%)	31	1	3	1	1
Iron Age (653)	72 (11%)	35	1	4	1	1
Roman (786)	195 (25%)	781	1	45	6	1
Early Medieval (608)	116 (19%)	178	1	7	2	1
Medieval (861)	246 (29%)	716	1	22	6	1
Post-medieval (1006)	224 (22%)	128	1	9	3	1

Appendix 17. Character of PAS6+ where found within 500m radius of HER certain and uncertain data.

Broad Period/PAS records	Certain HER records (300m buffer)		Certain HER records (500m buffer)	
	New PAS6+ records	Existing PAS6+ records	New PAS6+ records	Existing PAS6+ records
Upper Palaeolithic (2 records)	2 (100%)	0 (0%)	1 (50%)	1 (50%)
Mesolithic (338 records)	335 (99%)	3 (1%)	332 (98%)	6 (2%)
Neolithic (716 records)	626 (87%)	90 (13%)	560 (78%)	156 (22%)
Bronze Age (239 records)	211 (88%)	28 (12%)	200 (84%)	39 (16%)
Iron Age (552 records)	481 (87%)	71 (13%)	419 (76%)	133 (24%)
Roman (13,366 records)	7501 (56%)	5865 (44%)	4798 (36%)	8568 (64%)
Early Medieval (2145 records)	1659 (77%)	486 (23%)	1497 (70%)	648 (30%)
Medieval (7860 records)	7125 (63%)	2643 (37%)	3269 (41%)	4591 (59%)
Post-medieval (4586 records)	3924 (86%)	662 (14%)	3079 (67%)	1507 (33%)

Appendix 18. Spatial comparison of PAS6+ and well dated HER data according to 300m and 500m buffers.

Broad Period/PAS records	Probably related HER records (300m buffer)		Probably related HER records (500m buffer)	
	New PAS6+ records	Existing PAS6+ records	New PAS6+ records	Existing PAS6+ records
Upper Palaeolithic (2 records)	2 (100%)	0 (0%)	0 (0%)	2 (100%)
Mesolithic (338 records)	278 (72%)	60 (18%)	248 (73%)	90 (27%)
Neolithic (716 records)	482 (67%)	234 (33%)	333 (47%)	383 (53%)
Bronze Age (239 records)	189 (79%)	50 (21%)	138 (57%)	101 (43%)
Iron Age (552 records)	386 (69%)	166 (31%)	292 (53%)	260 (47%)
Roman (13,366 records)	7102 (53%)	6264 (47%)	4543 (34%)	8823 (66%)
Early Medieval (2145 records)	1584 (74%)	561 (26%)	1339 (62%)	806 (38%)
Medieval (7860 records)	4554 (58%)	3306 (42%)	2558 (33%)	5302 (67%)
Post-medieval (4586 records)	3538 (77%)	1048 (23%)	2519 (55%)	2067 (45%)

