The Don Valley in Prehistory:

Upland and Lowland Developments and Interactions

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Abstract

This thesis fills a lacuna in the sequence of regional archaeologies in Britain. No work of synthesis exists for the Mesolithic to Bronze Age of the study area, consisting of South Yorkshire and much of the north midlands.

Is it possible to detect regional senses of identity using archaeological methodologies? The nature of regional identity is well attested in the recent past. Rooted in familiar landscapes, environments and locales, identity at the regional scale is related to and expressed through the undertaking of particular or routine tasks with familiar people.

In this thesis a relational approach accounts for the complex and sophisticated interaction between people and materiality. The sources for this include the databases of HERs, museums and national datasets. They also include both publications and unpublished reports. Most importantly, the largely untapped resource of museum collections have been a crucially important source of information. This has resulted in a database for the thesis consisting of 12,234 individual records. All classes of artefacts and structures have been considered in historical sequence, together with and in relation to the landscapes and environments within which they were deposited.

In the Mesolithic, different home ranges overlapped on the southwest side of the study area on the Gritstone uplands. The home ranges were probably centred in the Peak District and to the northeast of the study area respectively. Groups predominantly journeyed along river valleys. In the Neolithic, tasks related to pastoral lifeways became concentrated on the higher and drier areas flanking the middle reaches of the major rivers and the Humberhead Levels. The Magnesian Limestone Plateaux acted as the centre of gravity of communities, expressed through the material remains of their activities, and the structures they built. This continued in the Bronze Age, but the Gritsone uplands to the west became settled once more. People expressing affinities both to the southwest and northeast occupied locales that were connected in both directions by river valleys. The Magnesian Limestone plateaux, however, remained a strong focus for communities established between low lying wetlands.

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Data that was gathered directly from museum databases and, more importantly, from archived projects housed in museum collections from around the study area formed the bulk of the project database. The value of these precious and unique repositories of (largely unpublished and in some cases previously barely known) sources of information cannot be overestimated. Without access to that data this project would have been impossible to complete. Moreover, the many thousands of years of social history that they form the source for would have remained untold. Many of the archives are housed in small local museums of the kind that are most under threat from closure at the present date by local and (effectively) national government. The staff in all of the museums below did everything they could to facilitate access, information and advice. Invariably they did so in a manner that was cheerful, positive and supportive of myself and my research. The following individuals were of particular help and are very warmly thanked: Peter Robinson (Doncaster Museum and Art Galley), Rose Nicholson (North Lincolnshire Museum, Scunthorpe), Samantha Glasswell (Bassetlaw Museum, Retford), Karl Noble (Clifton Park Museum, Rotherham), Maria Smith (formerly of Creswell Crags Visitor Centre), Liz Weston (Mansfield Museum), Helen Harman (formerly of MuseumsSheffield) and Lucy Creighton (MuseumsSheffield). Peter Robinson was especially helpful and informative in the early years, and Samantha Glasswell's good humour and kindness, and that of her colleagues peerless. Rose Nicholson's positive support in a moment of minor crisis was especially valuable. Pauline Beswick is thanked for alerting me to the presence at MuseumsSheffield of the unpublished archive from Unstone in Derbyshire. Staff at Experience Barnsley are thanked for facilitating access to their collection, which was but newly established at the time.

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Chapter 1:

Introduction

A personal preamble

My engagement with and thinking about the prehistory of South Yorkshire and the North Midlands predates the life of the thesis by some years. Before that, all of my archaeological efforts and thought had been directed towards the Eastern Mediterranean. Revelation, and a gradual change in direction, began just before beginning my masters training at the University of Sheffield as a mature student. There had been a long hiatus between that and my first degree, and although I had always been involved in archaeological related activities, I believed that I must do something to get back into the swing of academic life, as well as acquire new fieldwork experience. To those ends I enrolled with what was then The Institute for Lifelong Learning (TILL) at the University of Sheffield on an advanced field survey module. The module was not merely training, but involved the recording of newly identified features on Hallam Moors near Sheffield, with the focus on practice trenches of the First World War. There I met Helen Ullathorne and Dr. Phil Sidebottom, who were teaching the module and leading the fieldwork. I have never forgotten their kindness to me and enthusiasm for the work, which was infectious. Until then I would never have believed that I could be eager to stand all day in the driving rain of a freezing and windswept Pennine moor!

In the end I never got to survey the trenches - because volunteers were requested to record late prehistoric features nearby. That was the revelation - prehistoric archaeology on my own doorstep. I had never heard of such a thing near my own home and was surprised by how well preserved, albeit rather small, the features were. I was struck in particular by how those archaeological features seemed to be deliberately sited to take advantage of local natural features, such as the monolith-like outcrop of stone atop Headstone Bank, and the spring rising between that and the location of an embanked stone circle on the hillsope to the south-west. In turn, the entire prehistoric complex, consisting of cairnfields, standing stones, barrows and small field systems happened to overlook the head of the Rivelin Valley, with fine views eastwards almost to the confluence with the Rivelin and the Loxley. Could this be a coincidence? I don't believe in such coincidences. Then I learned from my knowledgeable fellow students that there were more prehistoric sites, including barrows that were to be found in the vicinity of the Don, many miles away, into which the Rivelin debauched. Naturally I wanted to read the book, so to speak, and find out how the prehistoric landscape was organised and what the story was for the region in which I had lived for 20 years but knew so little about. I wanted in particular to visit some of these other places that apparently were in South Yorkshire, a place hitherto that I would not have associated with prehistoric archaeology. It turned out that there was not a guide I could turn to, not even a reliable summary of the region's prehistory. That was the beginning of the long story that has resulted in this thesis.

Aims and Objectives

The broad aim of this thesis was to fill a major lacuna in the sequence of regional archaeologies of British prehistory. Regional prehistories are known from elsewhere including Cumbria (Evans 2005), Lancashire (Barrowclough 2008), Northumberland (Waddington 2000), The Humberhead levels (Van de Noort 2004), the Midlands (Mullen 2003), and Derbyshire (Edmonds and Seaborne 2001; Kitchen 2000; Barnatt and Smith 2004; Bevan 2003). The aforementioned are merely a representative selection of a widespread aspect of archaeological research.

However, the prehistory of the river Don drainage basin (including the modern regions of South Yorkshire, North Nottinghamshire, as well as significant portions of Derbyshire and North Lincolnshire), has been largely overlooked, and no work of synthesis for this region exists to date before the Iron Age.

The character of the landscape and environment, and how that changed over time, were important considerations integral to the approach taken in the interpretation, and helped to frame the chronological period to be investigated. The period covered begins with the Early Mesolithic and ends with the close of the Bronze Age. I felt that this broad period would both be manageable in terms of data collection at an appropriate resolution of detail, and logical. This is partly due to the very different nature of the landscape prior to the Mesolithic, and the very different character of the archaeological dataset beyond the Bronze Age.

Regional archaeologies addressing issues of social identity have been undertaken in the neighbouring region of the Peak District (Kitchen 2000; Edmonds and Seaborne 2001 for example) and an opportunity presented itself here to compliment that work. The main priority, however, was to put understanding of the study area on a systematic basis by drawing together information hitherto unknown in the wider archaeological community. The limited detail available with some data, and need to record very diverse categories over a wide area necessitated the preparation of a database with relatively low resolution of detail. Nonetheless, what follows demonstrates the great potential that the archaeological data has, and indicates what might be achieved if more detailed work on aspects of the corpus of information could be undertaken.

Overview

A crucial aspect of the interpretative approach I have taken is the integration of archaeological data, of very diverse nature and sources, with the changing environment as it was lived in by successive generations of inhabitants. The environment and the archaeological data need to be considered together, and they need to be managed separately for the sake of facilitating understanding of what are complex issues concerning formation processes and detailed and specialised arenas of study. Consequently the thesis is divided into two halves. Early chapters lay out the intellectual framework underpinning the interpretative approach, summarise the nature and content of previous work in the study area, and discuss issues concerning the character and formation of the database, and how the environment changed during the study period. Then a chapter describes the methodology used in analysing the data in its interpretative context. The later chapters, adopting a chronological structure, show how the analyses unfold through time. Each chapter opens with a brief summary of the relevant parts of the database, and concludes with a historical narrative. The final chapter brings together what has been learned in the previous three to propose answers to the research question. Below is a resume of the chapters and their content.

1. **Introduction**
   An explanation of the broad aims of the project, and the research question to be answered in that context, and description of the chronological and geographical parameters of the study area. An explanation of the structure of the thesis and summary of chapters.

2. **Regional Archaeologies, Approaches to Archaeological Regions, and the Present Study.**
   An examination of previous regional studies, definitions of archaeological regions and study area parameters, defining the concept of "region". Presentation of the research question within the context of the study area parameters as constituted here.

3. **A History of Archaeological Research in the Study Area**

Previous scholarship in the study area, including antiquarian and historical works, with special reference to previous archaeological research undertaken.

4. **Formation Processes and the Database.**
   A detailed review of the processes of environmental and human activity, including archaeological activity, that have influenced the character of the database.

5. **The Environment of the Study Area.**
   A comprehensive review of the history of environmental change across the study area until the end of the Bronze Age, utilising published data.

6. **Methodology**
   A description of the methods by which data has been collected, recorded in the database, and analysed.

7. **The Mesolithic**
   A comprehensive discussion of inhabitation detected with material culture, studied in its landscape contexts, in the form of a historical narrative to be developed over the following two chapters.

8. **The Neolithic**
9. **The Bronze Age**

10. **Confluence of Narratives: The Don Valley in Prehistory.**
    A discussion of and summary of the previous chapters, with conclusion, and recommendations for further work.

Chapter 2:

Regional archaeologies, Approaches to Archaeological Regions, and the Present Study

Introduction

“Over the hill” is how a woman described the location of her relations from the area around Bradfield in North Sheffield District. There were comings and goings on a regular basis. Sometimes lads from "there" would come over "here" on business, and end up marrying a local girl, and vice versa. That is how she had so many family connections there. “Here” was the Hope Valley in North Derbyshire, her place. “Over the hill” in Bradfield, approximately 15km away belonged to a quite separately constituted community, despite the connections, and the obvious similarities in topography with her own place.

The above anecdote, from a conversation between myself and a member of the public during archaeological excavations at Castleton, Derbyshire, in 2011, suggests two things about regions. First, that their boundaries might be physically defined by natural features. In this case the feature was the watershed between Hope Valley in North East Derbyshire and the valleys of the western uplands of South Yorkshire (North Sheffield District; Figure 2.1). Second, someone’s sense of identity could transcend such boundaries, implying different layers and complex scales of communal identity. These different scales of community matter when undertaking regional archaeologies. Study areas have the potential to become reified, and labelled as regions uncritically. How can researchers undertake such studies without unwittingly reifying study areas as pseudo-historical regions?

Figure 2.1: The watershed between Derwent and Hope valleys, Derbyshire, (left) and the Don drainage basin at Stanage Edge, South Yorkshire (right). Source: author.

The study area, situated in northern England (Figure 2.2) constituted in this thesis centres on the river Don and its tributaries, with their catchments. This fluvial system is defined not by the contemporary waterways, but by how they were constituted prior to the post-medieval drainage schemes initiated in the middle of the 17th century AD (Figure 2.4). These not only drained the Humberhead Levels to create the large arable plain we know today, but also changed the courses of rivers, altering the catchment itself (Figure 2.3).

The discussion below seeks to explain the rationale for the study area, placing it within the context of earlier regional archaeologies. A critique of previous approaches to the constitution of study areas will be followed by an evaluation of how senses of regional identity have been acquired and developed, consciously and unconsciously, by inhabitants in different times and places. The evaluation draws upon the work of scholars from history, archaeology, anthropology and social geography. It will demonstrate a general phenomenon: regional identities are constituted through familiar landscapes, people and tasks. It will be shown that waterways are at times crucial to this, particularly in small scale non industrial societies. Though often assumed to be boundaries, waterways can serve to connect communities, facilitating networks of shared material culture, experience and meaning. Around these networks, manifestations of regional and micro-regional identity ebb and flow. The primacy of waterways has informed the constitution of the present study area, and its inhabitation in prehistory. Insights from this chapter inform the archaeological analyses and interpretations that follow.

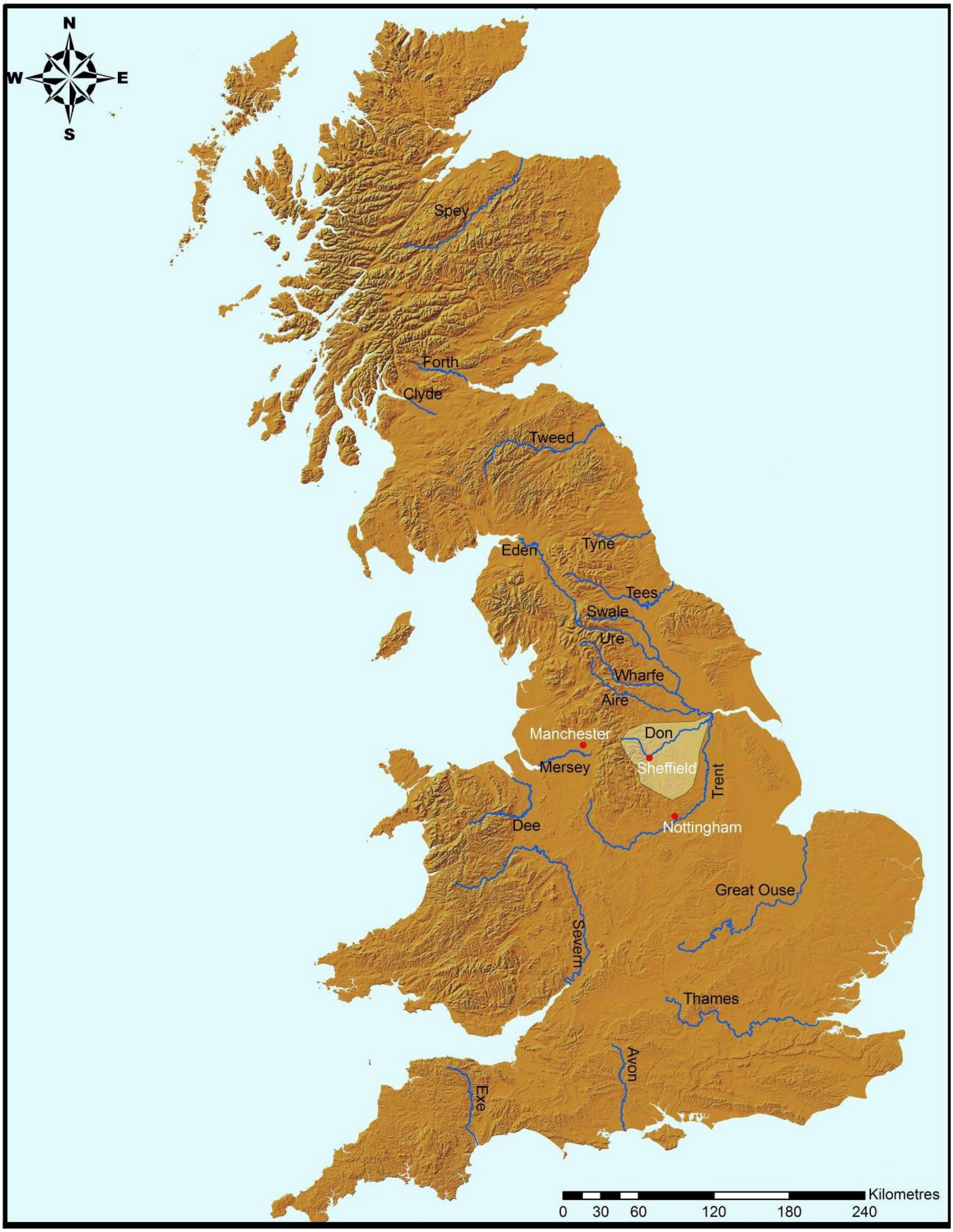


Figure 2.2: The mainland of Great Britain, showing the study area in relation to major rivers. © Crown Copyright/database right 2016, an Ordnance Survey/EDINA supplied service.

Figure 2.3: The former course of the River Idle, near Wroot, North Lincolnshire. Source: P. Buckland.

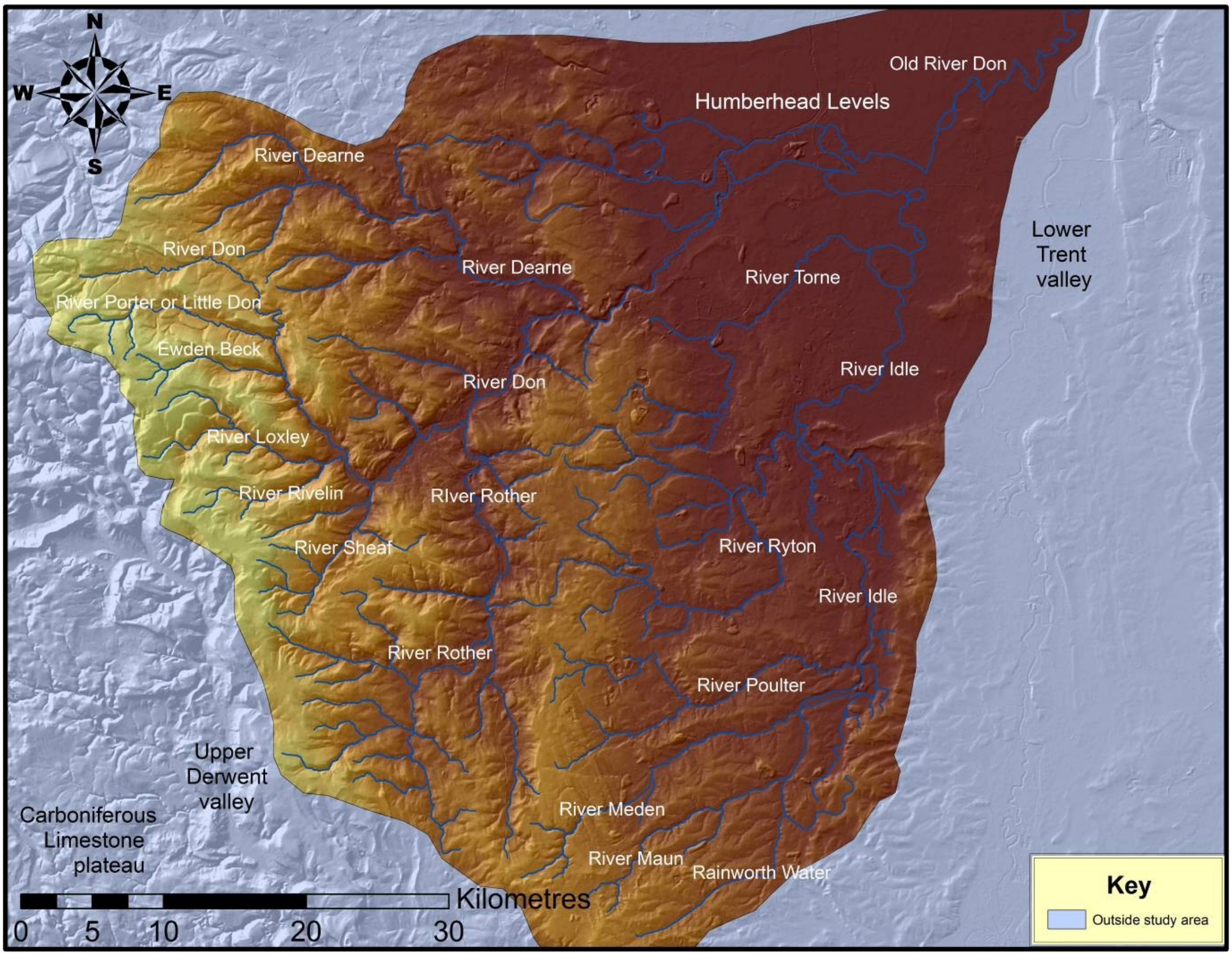


Figure 2.4: The River Don drainage basin prior to A.D. 1640. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Regional approaches in archaeology

Regional studies are popular amongst archaeologists in various parts of the world. In Britain, which is where this study is focussed, few scholars have thought critically about the constitution of their areas of study until recently (Jones 2011; Mullin 2011; Field 2011). Below follows a brief summary of how study areas have been designed in regional archaeologies prior to this.

Fox (1923), in an example of an early regional archaeology, centred his study on the city of Cambridge, bounding his study area with a 44 mile square box, based on a need to set limits and order data collection. However, it is implicit within this design that no postulated or assumed cultural validity was intended, and the very artificiality of the area militates against the unwitting reification of an assumed pseudo-historical region.

Elgee and Elgee (1933) took an administrative approach to the construction of their region, using the boundaries of the county of Yorkshire as the limits of study. Recognizing the artificiality and anachronistic nature of their study area, they took the trouble to describe the region in terms of its natural boundaries, thus showing a more explicit interest in how the environment itself might inform study area parameters although without explaining why. Childe (1934) was similarly troubled by the “national” boundary of Scotland. He discussed the topography, and the differences between the data in the north of Britain and that in the south of England. However, he did not dwell for long on the vast swathe of land between the two, and particularly that part immediately adjacent to his own area of study. Ultimately, he failed to explain why the political boundary between the modern states of Scotland and England should define the edge of his study area. His discussion of the topography, as with Elgee and Elgee, merely serving to furnish more reasons for questioning the basis for study area limits that follow contemporary administrative boundaries.

The majority of subsequent studies followed the administrative model (for example, Clarke 1960; Annable 1987; Evans 2005; Barrowclough 2008; Chadwick 2008), without asking how these contemporary administrative units related to the real communities of the past that they sought to understand. Some, perhaps mindful of the work of early scholars like Elgee and Elgee or Childe went further, basing their areas of study solely upon topographical considerations such as watersheds, drainage basins and mountain ranges (for example, Waddington 1999; Hosfield 1999; Russell 2001; Edmonds and Seaborne 2001; Bevan 2004). Waddington (1999: 15) went slightly further, arguing that the topographical characteristics of the Millfield basin, Northumberland, comprised a resource base that might have defined the home range of local Mesolithic hunter-gatherers. Definitions of this sort avoid the problems of using modern county boundaries or regions. However, even in these cases the edges of study areas, and by extension the areas which they bound, were assumed to have validity in an environmentally deterministic fashion.

The validity of such study areas is open to question, and while it is not here suggested that such studies were designed to demonstrate that, the unwitting reification of regions of questionable validity can be implied, particularly when furnished with names, whether contemporary and administrative such as county names or other historical regional designations such as "Peak District" or "Wessex". Therefore, the careful consideration of how study areas are designed and what they mean in terms of archaeological interpretations is something that should be made explicit.

The character of historical regions

In the general preface to the series “A Regional History of England” the editors, Barry Cunliffe and David Hey, justified a regional approach on the grounds that regional identities are demonstrable in the historical period (Cunliffe and Hey 1986: General Preface). In other words, since people living in the past have felt and expressed senses of common identity with respect to a particular region, these communities should be studied in regional contexts. It does not follow from this that they did not also experience senses of national or other forms of communal identity, but the existence of regional senses of identity require explanation. How have these common regional senses of identity been constituted? Examples informing and illustrating this are discussed below.

Harold Armitage (1939: 8), in describing the South Yorkshire area of Hallamshire, conceived his micro-region in terms of the distinctiveness of its people, usually constituted through the occupations for which they were known. In his day that meant mining and the making of metal tools. Many regions have been defined by the extent to which communities are linked by a common sense of social identity (Eyles 1985: 60-61; Cosgrove 1984: 2; Matless 1998: 147), exemplified by occupations in common. Between 1760 and 1860 industrialisation transformed a largely agrarian economy into one where manufacturing became the dominant employer (Anderson 2010: 223). In 1760 farmland constituted 47% of Britain’s national capital, and agriculture accounted for nearly 75% of the wealth of Britain (Anderson 2010: 223). Manufacturing only accounted for 7%. One century later, agriculture accounted for only 36% and manufacturing 24%. The region of the Don valley was one of the areas of Britain most rapidly and thoroughly transformed by these changes (Hey 1978: 8).

A method by which regions and micro-regions are perceived through the social characteristics of their inhabitants as exemplified by work can be termed a social catchment approach, or “social fields” (Welch and Terrell 1998: 51). The “social fields” analogy is one of bounded areas where socially and culturally homogenous small groups interact in a familiar setting (Welch and Terrell 1998), as sportsmen and women do on a sports field. In the case of Linton (1956) summarizing what it was that defined the region of Sheffield, the social catchment in question was very much based on occupation, rather than topography or geography.

However, social catchments expressed in work or other culturally specific phenomena can be fluid and ephemeral. They can, for instance, be contingent upon historical circumstances and can rapidly change. This has been shown in examples as diverse as 18th-century Nigeria, 19th-century Greece, and in the 19th and 20th-century Balkans (Salamone 1975; Welters 1995; Karakasidou 1997). In the Balkans, for example, for much of the post-medieval and early modern periods inhabitants differentiated themselves as communities at the very small scale of villages or nomadic groups. They did this by the use of different dialects of Slavic, Turkish, Greek and Latin derived languages, Christian and Muslim religious practices, and varying occupations with which different groups were associated (Karakasidou 1997). Materially, these were manifested by the use of different clothing styles, with differences being most marked by groups living in close proximity (Welters 1995). These communities were distributed throughout the Balkans. By the mid 20th century, however, this situation had completely changed during the course of nation building, with different parts of the Balkans assuming homogenous forms of identity based on assumed national characteristics. For example, Slavic speakers living in "Greece" either came to adopt the Greek language and ways, or were forced to leave. Greek speakers elsewhere in the Balkans were encouraged or forced to make similar adjustments (Karakasidou 1997).

The clear difficulty with taking an approach to a study area based on social catchments alone is one of archaeological evidence. How is regionality on this basis constituted materially? Differentiation would be difficult to establish materially within the dynamic and shifting situation described above. Identities are constructed through food, work, personal adornment and clothing, language and dialect, and religious practices (Souli 1989: 4-5; Mallos 2008; 7-10; Welters 1995; Salamone 1975: 11). Even when such things are expressed materially, the same artefacts can have different significance or meaning from group to group (Welters 1995; Welch and Terrell 1998: 50-51; Dietler and Herbich 1998: 254; 256; Hegmon 1998: 274). Furthermore, the separation of "work" from other aspects of social life including religious and domestic activities, and the manifestation of work in discrete chunks of clearly defined periods of time is a phenomenon of the industrial and post industrial western world (Thompson 1967). Prior to this and in non industrial societies, activities of a varied nature were undertaken which Thompson (1967: 60) characterises as "tasks", which were carried out in social contexts in which "work" was not differentiated from other tasks engaged in throughout the day.

To summarise, social identity at the small, regional, scale can be partially constituted during everyday tasks amongst people who are familiar with one another. This is not, however, expressed in any straightforward fashion, and can only partially be detected using archaeological data. Therefore, other ways in which regional identity is expressed or manifested must also be sought.

Landscapes and communities

Antiquarian scholars working within the Don Valley explicitly defined their areas of study using topographical criteria, including hills and valleys (Hunter 1819: 12), with particular reference to the course of the river Don and its tributaries (Miller 1804: 2-4; Hunter 1819: 1-10; Hunter 1828: ii; Holland 1837). Joseph Hunter (1828), known for being the first person to coin the term "South Yorkshire" (pre-dating the modern administrative designation by two centuries) gave as an alternative appellation "the great valley of the Don" (Figure 2.5). The unstated assumption, therefore, is that a region must be defined by its topography, and the waterways that connect its parts.

Later scholars of the region similarly constituted it through its hills and valleys (Armitage 1939: 17; Hey 1978: 9). However, Hey (1978) made the connection between its landscape features and the activities carried out in those landscapes. He was also the first scholar to draw attention to its sheer topographical diversity: to the east lie the former wetlands "so utterly different in character from the west that it is hard to imagine that the Pennines are so near" (Hey 1978: 9).

Figure 2.5: "The great valley of the Don", facing southwest from Melton Warren, South Yorkshire, along the middle Don Valley between Old Denaby (left) and Mexborough (right). The confluence of the Don with the river Dearne is to the immediate left of the bottom left hand corner. In the middle distance is Rotherham (left) and Sheffield (centre). Behind is just visible the Sheaf valley, with the east facing flanks of the southern Pennines and the watershed of the Don catchment rising behind. Source: author.

Recent work investigating the relationship between people and places has shown how senses of identity can be informed by reactions to certain topographical features (Matless 1998: 131; Pooley 2005: 137-166; Anderson 2010: 41). The Welsh, for example, even have a term, *hiraeth*, to describe a sense of belonging to or homesickness for, variously, either the mountains of North Wales, or the valleys of the south (Anderson 2010: 40). This level of deep emotional attachment to particular landscapes, and topographical features, suggests a direct relationship between where a person is and who they are (Chadwick 2004: 6; Anderson 2010: 41).

Thus, a concept such as "home" could be thought of as a synthesis of the physical characteristics of a region and its social characteristics (Hollaway and Hubbard 2001: 68). Cosgrove (1984: 19) is more explicit, suggesting that there is, for the inhabitant, no clear distinction between a person's identity and their location. In other words, the routines of daily activities, life's events, and the places where those things are situated form a symbiosis of being (Johnston 1998: 270). Eyles (1985: 133) makes the social aspect of this idea more explicit, noting that such phenomena occur in the context of interaction with familiar people. Places in the landscape therefore are a function of routines and daily activities conducted in a familiar environment (Knapp and Ashmore 1999: 15; Hollaway and Hubbard 2001: 79; Hind 2004: 141; Chadwick 2004: 7; Ingold 2000: 195).

On this basis, localities or entire regions could be defined as areas bound together by lifestyles that include tasks undertaken by people within a social context, and in particular landscapes. These identities can be manifested materially, as indicated earlier. The suggestion here is that this would be particularly strong in pre-modern, pre-industrial contexts where greater numbers of people, and a higher proportion of populations, would engage in tasks much more closely associated with the environment. The concept is one that the anthropologist Tim Ingold (2000: 190) has termed a "taskscape". Identities can be constituted in all manner of contexts and manifested materially in different ways. The importance of materially constituted activities situated in particular landscapes and specific locales is that they can serve as a proxy for the rich diversity of ways of life referred to above that are otherwise archaeologically invisible.

Landscapes can thus aid in providing a context within which to situate the varied material signatures of communities and their activities, but an important consideration is that they do not merely provide a passive backdrop (Edmonds 1999; McFadyen 2009: 126). The landscapes themselves, created in part through those activities, are integral to how inhabitants define themselves in ongoing interaction. This has been shown amongst non industrial societies as widely dispersed as Australia, Africa, and North America (Salamone 1975; Ingold 2000: 19-21; 47; 53-54). Modifications such as the encouragement or suppression of particular plants or animals, clearance of areas for habitation or subsistence activities, or the creation and modification of structures constitute a continuum of such processes. People and the landscapes they inhabit have changed together through continual interaction in this way.

Those activities and tasks frequently incorporate travelling or movement across familiar landscapes, particularly amongst hunting and gathering societies ranging across specific geographical areas (Helms 1987; Pandya 1990; Ingold 2000). It is suggested here that the landscapes, and individual features (whether "natural" or built) within those landscapes should therefore be regarded potentially just as much classes of “artefact” as any other class of material remains. The key to utilizing the various classes of material culture must lie in taking a contextual and holistic approach, which includes both monuments and the physical characteristics of the landscapes themselves (Johnston 1998: 56; Jones 2011: 3).

Thresholds or boundaries between such areas of landscape are therefore potentially part of the means by which different identities were constructed (Knapp and Ashmore 1999: 15; Westerdahl 2006: 46; Nozov 2006: 260; Edgeworth 2011: 64). They could arguably provide boundaries demarcating the familiar from the “other”. They might be “natural” features, or perceived cultural thresholds, or both (Figure 2.6). However, even where “natural”, they could only serve as thresholds or boundaries between regions if perceived as such by inhabitants. This cannot be assumed as a given, and archaeological proof for them as actual thresholds between regions inhabited by different groups is difficult to establish. Nevertheless, in terms of data collection, if potential “natural” thresholds can be identified, they would set reasonable and definite boundaries to a study area with the prospect being held open that they actually coincide with real world views, as experienced by past peoples.

Figure 2.6: Westwoodside and Haxey, at the southern point of the Isle of Axholme, North Lincolnshire, facing north from Gringley-on-the-Hill, North Notinghamshire. The water tower at the right of the photo marks the watershed between the Trent drainage basin (right, off photo) and that of the Idle (Don, left). Significant quantities of data, particularly from the Bronze Age, has been recovered from the locale of Westwoodside and Haxey within the Don drainage basin, but not from the watershed itself, which arguably served as a threshold or boundary between places. Source: author.

Mapping and understanding regions and the significance of rivers

Rivers were referred to at the start of the previous section in connection with the constitution of defined areas of movement and inhabitation. Rivers potentially have a multiplicity of functions and meanings. They are topographical features that can serve as thresholds or boundaries, but might also, for example, serve as routes of communication (Sherratt 1996; Chadwick 2004b: 64; 67; Mullin 2012). In the present study it is their potential for defining and facilitating regional senses of identity that is of particular concern.

In the case of the river Don, it is generally assumed to have been a boundary between regions since time immemorial (Armitage 1897: 1-2; Holland 1837: 7; 11; Hunter 1828: iii), usually beginning with reference to the supposed boundary between the putative “tribes” of the Brigantes and Corieltauvi. The boundary, and the very tribes themselves, are attributable to the evidence of classical writers who described "tribal" territories as constituted by the provincial administration of the Roman Empire (Harding 2004: 23). These have since generally been accepted *prima facie* without critical analysis, despite the lack of corroborating evidence, either literary or archaeological (Wacher 1978: 24; Salway 1981: 41-46; Cunliffe 1991: 110-130). They have then been projected back to the Late Iron Age (Salway 1981; Cunliffe 1991: 114; 223). Moore (2011) has shown how not only is this largely due to the uncritical acceptance of (poorly translated) classical sources, but that undefined concepts such as "tribe" mask what in reality are likely to have been fluid and complex relationships between social groups at a variety of scales. The supposed boundaries between these putative entities were not, for example, described by the classical sources along the lines usually assumed, but have been reconstructed from patterns in the distribution of coinages of the "tribes" with which they are assumed to correlate (Moore 2011: 11-12). No "tribal" coinages, it is claimed, provide unambiguously the names of the tribes they are assumed to represent (Moore 2011: 11).

In spite of the uncritical acceptance of the foregoing ideas, it is clear that many scholars working in the study area have, consciously or not, orientated themselves and their movements through the region along the river Don and its tributaries, rather than to either side of it (Hunter 1819; 1828: ii). Indeed, the entire two volume work of Holland (1837) is predicated on this assumption. The unstated assumption made by Hey (1978) which gives “South Yorkshire” its regional character surely comes in his orientation: west-east. The clue passes by without comment and is almost imperceptible, but the one feature that makes sense of this particular way of looking at the land is the river Don. The river Don, so often assumed to be a boundary, could therefore be envisaged as a way through landscapes rather than a barrier across them.

Perhaps the root of the discrepancy between rivers as barriers as opposed to ways through lies in how researchers have perceived their environment with the aid of modern cartography and scales of perception. Maps that belong to the post-medieval western European tradition of map making invariably assume an orientation that is north-south for example. So universal has this convention become that almost all maps produced everywhere in the world today follow this. It has the consequence of suggesting lines of movement, in terms of lines that we follow like the roads marked on maps, or imagined lines of the mind's eye that are assumed to connect places marked on maps even where such lines are physically absent (Ingold 2007: 49-50).

Other lines cutting across the aforementioned mapped connections might be perceived as obstructions on the assumed lines of movement. A map of Britain orientated north-south gives us just this kind of information, since the country orientated north-south forms a crude vertical line, that is cut horizontally by the courses of rivers rising in the Pennines running west-east, such as the Don. This thinking is explicit in Blair for example, in discussing the movements of the early medieval armies of Northumbria and Mercia (Blair 1984: 116-117; 119). Assumptions of this sort are perhaps easier to justify at such moments in history when world views are operating at the scale of kingdoms and empires writ large across landscapes. The Roman Empire possibly serves as the first example of this scale of perception within the British Isles, and its expansion across the island of Britain was along a line defined by its long axis. This line was demonstrably cut by the barriers across the island erected under the emperors Hadrian and Antoninus Pius. However, when viewed from the perspective of smaller communities whose world views were arguably on a much smaller scale, it is open to question whether this way of perceiving the world would really have been common, in the absence of large scale cartographic maps.

In fact even when societies have operated at the larger scales of awareness, with cartography in mind, maps have not always followed the above convention. They have been orientated on all points of the compass in various mapping contexts (see Figure 2.7 for example).

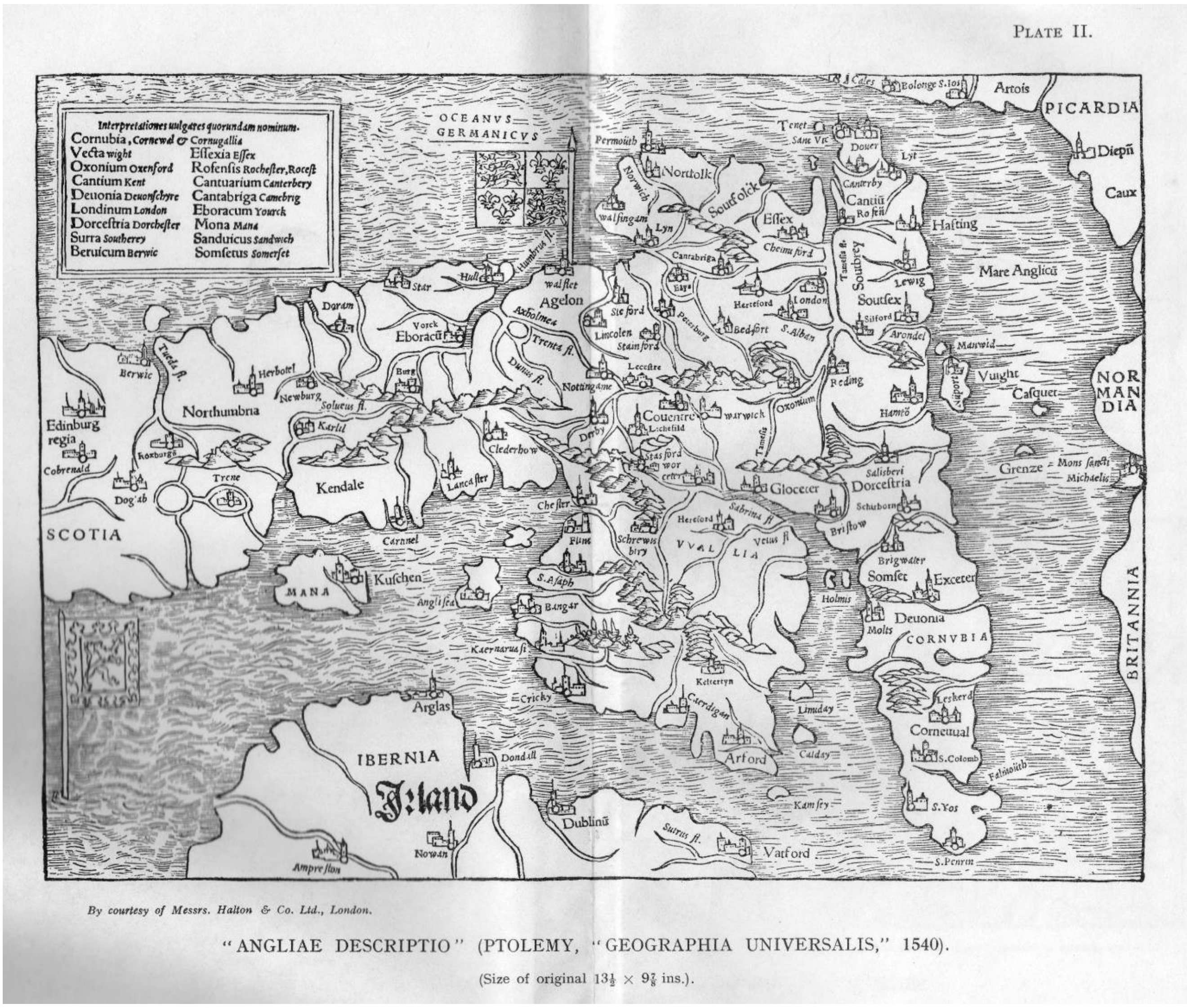


Figure 2.7: Map of Britain from 1540, based on Ptolemy (after Whitaker 1933).

A world perceived with the above orientation, and at a much smaller scale of perception, might suggest very different ways of traversing the landscape to that normally assumed, with those obstructive streams possibly becoming ways through, rather than barriers across.

The prospect that travelers in prehistory might have orientated themselves and understood their regions in ways very different to how travelers using contemporary cartography and its scale of perception might is given support in ethnographic research. This is in no small part due to the way that mobile communities such as the Ongee of the Andaman islands have created and understood their home regions through the medium of mobility itself (Pandya 1990: 777). Their "map" consists of knowledge gained from an early age about how their region is traversed along paths in the course of journeys between different areas that are inhabited at different times of the year. Such paths are punctuated by places along the way that are where particular social activities are undertaken or have been marked (Pandya 1990: 783-785). Mapping their routes does not mean inscribing them on two dimensional media using cartographic conventions. It consists of remembering places along the way in relation to each other, but not along the kind of fixed paths that might be followed if using western cartographic representations in relation to orientations based on cardinal points. In other words, their sense of regional identity is informed by knowledge of connections between places within the region rather than cartographic spatial representations. In the case of the Ilongot people of the Philippines, this is explicitly along the meandering lines of the paths they take when following the courses of streams (Ingold 2007: 81). Similar approaches to the understanding and "mapping" of home ranges by hunting and gathering travelers has been demonstrated elsewhere, such as amongst the Walbiri of Western Australia (Munn 1973: 215, quoted by Ingold 2000: 225), and the Ojibwa of Canada (Hallowell 1955: 195, quoted by Ingold 2000).

If we turn to the archaeological case that might give credence to the ideas above, In British prehistory, the suggestion is supported by distributions of monuments and artefacts that are known to correlate with the courses of waterways (Darvill 1987: 68; Sherratt 1996; Allen *et al* 1997; Bradley 1998: 121; Bradley 2000: 12; 37-38; Edmonds 1999: 145; Van De Noort 2004; Sainty 2007: 4-7; Peace 1981: Greaves 2011; Field 2011: 15; Edgeworth 2011: 67; Mullin 2012; Chapman and Geary 2013: 150). Sherratt (1996), for example, emphasises the importance of routes of communication, and in particular riverine communications between regions. He recognizes the need to understand sites in terms of their place in the landscape, but also that the extent to which they are connected is crucial to understanding the patterns of distribution of sites across landscapes (1996: 226). Ditched and banked enclosures, and ceremonial complexes have distribution patterns in particular which coincide with strategic positions overlooking waterways (Sherratt 1996: 218; 220; 221-222, Figure 2.8; Figure 2.9), and that even where water was not used as the mode of transport itself, it is likely that they marked routes, since movement along riversides are likely to be more easily traversed (Sherratt 1996: 225; Coles 1994; 298; Van de Noort 2004; 48).

Figure 2.8: Wincobank Hill, Sheffield, facing northeast from the bank of the River Don. Wincobank hill is the site an Iron Age hill fort, and was also the scene of activity during the Mesolithic period. The hill is situated close to the confluence of the Don with the River Rother. Source: author.

Figure 2.9: A standing stone (top) overlooking the confluence of Ewden Beck and Oaken Clough, South Yorkshire. Source: author.

Mapping through movement of the sort ascribed to the aforementioned ethnographic examples has memory at its core, and few topographical features can be as useful in remembering ways than the flow of rivers. This, for example, is made explicit in the descriptions of journeying between communities of reindeer herders in Siberia, where waterways and the lines of waterways feature in great detail (Argounova-Low 2012: 202). It can therefore be argued that although Sherratt correctly saw the relationship between the distribution of prehistoric monuments along waterways, and regional connectivity, he possibly overlooked the extent to which these correlations might also relate to shared experience and meaning within and between regional communities; they signify, arguably, thresholds between the regions and places where they begin and end. They include locations along pathways within regional patterns of routine movement easily remembered and deemed distinctive by familiar inhabitants with intimate knowledge of them, associated with particular activities, and life's events (Figure 2.10).

Figure 2.10: Crowle, North Lincolnshire, facing south from the line of the old course of the River Don. The unremarkable looking low prominence of Mill Hill, Crowle, in the background is surrounded by the levels. Crowle is thus much more prominent than it at first appears, and can be seen from a long distance across the flat expanse. For most of the study period in question, that expanse consisted of extensive reed beds, marshes and areas of standing water, and later the raised mires (see chapter five). At certain times of the year the water levels would have been high enough for it to have had the appearance of an island, like the "Isle" of Axholme to its immediate south. Such a place would have been distinctive and easily remembered by knowledgeable inhabitants. Data stretching from the Mesolithic to the Roman period has been recovered from Mill Hill and the vicinity. Source: author.

It has been demonstrated archaeologically that certain classes of artefact, such as stone axes, and in later periods metalwork, often occur in riverine contexts (Allen et al 1997; Bradley, 2000: 37-38; 121), including items which have clearly been deliberately deposited, sometimes without signs of use. They are frequently distributed along stretches of rivers, such as the Thames, and display different characteristics depending on which stretch of the river they happen to be in (Bradley, 2000: 53-54). Even artefacts that are not in rivers are often clustered in close proximity to riversides (Figure 2.6). This has been noted in palaeolithic material along the Don Gorge (Sainty 2007: 4) and in Mesolithic scatters found in proximity to the Don and along other nearby river channels (Peace 1981; Van de Noort 2004; Sainty 2007: 5; Figure 2.10), and finds dating from the Neolithic to the Bronze Age (Sainty 2007: 5-6).

The artefacts are not necessarily the products of local craftsmen and women, in local styles, but frequently originate in specific and often remote locations, such as the Neolithic stone axes of Cumbria. They are widely distributed across Britain and often occur in greater concentrations in places far from their points of origin (Needham 2009: 318). It has been argued that these artefacts have been used by different regional groups in different ways for the constitution of social relationships (Bradley and Edmonds, 1993: 204; Needham 2009: 320). The location of these artefacts in proximity to rivers goes beyond merely identifying a way of linking the passage of artefacts, and the regions through which they pass. It has been suggested that the locations themselves are significant. Rather than the objects alone being important in the negotiation of social relationships and identities, that the rivers also play a role in this, in their potential for liminality (Bradley, 2000; Chadwick, 2009: 221), and as places of significance in the landscape which connect different micro-regions (Van de Noort, 2004: 4).

Given the distribution of similar types of monuments from later prehistory noted by Sherratt (1996), particularly in the wider context of the earlier spread of Neolithic farming practices along river valleys in Europe (Davison et al 2006), and the distributions of artefacts noted by Bradley and others, rivers could also be argued to mark social linkage between regions and micro-regions, and even affect the orientation of regions and micro-regions (Helms: 1988: 22; Davison et al 2006; Sherratt 1996: 219).

Such micro-regions, it could be argued, have not only the distribution of extra-regional artefacts to establish supra-regional identity, but the waterway itself. Rivers, it is claimed (Helms 1988: 22; Chadwick, 2004: 214), were crucial to communities for establishing senses of place and identity. They connect regions and can even define them geographically (or micro-regions in the case of the Don), but are also features within those micro-regions incorporating places of significance along the way. Rivers, however, are not homogenous features and necessarily experienced by inhabitants of micro-regions in the same way. Apart from their different landscape settings, they change markedly in character from micro-region to micro-region, from small streams descending steep hillsides, meandering but deceptively swift flowing rivers traversing undulating lowlands, to broad channels crossing low lying plains subject to inundation (Park 2005; Folkard 2005).

Rivers can be said therefore to act in more than one way in the constitution of social identities and relationships. At the micro-level they have localised characteristics which can help to create notions of place, in conjunction with other aspects of local landscapes such as prominent hills, crags, gorges or escarpments, and locally erected monuments within those landscapes, and at key points along the length of a river such as meanders or confluences (Figure 2.9; Figure 2.11). At the regional level they can serve to remind people of the connectivity with distant places, by which ideas and material culture are transmitted in the construction of identities at that level. They also mark the ways along which places of significance to regional communities form the collective taskscapes that constitute their regions.

Taskscapes, as envisaged by Ingold (2000) and others consist of varied tasks undertaken by people that do not compartmentalise and distinguish between different facets of life's activities, in a post-industrial Cartesian fashion. The movement between places creates the taskscape, is embedded within and includes other aspects of the inhabited landscape such as plants, animals and the landforms themselves. The movements along pathways between the different parts of the taskscape map out regions by performative action, and define the relatedness between places along them by people that share that knowledge (Ingold 2000: 229-233; Argounova-Low 2012). Waterways are thus potentially crucial both as features in the landscape and indicating ways through it, linking the distinctive locales within the taskscape that form regions.

Figure 2.11: Deepcar, South Yorkshire, facing south southeast along the upper Don valley from Hunshelf Bank. The well known Early Mesolithic site is located to the immediate left of the photo, overlooking the Don on a precipitous ledge. The confluence of the Don with the Little Don is to the left of centre, a little downstream from the Early Mesolithic site. Source: author.

The Don valley in prehistory

The river Don and its tributaries flow through various topographically distinct landscapes. On the basis of the above discussions, we can expect to see communal identities expressed materially and contextually. The reason why they should be studied together is because of the connectivity of rivers argued by various scholars (Salamone 1975; Helms 1987; Sherratt 1996; Ingold 2000; Argounova-Low 2012).

In designing the present study area, rather than creating an artificial bounded territory, from which to look inwards, the rivers will be used as a base line, from which to look outwards, to networked social catchments expressed through monuments, material culture and landscapes, distributed along the line of its interconnected waterways. Limits must be placed on data collection, and these limits will, by default, define the maximum extent of whatever social catchments are identified, and how they ebb and flow over time. Nevertheless, data collection limits will not necessarily define the edges of social catchments.

From the perspective of data collection, there will be a boundary that is ultimately artificial and bears no assumed connection with ontological or historical reality. It will be defined by the watersheds of the Don itself and its tributaries, but without the questionable assumption that this defines the real boundaries of a pseudo-historical territory. Practical limits will be set to what is achievable in terms of data collection, but within a framework that facilitates the meaningful study of real communities of people.

It follows from this that within a study area that is large, encompassing not only the Don Valley itself but the valleys of its tributaries, variously constituted social territories might have existed in part or whole up to (and potentially beyond) the edges of the study area. It must be assumed that these cannot have remained static over a period spanning many thousands of years.

The question that remains to be answered concerns the prehistoric past, long before the documentation of the foregoing examples. Regional identities, materially and environmentally constituted are known historically, and have changed over time. To what extent will contextual analysis of monuments and material culture in the area at question reveal similar phenomena in prehistory?

Chapter 3:

A History of Archaeological Research in the Study Area

Introduction

This chapter reviews the history of archaeological research in the study area. It begins with antiquarian scholarship, largely confined to the 19th century. This is followed by a description of early archaeological research, which belongs to an amateur tradition that formed the bulk of activity until the late 20th century. Early, largely institution based, professional archaeology is then characterised, leading to the period of “rescue” archaeology and development of “community” archaeology. Finally, the character and impact of developer funded archaeological work is described.

The review focuses on a selection of past research chosen on the basis that it must have direct or indirect relevance to the present study. Most of the work therefore directly addresses the period between the beginning of the Mesolithic to the end of the Bronze Age, or indirectly has a bearing on these periods. Thus later prehistoric work that also includes material of earlier, or potentially earlier, provenance or significance is also discussed. Additionally, work by researchers who have not pursued a specifically earlier prehistoric research agenda and have more general interests is also considered, where it has an important bearing upon the history of research in earlier periods.

Antiquarian scholarship

The earliest antiquarian work in the study area was written by Robert Thoroton (1623-1678). Thoroton was a man of relatively humble origins, and was the first member of his family to study at university (Henstock and Train 1977), taking an MA at Cambridge in 1646. From that time he practised as a medical doctor while pursuing his amateur interest in antiquarian studies. The results of his work, *The Antiquities of Nottinghamshire,* were published in 1677. Settlement by settlement, Thoroton described everything and everyone that he could identify in the documentary archives. A new edition of the work was published in 1790, edited and with additional information prepared by the antiquary John Throsby. Throsby reproduced Thoroton's work *verbatim*, merely updating the work by adding new detail at the end of each original entry. In the preface to the 1790 edition, Throsby summarised the aims of the history as being to describe in detail "ruins; fragments of antiquities; engravings of natural and artificial curiosties" but also detailed descriptions of each settlement in the author's day (both Thoroton and Throsby) and the names and biographies of its prominent inhabitants, and information concerning the land use and economies of the county (Throsby 1790: XIX).

Thoroton, in his entry for Scaftworth writes that the remains of the Roman fort were still visible and that part of a spear, as well as pottery, were recovered during the cutting of ditches across the earthworks (Thoroton 1790, vol.III: 323). However, this is a rare example of material dating from before Domesday being discussed. In practice, the vast majority of the work discusses the history of the settlements, estates and their owners in the historical period, and the economic uses to which the landscape was put at the time of writing.

Antiquarian scholarship in the North Nottinghamshire area is noticeable by its absence after Thoroton's time. Major Hayman Rooke conducted a modest level of antiquarian excavation in the vicinity of Mansfield in the late eighteenth century (Butler 1954: 3; Sherratt 1965: 4-19), but apart from his work and the contribution of Throsby in 1790 nothing of note, even the recovery of stray finds, occurred in the North Nottinghamshire area before the 20th century (Butler 1954: 4).

In the vicinity of the Don valley, little interest seems to have been shown in antiquarian study before the nineteenth century, but then flourished. Edward Miller (1735-1807) was the first of this new generation of antiquaries. Miller's origins were very humble, being the son of a pavior (pavement layer). He was expected to follow his father's trade, but left to become a musician instead ("Dotted Crotchet" 1905: 374), eventually becoming the organist of St. George's Minster in Doncaster in 1756, a position which he held until his death. Miller took a doctorate in music from Cambridge in 1786 ("Dotted Crotchet" 1905: 375), but had antiquarian interests as well: his *The history and antiquities of Doncaster and its vicinity* was published in 1804.

Miller's history is a descriptive narrative of an area that broadly encompasses everywhere between Rotherham in the west to Thorne in the east, and from Pontefract in the north to Bawtry in the south. It thus consists of a transect of the landscape that is explicitly defined by the course of the River Don and its tributaries (Miller 1804: 2-4).

Miller's (1804) history begins with Domesday. His work does not rely solely on documentary evidence, and he emphasises that every place that he describes is a location that he personally visited. This includes noting monuments in the landscape such as a "tumulus" near the entrance of Conisbrough castle and "ancient fortifications" at Stainber. The date of these monuments is not discussed, other than to make the claim that the "tumulus" at Conisbrough castle is reputed to be the burial place of Hengist. Miller's work is partly concerned therefore with the historic environment, but he is interested in much more than that: he describes Doncaster's natural history, its agriculture, its ecclesiastical history and much else to do with its contemporary social and economic life. The second part of his work is a descriptive account of the outlying towns and villages, taking each outlying village in turn, grouped by proximity to Doncaster.

Miller is not alone in choosing an area of study that is described by the locations of settlements along the course of a river. William Peck did so in his book *A topographical History and Description of Bawtry and Thorne with villages adjacent,* published in 1813. The River Idle and its importance for Bawtry and its trade, "very ancient", are explained at the outset (Peck 1813: 10). Austerfield, Finningly, Lindholme and Hatfield also feature, as well as Thorne.

Peck describes every settlement in terms of the histories of its most prominent families, and buildings deemed of particular importance, such as churches and chapels. Additional information about the economies of the foregoing settlements is also given. There is little mention of the history of the area before the Normans, apart from noting the site of a battle by the Idle near Austerfield in AD 542 (Peck 1813: 61) and his excursus on the battle of Hatfield, where Edwin of Northumbria is reputed to have been defeated and slain by a coalition of the British and Mercians in AD 633 (Peck 1813: 89).

Peck followed this work with the publication in 1815 of *A topographical account of the Isle of Axeholme.* Little is known about Peck, but he was later regarded as being a man knowing "little of literary art" and "without the advantages of a liberal education" (Peacock 1870: 137), despite being acknowledged as "trustworthy, and in a certain sense interesting" (Peacock 1870: 137). Perhaps his origins can therefore be assumed to have been as humble as those of his antiquarian colleagues. In some ways Peck's later work repeats the format of the earlier, with treatments of agricultural developments and practices in his time, and the genealogies of prominent families, but also includes an account of local sports and pastimes, the cutting of the Keadby and Stainforth canal, and biographies of prominent local literary figures and preachers. However, of more obvious relevance to prehistoric archaeology are his accounts of local geology and soils, and the general lie of the land in terms of its elevation. Peck also gives a detailed account of the history of the drainage of what are now known as the Humberhead Levels, beginning in the medieval period, but carried out on a much larger scale, in stages, from the time of Cornelius Vermuyden in the mid 17th century.

The drainage of the levels radically altered the conditions under which archaeological artefacts were preserved, drying out vast areas of the landscape that hitherto had provided a wet and anaerobic environment for organic material. Most of the organic data has since been lost as a result, but several early scholars described the recovery of trees and related material including worked wood from the region (Buckland 1976: 158-61). Peck repeats information gained from Abraham de la Pryme, writing at the end of the 17th century (Peck 1815: 2-5) concerning ancient trees including fir, oak, birch, beech, yew, wirethorn, willow, and ash and the frequent recovery of hazel nuts and acorns from the area. Peck also recounts the observances of eye witnesses that recalled the nature of the local flora in the days before drainage when the landscape was still a royal chase (Peck 1815: 4).

Perhaps because Peck was aware that the levels had formed an environment that was conducive to the preservation of ancient material culture, he takes more of an interest in prehistoric material than in his earlier work: According to de la Pryme (cited in Peck 1815: 7) a great deal of the recovered wood showed signs of having been worked, some pieces even retaining broken axe heads in them. The prehistoric material also included a dugout canoe for example, and a probable Roman wooden statue recovered in 1802. Peck also took an interest in "Roman reliques" (1815: 7).

A concern with the environment is a common aspect of the antiquarian scholarship that is described above. This includes elevation, hydrology and even climate. Miller, for example, emphasises the importance of local climatic conditions in helping to establish the framework for the identity of the Doncaster area (Miller 1804: 6, 24).

Environmental factors, and how they help to characterize a region, was continued by the next scholar to investigate a substantial part of the region of study: Joseph Hunter describes *Hallamshire* in terms of its streams and rivers (Hunter 1819: 3, 10), and its well wooded valleys and hills (Hunter 1819: 10-12).

Joseph Hunter (1783-1861) was born in Sheffield, the son of a cutler (Hunter 1861: 3). His mother died shortly after his birth, and he was placed in the care of the Rev. John Evans, a Presbyterian minister. Hunter's interest in the antiquities of his native district began while a child, but his early professional life was that of a Presbyterian minister like his guardian (Drury 1914: 12). He took his first post as a minister in 1809, in Bath (Hunter 1861: 4; Drury 1914: 12), but continued to pursue his antiquarian interest in the place of his birth. Hunter's *Hallamshire* was published in 1819, consisting of two sections, the first a narrative history of Sheffield and its district, followed by descriptions of its various parishes. His discussion of the upland areas to the north of the city include references to a stone circle and barrow cemetery on Broomhead Moor, with the tumuli including cremation burials and a "celt" (Hunter 1819: 269).

Hunter is best known for his two volume work *South Yorkshire,* published in 1828 and 1831. Hunter's general approach is similar to that of Miller, beginning with a broad overview of the history of the region, followed by descriptive narratives of each town, village and locality, relying for the most part on documentary sources, supplemented with personal observations and anecdotes.

For prehistory, Hunter's views can best be summed up in his own words: "When there is no written recovery of the past, we can live only with the present generation; in the ages which are gone by, all is indistinctness, and the want of accurate knowledge often betrays itself in ludicrous absurdities" (from the preface). He goes on to add that the vast majority of his work does not refer to times earlier than Edward the Confessor.

Hunter excuses his interest in his region on the grounds that it is the place of his birth, and that the "district is little known, for by far the greater part of it has never been approached by any topographer" (Hunter 1828: preface), although he does acknowledge the work of his predecessor and friend Edward Miller. Hunter explains in his chapter on the general history of the region that he is concerned with describing the monuments, villages and towns of the region, and their histories, in their context, and this context is a discrete area of the landscape defined by the course of its greatest river and its tributaries (Hunter 1828: ii). This is his reason for writing a history of "South Yorkshire", as opposed to the West Riding of Yorkshire. "South Yorkshire" is a term which he coined, and to which he suggested as an alternative appellation the term "the great valley of the Don" (Hunter 1828: ii).

John Holland followed the interest shown by Hunter in the Don valley when he wrote his book *The tour of the Don: a series of extempore sketches made during a pedestrian ramble along the banks of that river, and its principal tributaries,* published in 1837. Holland (1794-1872), well known to Hunter (Hudson 1874: 2), was born in Sheffield Park, the son of a maker of optical instruments (Hudson 1874: 3). He was a prolific poet, who divided his time between working in his father's trade, teaching in Sunday school and in his literary pursuits (Hudson 1874: 10-13). His love of the natural environment informed his poetical output (Hudson 1874: 14), and clearly influenced his approach to his antiquarian interests: Holland's book takes the form of a progress along the river valley, beginning where the river rises near Penistone in the west and moving east downriver, with forays up tributaries along the way. Hunter's *Hallamshire* emphasises the importance of the natural environment, in its extensive introduction, and this book above others made a deep and lasting impression upon Holland (Hudson 1874: 39).

Holland's (1837) progress provides the framework for his discussion, which, as with other antiquaries, consists of a detailed local history of its various major settlements, such as Sheffield, Rotherham, and Doncaster, as well as minor settlements. He also discusses ecclesiastical matters, geology, the drainage of the Humberhead levels, and matters to do with the flora and fauna of individual locations such as the district to the north of Sheffield. The built environments are also described, such as Thurlstone, as are agricultural matters: thus we learn that in Holland's day the area around Penistone was under arable cultivation, and that in the area around Langsett oats were grown.

True to his antiquarian perspective, Holland also makes reference to objects, material and monuments that he regards as being of great antiquity, including ancient trees and associated finds such as hazel nuts and worked wood recovered from riverine contexts beneath clay in the Sheffield area. He also refers to the existence of archaeological antiquities, such as the tumuli on Broomhead Moor, the earthworks at Wincobank and the nearby Roman fort at Templeborough, and the frequent discovery of ancient trees, human remains, coins, and ancient axes on the Humberhead levels.