Appendix 19. Spatial comparison of PAS6+ and probably related HER data according to 300m and 500m buffers.
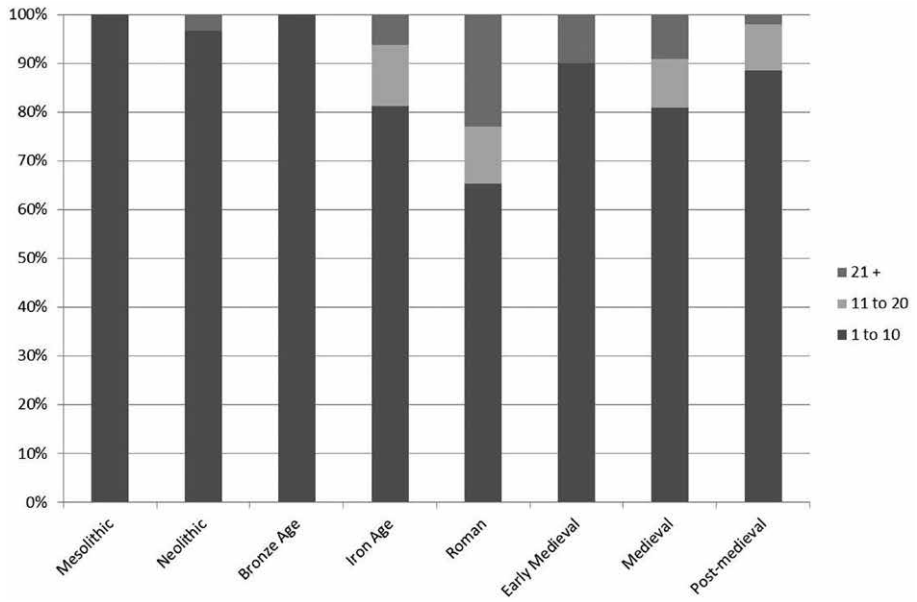
Appendix 20. Proportional density of PAS records within existing HER activity areas (PAS6+ at 300m buffer, using certain data only).
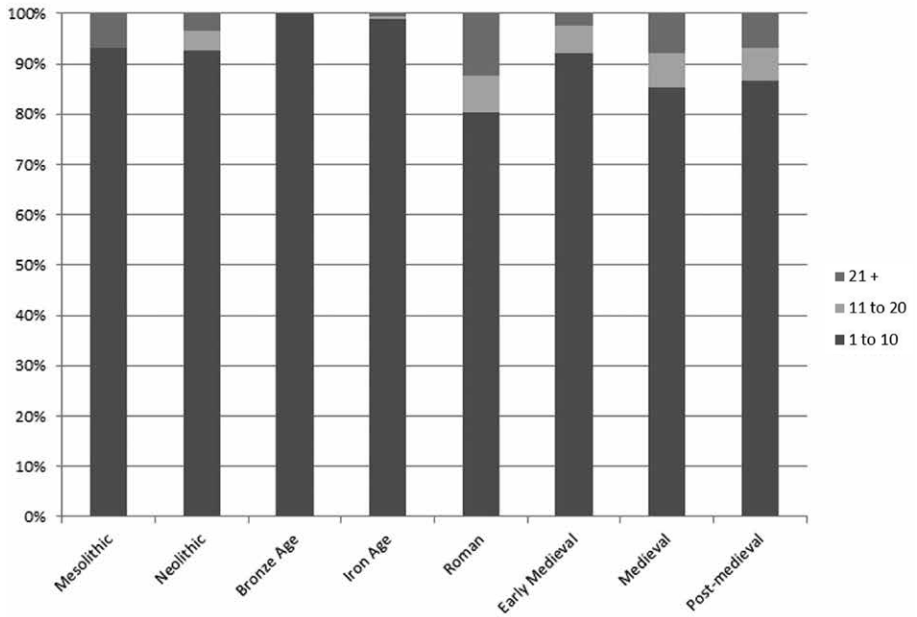
Appendix 21. Proportional density of PAS records within new activity areas (PAS6+ at 300m buffer, using certain data only).

Density (PAS records in existing HER activity areas)	Mesolithic	Neolithic	Bronze Age	Iron Age	Roman	Early Medieval	Medieval	Post-medieval
1 to 10	3	29	12	13	162	54	259	130
11 to 20	0	0	0	2	29	0	32	14
21 +	0	1	0	1	57	6	29	3
Total	**3**	**30**	**12**	**16**	**248**	**60**	**320**	**147**

Appendix 22. Density of PAS records within existing activity areas.

Density (PAS records in new activity areas)	Mesolithic	Neolithic	Bronze Age	Iron Age	Roman	Early Medieval	Medieval	Post-medieval
1 to 10	41	137	104	196	310	312	363	371
11 to 20	0	6	0	1	28	19	29	29
21 +	3	5	0	1	48	8	34	29
Total	**44**	**148**	**104**	**198**	**386**	**339**	**426**	**429**

Appendix 23. Density of PAS records within new activity areas.

No. Periods represented	No. Activity Areas
1	1315
2	494
3	296
4	152
5	75
6	38
7	16
8	9
9	1

No. Periods	Combinations
2	36
3	84
4	126
5	126
6	84
7	36
8	9
9	1
TOTAL	**502**

Appendix 24. The temporal character of 100m activity areas.