The last great writer of the antiquarian tradition in the region, John Tomlinson, published his *Doncaster from the Roman Occupation to the present time* in 1887. In the preface, he declares his intention to confine his subject to secular matters, a departure from previous practice, on the grounds that church history is to be the subject of a separate volume (Tomlinson 1887: vi). He indicates on the first page that he is aware that the general area had a history before the historical period, noting that stone tools had been recovered from the Magnesian Limestone slopes to the north of Doncaster. Nevertheless, he declares that his purpose is “to register facts, so far as they can be ascertained, and to eschew hypotheses” (Tomlinson 1887: 2).

Tomlinson described the “facts” in great detail in a simple chronological narrative over the rest of his book. The first chapter of Tomlinson’s work concerns the period before the Norman Conquest, and includes sometimes detailed descriptions of archaeological material recovered in the area dating to the Roman period, including altars and pottery (Tomlinson 1887: 4-6). The rest of the book consists of a description of events in Doncaster given in simple chronological order, in a narrative historical style, ending in his own day.

Tomlinson’s work, along with his predecessors in the region, can be characterised by the diverse themes which dominate the antiquarian tradition: current economic use of the landscape, historical events and the lives of prominent personalities, along with sometimes detailed descriptions of the places and individual buildings which formed the backdrop for those events. The nature of the landscape, and even the climate, feature high in descriptions of the areas of study, and help to define what those areas of study are, geographically.

Treatment by the antiquarians of what we now call prehistory is confined to occasional anecdotes concerning undifferentiated monuments and material culture, or local stories about legendary battles, generally assumed to belong either to the Roman period or a homogenous “ancient British” or “Brigantian” era before the Romans (Miller 1804: 303; Peck 1813: 61; Hunter 1819: 14-15; Hunter 1828: iii; Tomlinson 1887:1).

The advent of seriation, establishing the ordering of material culture into typologies, with “types” developing in a progression over time, represents a revolution in the development of archaeology as a scientific discipline. Along with the creation by C. J. Thomsen of the "three age" system in the early nineteenth century, such advances allowed scholars of the remote past for the first time to think rather differently about prehistoric material. This was in sequences stretching over a chronology of much longer duration than hitherto imagined.

Thomsen and others were not initially well known beyond Scandinavia, partly because they were not published in English (Rowly-Conwy 2007: 83-84). When news of the new ideas began to filter through, they were often met then with vigorous opposition by scholars that already had a framework for understanding pre-Roman monuments and material culture. This framework explained differences in assemblages containing chipped stone, bronze and iron by reference to status and cultural practices within a homogenous "Celtic" period of short duration (Rowly-Conwy 2007: 115-120). Thus, the very concept of a "prehistory" that came before the Roman period was not universally accepted for much of the century, despite the work of Thomsen (Rowly-Conwy 2007).

Early archaeological research in the region

Tomlinson's work comes at the end of a tradition of topographic study that employed multiple branches of enquiry to describe the characteristics of a region. These branches of enquiry were to diverge from the late 19th century, as the modern disciplines of archaeology, social history and local history, as well as geography and its sub-branches began to take shape as more specialised forms of enquiry in Britain. Already by 1873 the Rev. Alfred Gatty was publishing *Sheffield: Past and Present* as a book that was purely a work of narrative history.

Prehistoric archaeology was also emerging for the first time as a branch of scientific enquiry in its own right, through the study of prehistoric material remains. Tomlinson uses this approach to a modest extent himself, but from the late 19th century purely archaeological approaches incorporating the aforementioned developments in seriation were used to attempt to understand the societies that antiquarians like Hunter or Tomlinson had previously deemed unknowable.

The work of Ella Armitage (1841-1931) marks an important turning point in the history of local scholarship. Like her predecessors, she was also an amateur in the field of archaeology, but unlike them she had received education to degree level in history at Cambridge, becoming a research student in 1874 (Counihan 2004). She later taught history at Owens College in Manchester, developing an interest in the area's medieval castles and earthworks.

Armitage's work has an antiquarian character to it, as it takes the form of a historical narrative, and covers a wide range of topics including ecclesiastical history (Armitage 1897:

121-304). Armitage herself implies that she regards herself as an antiquary (Armitage 1897: 16). However, her *Key to English Antiquities, with Special Reference to the Sheffield and Rotherham district,* does not include some of the topics that are familiar from earlier works, such as current agrarian practices. Her treatment of prehistory (Armitage 1897: 16-44) is much more detailed and systematic, being subdivided by themes such as Long Barrows and Round Barrows in chapter two and "camps" and earthworks in chapter three. Crucially, Armitage organizes her treatment chronologically, within the framework of the "Three Age" system pioneered by C. J. Thomsen.

For the first time in the region, prehistoric artefacts and monuments are more than a collection of curiosities. The three age chronological system allowed Armitage to discuss cultural differences, as these changed over time. Armitage initially explains these changes in terms of perceived racial differences between the occupants of the different styles of burial mound, with the implication that new people either displaced or possibly merged with earlier populations (Armitage 1897: 27-9, 307-8). Later she ascribes cultural change to successive "waves of influence" passing over different races, no matter how far apart, as part of an upward trajectory of progressive cultural development (Armitage 1897: 33).

At the same time that Armitage was attempting a synthesis of the known corpus of archaeological information from across her area of study, other amateurs interested in archaeology were taking a quite different approach. Reginald Gatty, the son of the aforementioned historian Alfred Gatty, was engaging in fieldwork. Gatty was the rector of Bradfield and spent his spare time walking across the landscape searching for flintwork (Greenwell 1914: 91-3). When he was transferred to take up ministry at Hooton Roberts, near Conisbrough, he continued to collect flints that formed substantial collections at Weston Park Museum and Clifton Park Museum, in Sheffield and Rotherham respectively (Armitage 1939: 6). Gatty was not only interested in his immediate surroundings though. He also established a reputation through his work in North Lincolnshire, identifying a number of sites where "pygmy flints" were recovered (Greenwell 1914: 92), that in today's terms would be recognized as Mesolithic.

Gatty was not unique in wishing to further knowledge about the prehistoric past by collecting artefacts from and identifying monuments in the landscape: By the early years of the 20th century a number of interested and like minded people had coalesced to form the Hunter Archaeological Society (Leader 1914: 109-10). Formed in 1912, and named after the antiquarian Joseph Hunter, the stated aim of the society was "To…record all antiquities discovered in the progress of public works", and to collect information in general that "require more thorough examination by systematic scientific investigation" (Leader 1914: 109). The Hunter Archaeological Society resolved that the results of the fieldwork of its members must be made public, and the first issue of its Journal, the *Transactions of the Hunter Archaeological Society,* was published in 1914.

In the early years, most information published in the *Transactions* was confined to collating finds that had been recovered during public works and private development from around the society's region: North Derbyshire and South Yorkshire (Winder 1914; Armstrong 1920a, 1920b; Howarth 1921; Armstrong 1922; Baggaley 1928, 1932; Himsworth 1942). This began to change with the work of Leslie Armstrong (see below).

The Hunter Archaeological Society was not alone in providing an organised focal point for local studies. The Thoroton Society of Nottinghamshire was founded in 1897 and predates the HAS by several years (Standish and Phillimore 1897). It too expressed a concern for and interest in local antiquities (Standish and Phillimore 1897: 9). However, before 1927 almost no recording of prehistoric artefacts or monuments was undertaken. When that came, it was on the site of a Roman fort (Oswald 1927), at which Neolithic and Bronze Age artefacts were noted.

Within the geographical bounds of the present study, Leslie Armstrong (1878-1958) was undoubtedly the most important archaeologist working before the Second World War, and a member of the Hunter Archaeological Society from 1920 until his death (Anon 1960: 101). The son of a printer from Harrogate, Armstrong’s early career was as an art teacher in Ripley, before moving to Sheffield in 1912 to take a position as a surveyor (Anon 1960: 101). He was an amateur with skills that were to stand him in good stead when recording Sheffield Castle between 1925-7 (Anon 1960: 101), but his interests were diverse, including fieldwork in South Africa (Allsworth-Jones 2012: 30) and most importantly, at the internationally important post-glacial sites at Creswell Crags in North-East Derbyshire (Anon 1960: 103; Armstrong 1926).

Armstrong’s fieldwork at Creswell, with its meticulous attention to detail, is frequently refered to by Harold Armitage in his synthesis of the earlier prehistory of the region of Sheffield (Armitage 1939). Near the end of his life, Armstrong himself contributed a chapter to an edited volume that synthesised much of the earlier prehistory of the region as it was then understood (Armstrong 1956: 90-111). This included his research at Creswell, but went much further than the Palaeolithic: The chapter opens with a claim worth quoting in full:

> Archaeologically, the north Midland region is unrivalled In Britain for its complete record of prehistoric occupation from the dawn of the Palaeolithic to the end of the Bronze Age and beyond.

The unbroken sequence allowed Armstrong to describe a succession of tool types and monuments that are presented in distribution maps. Although nominally describing the Sheffield area, Armstrong’s study encompassed an area stretching from North Derbyshire to the Humber estuary. Changes are described in terms that Ella Armitage would have understood: a succession of migrations, fusions between “races” (Armstrong 1956: 102-03), and assumed “influences” explaining cultural change (Armstrong 1956: 104).

The fieldwork undertaken by Armstrong was followed by a new generation of archaeologists from the 1940s onwards, all of whom engaged keenly in field archaeology, the results of which came to be published regularly in the pages of the *Transactions.* This included the retired accountant Harold Copley (1897-1949), who was the first person to survey earthworks in the vicinity of Rotherham (Copley 1948a; 1948b), and who amassed a collection of flintwork from the area, making an early attempt to record the locations of the finds on a systematic basis (Copley, unpublished field notes held by Clifton Park Museum). The two dominant figures in prehistoric scholarship in the region at this time were Fredric Preston (1905-1994), and Dorothy Greene (1898-1998).

Greene was the daughter of a mine worker at Grimethorpe colliery in Sheffield, who moved to Rotherham after the untimely death of her father in an explosion (Wagner 2012: 32). She began her working life in the drawing office of an engineering company, but soon became interested in archaeology as a result of meeting at work the excavator of Templeborough Roman fort (Wagner 2012: 32). While working in the office of the Borough Engineer, Greene acted as an unofficial archaeological advisor, and was eventually moved to Clifton Park Museum, becoming its keeper of Roman Antiquities when the museum began displaying the finds from Templeborough (Creamer 1999: 81). Greene was an active member of the Hunter Archaeological Society for 78 years, but was nevertheless the first archaeologist in the region also to work as a paid professional.

Greene’s contributions to the archaeology of the region included a survey of Roman roads (Green 1948, Green 1958) and excavation reports on a linear earthwork stretching 11 miles along the north side of the River Don between Sheffield and Mexborough, the “Roman Ridge” (Green 1947; Green and Preston 1951; Green and Smedley 1958), and a suspected Roman road (Greene and Wakelin 1948).

Her contemporary, Fredric Preston, was the son of a steel worker, who spent his professional life as a bank worker (Beswick 1995). After initially pursuing local history, Preston turned to archaeology, making significant contributions in the form of detailed surveys of the “Roman Ridge” (Preston 1949; 1950), and papers on the significance of “hillforts” in the region (Preston 1947, 1954). However, his outstanding contribution was, with fellow amateur archaeologist Leslie Butcher, in designing the “scheme” for archaeological research (Beswick 1995: 77). The “scheme” was a detailed inventory of all known archaeological artefacts and monuments from across the region, which was periodically summarised and published in the form of distribution maps (Preston 1955: 211-12; 1977: 285-95; Jones 1989: 56). This was eventually to form the basis of South Yorkshire's Sites and Monuments Record (Beswick 1995: 77).

Another of Preston's significant contributions was the establishment of the Hunter Archaeological Society’s Field Research Section, which was designed to systematically record and monitor all known sites and monuments, with the aim of furthering archaeological knowledge of the region as a whole and help facilitate research strategies (Beswick 1995: 77). The Section also organised and conducted fieldwork, such as the topographical field surveys of Big Moor and Ramsley Moor in Derbyshire in 1956-57 (Jones 1989: 57), and the excavation of the prehistoric features at Swine Sty in Derbyshire in the late 1960s (Jones 1989: 58).

On the basis of the forgoing developments, both surveying and excavation became the hallmark of archaeological activity across South Yorkshire and North Derbyshire in the post-war decades. Even in North Nottinghamshire, which saw little activity during these years, fieldwork was the occasional medium through which people attempted to engage with prehistory: excavations were directed by A. Oswald, son of the excavator of Margidunum, at Mansfield Woodhouse, using volunteers that were in part drawn from the HAS (Oswald 1949), and the Iron Age excavation at Scratta Wood in the early 1960s (White 1966; Chadwick 2008: 1202-04; Dolby 2008; Figure 3.1 below), also drew volunteers from the Sheffield area.

While syntheses were produced (Preston 1947; 1954; Armstrong 1956), the momentum subsequently slowed, with the only work synthesising prehistoric archaeology being the contributions to Mesolithic research by Radley and Marshall (Radley and Marshall 1963, 1965). Instead, local archaeologists concentrated their efforts on fieldwork. Much of this activity was published in the form of reports in the regional journals of the Hunter Archaeological Society, the Yorkshire Archaeological Society and the Derbyshire Archaeological Society. Yet with time even the results of fieldwork began to be disseminated less often. Leslie Butcher, for example, conducted detailed topographical surveys over many years that were not published until after his death (Beswick and Merrils 1983).

Derrick Riley (1915-1993), was perhaps the last archaeologist who worked purely in the amateur tradition, and who did publish prolifically. Riley's early work followed the pattern familiar from his older contemporaries. This included making contributions to prehistoric archaeology by reporting on surveys of Bronze Age monuments on Ramsley Moor (Riley 1960), and on a discussion of some unpublished flintwork collected by Leslie Armstrong from Ughill in the Loxley Valley (Riley 1962).

However, Riley's most important contribution to scholarship in the region followed from the skills he had learned as a pilot in the Royal Air Force during the Second World War (Bewley 1995: 76). After the war, Riley was offered a position as an Inspector for Ancient Monuments, but declined the offer, in preference for a career in the engineering industry (Bewley 1995: 76). He had by no means lost interest in archaeology, and continued to pursue his research as an amateur. Riley exploited his skills as a pilot in his use of aerial archaeology. By flying over the landscape during the summer months, Riley was able to detect ancient sub-surface features as marks in arable crops.

Riley published the results of his work regularly (Riley 1973; 1976; 1977; 1978), culminating in the publication of two highly regarded books on the subject (Riley 1980; 1987). His contribution transformed knowledge of the extent of later prehistoric monuments in the region, laying the foundations for much of the fieldwork that was to follow. Riley's flights took him over the whole region and beyond, noting particular concentrations of sub-surface features over the Magnesian Limestone belt running north-south through the middle of eastern England. However, Riley himself noted that some of this difference, at least, was due to differences in the underlying geology rendering features on the Magnesian Limestone more predictably visible (Riley 1977). Since his resources were limited, this encouraged a strategy of concentrating efforts over those areas most likely to yield positive results, resulting in bias of the sample recorded.

"Rescue" archaeology, and early professional field archaeology

A distinct sub-branch of archaeological activity during much of the 20th century, and one that was to have important consequences for the development of archaeology in the region, was what is termed "rescue" or "salvage" archaeology (Garton *et al* 1988; Eccles *et al* 1988).

Most fieldwork, up until the 1970s was motivated by a desire by interested amateurs to understand the significance of sites and monuments for past human activity. The fieldwork undertaken was therefore able to be planned ahead (at least in theory), targeted to specific areas, and carried out at the time and convenience of fieldworkers.

"Rescue" archaeology was quite different to the regular activities of archaeologists, being prompted by the imminent destruction of a site or monument during the course of construction work or other groundwork, or agricultural related work (Hodgson 2012: 38).

Sometimes the existence of archaeological sites under threat was already known, such as during civil engineering being undertaken in the vicinity of upstanding monuments. Groundwork undertaken in the vicinity of the "Roman ridge" (Green 1947) would be an example of that. Previously detected sub-surface features like the cropmark enclosures at Chainbridge Lane in Nottinghamshire are another example (Eccles *et al* 1988). At other times previously unknown archaeological material was detected during the early stages of other disturbance, such as the Iron Age settlement that was discovered during the clearance of woodland at Scratta Wood in Nottinghamshire in 1959 (White 1966; Dolby 2008).

Before the advent of the government's Planning Policy Guidance Note 16 (PPG16) in 1991, rescue work was normally allowed at the discretion of landowners and developers, with the result that time for investigation, and its extent, could be highly variable. The excavation of the Iron Age settlement at Scratta Wood in North Nottinghamshire, for example, was conducted over several years with the cooperation of the landowner (White 1966; Chadwick 2008: 1202-04; Dolby 2008: 45), who afterwards allowed Worksop Historical and Archaeological Society to carry out systematic fieldwalking in the surrounding fields for several more years (unpublished archive held at Bassetlaw Museum; Figures 3.1 and 3.2 below). The enclosures at Chainbridge Lane, North Nottinghamshire, on the other hand had already been partly destroyed without record when investigations began (Eccles *et al* 1988: 16; Chadwick 2008: 120: 1213). When archaeological work was permitted, time constraints and resources allowed for only minimal excavation, followed by observation of the remaining features as they were obliterated by machines commencing groundwork (Eccles *et al* 1988: 17).

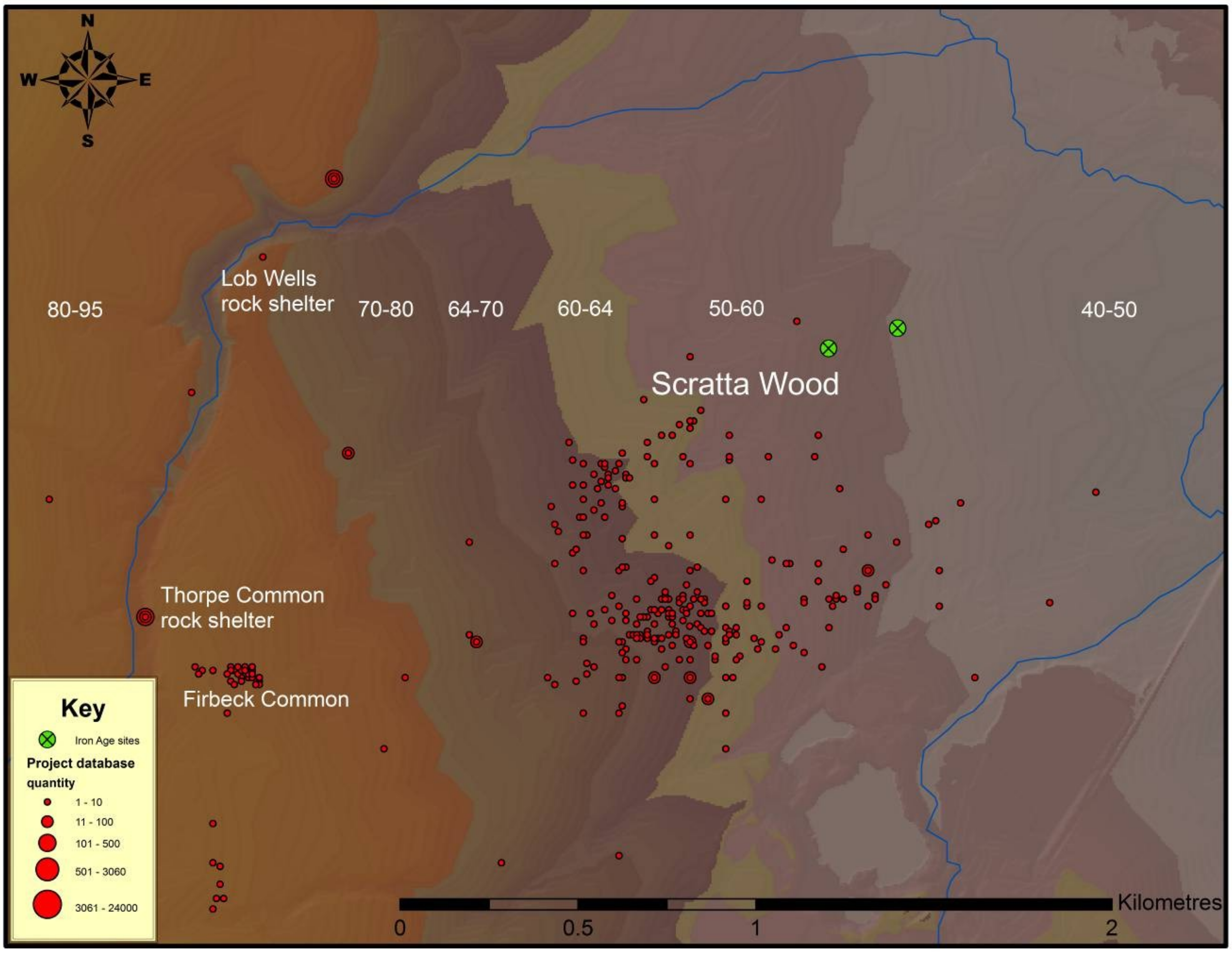


Figure 3.1: Distribution of earlier prehistoric finds at Scratta Wood, North Nottinghamshire, in relation to the Iron Age settlement. Figures refer to height OD in metres. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Figure 3.2: Facing southeast across the undulating fields of Scratta wood. Most finds were recovered from the ridges of the field. Source: author.

Rescue excavations were hastily organised *ad hoc* and often conducted by teams of amateurs, sometimes assisted by professionals. The excavations at Scratta Wood and Chainbridge Lane was organised on this basis. At Chainbridge Lane in 1985, for example, a number of volunteers from Retford and District Historical Society assisted by members of the Hunter Archaeological Society's Field Research Section conducted salvage operations on enclosures ahead of quarrying (Eccles *et al* 1988: 15). It had originally been hoped that a professional unit could have recorded the site, but Trent and Peak Archaeological Trust were unable to secure the funding necessary, and no other unit could carry out the work (Eccles *et al* 1988: 17). The amateurs conducted what work they could as a last resort, excavating a small sample of the features (Eccles *et al* 1988: 17).

Increasingly during the 70s and 80s, rescue work was to be conducted by professional archaeological units such as Tent and Peak, usually attached to a parent organisation such as a county council or university. In South Yorkshire, with the establishment of the new metropolitan county in the early 1970's also came the establishment of a county archaeology service, with its own dedicated unit of field archaeologists. The South Yorkshire Archaeology Unit undertook numerous rescue excavations throughout the late 1970s and the 1980s. Pickburn Leys, for example, to the north and west of Doncaster, was investigated by the unit in advance of quarrying in 1984 (Chadwick 2008: 1137-8). The site yielded information relating directly to the Iron Age and Roman periods (Chadwick 2008: 1138; Sydes 1993), but also furnished quantities of earlier prehistoric flintwork (Sydes and Symonds 1985).

Another important site investigated by the South Yorkshire Archaeology Unit was the ditched and banked enclosures at Sutton Common. This site, unique for its levels of organic preservation, first came to the attention of archaeologists due to the amateur excavation carried out by Whiting in the 1930s (Whiting 1937). The archaeological deposits were suffering from severe degradation due to agricultural activities and government drainage schemes (Chadwick 2008: 1039-48). New investigation only commenced, and then on a limited scale, in response to and after much damage had taken place (Adams *et al* 1988; Chadwick 1992; 2008: 1040). The enclosures proved to be Iron Age in date, but again the site yielded information demonstrating that it had been repeatedly a scene of activity throughout prehistory.

Similarly important work was undertaken by North Derbyshire Archaeological Committee during 1977 at Unstone in North Derbyshire (Courtney n.d.). Evidence for structures were recorded, and an assemblage of 3000 artefacts of chipped stone were recovered in advance of agricultural work (unpublished archive, MuseumsSheffield). The work was undertaken at the discretion of the landowner.

Trent and Peak Archaeological Trust is an example of a unit that was attached to a university, in this case the University of Nottingham. Their work undertaken near Menagerie Wood, Worksop, in 1985 was of a similar nature to Pickburn Leys where cropmarks were investigated ahead of development (Garton *et al* 1988: 22; Chadwick 2008: 1246). In the case of Menagerie wood, evidence was also recovered that suggested to the excavators that the activity mainly related to the Iron Age and Roman periods, although datable finds were recovered only from the upper fills of the ditches (Garton *et al* 1988: 28), and a mere 7.5% of the features were actually excavated (Garton *et al* 1988: 31).

The preceding examples are suggestive of weaknesses within the organisation of fieldwork in advance of development before the advent of PPG16: professional archaeological units, although they existed, could not always secure funding for their activities in time to excavate and record sites before they were lost. Even where work was permitted, limited time and resources inevitably led to inadequate sampling, with the loss of sufficient data to adequately characterise, date, and understand archaeological features and therefore the societies that created them.

Institution based professional archaeology: 1963-1991

The activities of amateurs working in the study area continued unabated during the 70s and 80s. However, an increasing proportion of the work being undertaken over these years was carried out by archaeologists who had received professional training at the highest level, and as time progressed came often to be produced either as unpublished theses (Buckland 1976), as papers in academic journals (Radley and Mellars 1964), or as unpublished interim reports (Sydes and Symonds 1985).

The career of Jeffrey Radley (1936-1970) was transitional in this sense. His early training was in geography, in which he obtained a degree from the University of Leeds, following this with an MA in geomorphology (Anon 1971: 68). His early archaeological work was undertaken on a voluntary basis, with his first and best known excavation, with Paul Mellors, taking place at the Mesolithic site at Deepcar in North Sheffield District (Radley and Mellars 1964). The Deepcar site was excavated while Radley was employed as a school teacher in Rotherham (Obituary 1971: 68). The site revealed structures, and furnished in excess of 23,000 chipped stone artefacts from the earlier Mesolithic.

From 1963 Radley was employed as a professional archaeologist working for the Royal Commission on the Historic Monuments in England. He continued to work in the North Midlands and South Yorkshire, publishing work mainly on Mesolithic sites that he investigated in the area, including Hail Mary Hill at Treeton (Radley and Mellars 1963: 307-11), Hooton Roberts (Radley 1964), various locations in the vicinity of Sheffield (Radley 1962: 236-7; 1965; 1966: 110-14), and South Anston (1969: 252-61).

Radley's reputation rested in part on being a generalist with a wide variety of archaeological interests in an age of increasing specialism (Anon 1971), but his most important contribution was in furthering understanding of the significance of Mesolithic sites and assemblages in the region (Radley and Marshall 1963; 1965). With G. Marshall, Radley brought together the disparate results of his own fieldwork and that of others to propose that the highland area around the headwaters of the River Don formed a nucleus for activity that was distinct from elsewhere in the Pennines (Radley and Marshall 1965). Radley noted that chipped stone was concentrated on slopes with an east or south facing aspect and that the chief sources of flint lay on the Wolds of East Yorkshire and North Lincolnshire (Radley and Marshall 1963: 96).

A significant shift in the direction from which new research was coming occurred in 1971 with the appointment of Paul Buckland as director of excavations at the Mesolithic site of Misterton Carr in North Nottinghamshire (Buckland 1976: 89). At the time, Buckland was studying for his PhD at the University of Birmingham, based in the Department of Geology.

The subject of Buckland's thesis was nominally the Vale of York, and how the environmental contexts, accessed through the study of insects, in various points in the remote past could help inform understanding of societies in prehistory (Buckland 1976). In practice this came to include the entire lowland area to the east of Doncaster now known as the Humberhead Levels. The site at Misterton Carr, lying on the south edge of the Humberhead Levels (Buckland and Dolby 1973), was of clear relevance to Buckland's research.

Buckland carried out the excavation of Misterton Carr with the cooperation of Malcolm Dolby, the Keeper of Antiquities at Doncaster Museum, and the first archaeologist to recognize the importance of the site (Buckland 1976: 88-9). The excavation and preceding fieldwalking furnished more than 6000 chipped stone artefacts, mostly of earlier Mesolithic date.

Buckland and Dolby concluded that though the Mesolithic assemblage recovered from the site was broadly contemporary with that at Star Carr in the Vale of Pickering, its closest typological affinities were with the upland sites to the west, in the vicinity of the headwaters of the River Don (Buckland and Dolby 1973: 25-6).

Buckland was soon to become Dolby's colleague at Doncaster Museum, in the role of Archaeological Field Officer, actively conducting fieldwork as a professional employed by the museum service. Buckland's colleagues at Doncaster included John Magilton, who in 1977 produced for Doncaster Metropolitan Borough a survey of all archaeological sites, finds and historic buildings in the villages in the vicinity of the town (Magilton 1977). Similar surveys were also being undertaken in North Derbyshire (Hart 1981) and Humberside (Laughlin *et al* 1979) in the late 1970s.

Universities were also developing as centres for archaeological activity across the region during the 70s and 80s, as illustrated by the rescue work undertaken by Trent and Peak Archaeological Trust. A significant development taking place by the 90s was collaboration between archaeologists based in the Department of Prehistory and Archaeology at the University of Sheffield with other archaeologists in the region. This included investigations carried out by staff and students from the department at the multi-period site of Sutton Common alluded to earlier, between 1992-93 (Chadwick 2008: 1043). The main value of the work at Sutton Common was to demonstrate that the preservation of organic deposits there had deteriorated rapidly since the completion of the earlier work.

Another example of the department's involvement in the region in these years included the surveys and trial trenching conducted by staff and students at Scabba Wood near Doncaster during 1994-99 (Buckland *et al* 1999; Chadwick 2008: 1034-36; Buckland *et al* forthcoming). The work was carried out in collaboration with the Doncaster section of The Yorkshire Archaeological Society. The site consisted of an enclosure and rock shelter burial site (Buckland *et al* forthcoming: 1). Initially investigated by South Yorkshire Archaeology Unit in

1992 (Chadwick 1992) and then by the Doncaster branch of the Yorkshire Archaeological Society in 1996, the University of Sheffield became involved over the seasons in 1997-98 (Buckland *et al* forthcoming: 1).

Nottingham and Sheffield were not the only universities to take an interest in the region. In 1992, the Humber Wetlands Project was established, initially to assess the Humberhead levels for its archaeological potential (Van de Noort and Ellis 1997: 1), but later to engage in a detailed field survey of all the wetlands surrounding the Humber Estuary. The wetland landscapes were divided into discrete areas that were investigated separately, with the Humberhead Levels being the second area to be surveyed, between 1995-6 (Van de Noort and Ellis 1997: 2). The project was commissioned and financed by English Heritage, but the project team was based in the School of Geography and Earth Sciences at the University of Hull (Van de Noort and Ellis 1997: 1).

The data generated by the Humber Wetlands Project suggested to the project team that the lower reaches of the main tributaries of the River Don had been conduits and foci for considerable movement and activity during prehistory, and in particular the River Idle (Van de Noort and Ellis 1997: 395).

After the Humber Wetlands Project, several of the team members continued working in the region: Van de Noort directed the major programme of excavations at Sutton Common funded by English Heritage. Helen Fenwick and Malcolm Lillie were to remain at the University of Hull permanently, joining the Departments of History and Geography respectively and developing their contribution to the archaeology of the region under the auspices of the Brodsworth Community Archaeology Project (see below).

Community Archaeology

As we have seen in the above discussion, fieldwork and research by volunteers led by amateurs began to be eclipsed during the 1970s and 80s, with more work being carried out by professionals based in universities, museums and working for units. It does not follow from this that ordinary members of the community lost interest in engagement with the historic environment, but more of the people that would have come to the fore in leading amateur archaeology now began to pursue professional careers. Ordinary members of the public were still in evidence, though now predominantly by volunteering in what is termed “community archaeology".

Professionals acted as nuclei for archaeological research in the region during the 1970s, around which the activities of interested parties coalesced. This included, for example, Allan Peace, an amateur who attended evening classes at Doncaster Museum during those years (A. Peace, pers.comm.). Peace went on to undertake systematic fieldwalking along the Don Gorge and on the adjacent Magnesian Limestone plateau. As a result, hundreds of stone and flint artefacts and debitage were recovered that resulted in a significant contribution to the state of current knowledge concerning prehistoric activity in the area (Peace 1981).

The activities of professional archaeologists like Paul Buckland at Doncaster Museum could act as foci for the work of volunteers such as Peace. In the case of Clive Hart in North Derbyshire, fieldwork involving volunteers consisted of walkover surveys to identify sites and monuments, topographical field surveys to create detailed records of features, and fieldwalking in order to recover material culture (Hart 1981: 8-10). During the 1980s this development began to take on a more formal arrangement, with the organisation and leading of projects by paid professionals, with the express purpose of providing archaeological experience to members of the public. Bassetlaw Heritage Project, in North Nottinghamshire, and The Isle of Axholme Field Survey in North Lincolnshire are examples of this.

Funding to support the aforementioned projects came from various organs of government. Thus, Bassetlaw Heritage Project was financed by the Manpower Services Commission (Vyner and Wall 2011: 4). The Isle of Axholme Field Survey was financed by grants from the Countryside Commission and the Manpower Services Commission (Sitch and Williams 1989: 24; figure 3.3 below). Projects like these, along with the rescue work discussed earlier, did much to redress the imbalance that had hitherto existed in the volume of information from parts of the study area not previously investigated.

Community archaeology projects also came to be a feature in university departments. Brodsworth Community Archaeology Project, for example, is the largest scale and longest running programme of archaeological field research in the region. The project, directed by Colin Merrony, which incorporates both academic research with community volunteer involvement, was begun in 2001 under the auspices of the University of Sheffield. From 2004 the project became a collaborative one, co-directed from then by Helen Fenwick of the University of Hull.

In the years since 2004, a huge swathe of the Magnesian Limestone Plateaux stretching from the Don Gorge in the south to Brodsworth in the north has been the subject of large programmes of geophysical survey, topographical field survey, graveyard surveys, fieldwalking, and targeted trial trenching. The data recovered attests to activity across this landscape from the Mesolithic period up to the present day. For the prehistoric periods, the data mostly consists of chipped and ground stone artefacts recovered through fieldwalking and sub-surface features detected through geophysical prospection and subsequent excavation (Cockrell *et al* 2014). The material culture recovered, and the features recorded during that time have significantly added to the body of prehistoric data available for the middle reaches of the Don Valley.

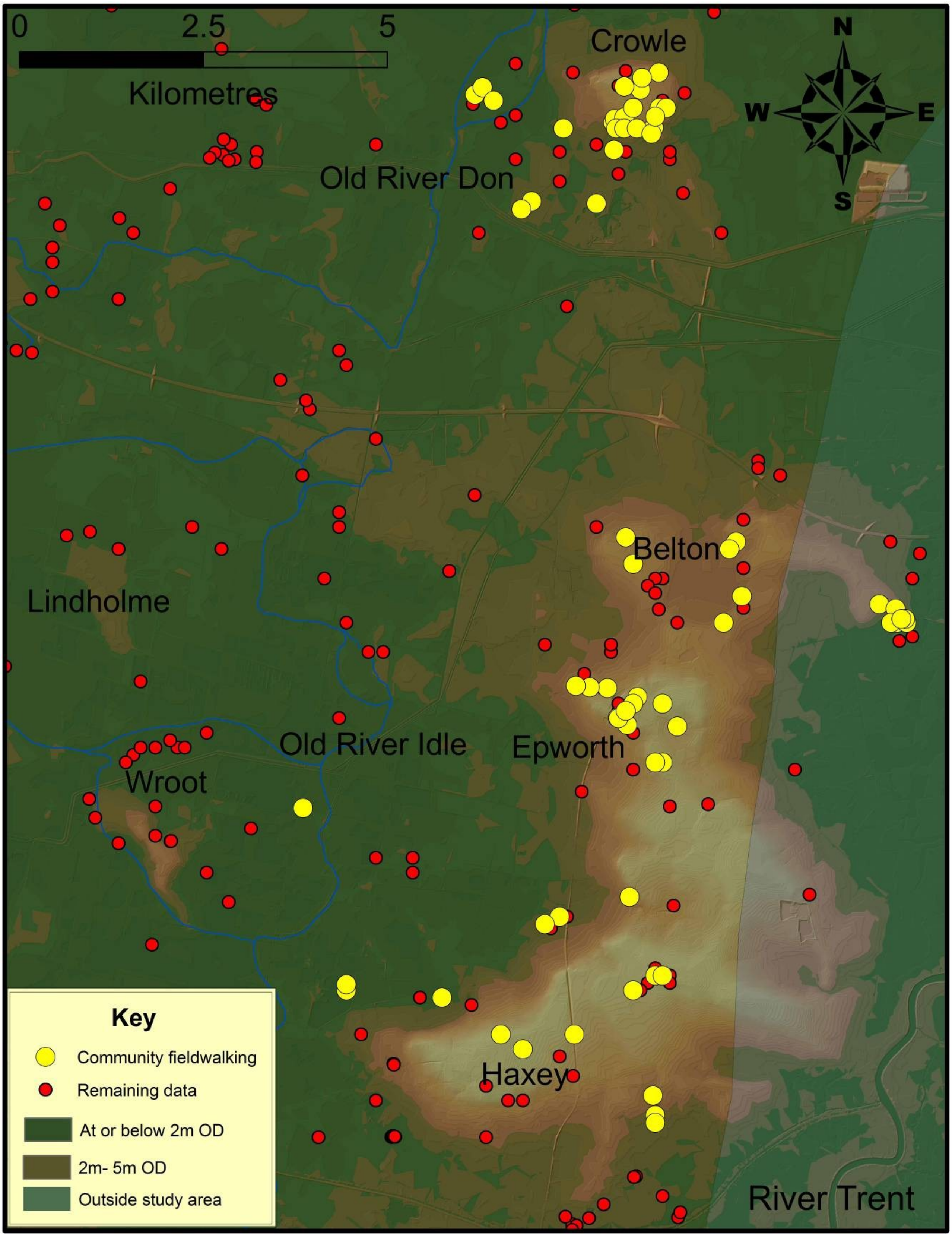


Figure 3.3: The Isle of Axholme (right) with prehistoric data recovered by the Isle of Axholme Field Survey team and other prehistoric findspots in the area. Crown Copyright ©Ordnance Survey 2012. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Developer funded archaeology from 1991 to the present day

Planning Policy Guidance Note 16 (PPG16), for the first time, placed the onus of responsibility for ensuring the survival of archaeological deposits firmly in the hands of commercial developers and landowners (Hodgson 2012: 38-9). This meant that planning consent for the development of land became contingent upon either the preservation of archaeological deposits *in situ*, or the mitigation of their destruction through preservation by record. Archaeological monitoring and investigation to achieve this was to be paid for by the developer (Francis 1991: 6; Hodgson 2012: 38-9).

The adoption by local planning departments of PPG16 at the beginning of the 1990s resulted in a vastly increased rate of archaeological work across the region. Developer funded projects are undertaken by companies that evolved from the earlier professional units, and have since been joined or superseded by new companies. Recent research has shown that nationally, 89% of all archaeological investigations in the decade following the publication of PPG16 were developer funded (Darvill and Russell 2002: 52, cited by Hodgson 2012: 39). A recent survey in West Yorkshire and South Yorkshire investigating prehistoric sites (that have furnished data relating to the Roman period) has calculated that of 175 projects between 1990 and 2004, 168 were developer funded (Hodgson 2012: 40).

The commercial units, or companies, that now exist to carry out developer funded projects do so anywhere in the country, but often carry them out in the regions where they are based. Thus, Archaeology Services WYAS have in recent years worked on prehistoric sites such as Marr Wind Farm (Rose 2010), Pastures Road at Mexborough (Chadwick 2008: 1134-36; Weston 2012), and recording enclosures and Bronze Age barrows at Rossington (Moretti and Webb 2012). Other units that have been locally or regionally based include Oxford Archaeology North and ARCUS (Archaeological Research Consultancy at the University of Sheffield). In the wake of the recent demise of ARCUS, Wessex Archaeology has established a local office in Sheffield and York Archaeology Trust now has a local presence in the form of its subsidiary, ArcHeritage.

PPG16 has been superseded by PPS5 (Planning Policy Statement note 5) and most recently by the NPPF (National Planning Policy Framework). These developments have occurred only in recent years. This is not long enough to assess their impact on archaeology in the current study, but does not to date appear to have curtailed the work that commercial archaeological units undertake, or the manner in which they undertake it.

Summary and conclusion

Antiquarian scholars of the region were curious about what is now called the prehistoric past, but did not or could not differentiate between its chronological parts. They had at their disposal only a meagre corpus of information, exacerbating the difficulty of understanding its significance for social history.

By the time that amateur archaeologists were beginning to investigate the region, stray finds of surviving material culture, and the recovery of flint artefacts by collectors such as the Rev. Gatty was generating an interest in the prehistoric past. The early amateurs concentrated activity on that past and on the succeeding Roman period in the region. Their work was characterised above all by the undertaking of fieldwork to record features in the landscape and recover artefactual data, with few attempts to draw that information together in works of synthesis.

By far the majority of archaeological research was conducted in the upland areas in the western half of the present study area. In particular, the Magnesian Limestone ridge in the middle and the gritstone uplands at the extreme west, in the vicinity of the headwaters of the River Don, have been targeted for activity.

The advent of professional archaeology raised standards in the recording of data recovered through fieldwalking and excavation in particular, facilitated much “rescue” archaeology either directly or indirectly, and provided skilled leadership in the newly emerging branch of “community” archaeology. The professional units that emerged during the 1970s and 80s provided the model for what was to follow in the wake of the publication of PPG16 in November 1990.

The work of institution based professionals did much to facilitate archaeological research in parts of the region that hitherto had received very little attention, and especially in the vicinity of Doncaster and in Bassetlaw district. However, funding difficulties, and lack of adequate legal protection for the historic environment limited what these units could do to record archaeological deposits under threat from development.

At the level of academic research, the aforementioned lowland areas had their profiles raised by research undertaken by the Humber Wetlands Project, and by the doctoral research of Paul Buckland in 1976, and by Adrian Chadwick in 2008.

The publication of PPG16 precipitated an expansion in the undertaking of archaeological fieldwork, and especially excavation, in the region. Most of the work relevant to prehistoric research has taken place in the eastern half of the region. This has resulted in a greatly enhanced database. The results of some of this work are occasionally published in journals, but the majority exists only as interim reports lodged with Historic Environment Records. Moreover, the reports are presented in a standardised manner that make little attempt at interpretation, resulting in repetitive summaries of the significance of the data recovered.

As with the amateur work, the emphasis in professional work has been very much on the collection and recording of information rather than drawing data together in works of synthesis. The aforementioned academic works of Buckland and Chadwick, important though they are, concentrate on lowland districts. Chadwick's research, moreover, concentrates on the Iron Age and Roman periods, and validly so, but leaving unexplored in modern scholarship what went before.

Another feature of archaeological research in the region that has characterised its development is its separation from the wider environmental considerations considered so important by the antiquarian forbears of archaeologists. The work of Buckland (1976) and in particular Chadwick (2008), conforming as they do to different regional parameters, serve to emphasise this rather than mitigate it.

Few attempts have been made to draw together the information generated in the last 100 years in works of synthesis covering South Yorkshire and the North Midlands for earlier prehistory: Ella Armitage's example of 1897 was not only concerned with the study area in question, but the whole of England, albeit with special reference to the vicinity of Sheffield and Rotherham. The first specific attempt to bring together what was known about a significant portion of the present study area was not attempted until 1939 by Harold Armitage, whose approach to interpretation was identical to that of Ella Armitage. Cultural changes were explained by the movements and displacements of populations. The next attempt was that of Leslie Armstrong's paper of 1956, with nothing ventured for the chronological period in question since then. Even the work of Armstrong, however, had not developed in terms of its interpretative framework beyond the thinking that had informed the work of Ella Armitage in 1897.

As has been noted, much new information has been generated since Armstrong's time. An aim of the present study will be to fulfil the potential that Armstrong recognized earlier, bringing together the vast body of information that has been gathered over the last century and will, moreover, reintegrate that within its landscape and palaeo-environmental context. In drawing together these approaches, the present study will fill a major gap in the sequence of regional prehistoric studies in Britain.

The following chapter will explain how consideration of the environment and landscape will inform analysis and interpretation of the aforementioned and increased database.

Chapter 4:

Formation Processes and the Database

Introduction

The processes that have contributed to the archaeological database are diverse and complex. They not only relate to a myriad of different natural and human phenomena in the landscape, but also to the very different ways that the information has been collected by generations of fieldworkers. They have employed different methodologies during the course of varied archaeological activities at different scales and in different circumstances. As shown in chapter three, this has occurred over centuries, and has been undertaken by people of diverse backgrounds, frequently pursuing varied aims and with different assumptions about what data should be recovered and how it should be recorded.

The aforementioned matters need consideration in order to minimise the effects of bias in the sample that will affect the archaeological analysis and interpretation to follow. With the assumptions indicated above, very detailed attention to the issues could easily be the subject of an entire thesis in its own right, or a large monograph. Valuable a discussion though that would be, it would not be appropriate to attempt such an undertaking here. What follows is a discussion of the foregoing issues that is appropriate in a study that seeks to take a broad approach to a very large dataset covering a large geographical area. For that reason only those formation processes that operate at the largest scale will be discussed, affecting either large swathes of the study area or large portions of the database.

There is considerable variation in the character of the distribution of data across the study area, resulting in the potential for a confused treatment if not undertaken in manageable steps. The discussion must therefore be broken down in order to aid understanding.

Figure 4.1 shows that the data, observed at the broadest scale of analysis, coincides very closely with the different bedrock geological formations across the study area, excepting the Humberhead Levels and River Idle catchment where superficial deposits are more relevant. It does not follow from this that the geological zones themselves determine the character of the distributions in any straightforward sense, if at all, but does serve to provide a framework for the discussion of the data in smaller more manageable segments. For this reason the different geological zones will form the basis for the discussion about areas of high or low density of data and any formation processes affecting these. This includes archaeological events. The events generating assemblages will also be discussed in each zone separately, along with other considerations. However, some archaeological events will be discussed at the level of the entire study area, at the end. This is because the issues to be discussed at that juncture relate to the entire study area rather than any particular part.

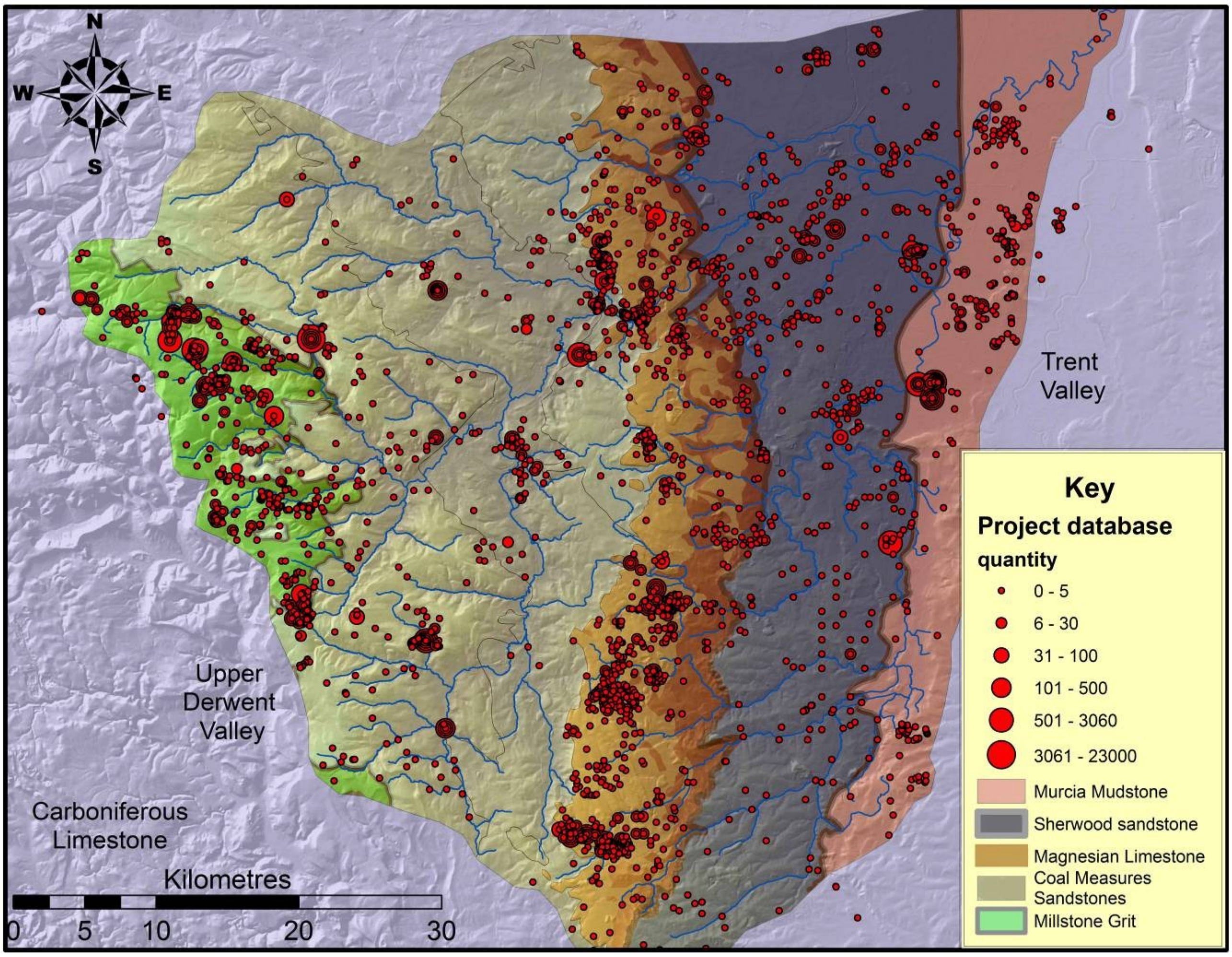


Figure 4.1: Distribution of data in relation to bedrock geological formations. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

To sum up the sequence of discussion; each geological zone, starting in the west and moving east, will describe separately the processes that have formed the dataset in each zone. They are Millstone Grit, Coal Measures Sandstones, and Magnesian Limestone. The Sherwood Sandstone and Mercia Mudstone substrate areas will be considered together, but subdivided not by bedrock geology, but superficial geology that differentiates most of the River Idle catchment from the Humberhead Levels (Figure 4.2).

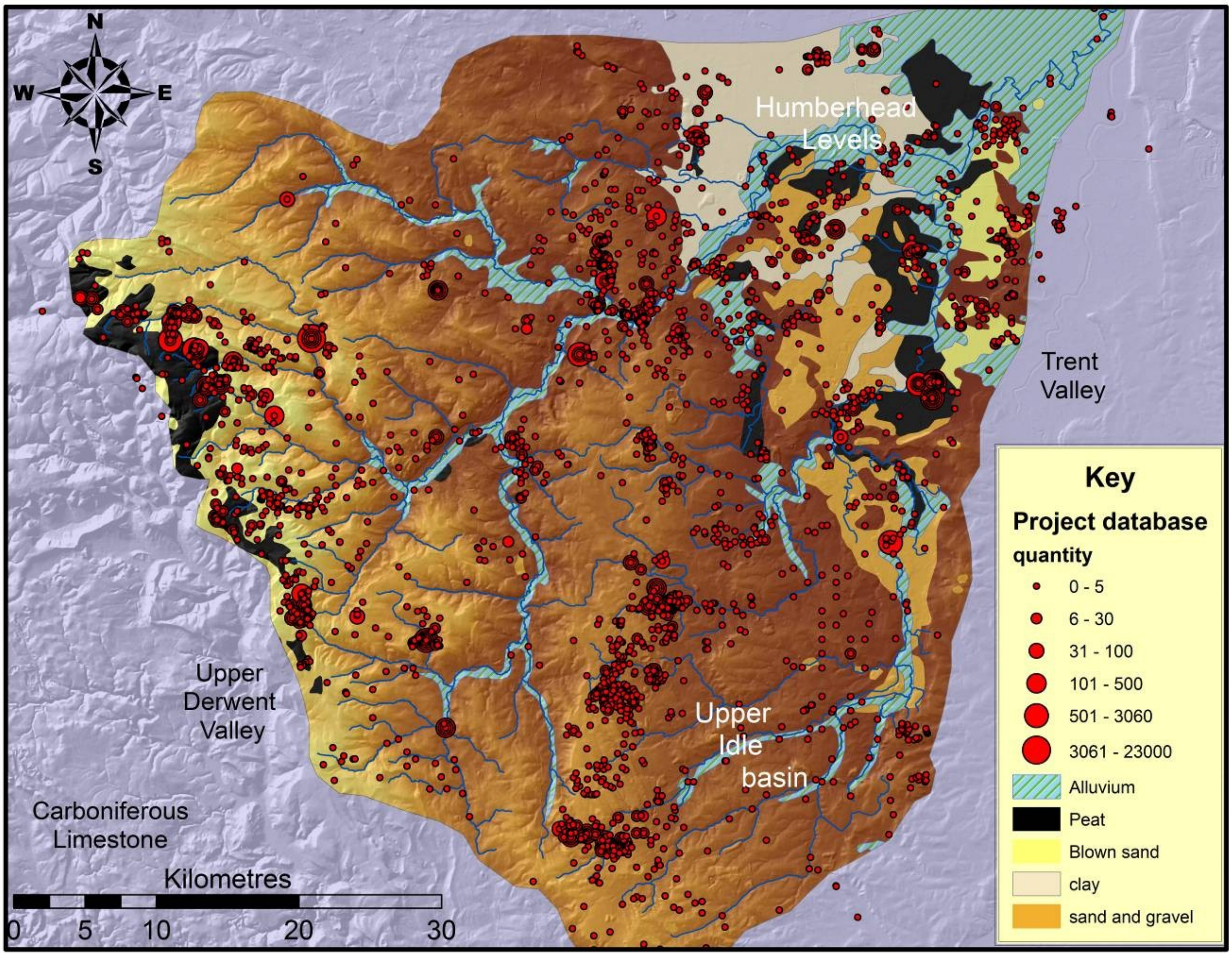


Figure 4.2: Distribution of data in relation to superficial geological formations. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Before the detailed analysis of the distribution zones, a description of the database in terms of the kinds of archaeological events that have generated it will be given below, defining the terms to be used in the analysis. A summary of the main findings will follow that description before the detailed exposition. At the end a table will be provided (table 4.1), showing and listing the main points, to be followed with concluding remarks.

Archaeological events

Some of the designations will be self evident ("fieldwalking" as opposed to "excavation" for example). Others need careful definition. These include "Amateur", "Community", "Academic", "Professional", and "Developer Funded", since the dividing lines between some of these activities can become blurred, and some of the people that undertake them can engage in different activities at different times. The terms used and definitions given below are based upon the discussion in chapter three, *History of Archaeological Research in the Study Area*.

By "Amateur" is meant archaeological field research or recovery by untrained or self taught members of the public. Examples of this would include the collecting activities of the rural curate the Reverend Reginald Gatty, or the retired accountant Harold Copley. It also includes the work of early professional archaeologists (see chapter three), the character of whose independent work, and especially fieldwalked assemblages, bears closer methodological comparison with the collecting activities of genuine amateurs than it does to the mature systematically organised projects of later decades (gridded or transect recorded collection). An example of this would be the work of the professional Jeff Radley, often undertaken alone or with amateur friends like Fred Hepworth of Stocksbridge.

Metal detecting, designated separately, is a related activity that has burgeoned in recent decades, but is carried out in the course of using a particular piece of equipment. Metal detecting, unlike earlier amateur efforts, also takes place at a time when scientific methodologies for collecting and recording data are commonplace. Whether carried out in a negative or positive spirit (not the subject for discussion here) it therefore represents a conscious rejection of conventional archaeological methodologies.

By "Community" is meant activities undertaken largely by ordinary members of the public, but led or supervised by professional or professionally trained archaeologists. An example of this would be the Bassetlaw Heritage Project (Hurcombe 1988).

By "Academic" is meant field research undertaken by professional or professionally trained academic researchers during the course of recovering information in order to answer specific archaeological research questions.

By "Professional" is meant activities that are undertaken by professional archaeologists from various employment contexts in order to carry out grant funded or local authority funded research, or recover data in advance of commercial development (prior to 1991). Examples of this would include the excavations carried out at Misterton Carr in the early 70s by archaeologists from Doncaster Museum (Buckland and Dolby 1973; Buckland 1976), and the extensive fieldwalking undertaken by the University of Hull on the Humberhead Levels during the 1990s (Van De Noort and Ellis 1997).

By "Developer Funded" is meant contractual work undertaken by archaeological companies or "units" that operate in a pseudo-commercial context. It is important at this point to explain that regular commercial activity takes place in a context where contractors compete for work on price and quality in a free market, where "supply and demand" obtain (Chioveanu 2012: 25), and where higher quality is sometimes, though not always, associated with a higher price (Shugan 1984; Zeithaml 1988). This is not the case in developer funded archaeology. Developers are *obliged* to award contracts to competing companies in order to comply with planning legislation and the decisions of local authority planning departments. Developers are therefore motivated in the first instance by the requirement to comply with the planning process rather than a demonstrated desire to record or investigate past human societies. On that basis, while price is likely to be a consideration, the extent to which developers award contracts on grounds of quality is open to question.

By "stray finds" is meant artefacts that have been recovered by members of the public while engaged in non-archaeological activity. Finds recovered during civil engineering related activities have been separately designated, on the grounds that findspots are frequently known to a better than usual degree of accuracy, and because of the very specific circumstances of recovery, usually related to urban expansion.

Summary of Findings

The differences in density of data across the study area probably relate to various factors, but an important one of those is bias in the sample caused by human activity related formation processes.

In those areas where activity has been at a low level (the Millstone Grit uplands), or historically relatively benign in nature (the Magnesian Limestone belt, the Isle of Axholme), considerable amounts of data has survived into recent times, much of which has been recovered through fieldwalking projects and excavations. Conversely, where activity has been most intense and destructive (the Coal Measures Sandstones), the absence of data reflects masking due to urban expansion or total destruction due to aggressive extraction processes. Nevertheless, the presence in the Coal Measures Sandstones landscape of locations with high concentrations of surviving data (Unstone, Chesterfield, Canklow/South Rotherham, Roebuck hill, Hooton Roberts) suggests two things; first, that pockets of data survive, with all that this implies for the management of future development in the area (not the subject of this thesis). Second, it suggests that earlier prehistoric activity across the area was considerably more intense than might otherwise be thought. This must be taken into account during the interpretative phase of the present thesis.

The evidence from the Sherwood Sandstones dominated area east of the Magnesian Limestone is more complicated. It has been suggested that the dearth of data in the river Idle catchment is representative of limited historical activity (Knight and Spence 2013: 25). If this is correct it must reflect a lack of human interaction with that landscape spanning several millennia. This seems, *prima facie,* a questionable proposition. There is little evidence that formation processes have destroyed or been masking data in the River Idle basin. Aggregates extraction, for example, has certainly taken place and its effects well documented (Eccles et al 1988; Roberts *et al* 2010), but has not been widespread enough to be responsible for the overall picture that emerges. As will be seen below, the concentration from the vicinity of Carlton-in-Lindrick arouses suspicion if there really was very limited activity in the Idle basin in prehistory. This is even more so when the substantial assemblage of chipped stone recovered from Tiln, North Nottinghmshire is taken into consideration (Challis 1997). This is supported by the number of stray finds that have been recovered from across the Idle Catchment.

It is possible, therefore, that despite the extensive survey conducted by Trent and Peak (Knight *et al* 1998; Knight and Spence 2013) that the limited amounts of systematically recovered data reflect the limited attention paid to the area by archaeologists.

The area of the Humberhead levels presents us with a scenario suggestive of considerable bias due to various kinds of formation processes: large areas have been covered with alluvial deposits and silts deposited through post-medieval warping activities, particularly in the lowest reaches of the old Don, that probably mask archaeological strata. Conversely, Peat extraction on Thorne and Hatfield Moors has almost certainly destroyed one of the most archaeologically rich and sensitive areas in these islands. A hint at the lost potential from those locations is suggested by the considerable assemblages that have been recovered from the peat rich environment in the vicinity of Misterton Carr in North Nottinghamshire (Buckland and Dolby 1973; Buckland 1976; Van de Noort and Ellis 1997), and from the remnants of trackways recorded from both Thorne and Hatfield Moors themselves (Buckland 1976).

Urban expansion in the Doncaster area, along the line of a low ridge protruding into the levels, has also served to mask a considerable area from archaeological investigation. However, it is worthwhile noting that the regular chance discoveries of earlier prehistoric artefacts and monuments from Doncaster support the suggestion that this was once an area of considerable activity (Figure 4.14, Figure 4.15).

Millstone Grit

Beginning in the West, the Millstone Grit formation is the location for one of the densest spreads of data in the study area. This area also has the highest altitude, with most of the area lying above 300m OD. The landscape is characterised by ridges that are cut by deeply incised valleys that are configured approximately east-west (Figure 4.3; Figure 4.4).