Appendix 25. Number of possible combinations.

Period	Number of new PAS activity areas	Number of new PAS activity areas that include PAS data from the next archaeological period (e.g. no. Roman activity areas that include Early Medieval finds)
Upper Palaeolithic	2	2 (100%)
Mesolithic	44	21 (48%)
Neolithic	148	28 (19%)
Bronze Age	104	37 (36%)
Iron Age	198	145 (73%)
Roman	386	137 (35%)
Early Medieval	339	243 (72%)
Medieval	426	191 (45%)
Post-medieval	429	N/A

Appendix 26. Chronological relationships within new activity areas (PAS6+ at 300m radius, using certain data).

Period	Number of HER activity areas	Number of HER activity areas that include HER data from the next archaeological period (e.g. no. Roman activity areas that include Early Medieval finds)
Upper Palaeolithic	13	5 (38%)
Mesolithic	121	33 (27%)
Neolithic	663	139 (21%)
Bronze Age	801	70 (9%)
Iron Age	321	203 (63%)
Roman	1497	267 (18%)
Early Medieval	528	272 (52%)
Medieval	1891	579 (31%)
Post-medieval	1376	N/A

Appendix 27. Chronological relationships within existing activity areas (PAS6+ at 300m radius, using certain data).

HLC area	Percent of PAS activity areas that fall within 300m of medieval HER data
The Wolds	36 of 52 (69%)
The Clay Vale	29 of 44 (66%)
The Southern Cliff	22 of 40 (55%)
The Trent Valley	18 of 23 (78%)
The Northern Cliff	17 of 23 (74%)
The Grazing Marshes	11 of 14 (79%)
The Fens	3 of 6 (50%)
The Northern Marshes	2 of 4 (50%)
The Confluence	3 of 5 (60%)
The Wash	0 of 1 (0%)

Appendix 28. Number of Middle Saxon PAS records that fall within 300m of medieval HER data.
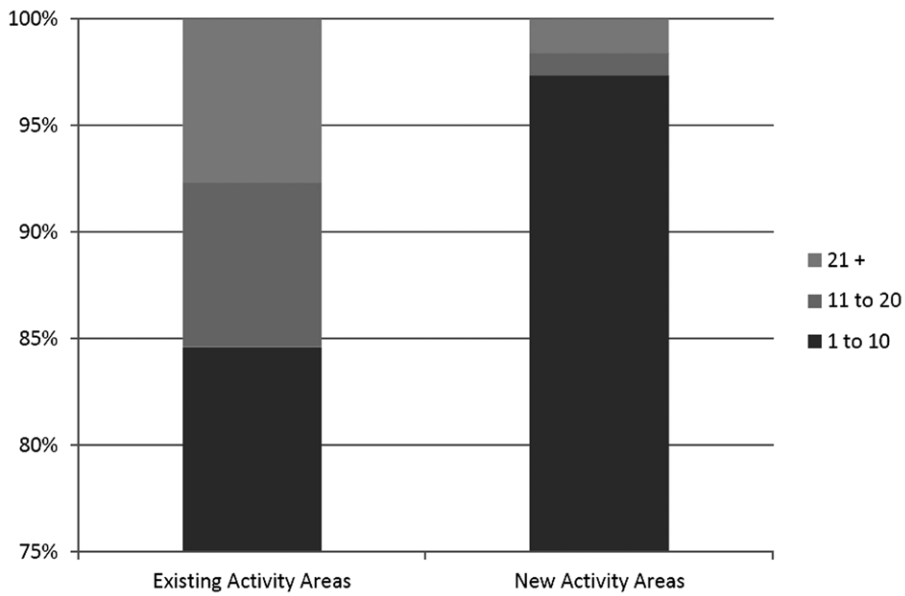
Appendix 29. Density of Middle Saxon PAS records within existing and new activity areas.
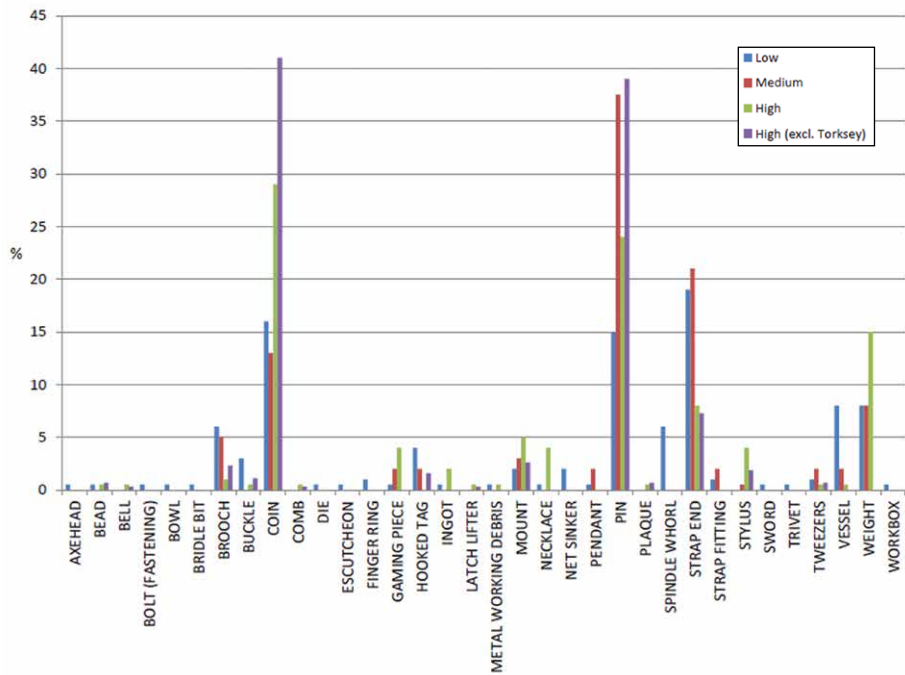
Appendix 30. Proportion objects by type, according to low, medium, and high density activity areas