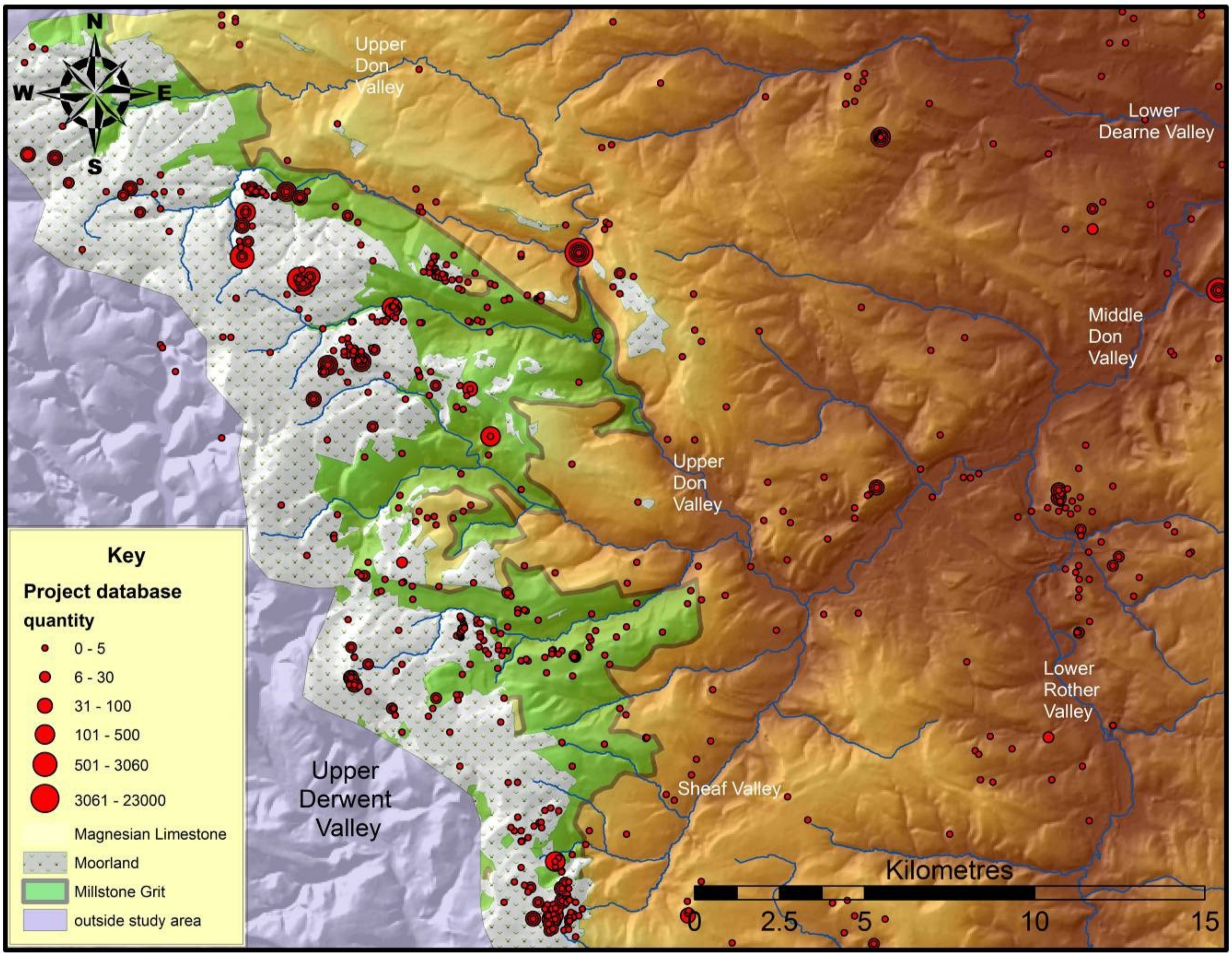


Figure 4.3: Distribution of data in relation to Millstone Grit. . Moorland overlies much of the Millstone Grit. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service. SYAS ©all rights reserved.

Figure 4.4: Upper Ewden valley, facing east. Source: author.

The landscape in this upland zone is also largely covered by moorland (Figure 4.3; Figure 4.4; Figure 4.5), historically managed for grouse shooting for at least the last 200 years (Holland 2013 (1837): 33; 36). Most of the densest clusters of data relate to the moorland areas. These areas of land have had virtually no development in at least that 200 year time period, suggesting that any archaeological deposits surviving from the period when they first became managed as grouse moors remained free from systematic disturbance until early archaeologists began to undertake fieldwork on them. Figure 4.5 below shows that archaeological work in the area has been conducted on an almost entirely amateur basis, indicating that most of the data was recovered prior to the advent of professional archaeology from the late 1960s.

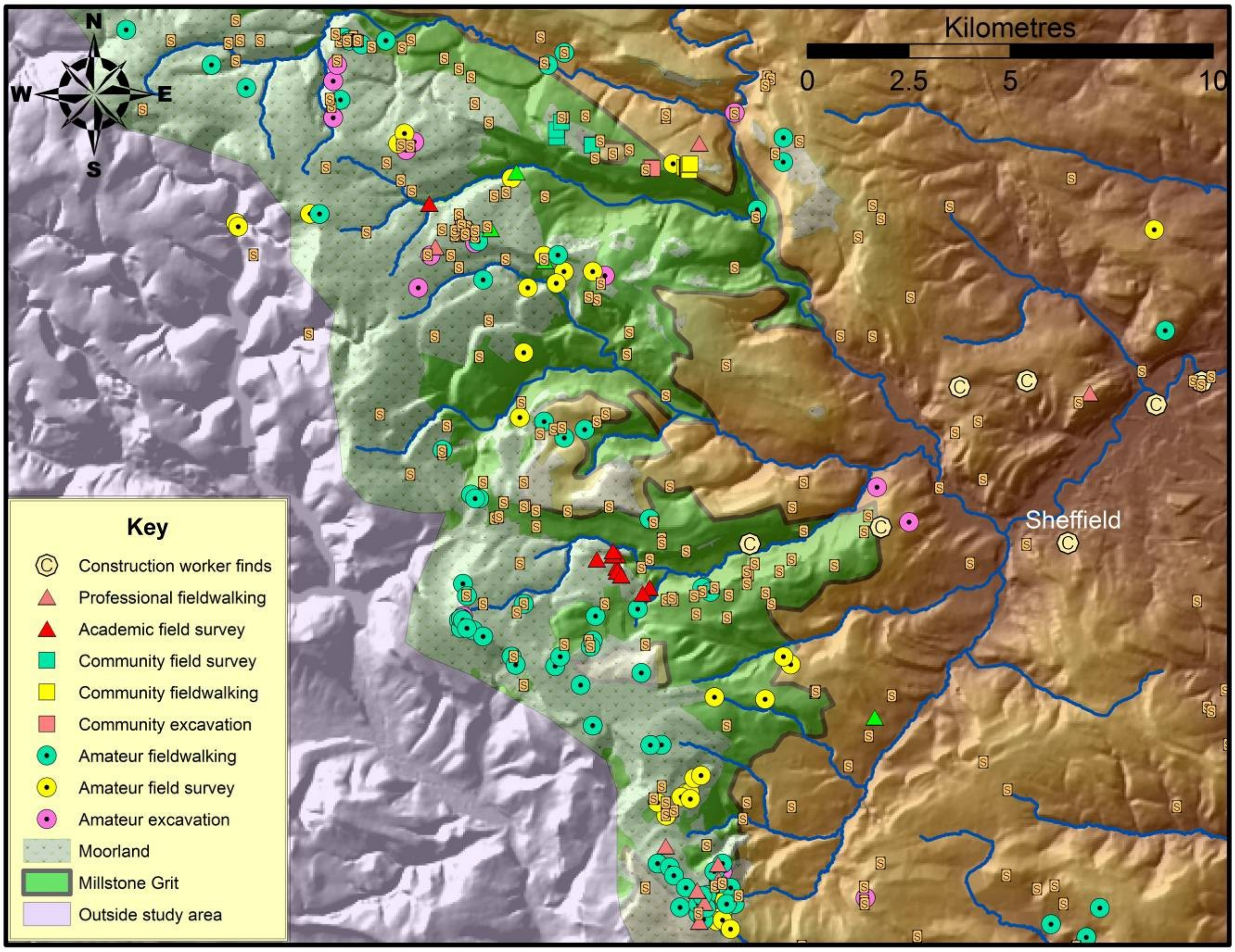


Figure 4.5: Distribution of archaeological events across the Millstone Grit formation. Stray finds are indicated by "s". © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service. SYAS ©all rights reserved.

Coal Measures Sandstones

The Coal Measures Sandstones formation by contrast with the Millstone Grit is not only the largest geological zone, but also the most thinly populated with early prehistoric data. Its elevation varies considerably, as its landscape undulates across the zone between approximately 200m O.D. to as low as 30m. This can be explained by the progress of the River Don, cutting through the geology as it moves south from Deepcar in the Upper Don valley to its confluence with the river Sheaf at Sheffield (Figure 4.6) before turning sharply north-east in a much broader valley, and the courses of its major tributaries the Rother and the Dearne that also incise deep and broad valleys (Figure 4.7; Figure 4.8).

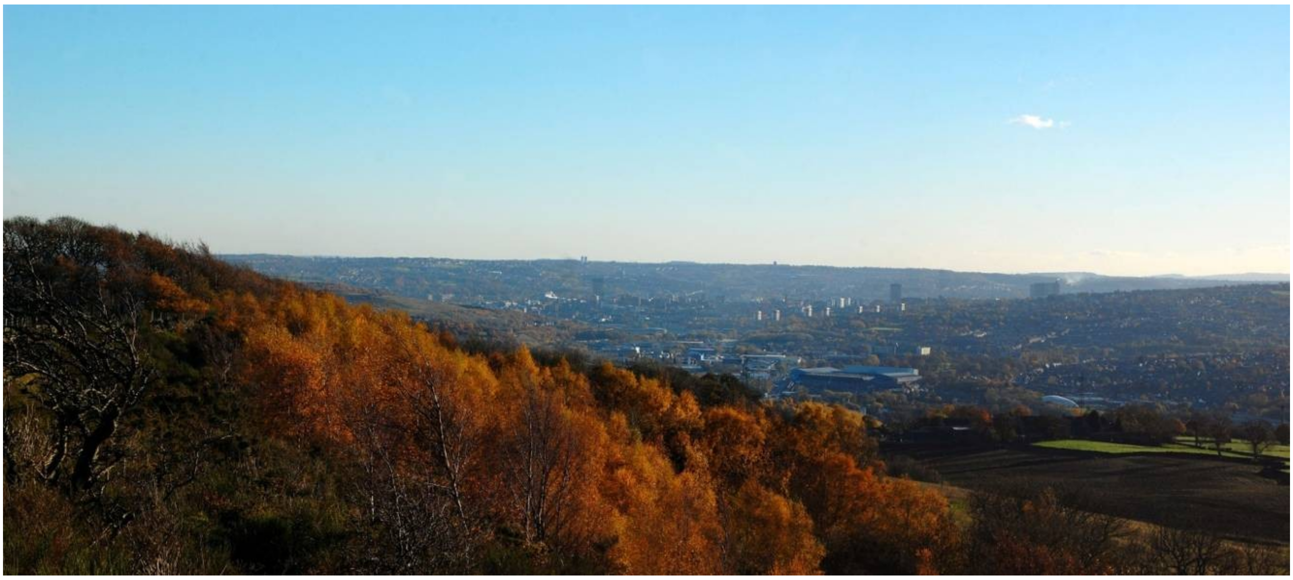


Figure 4.6: The Upper Don valley from Birley Edge, facing south. Source: author.

Figure 4.7: The Don valley where it meets the Rother valley, to the immediate west of Canklow. Source: author.

Figure 4.8: Dearne valley, facing north-west from Bilham. Source: author.

Very rapid urban expansion from the early 19th century, precipitated by industrial expansion from the previous century (Holland 2013 (1837); Klemperer 2010: 5; 47), took place before the burgeoning of archaeological activity from the early to mid 20th century noted in chapter three. By the time that early archaeologists were becoming active in the region, much of the Coal Measures zone had been built over, particularly by the time of the advent of professional and "rescue" archaeology at the end of the 1960s. To this must be added the effects of open-cast mining activity, archaeologically destroying much of the Coal Measures landscape that was not built over (Figure 4.9). Due to these processes, archaeological activity is limited, existing in pockets of amateur and professional projects to the south of the zone (Figure 4.10), with later developer funded activity occurring mostly in the middle and lower reaches of the Dearne valley (Figure 4.11).

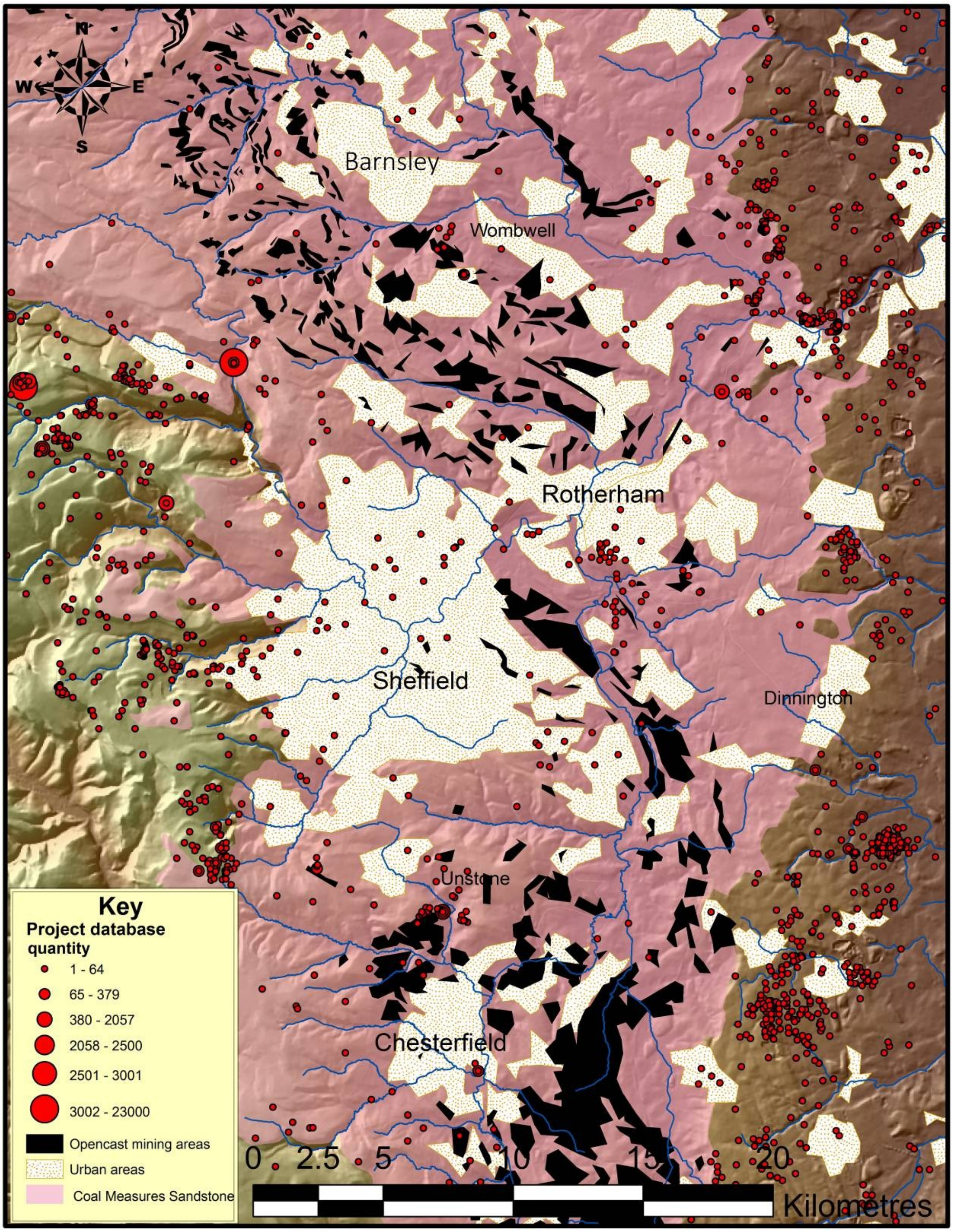


Figure 4.9: Distribution of data in relation to the Coal Measures Sandstones geological formations. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service. Contains public sector information licensed under the Open Government Licence v2.0.

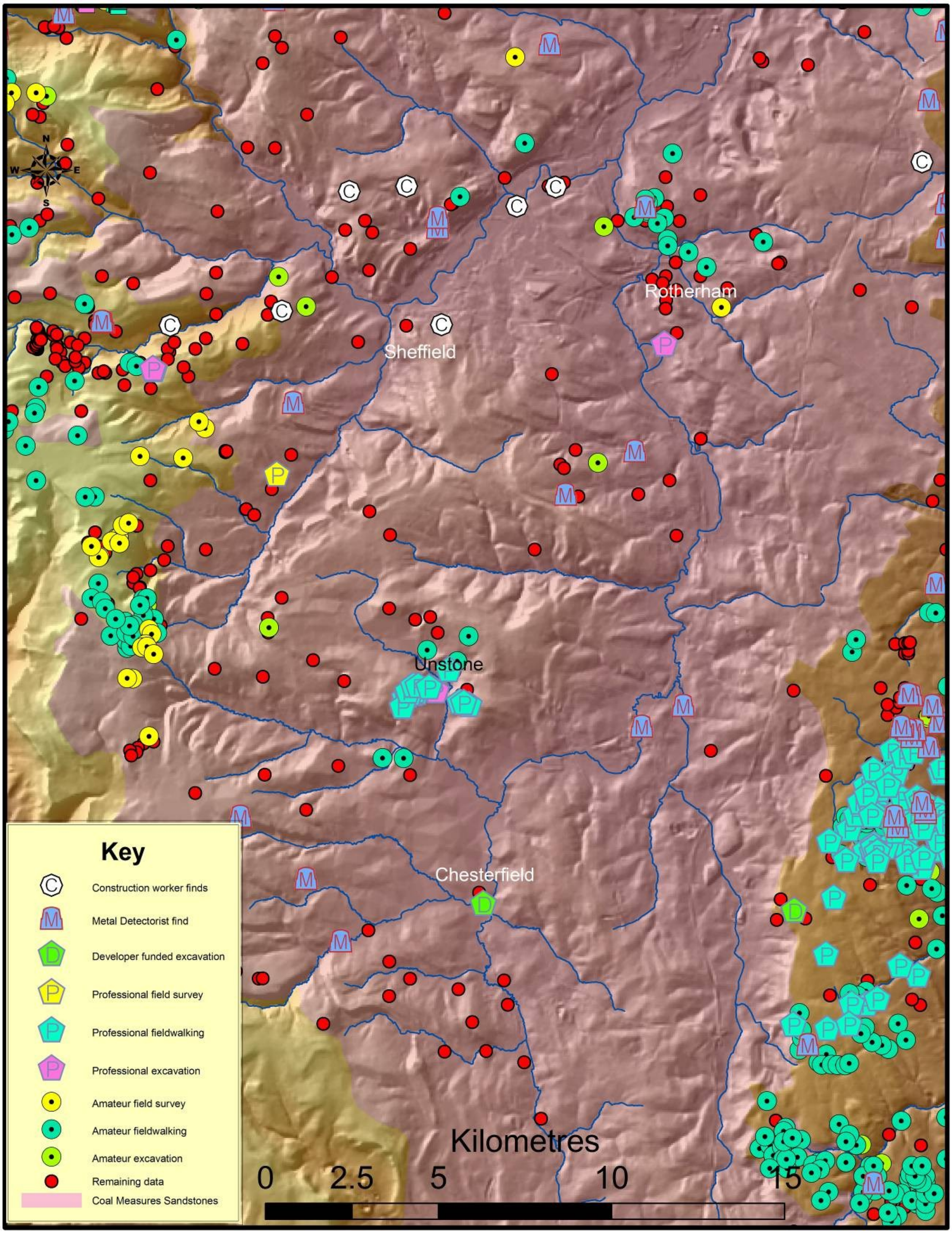


Figure 4.10: Distribution of archaeological events across the southerly Coal Measures Sandstone geological formations. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

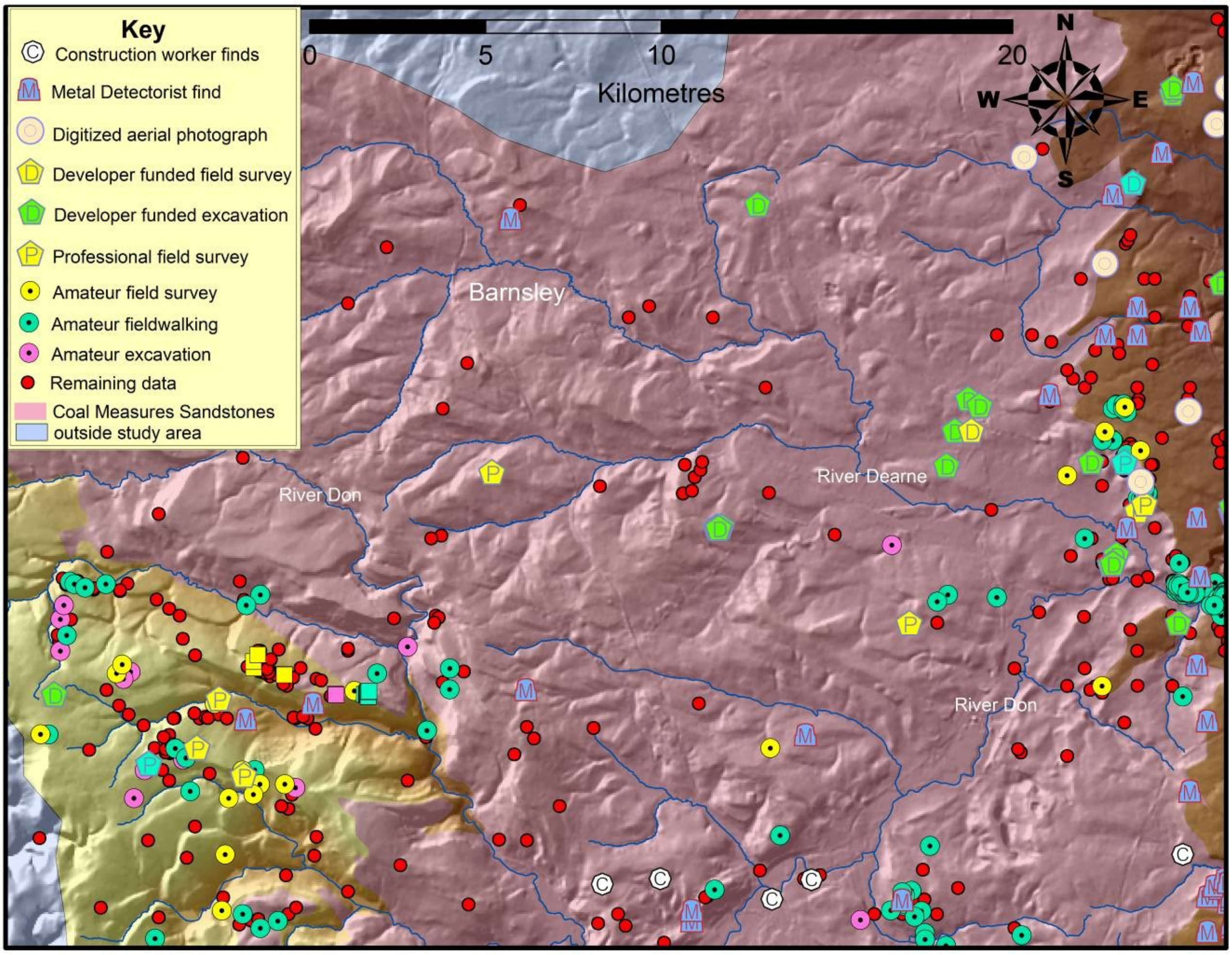


Figure 4.11: Distribution of archaeological events across the northerly Coal Measures Sandstone geological formations in the Dearne Valley. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

It will be noted from figure 4.4 that there is a difference in the distribution of findspots between north and south Sheffield, arguably reflecting differences in the nature of the built environment impacting upon data collection. Examination of the nature of the expansion does not support this however, since there is no significant difference between the northern and southern suburbs in terms of the date or nature of the developments, which appears to be dominated by the construction of planned social housing (Figure 4.12). It was noted in conversation (C. Merrony, pers. comm.) that much of the southern side consists of the former Manor deer park, and references (Holland 2013 (1837) vol.2: 59) allude to the considerable extent to which this area was disturbed by the search for iron ore during the late 18th century. It is likely for these reasons that the area was too damaged by such activity to yield prehistoric data by the time collection began to take place.

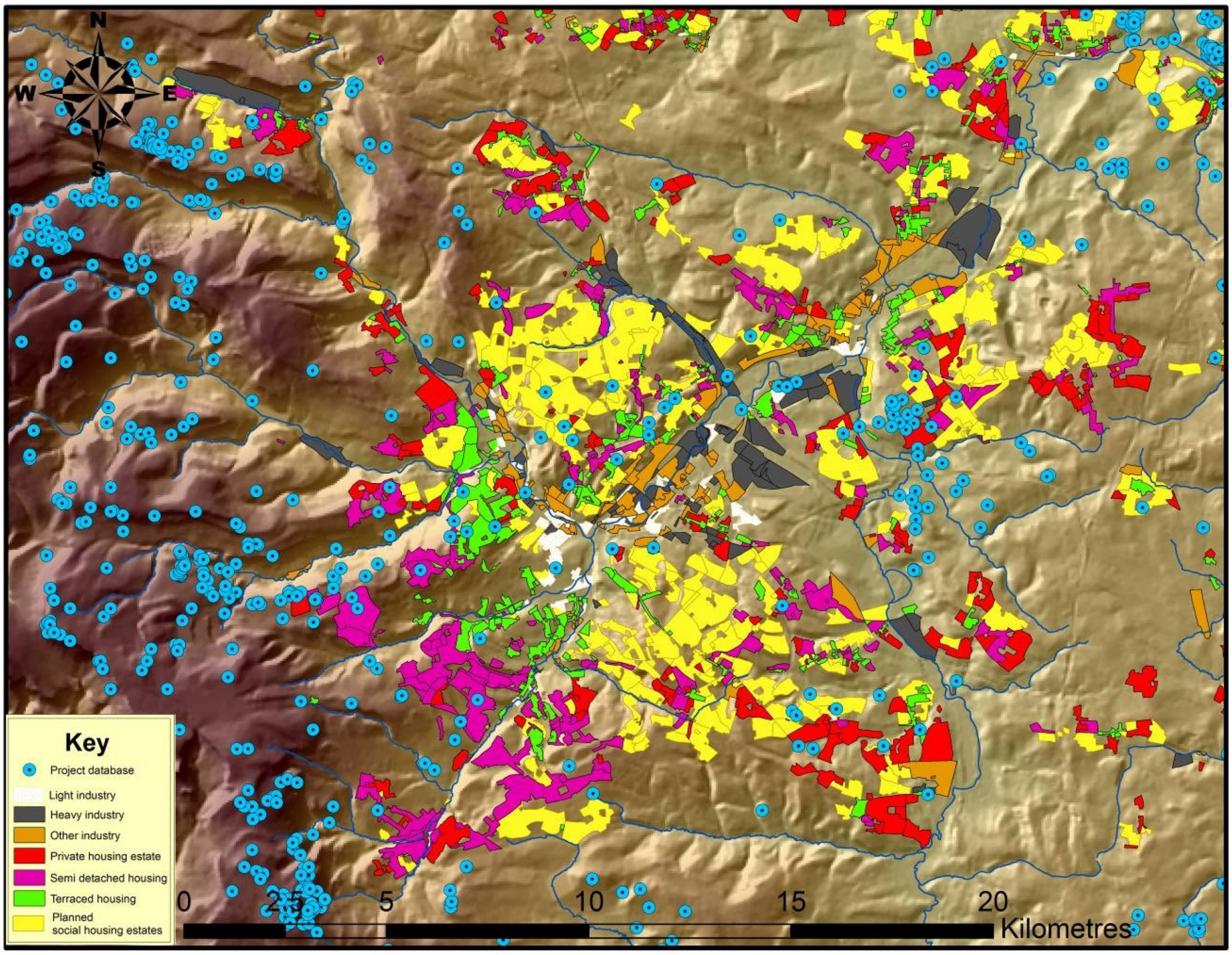


Figure 4.12: The distribution of data in the Sheffield area. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service. SYAS ©all rights reserved.

It is noteworthy that at several locations across the Coal Measures zone significant findspots of prehistoric artefacts do exist, despite the generally sparse nature of the zone. These are at Unstone in Derbyshire (Courtney n.d.; Courtney and Pierpoint n.d.; Myers 2001), Chesterfield (Myers 2001; Cumberpatch and Thorpe 2002), Canklow and the south Rotherham area (Copley 1948a; Copley 1948b; Copley 1950; Tyson 1950; Copley unpublished archive held by Clifton Park Museum; Radley and Mellars 1963; Radley and Plant 1969; Taylor 1999; Cockrell forthcoming), Hooton Roberts in the middle reaches of the

Don Valley (unpublished archive, Clifton Park Museum), and Roebuck hill in the upper Dearne Valley (Makey 2007). These are all locations that have not been subjected to opencast mining, and in the case of Unstone, south Rotherham district and Hooton Roberts have also not been subjected to large scale urban development. At Chesterfield, the findspot was a chance discovery of Mesolithic material from a disturbed context in the town centre that came to light during developer funded excavations (Myers 2001). The Roebuck hill assemblage is also largely Mesolithic. It came to light during excavations in advance of the development of a greenfield site in an area characterised, in general, by opencast mining and urbanisation.

The aforementioned isolated discoveries support the idea that the Coal Measures zone is much less well represented by data than it would be had the industrial and urban development not taken place, or had it been subjected to archaeological investigation now common in developer funded contexts, in advance of that development. However, it also suggests that this zone still has the potential to furnish important information.

Magnesian Limestone

The Magnesian Limestone ridge bisects the study area along a north-south line, dividing the study area into two almost equal parts. It is nowhere more than 7km wide, but along its long axis runs to approximately 60km across the study area. This zone is characterised by the densest concentration of findspots and locations in the study area, the concentration being demarcated by the extent of the geology (Figure 4.13). The elevation of the ridge is not high, rarely rising above 100 metres OD, but rarely falls below 60 metres on its west facing edge. It is in effect a plateau, or more accurately a series of small plateaux, albeit ones that gently undulate and are bisected by small gorges rather than being dead flat across its entire surface (Roberts *et al* 2010: 3; Rodwell and Hey 2010; Figure 4.14).

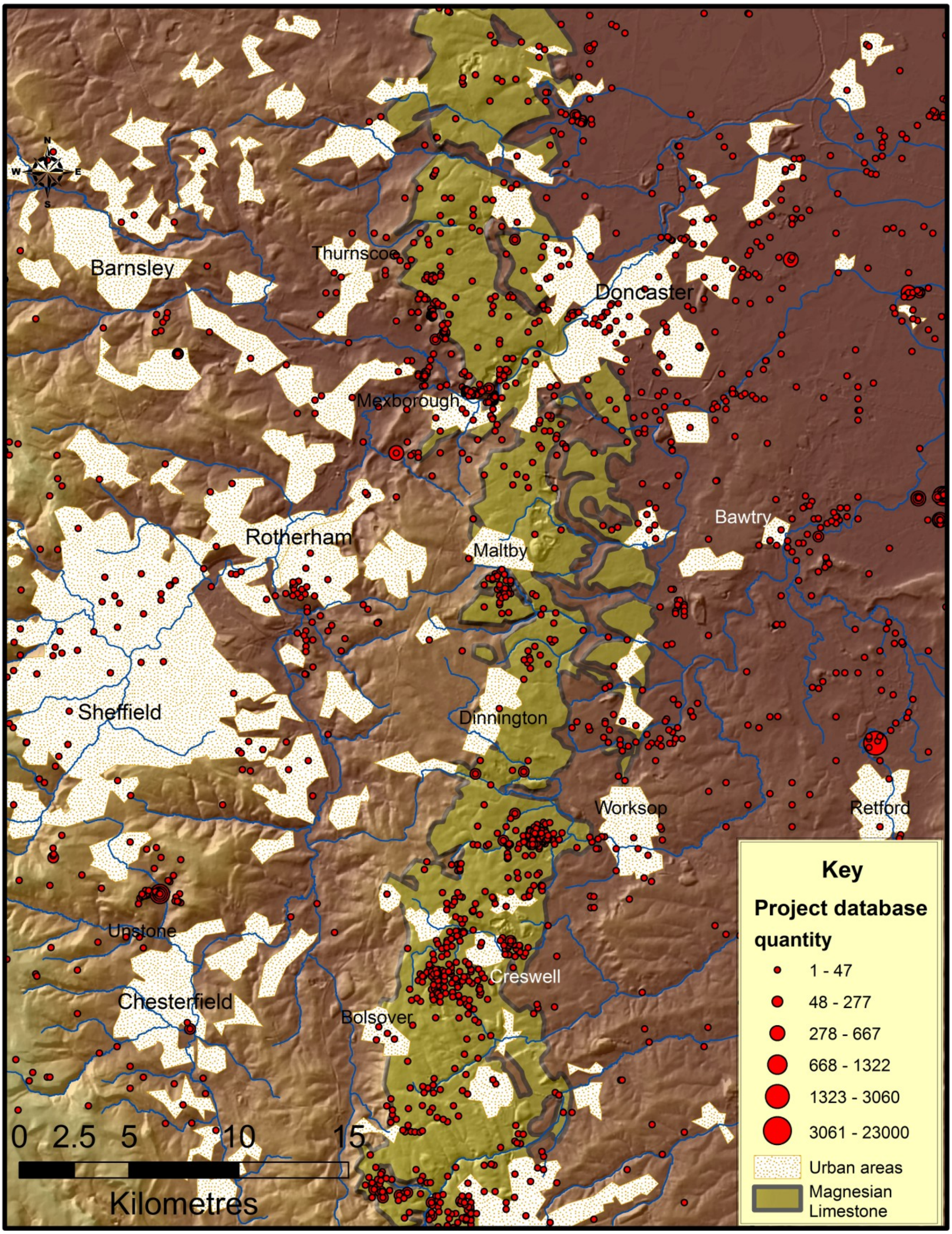


Figure 4.13: Distribution of data in relation to the Magnesian Limestone plateaux. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Figure 4.14: The undulating landscape of the Magnesian Limestone at Hickleton, South Yorkshire. Source: author.

The modest height of the Magnesian Limestone belies its prominence in the landscape: its west facing slopes frequently fall in a dramatic scarp, overlooking the low lying valley bottoms of the Rother, Don and Dearne (Rodwell and Hey 2010; Klemperer 2010: 5; Figure 4.15). The ridge falls away more gradually to its east, but still over a broad low lying valley in the River Idle drainage basin, and to the very low lying Humberhead levels in the north of the study area (Figure 4.16; Figure 4.17).

Figure 4.15: The view northeast from Old Denaby, South Yorkshire, across the Don Valley and lower Dearne Valley towards the west facing escarpment of the Magnesian Limestone at High Melton. Source: author.

Figure 4.16: The view east from Whitwell in North Nottinghamshire, across the middle Idle valley. Source: author.

Figure 4.17: The view east from Bilham in South Yorkshire across the Humberhead levels. Source: author.

The formation processes affecting the Magnesian Limestone area differ significantly from that of the Millstone Grit or the Coal Measures Sandstones. Widespread human interaction with the landscape on an industrial scale has certainly taken place, in contrast to the Millstone Grit uplands, but not of a kind that has resulted in large scale urbanisation or surface extractive processes, as it has with the Coal Measures Sandstones zone. Quarrying for Limestone has affected the landscape (Roberts *et al* 2010) but to a much smaller extent than coal mining has affected the areas to the west.

The coal mining to the immediate west from the 18th century onwards enriched landowners in the region, some of whom had estates on the Magnesian Limestone. The fertile soils of these estates also benefitted local landowners, many of whom were attracted to reside in the area as *nouveau riche* settlers due to its proximity to the prosperous market town of Doncaster (Klemperer 2010: 288). The presence of families in halls such as those at Brodsworth, Cusworth, Sandbeck, Hardwick and Hickleton (Figure 4.18; Figure 4.19) resulted in much of the Magnesian Limestone landscape being utilised as woodlands and parklands rather than being subject to industrial or urban expansion (Roberts 2012; Rodwell and Hey 2010: 59). Many of the woodlands had formerly been managed as sources of fuel for the burgeoning iron working industries of the 17th and early 18th centuries (Rodwell and Hey 2010: 57-58). Figure 4.19 below shows a map of the landscape to the immediate west of the village of Marr, South Yorkshire as it appeared in 1902. The second revision Ordnance Survey map of 1930 shows that it was virtually unchanged at that date.

Figure 4.18: The imposing east facing Palladian style facade of Hickleton Hall. Source: author

Figure 4.19: The fields and woods of Marr Moor, Marr Thick, and Melton c.1902. On the west edge of the map lies Hickleton Hall, Brodsworth lies on the north edge. Only three kilometres to the east is Cusworth Hall. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Agriculture was and is the defining characteristic of economic activity on the Limestone, due to the fertile nature of the thin well drained soils (Roberts *et al* 2010: 1; 8; Klemperer 2010: 4; 48; 288). Before the middle of the 20th century, horses provided the main source of traction across the study area (Cauldwell 2009: 199-206; G. Hall pers.comm.). Geoffrey Hall, a farmer in his 90s from Stone in South Yorkshire, happily recalled to me that the best day of his life was when his family abandoned horse drawn ploughs in favour of tractors. In this context of intense but unmechanized agricultural activity considerable pockets of archaeological data survived until recently in places where woodlands had been in evidence, such as Scabba Wood and Edlington Wood in South Yorkshire and Scratta Wood in North Nottinghamshire (Chadwick 1992; 2008: 1027-31; 1034-36; 1202-04; Buckland *et al* 1999; Buckland *et al* forthcoming; Dolby 1973; 2008; Worksop and District Historical and Archaeological Society Unpublished Archive held by Bassetlaw Museum; Roberts *et al* 2010: 96), and in the narrow gorges at places such as the Don Gorge, Lob Wells, Thorpe common, Firbeck Dyke, Creswell Crags, and Whaley (Peace 1981; Lob Wells rock shelter archive held by Creswell Crags visitor centre; Murray 1987; Brooks 1989; Jenkinson 1980; Armstrong 1949; 1950; 1951; 1952; 1953; Wall and Jacobi 2000).

Consequently, sub-surface rock cut features, and material culture also survived to a lesser degree across the arable fields of the Magnesian Limestone (Roberts *et al* 2010). Most of the rock cut features probably relate to the Iron Age and Roman periods (Chadwick 2008; Roberts *et al* 2010), although some features certainly relate to earlier prehistory (Roberts *et al* 2010: 17-24).

The woodlands in the vicinity of Marr were probably removed as part of agricultural development measures in 1948 (A. Turnbull, pers. comm.), and upstanding archaeological features remained visible in the succeeding fields (A. Turnbull, pers. comm.). These were vigorously levelled to improve the land in the period following the second world war. Similarly, when Scratta Wood in North Nottinghamshire was cut down at the beginning of the 1960s, upstanding features of the Iron Age and Roman period were revealed. These were noticed by local amateur archaeologists who were then permitted to record the features before the site was given over to agriculture (Dolby 2008). The existence of the Iron Age site is reasonably well known (Chadwick 2008), but less well known is that large quantities of earlier prehistoric material was also recovered in fieldwalking at the site (Worksop and District Historical Society unpublished archive held by Bassetlaw Museum).

Surface collection between the 1960s and the end of the 20th century resulted in the recovery of large quantities of struck stone artefacts from across the Magnesian Limestone (Peace 1981; Worksop and District Historical Society unpublished archive held by Bassetlaw Museum; Hurcombe 1988; Pam French unpublished archive held by Creswell Crags visitor centre; Knight 1986; Knight *et al* 1998; Philips and Guirr 1985; Parton 1983). Such projects have on the whole been undertaken by professional archaeologists in the context of grant funded work, or amateurs, mainly in the southern half of the Magnesian Limestone zone (Figure 4.20; Figure 4.21).

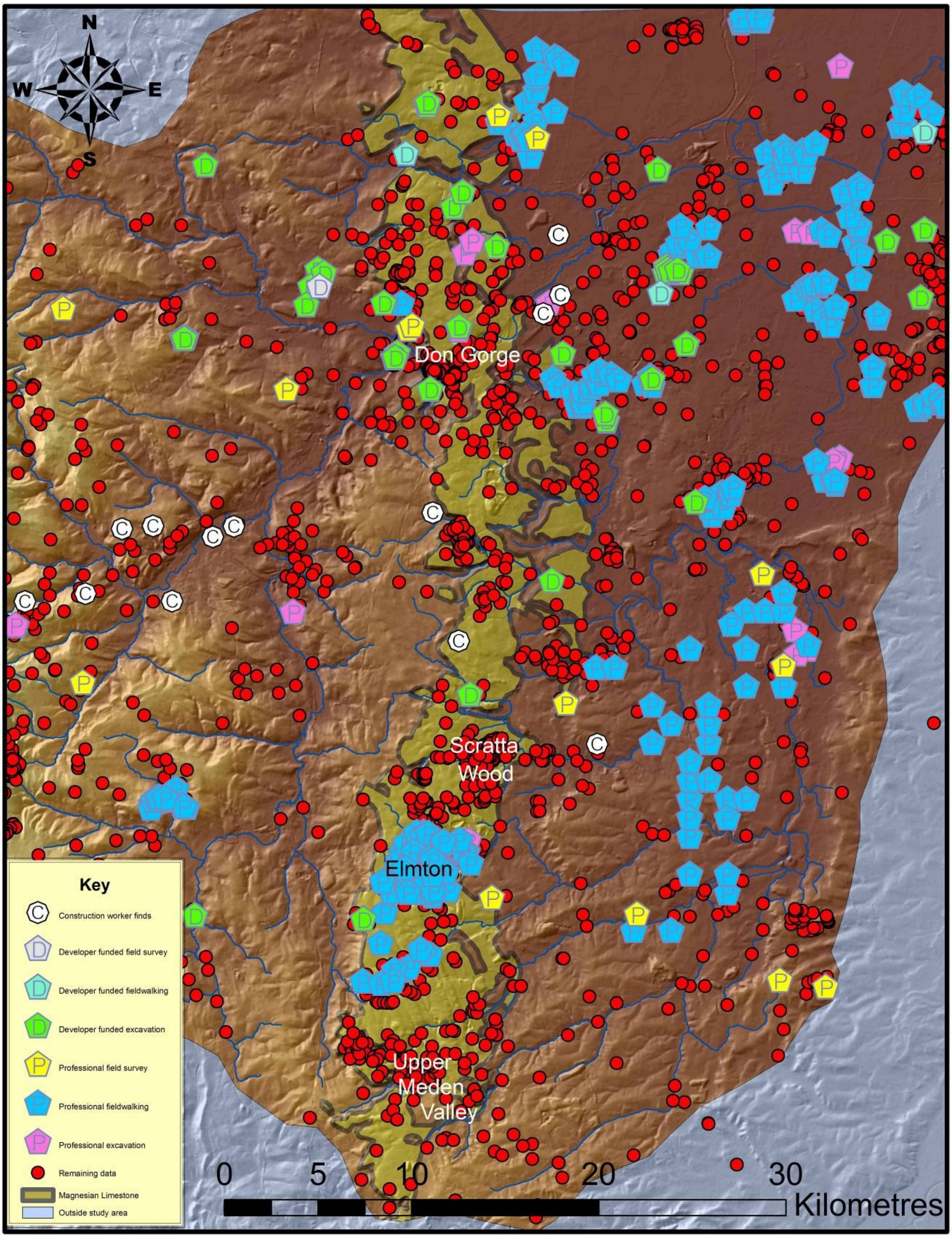


Figure 4.20: Professional and developer funded work on the Magnesian Limestone. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

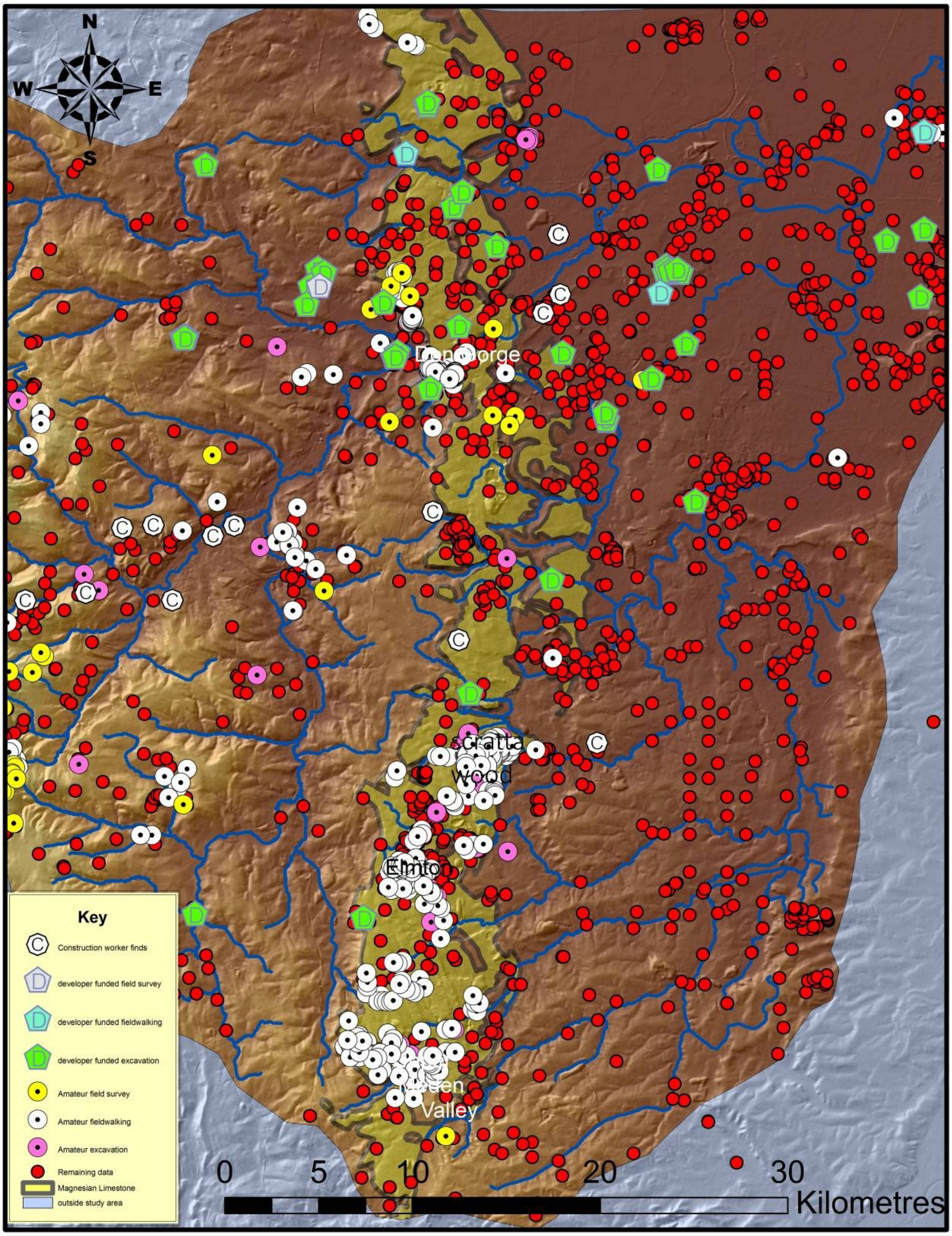


Figure 4.21: Amateur and developer funded work on the Magnesian Limestone and near vicinity. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Fieldwalking coverage has by no means been equal though, and significant gaps exist across the Magnesian Limestone between collection areas that cannot be accounted for by other kinds of activity, such as surface extraction or urban expansion. Some of these gaps are narrowed to some extent by the presence of numerous stray finds, and especially in recent years by the reporting of metal detectorist finds to the Portable Antiquities Scheme. In the case of Dinnington, which is the location of a Neolithic Long Barrow destroyed in 1862 (Cockrell, forthcoming), substantial gaps in data coverage exist in very close proximity to areas that have been fieldwalked, yielding much data in the vicinity of Carleton-in-Lindrick and to the west of Worksop at Scratta woods. Gaps in coverage surrounding the village are likely to represent lack of fieldwork rather than lack of earlier cultural activity (figure 4.22).

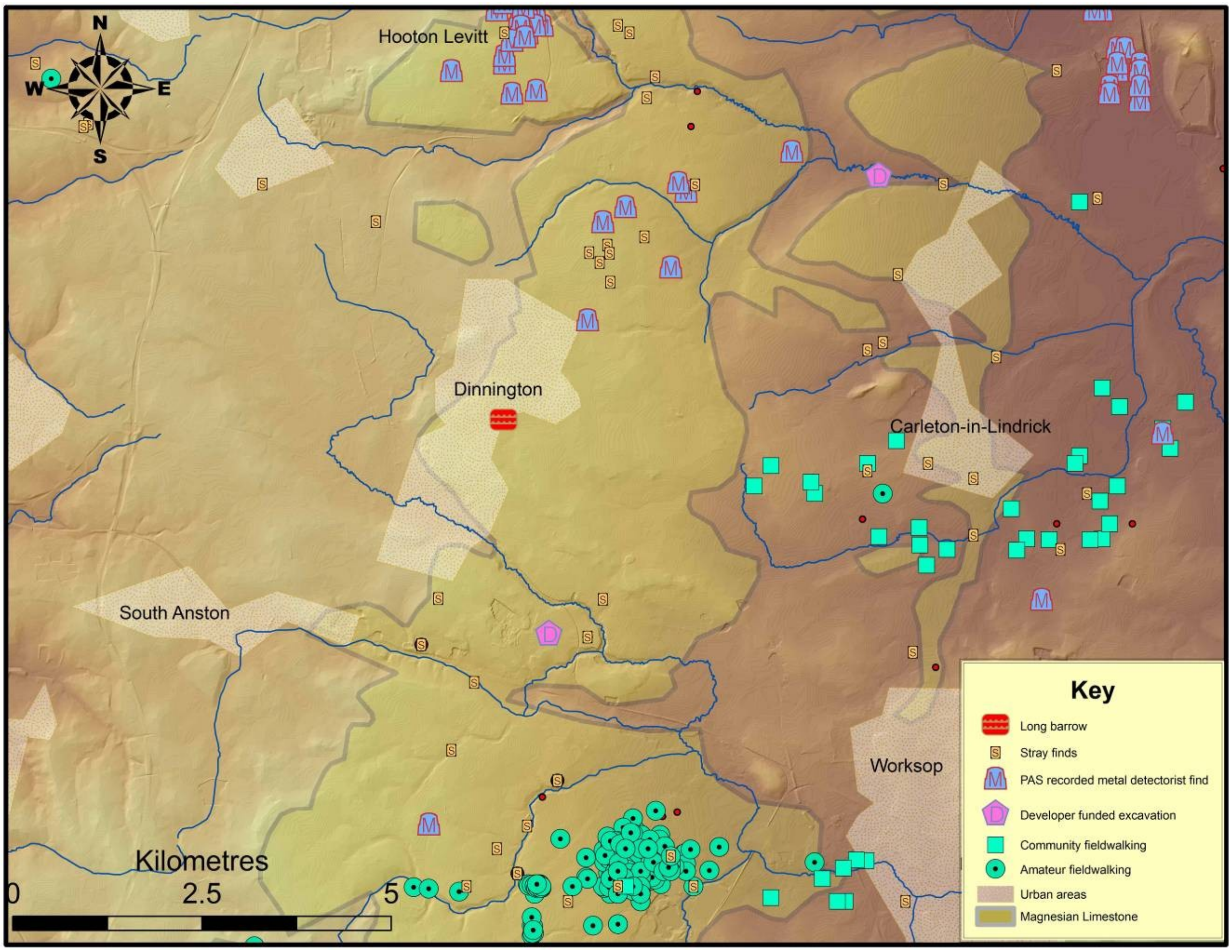


Figure 4.22: Dinnington and its environs, with gaps in data coverage probably indicative of lack of archaeological research. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

In the northern half of the Magnesian Limestone, in the vicinity of the Don Gorge, developer funded excavations are the main representatives of systematic recovery, with much smaller assemblages in evidence (Figure 4.20; Figure 4.21). Conversely, features in the form of cropmarks recorded through aerial photography, are more in evidence to the north than in the south (Figure 4.23). These features are suspected on morphological grounds to be round barrows, probably dating to the Bronze Age. The suggestion is supported by the excavation of two of these features at Rossington by Archaeological Services WYAS, that were confirmed as round barrows recently (Weston 2012). The digitized aerial photographic evidence does not extend much further south than the extreme north of Nottinghamshire, but the presence of a number of known or suspected barrows below this point using other sources proves that such monuments certainly existed in the landscape. The fact that so many have been detected as cropmarks further north strongly suggests that many more remain hidden as sub-surface features in the southern half of the Magnesian Limestone area as well.

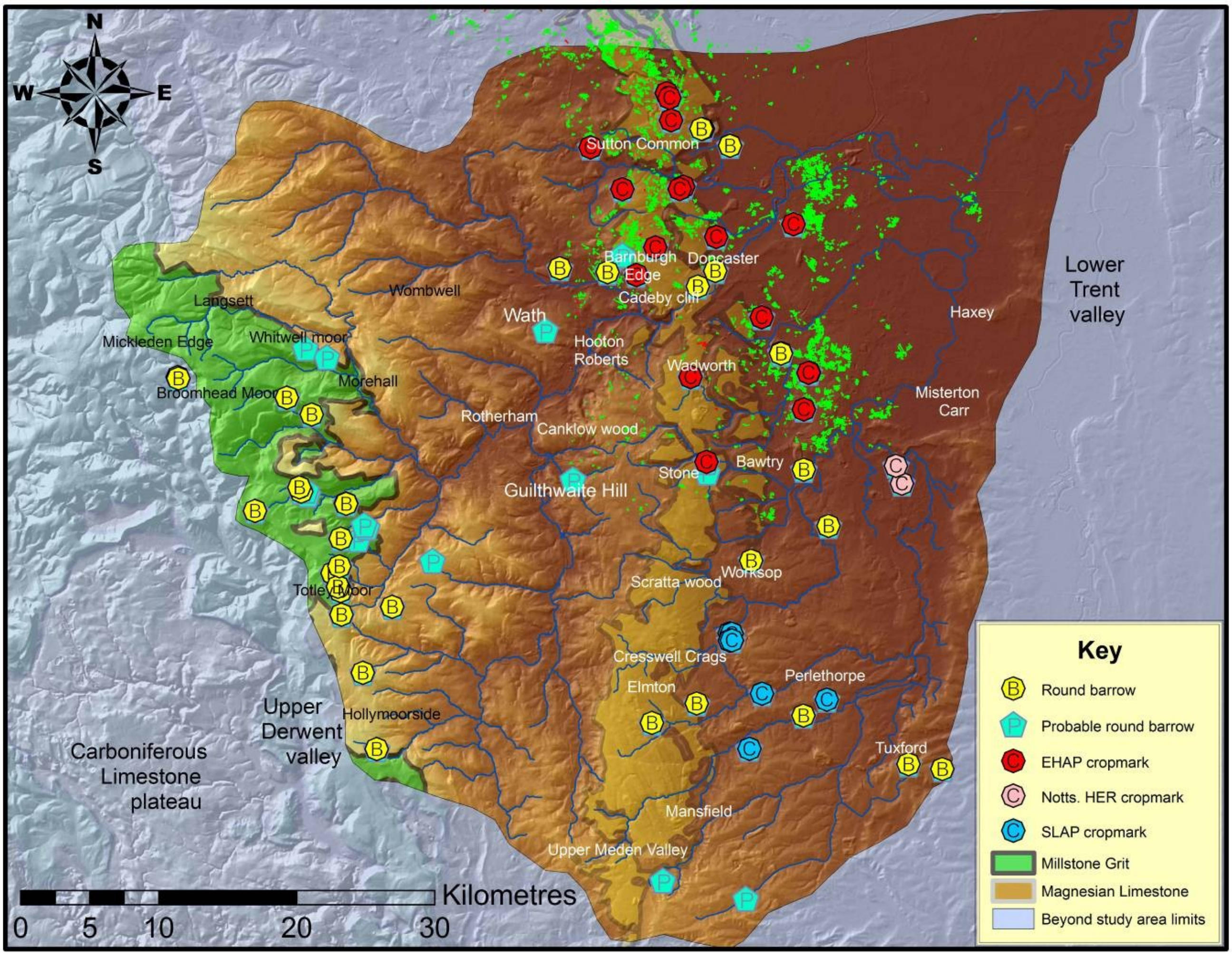


Figure 4.23: Cropmarks indicative of round barrows, in relation to AP data (SLAP, EHAP - see appendix) and other known and suspected round barrows. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service. Contains public sector information licensed under the Open Government Licence v1.0.

With the onset and development of the new mechanised approach to farming in the period after the second world war, the Magnesian Limestone landscape has been changed dramatically in recent decades. Deep ploughing has stripped the area of its topsoil according to one local farmer from Hooton Levitt (D. Haywood, pers. comm.). According to farmers to the north of the Don Gorge even the continual dumping of manure and fresh topsoil in places has not prevented sub-soilers from digging through the thin soils and breaking up the degraded bedrock. In places, views have changed as the level of the bedrock itself is lowered (C. Merrony, pers. comm.).

The above developments represent a severe threat to archaeological deposits (Courtney 1978; Roberts *et al* 2010: 14; 98; Cockrell *et al* 2014). This seems to be supported by the much more modest sized assemblages recovered in fieldwalking in the years since the large scale fieldwalking projects between the 60s and 80s of the 20th century, from areas to the immediate north of the Don Gorge (Brodsworth Community Archaeology Project unpublished archive; Cockrell *et al* in 2014). On this basis, it is to be expected that by the end of the century, and probably sooner, the Magnesian Limestone will be as denuded of its archaeology as are the Coal Measures Sandstones areas.

Sherwood Sandstone

The character of the landscape across the Sherwood Sandstone formation differs considerably between its northern and southern halves, broadly between the Humberhead Levels and the upper and middle Idle valley (Figure 4.24). There are some differences in the nature of the distribution of findspots and locations as well, with greater density visible on the northern half than on the southern (Figure 4.24). These differences relate to the differences in superficial quaternary deposits, resulting in somewhat different topographical characteristics (Figure 4.2). The southern half consists of the broad and shallow valley of the Idle river system, with its gently undulating landscape of ridges divided by small but distinctly incised valleys (Figure 4.25), and the northern half consisting of the drained wetlands forming the Humberhead Levels (Figure 4.26). These differences are difficult to relay effectively in photographs, but with the addition of contours and other topographical information, the differences in how the landscape relates to the distribution of findspots and locations becomes clear in mapping (Figure 4.24).

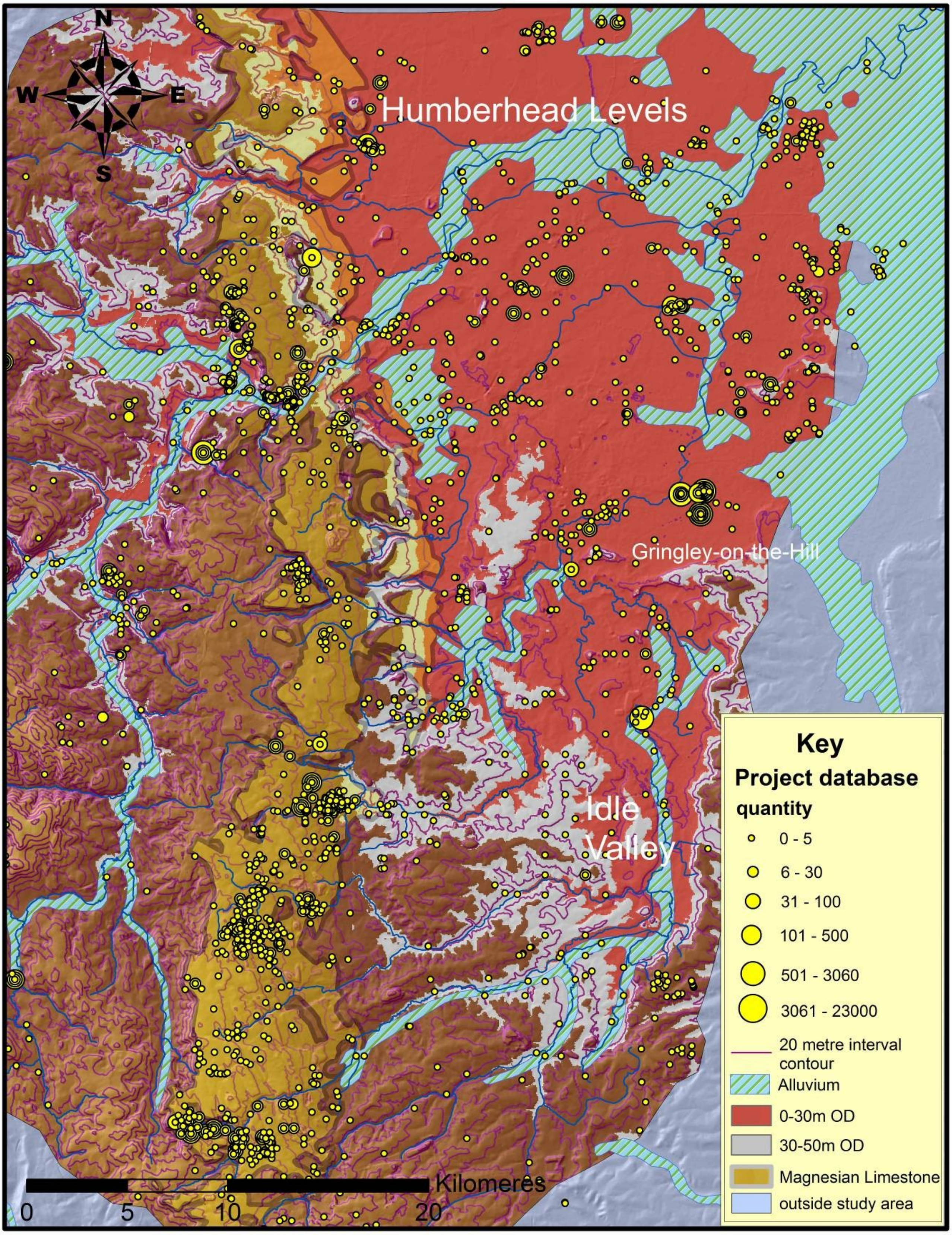


Figure 4.24: The distribution of data in relation to the Idle valley and Humberhead Levels. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Figure 4.25: The view southwest across the middle Idle valley, from Gringley-on-the-Hill, North Nottinghamshire. Source: author.

Figure 4.26: The view northwest across the Humberhead Levels from Beacon Hill long mound, Gringley-on-the-Hill, North Nottinghamshire. The dark line to the left background on the horizon marks the edge of the Magnesian Limestone, while the darker patch on the right of the photo marks the location of Haxey and Westwoodside on the Isle of Axholme. Source: author.

With these differences in mind, the Idle river system and Humberhead levels will be discussed separately.

The river Idle drainage basin

There are differences in distribution that might relate to formation processes even in the small sub-subdivision that will be discussed below, but the overriding character of the area is of a sparse distribution of data, recalling the character of the Coal Measures Sandstones (Figure 4.24). Part of this can be attributed to the difficulty inherent in identifying fieldwalking opportunities in a landscape which features extensive woodlands and parklands. They, along with the urban areas comprise a significant proportion of the landscape between Mansfield, and Worksop and Retford in North Nottinghamshire (Figure 4.27).