HLC Area	Middle Saxon only	Middle Saxon and Roman	Middle Saxon and Early Saxon	Middle Saxon, Roman, and Early Saxon
The Confluence	1 (20%)	3 (60%)	0	1 (20%)
The Northern Cliff	1 (4%)	12 (52%)	2 (9%)	8 (35%)
The Northern Marshes	1 (25%)	0	0	3 (75%)
The Wolds	15 (28%)	20 (37%)	3 (5%)	16 (30%)
The Clay Vale	4 (10%)	27 (66%)	2 (5%)	8 (19%)
The Trent Vale	6 (27%)	10 (45%)	1 (5%)	5 (23%)
The Southern Cliff	6 (15%)	12 (31%)	2 (5%)	19 (49%)
The Grazing Marshes	5 (36%)	7 (50%)	1 (7%)	1 (7%)
TOTAL	**39 (19%)**	**91 (45%)**	**11 (6%)**	**61 (30%)**

Appendix 31. Number of activity areas according to chronological profile, with proportion of total HLC area shown in brackets.

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PORTABLE ANTIQUITIES, PALIMPSESTS, & PERSISTENT PLACES

Every year thousands of archaeological objects and artefact scatters are discovered by the public, most of them by metal-detector users, but also by people whilst out walking, gardening, or going about their daily work. Once recorded, these finds hold enormous potential in helping us understand the past. In England and Wales these finds are reported to the Portable Antiquities Scheme (PAS), and since 2003 over one million finds have been recorded.

This book explores the significance of PAS data for Lincolnshire, in particular how these finds enhance the 'known' archaeological record, and how they come together to form multi-period artefact scatters, defined here for the first time as 'plough-zone palimpsests'. A bespoke methodology is developed that allows PAS data to be analysed at different scales of time and place. This brings into focus different sources of bias and different interpretative possibilities. A series of case studies then explore these palimpsests on varying scales of time and place. These demonstrate how portable antiquities are important biographical components of 'temporally-sticky' or 'persistent places', and have the potential to reveal structuring within the landscape over long-periods of time. Combined with other evidence engrained within the landscape, PAS data help to explain how the past influenced the subsequent use of places, and how the aftershocks of human activity resonate in the landscape today.