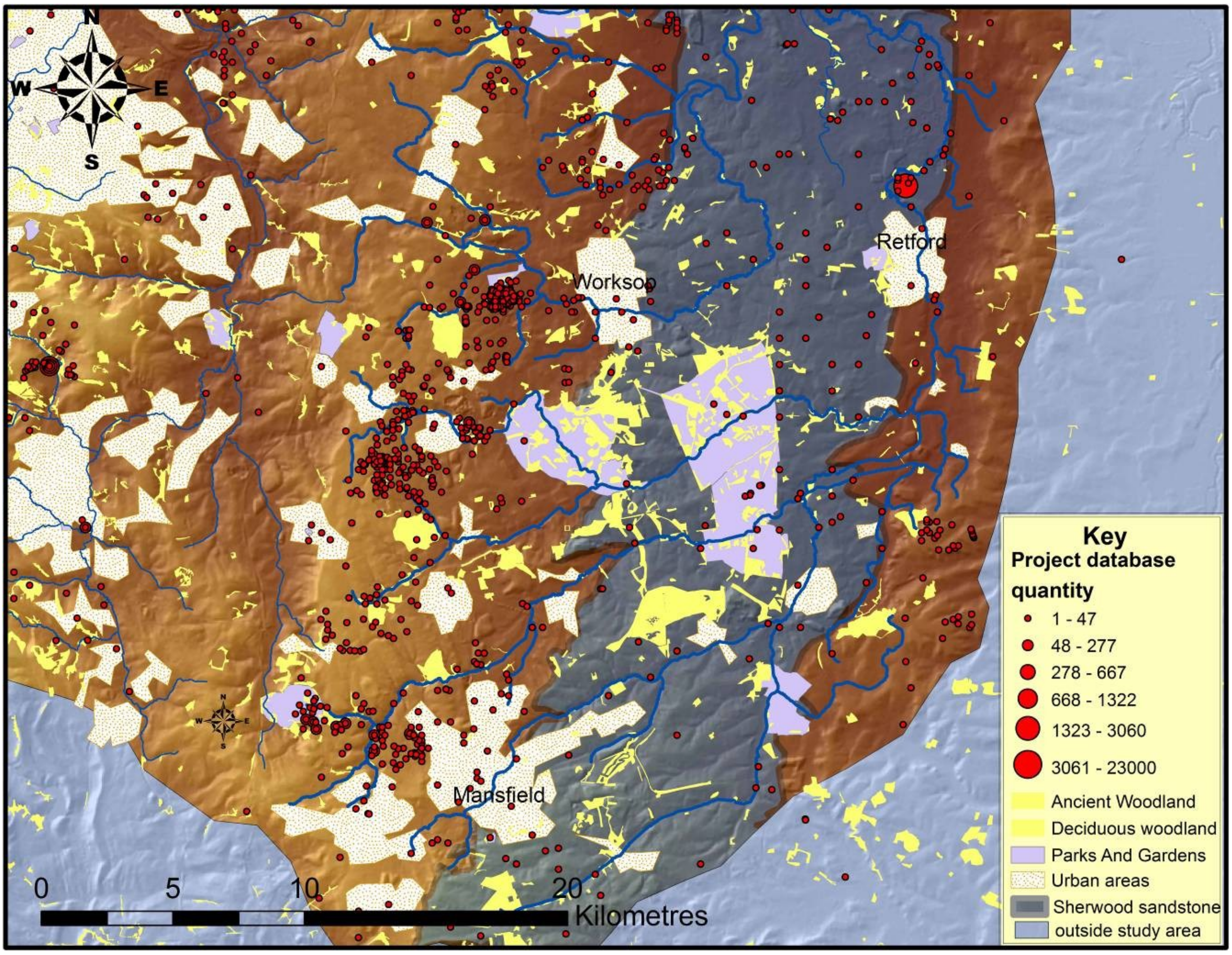


Figure 4.27: Urban areas, parks and woodlands in the upper Idle Valley. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

However, much more land to the east of Mansfield is not masked in this way, and is equally sparse in findspots and locations. In the northern half there are two places where there is more data; on the floodplain of the lower reaches of the Idle to the immediate north of Retford at Tiln, and on the interface between the Magnesian Limestone and Sherwood Sandstone in the vicinity of Carlton-in-Lindrick (Hurcombe 1988; Figure 4.28). At least some of the data north of Retford appears to have been collected prior to aggregates extraction, as part of fieldwalking undertaken by Trent and Peak Archaeological Trust (Knight *et al* 1998). The data from Carlton-in-Lindrick, was part of another Manpower Services Commission funded community project, from the 1980s (Hurcombe 1988).

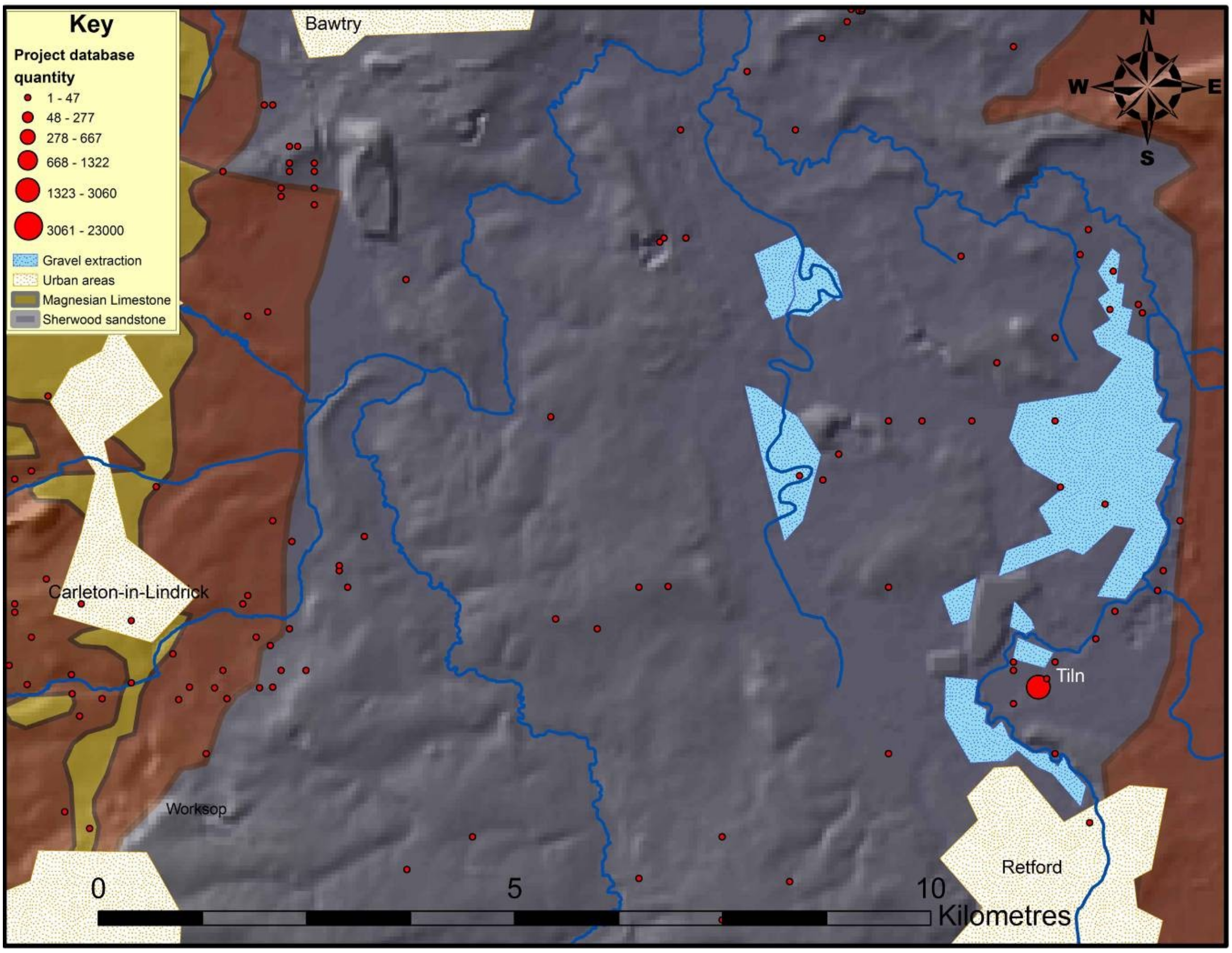


Figure 4.28: The middle reaches of the River Idle drainage basin in north Nottinghamshire. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Between those concentrations is a wide band that covers the majority of the remaining area. It is this band which is most conspicuous by its lack of archaeological data. The area was fieldwalked systematically by Trent and Peak Archaeological Trust and noted for its dearth of finds (Knight *et al* 1998). Apart from this project systematic fieldwork along this wide band between the Magnesian Limestone and the River Idle is notable by its absence. However, stray finds and metal detectorist finds have been recovered in relative abundance (Figure 4.29) supporting the suggestion that this area of landscape is not necessarily less well endowed with archaeological potential than other parts of the study area. More such finds have been recovered from the neighbouring Magnesian Limestone (Figure 4.29).

On the basis of the general distribution of stray finds there is no reason to believe that the Idle valley was lacking in human activity in earlier prehistory. It is possible, therefore, that lack of archaeological attention is the main culprit for lack of data from the Idle valley. This is particularly noticeable along a north-south line described by the interface between the Magnesian Limestone and the Sherwood Sandstones, between the Carlton-in-Lindrick area and Mansfield. At Carlton, and between Worksop and Scratta Wood relatively large amounts of data were recovered from these patches of systematically searched landscape (Hurcombe 1988; Figure 4.29). The rest of that vertical band of landscape is noticably bereft of mapped data. A contributing historical factor in the lack of aforementioned archaeological activity is probably to be found in the absence of old established museums in the area that elsewhere have formed the focus of earlier collecting activities (Moore 1979: 82).

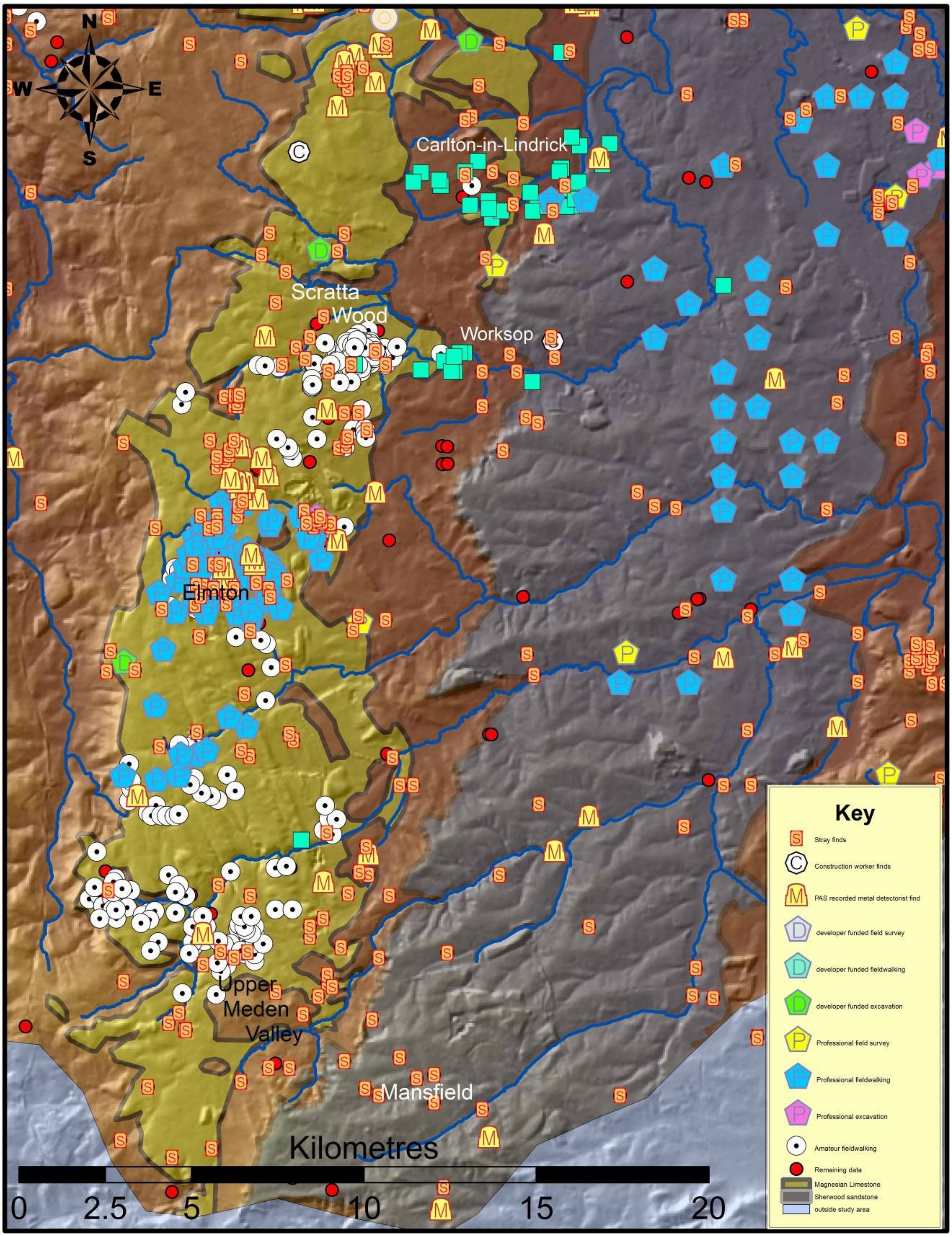


Figure 4.29: Distribution of archaeological events across the river Idle catchment. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The Humberhead Levels and the Isle of Axholme

The levels themselves are mostly underlain by the Sherwood Sandstones to the north of the Idle valley (Figure 4.1), largely covered by quaternary deposits of sand, gravel, and clay (Roberts *et al* 2010: 2; Figure 4.2; Figure 4.35). The portion that is not underlain by Sherwood Sandstones lies partly to the immediate north and east of Crowle, where the former course of the River Don had its confluence with the Trent. This area consists of undifferentiated sandstones, siltstones and mudstones usually referred to as the Mercia Mudstones (Klemperer 2010: 4); Crowle itself, and the settlements to its immediate south on the Isle of Axholme also fall within the Mercia Mudstone formation (Figure 4.1). In terms of aspect, there is nothing to distinguish these areas (apart from the Isle of Axholme), which have a uniformly flat and featureless topographical character (Figure 26; 30), 47% of which falls below 20 metres OD (Roberts *et al* 2010: 2).

Figure 4.30: The view north from Mill Hill, Crowle, across the lower reaches of the former River Don. Source: author.

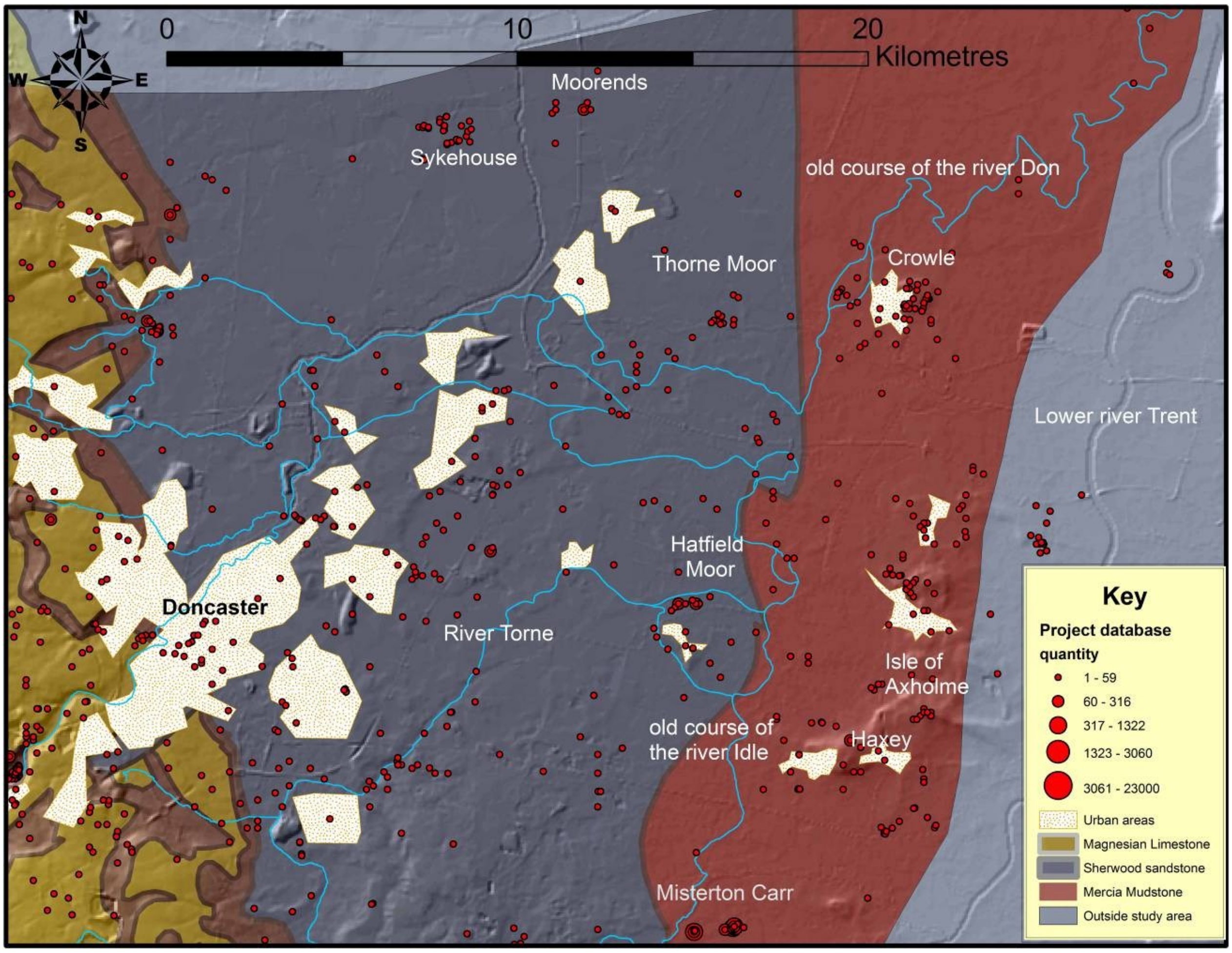


Figure 4.31: Humberhead levels geological formations . © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Little urban expansion has taken place beyond the immediate vicinity of Doncaster, but here numerous stray finds of earlier prehistoric date have come to light during the course of that expansion (Figure 4.32). This has resulted in a localised concentration of finds on the spur of sand and gravel that constitutes the landscape of Doncaster and its north-eastern suburbs (Figure 4.35). The quantities compare favourably with those recovered from other urban areas within the study area under similar circumstances, suggesting that the low ridge occupied by the town was a location for considerable activity in earlier prehistory. Not surprisingly, other settlements in the area also occupy contexts that are slightly raised above the levels. It is at these locations where the majority of concentrations have been recorded (Figure 4.33; Figure 4.34).

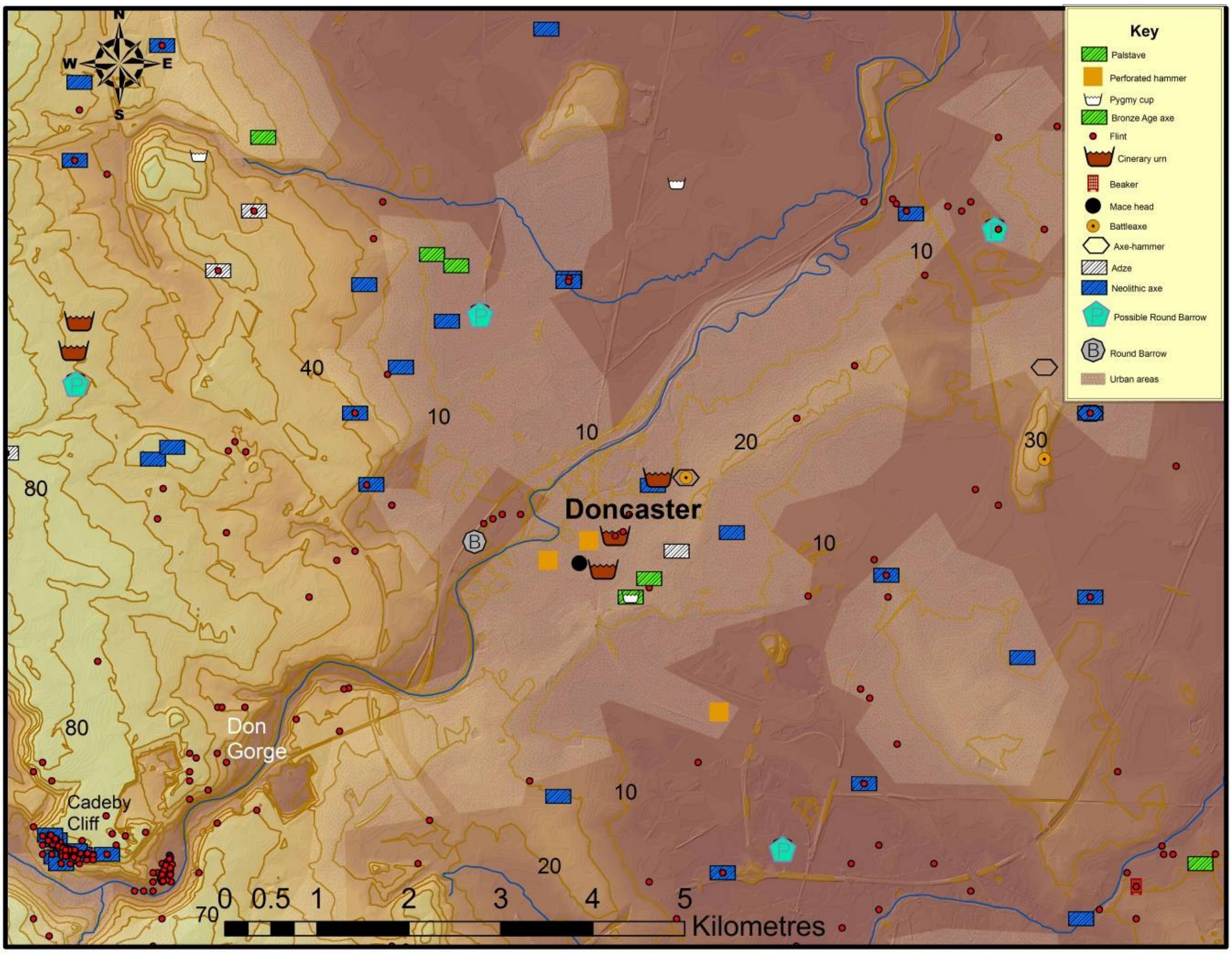


Figure 4.32: The distribution of earlier prehistoric artefacts and sites in the vicinity of Doncaster. Figures represent height in metres OD. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

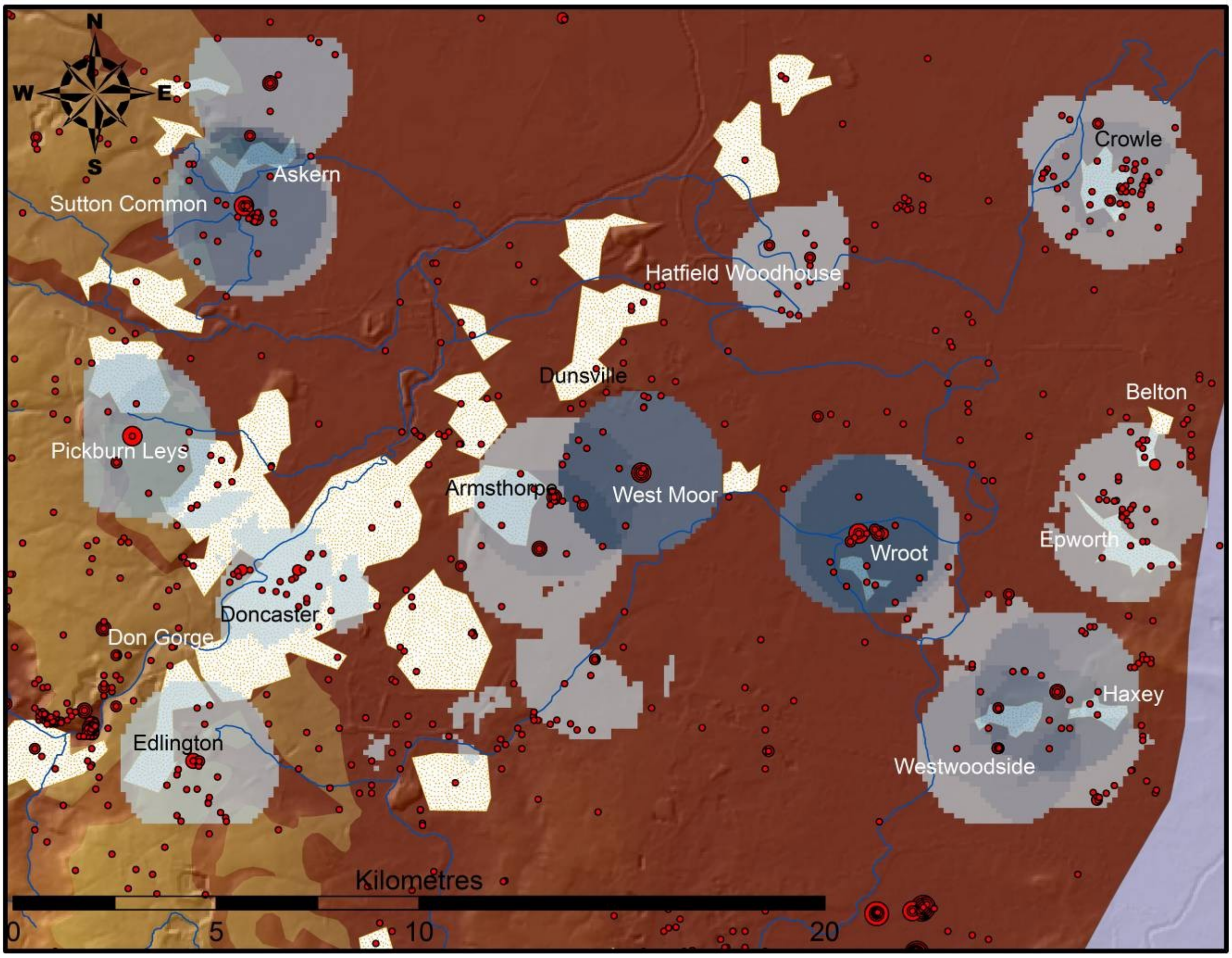


Figure 4.33: Point density plots (blue. Darker is higher) showing higher areas of data density relating to urban areas, built on higher and drier locations. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The dominant economic activity in recent centuries has been intensive agriculture developed in the wake of the drainage of the levels in the post-medieval period (De La Pryme 1870 (1699); Miller 1804; Peck 1813; Hunter 1828; Holland 2013 (1837), Rotherham 2010: 24-27; 50), although industrial scale peat cutting has been carried out on the raised mires of Thorne and Hatfield Moors (Buckland 1976: 156-58; Rotherham 2010: 50).

Many of the superficial deposits across the levels post date the earliest human activity, potentially masking the data relating to the earliest periods, as has been suggested for other places with superficial deposit coverings such as the Witham Valley in Lincolnshire (Knight *et al* 2012: 42). These include the peat deposits covering much of the levels (Figure 4.34). They also include artificially deposited silts created in the wake of the post medieval drainage schemes at regular intervals until the beginning of the 20th century, using the warping method (Rotherham 2010: 123). Nevertheless, larger items of stray finds, such as Neolithic polished stone axes and metalwork of Bronze Age date are frequently brought to the surface in the course of deep ploughing, to the immediate east and north of Doncaster (P. Robinson, pers. comm.). Numerous smaller items of struck stone have been recovered in more systematic fieldwalking and excavations at various locations, notably at Moorends on the north edge of the study area, and at Misterton Carr in north Nottinghamshire (Figure 4.31; Van De Noort and Ellis 1997; Buckland and Dolby 1973; Buckland 1976).

The assemblages noted are suggestive of greater prehistoric activity than is apparent from most of the levels. The well known prehistoric trackways of Thorne and Hatfield Moors are indicative of the level of organic preservation that once was in evidence at these locations, to judge from the statements of early antiquarians (De la Pryme 1870; Miller 1804; Peck 1813: 4-8). Moreover, unconfirmed eyewitness accounts suggest that much data of all kinds existed on the raised mires within living memory (P. Robinson, pers. comm.). This information was destroyed without record during peat cutting carried out in the 20th century, giving a relatively sparse impression of activity in distribution maps (Figure 4.31; 4.34).

Apart from the masking of data due to warping activities, a considerable swathe of the levels have been buried under alluvial deposits (Figure 4.34). It is possible, therefore, that much more data is masked by the alluvium. An exception to this is the unusual number of finds that have been recovered from the vicinity of Potteric Carr, to the immediate south of Doncaster (Figure 4.34). It should be noted, however, that this area has been subjected both to professional fieldwalking in the context of the Humber Wetlands Project, and some developer funded work (Van De Noort and Ellis 1997; Jones 2002; Figure 4.35). Small concentrations between Thorne Moor and Crowle, and on the alluvial plain to the south west of Thorne Moor can similarly be explained (Figure 4.34).

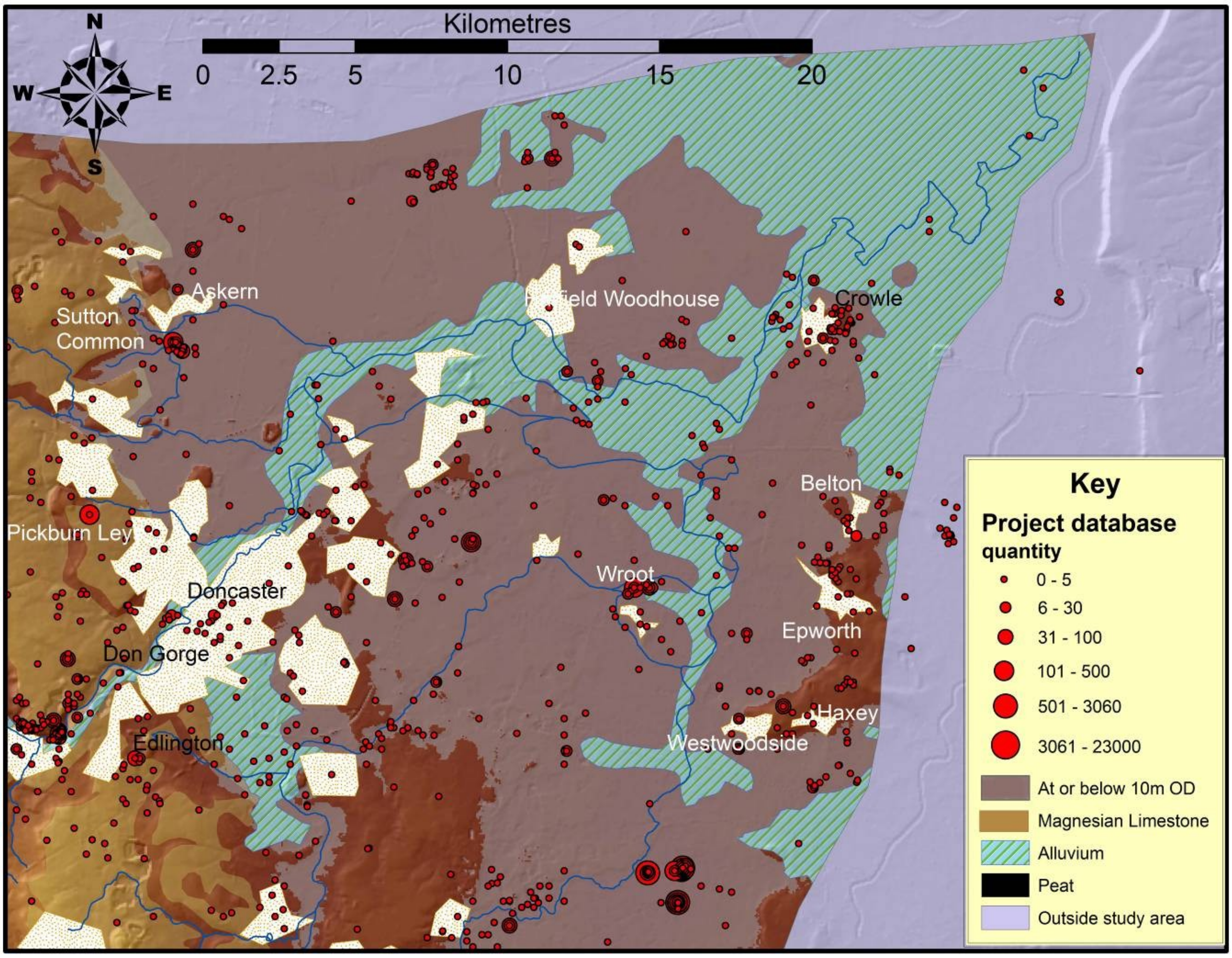


Figure 4.34: Alluvial deposits on the Humberhead levels. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service. Contains public sector information licensed under the Open Government Licence v1.0.

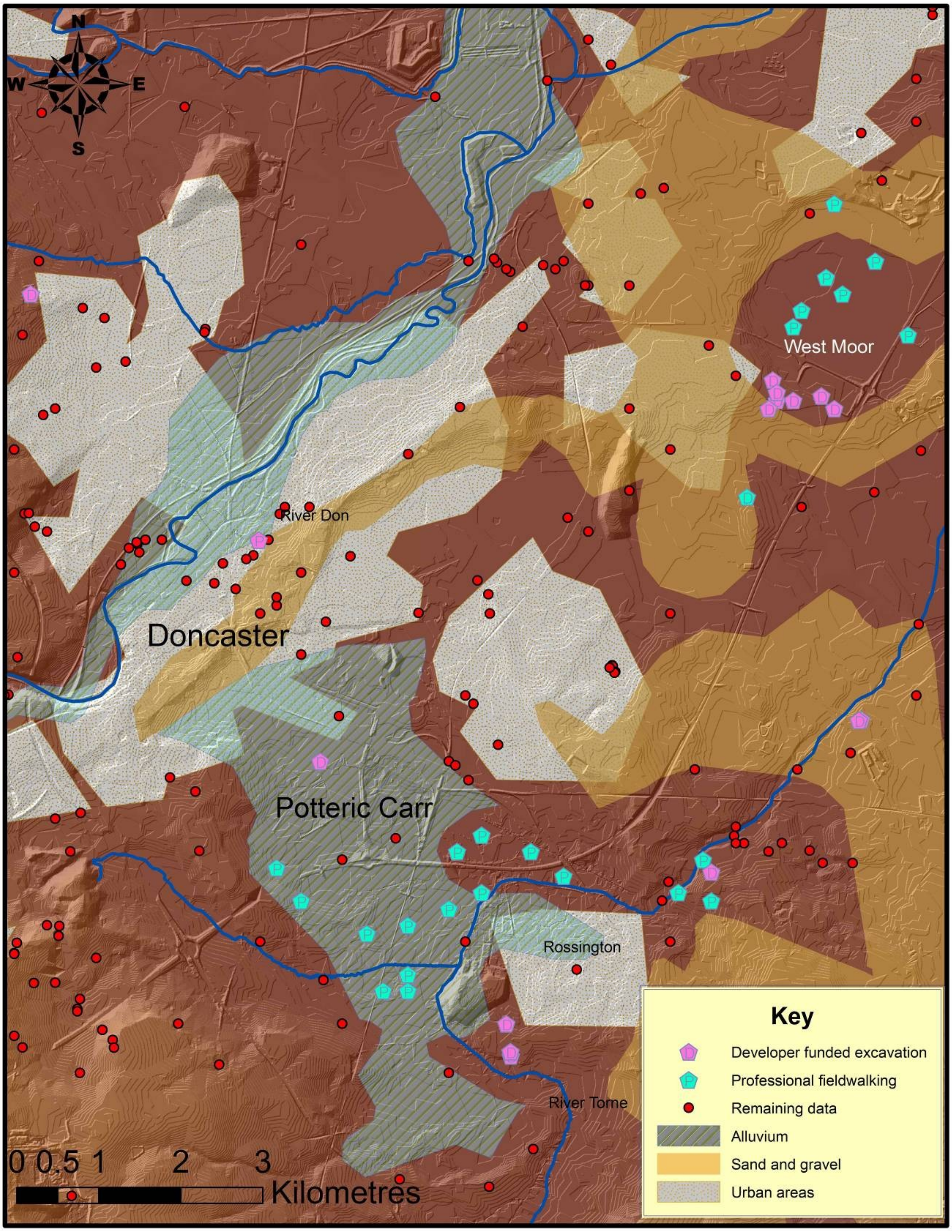


Figure 4.35: Archeological events in the vicinity of Potteric Carr, South Yorkshire. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The isle of Axholme (including Crowle) furnishes one of the largest concentrations of findspots across the levels (Figure 4.33). It is, however, the highest part of the landscape between the River Trent and the Magnesian Limestone to the west, north of Nottinghamshire, and has not been subjected to the inundations and recent human activity that has affected the levels themselves in the wake of the post-medieval drainage schemes. To that extent it has more in common with the exploitation of the Magnesian Limestone than with the Humberhead levels proper. It was, moreover, the scene of intense systematic fieldwalking during the 1980s (Sitch and Williams 1989), resulting in the recovery of a considerable assemblage of struck stone.

Remaining factors

Two sources of archaeological data that have not yet been properly considered, mainly because they relate to the entire study area, remain to be considered. The first of these is academic field research.

Academic research activity in the study area is notable by its absence, with the exception in recent years of the Brodsworth Community Archaeology Project run jointly by the universities of Sheffield and Hull. Lack of research has impacted negatively on the dataset, in the sense that little data has been recovered in order to answer specific research questions. This has arguably contributed to the poor archaeological understanding of the prehistory of the river Idle catchment for example, and has resulted in little excavation in particular taking place in those areas of the landscape that see limited developer funded work.

In areas where minimal damage to the landscape is taking place preservation *in situ* has *de facto* resulted, which is a positive outcome in some senses, albeit one that does nothing to advance our understanding of past human societies. To advance understanding of past human societies is, it is worth noting, the principle function of the discipline of archaeology. Conversely, the result in some areas of the landscape must be regarded as destruction *in situ*, as whole swathes of data are rapidly ploughed away, as on the Magnesian Limestone. To that extent the efforts of the Brodsworth project have undoubtedly resulted in the recording of much archaeology that otherwise would have been destroyed *in situ.* It is to be regretted that more such research does not take place elsewhere on the Magnesian Limestone, in order to preserve by record that which otherwise will undoubtedly be gone forever in a few years.

The other consideration here is a part of the dataset that is generally overlooked by archaeologists; stray finds (Figure 4.36). Stray finds have a number of advantages over other forms of archaeological data which can best be appreciated by considering the disadvantages of other forms of archaeological event.

The biggest problem facing researchers of large and diverse datasets is their very diversity. To interpret such information necessitates comparability between data generated under very different circumstances, employing various methodologies, to different standards in often quite diverse activities. The narrower the focus of research, the more such problems are exacerbated. This can partly be mitigated for by, at the detailed level of analysis, comparing only similar kinds of datasets. So, for example, in the upland zone of the present study area the vast majority of work has been undertaken by amateurs to a similar standard using similar methodologies. By comparing only those projects, detailed questions not utilizing radically differently generated datasets can be approached meaningfully. At the broad, regional, scale of analysis this is not possible. However, since a much larger area of analysis is being considered, different kinds of questions, with a wider less detailed focus, might be asked instead to mitigate for the problem.

The above kinds of issues are far less acutely problematic when analysing stray finds, at least at the regional scale of analysis. At the detailed scale stray finds are usually of little use when studying a single site or small area of landscape. The findspot accuracy is usually, though not always, too poor to allow for that. At the regional scale, however, the problem of locational accuracy recedes very significantly.

At the regional scale of analysis, a particular problem with systematically gathered data is that different areas of the landscape have frequently been subjected to very different kinds of investigation. To take an obvious example, comparing the excavated and fieldwalked evidence from the Millstone Grit substrate, mainly generated through amateur archaeology in the first half of the 20th century, with data generated largely through the efforts of developer funded activity from the lower Dearne valley in recent years. To compare such datasets raises instant compatibility issues, depending on the level of analysis.

Stray finds do not suffer as much from the aforementioned problems. At the regional scale they are more easily comparable. Moreover, though densities vary, collectors are not confined largely to one part of the landscape or another in the way that systematic workers are, due to being constrained by the locations of urban and industrial development for example, or potential bias on the part of research grant funding bodies. As an activity, stray find collecting is also not confined to a particular point in time (such as the period since 1991 and the advent of PPG16, or the early to mid 20th century during the fluorescence of amateur archaeology). This enables the researcher to, for example, offer evidence to support the idea that the Idle Valley is probably less poor in earlier prehistoric activity than is usually supposed, or to postulate that the landscape around Dinnington was probably richer in prehistoric activity than is suggested by an uncritical observation of the regional distribution of findspots, as suggested here earlier.

In addition to the above, the extensive nature of the distribution of stray finds supports the idea first suggested by Foley (1981), which is that there is much more to the inhabitation of the landscape than existence of mere "sites".

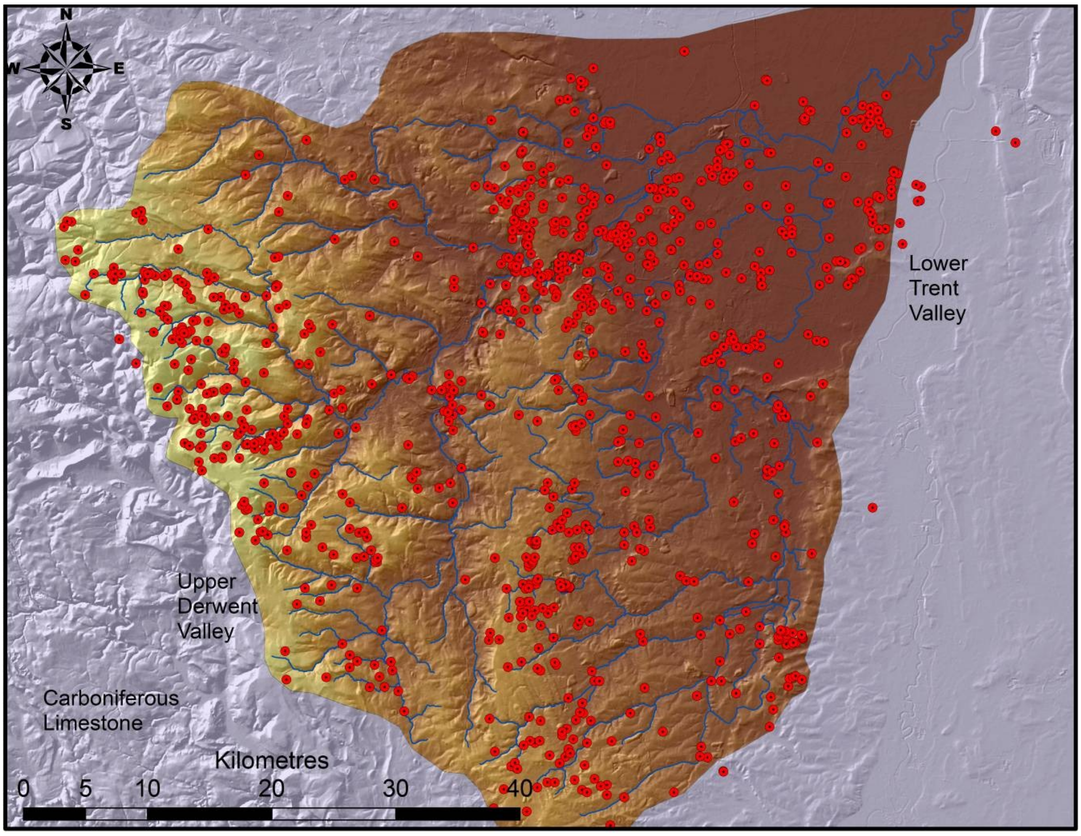


Figure 4.36: Stray finds across the study area. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Conclusion

An uncritical assessment of the distribution of artefacts and monuments across the landscapes of the study area would conclude that prehistoric activity was largely confined to the Gritstone uplands of the west and the Magnesian Limestone ridge in the centre.

A critical analysis of the formation processes and distribution of findspots and locations indicates a more complicated scenario, with considerable activity implied across the Coal Measures Sandstones as well. The Humberhead Levels offers yet more complexity, with different kinds of formation processes either masking or destroying archaeological deposits, and yet with sufficient data across the rest of this landscape to indicate considerable prehistoric activity. The situation in the lowland area of north Nottinghamshire is more contentious, but is unlikely, *prima facie*, to have been devoid of activity, despite the well known dearth of systematically recovered archaeological data. It is likely that this landscape was as active as any other part of the study area. Interpretations of the study area must avoid the assumption that inhabitation or use of the landscape was confined only to those higher altitude areas with the densest concentrations.

Summary of main findings				
Millstone Grit	Coal Measures	Mag. Limestone	Idle Valley	Levels
Landscape/visibility: undeveloped and largely undisturbed. Upstanding features common, but partly masked by vegetation.	**Lands./visib.:** masked or destroyed due to urban expansion and mining. Occasional survivals in pockets of undisturbed.	**Lands./visib.:** moderate intensive agriculture - destructive intensive agriculture. Sub surface features common, but being destroyed.	**Lands./visib.:** moderate intensive agriculture. Woodlands and parklands. Probable sub-surface survival but invisible at surface.	**Lands./visib.:** significant levels of masking due to alluvial action and warping. Significant destruction due to peat cutting. probable sub-surface survival.
Arch. Events: dominated by widespread amateur work. Little work by professional community in study area.	**Arch. Events:** developer funded in north, other professional in south. Little other work.	**Arch. Events:** widespread amateur fieldwalking and professional fieldwalking. Some amateur excavation.	**Arch. Events:** Very limited. Some professional work, and some amateur work on interface with Mag. Limestone.	**Arch. Events:** extensive professional fieldwalking and isolated professional and developer funded excavation .
Remarks:	**Remarks:** little coverage but significant assemblages recovered in some places.	**Remarks:** deep ploughing will remove almost all sub-surface features and information.	**Remarks:** lack of data likely to be the result of limited archaeological activity.	**Remarks:**

Table 4.1: Tabulated summary of the relationship between the database and formation processes. Stray finds have not been included in the "archaeological events" row, since they occur across the entire study area.

Chapter 5:

The environment of the study area

Introduction

The environment, and how it changes over time, is worthy of a thesis in its own right. This is particularly so in a region of such diverse landscapes. That is not the subject of the present study, and the author has not attempted to undertake original palaeo-environmental research. What follows is a synthesis of the work of scholars working in the region and beyond, most of whom specialise in environmental research, using a variety of approaches and methodologies.

Beyond describing the environmental context for the archaeological analysis and discussion to follow, the main contribution of this chapter will be to bring together work that has been undertaken by scholars addressing different parts of the present study area. Those parts of the landscape have not been considered as a single ecosystem before, despite being linked by the same fluvial system. It will be seen that the different parts of the drainage basin can best be understood when considered together as a single entity.

The study area has been unevenly covered by environmental researchers. Decades of research by scholars in both the upland district of the Southern Pennines and the lowland district of the Humberhead Levels has furnished a large body of detailed work into the changing environment. Data recovered has consisted of organic remains preserved in upland and lowland peats, soil deposits, carbonised organic material (particularly in the uplands), archaeological data, insect fauna and pollen. By contrast, the landscapes between these areas, mainly overlying the Coal Measures Sandstones and Magnesian Limestone substrates, are almost entirely bereft of relevant research. *Prima facie*, it follows that we cannot at present characterise the histories of these places using environmental data and are reliant on utilising archaeological data as a proxy.

Fortunately, some of the issues governing discussions over the changes in the upland and lowland districts respectively have a bearing upon each other. It is therefore reasonable to extrapolate from these discussions what was likely to have transpired in between the uplands and lowlands to some extent. Furthermore, The Coal Measures Sandstones-dominated zone consists of topographical contexts that are broadly similar either to the uplands (the valley sides and ridges) or the levels (the narrow floodplains and valley bottoms). To this can be added more general works undertaken at much larger scales of analysis that discuss the palaeo-environments of Britain and north western Europe. This allows us to draw tentative conclusions about the nature of the environment and environmental change across that large swathe of landscape, but ones that cannot be more than suggestions in the context of the present thesis.

Presented below is a broad characterization of the environment of the study area and how it changed over time, described chronological period by chronological period. This broad brush approach avoids the necessity to engage in the kind of detailed discussion that would be appropriate for a major contribution of original work, but be sufficiently detailed to provide meaningful contexts for the archaeological study to follow, aiding and informing interpretation.

The Mesolithic: closed canopy or open and park-like landscape?

The beginning of the Mesolithic dates from soon after the start of the Holocene. The Humberhead Levels, site of the former glacial Lake Humber consisted of a plain of clay-silts by its onset, possibly dating to earlier than 12500 B. P. (Bateman *et al* 2007: 195-196: Gaunt in press: 13). Sea levels at this time were much lower than today, at approximately 15-20m below O.D. (Ellis 1997: 7; Chapman and Gearey 2013: 147). Due to the much lower water table, and the much lower sea level height, the area of the Humberhead Levels consisted of a plain with little vegetation, gently inclining from about 8m O.D. in the Vale of York to roughly 5m O.D. to the south east of Doncaster (Buckland and Smith 2003: 32). The plain was bisected by relatively straight, steep sided, and very deeply incised river channels cutting through the earlier morainic deposits (Ellis 1997: 7; Dinnin 1997: 32; Van De Noort 2004: 19; Buckland and Smith 2003: 32; Chapman and Gearey 2013: 147; Mansell *et al* 2014: 15; Gaunt in press: 13). These river channels (the Don, the Torne and the Idle) were flanked by levees, that were partly subject to remodelling by aeolian action (Gaunt 1994; Gaunt in press: 13). The remnant dunes and sand bars form most of the very modest raised areas across the levels, with the levels themselves flanked on the east by the Mercia Mudstone hills of Crowle and the Isle of Axholme, and on the west by the free draining slope of the Magnesian Limestone belt.

From a relatively sparse and open beginning (Mansell *et al* 2014: 10) It is generally believed that the landscape across northern England at the beginning of the Mesolithic rapidly became forested, initially with pioneer species such as birch and pine (Bartley 1962;

Buckland 2005: 72), with specific data suggesting this for the present study area in both its upland and lowland areas for pollen zones IV and V or by approximately 7000 B. P. (Buckland 1976: 136; 138; Tallis 1991: 413; Dinnin 1997: 35). Deciduous trees including oak and elm soon followed to colonize the landscape (Dinnin 1997: 35; Mansell *et al* 2014: 10).

The traditional assumption has been that by "forest" is meant a dense canopy covering the entire landscape (Fox 1947: 11; 37; 58-59; 90; Jacobi *et al* 1976: 310; Vera 2000: 1; 14-17; 57; van Vuure 2005: 175; Coles 2006: vii; 8; 87; Kirby 2005: 21; Buckland 1979: 144; 2005: 63; Hodder and Bullock 2005: 32), with Cyril Fox famously making the claim that in remote prehistory if a squirrel were to travel from one end of the country to the other it would never have to touch the ground (Fox 1947: 90).

This assumption began to be challenged in the 1980s by scholars suggesting a landscape that included trees, but was essentially open and park-like (Vera 2000: 51-56; van Vuure 2005: 175; Buckland 2005: 63; Hodder and Bullock 2005: 32). This culminated in 2000 with the major work of synthesis by Vera, who attempted to prove the point both on theoretical and empirical grounds. It was claimed that the assumption was based on uncritical interpretations of early pollen diagrams that bore superficial similarity to contemporary diagrams obtained in modern closed canopy woodlands (Vera 2000: 64-65). Vera argued that the presence of shrubs such as hazel in pollen diagrams, often in significant quantities, indicated that dense canopy woodland could not have existed, since hazel and similar plants could not flower and pollinate in such an environment (Vera 2000: 6-7). He supported this by suggesting that the presence of ungulates, and especially large herbivores in the archaeological record proved that woodlands must have been subjected to significant damage by browsers. The presence of grazers, moreover, suggested to Vera that grasslands must have existed in significant amounts in order to provide them with sufficient food. The high levels of tree pollen in pollen diagrams, it was claimed, could be accounted for by their spread by wind that is better able to distribute pollens in a more open environment. The trees, that though fewer in number, could produce more pollen due to having more side branches that spread wider in less constricted spaces. Vera (2000: 51) also cited examples of contemporary and near contemporary landscapes where open park-like environments are the norm, such as the Serengeti in east Africa. On this basis, Vera postulated a landscape that took the form of a mosaic of woodlands separated with more open areas in between (Vera 2000: 9).

Vera's thesis in turn has been challenged (Kirby 2005: 18; Buckland 2005: 89) and on occasion subjected to severe criticism (van Vuure 2005). Van Vuure claims that Vera's assertions about pollen diagrams do not take into account the differentiation between levels of tree pollen compared with levels of non tree pollen species such as hazel, indicating that levels of hazel are relatively insignificant in many cases. Van Vuure also refutes the assertion that hazel is unable to pollinate in closed canopy woodlands, citing anecdotal examples of where this has apparently taken place (Van Vuure 2005: 309). Van Vuure claims that ungulates are unable, without human intervention, to maintain open landscapes. Moreover, he suggests that the various forms of wild cattle in particular favour low lying wetland environments that are characterised by flora frequently dominated by the grasses and sedges that are their preferred foods, with the implication that they did not graze beyond such environments.

Van Vuure refutes the contemporary and near contemporary examples given by Vera, and in particular criticises his use of the Serengeti as an example on the grounds that the climate and precipitation are not comparable with north west Europe. Furthermore, van Vuure (2005: 311) exudes exasperation with Vera in not considering the many examples of dense rain forest that also exist in Africa. Van Vuure completes his critique by citing his own examples of wilderness environments known to have consisted of dense forest, some cited from ancient and medieval history, and others more contemporary (Van Vuure: 276-80). Van Vuure is particularly interested in the vast barely inhabited regions of eastern Siberia that are so thickly forested that movement across them is virtually impossible even, it is claimed, by humans.

There is a certain amount of circularity in van Vuure's last line of attack that serves as a warning in taking his polemical critique at face value: after the last glaciation there were, initially, very few if any trees across landscapes that were presumably changing from a steppe-like tundra into what they subsequently became (Ellis 1997: 7; Spikins 1999: 32; Mansell *et al* 2014: 10). In the present study area this initial regime has already been noted above on the Humberhead Levels. It is assumed that fauna of various kinds, including large herbivores such as aurochs (wild cattle) moved into these landscapes (van Vuure 2005: 235), presumably without initial difficulty. It could therefore be argued that their existing presence might, at least in part, have prevented trees from forming a canopy as dense as that in eastern Siberia from the outset. Moreover, van Vuure himself admits that the dense forests of eastern Siberia lacks at least one major species of fauna that would without doubt make a significant difference were it present: the beaver (Simmons 1993: 110-111; Van Vuure 2005: 279; Hodder and Bullock 2005; 43). Beavers were native members of the fauna of the British isles in prehistory from the end of the last Ice Age (Coles 2006: vii). More will be said about the beaver below, but it is also worth noting that the archaeological record does not support the idea that the forests were so dense that people were effectively excluded (Jacobi *et al* 1976: 310; Figure 5.1). Concentrations and gaps certainly exist, but the distribution of material culture as a whole, given earlier discussions about sample bias due to formation processes, is sufficient to confirm that all parts of the landscape were travelled across and inhabited (Figure 5.1). This is consistent with recent modelling of woodland coverage across the British isles, which strongly suggests that in broad terms, forest density estimates based upon pollen analysis has overestimated the extent of tree coverage in previous interpretations for the early Holocene (Fyfe *et al* 2013).

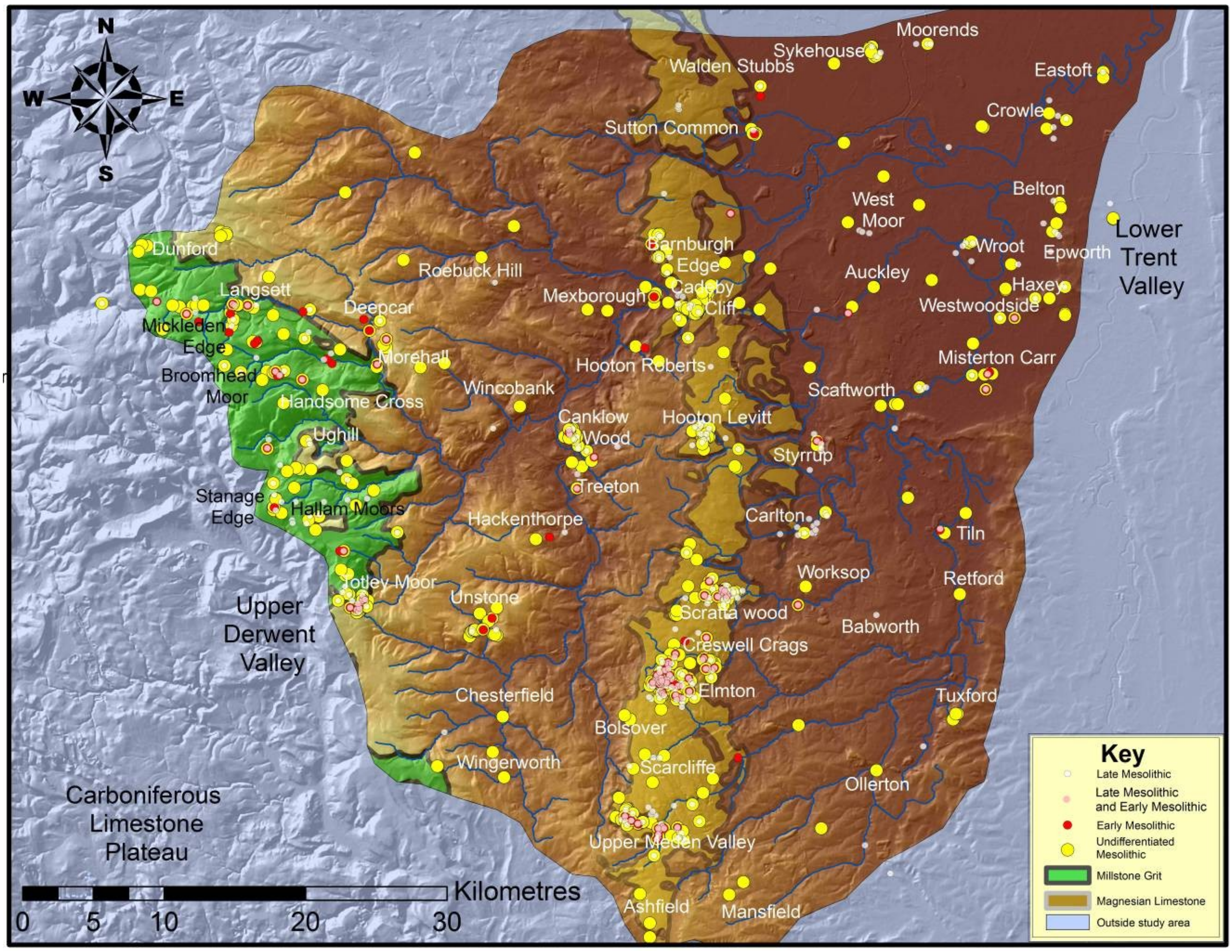


Figure 5.1: Distribution of Mesolithic findspots across the study area. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Tree cover in the study area

Evidence indicative of the existence of considerable woodlands across parts of the present study area, that later changed in character, can be found as early as the observations of Abraham De La Pryme at the end of the 17th century AD, who noted the regular discovery of ancient trees in the peat on the Humberhead levels. Such organic finds have also come to light in the upland district that is currently moorland (Conway 1947: 158; Hicks 1971: 649; 651; Jacobi *et al* 1976: 310; Figure 5.2). Environmental analysis of core samples taken in both landscapes include pollens that support the view that there was a widespread cover of woodlands in the Early Mesolithic across the study area, despite the known presence of ungulates that favoured open landscapes (Buckland 1976: 138; 2005: 72; Dinnin 1997: 35; Spikins 1999: 32).

Figure 5.2: Tree roots exposed by eroding peat on Broomhead Moor, South Yorkshire. Source: author.

Work on some of the upland soil profiles revealing the presence of lenses with carbonised material embedded within them indicates that in the Later Mesolithic (pollen zones VI-VIIa) episodes of burning took place, which it has been plausibly suggested are anthropogenic in nature (Jacobi *et al* 1976; Simmons 1993: 110-111; 117; Heath 2003: 13). This interpretation has been challenged (Bonsall *et al* 2002), with natural burning due to the rise in temperatures in the early stages of the "climatic optimum" (Parker *et al* 2007 : 170) being offered as an alternative explanation for the charcoal lenses. The lenses of burnt material are regularly recorded in contexts across the British Isles (Moore 1993; Caseldine and Hatton 1993; Simmons 1993: 111; Bonsall *et al* 2002: 11; Hosfield *et al* 2007: 43; 45-47; Wilkinson *et al* 2007: 66; Parker *et al* 2007: 172; Geary *et al* 2010: 1541) with the implication that most of the woodlands across the entire landscape were destroyed at some time or another. Moreover, the warmer climate with greater precipitation would have encouraged the spread of trees to an extent that would presumably increase the risk of fire, but make natural causes for the extent of destruction across such wide areas a questionable proposition.

Recent much more detailed analyses of soil profiles excavated on the North York Moors has allowed for a considerably more nuanced and subtle understanding of episodes of burning from the Later Mesolithic across northern England (Simmons 1993: 115-116; Innes *et al* 2013). These indicate that the sub-phases of burning followed by open areas, succeeded by forest regeneration, occurred both more frequently and for much shorter periods of time than hitherto thought (Innes *et al* 2013: 81). The episodes of burning, followed by forest regeneration, occurred across small areas in close proximity that were separated in time by only two or three decades. These were at locations that earlier less detailed studies had suggested were larger in extent with fewer fires separated by longer periods of time (Buckland 2005; Innes *et al* 2013: 88-89). This more detailed picture of smaller burnings in close proximity with short chronological succession strongly supports the model of anthropogenic activity suggested by Jacobi *et al* in 1976.

The very limited geographical extent and short duration of the burning episodes, whether anthropogenic or not, would have resulted in a mosaic of woodlands and more open patches of the kind favoured by Vera (2002; Simmons 1993: 111; Spikins 1999: 111; Fyfe *et al* 2013). The small scale of the resulting cleared areas suggests that burning was controlled or limited in some way, supporting the anthropogenic interpretation, although presumably some at least must have been due to natural or accidental causes.

It is postulated that regular burning took place to encourage the more predictable presence of healthier and better fed populations of deer in areas that were formerly naturally more open, but where forest cover was expanding due to warming of the climate (Caseldine and Hatton 1993: 120; Spikins 1999: 116). This is a practice well attested in the ethnographic literature, in places as diverse as the North American continent, Australia and Tasmania, Tierra Del Fuego, New Guinea and Turkestan (Jacobi *et al* 1976: 315; Innes *et al* 2013).

At approximately the same time on the Humberhead Levels, with the steady rise in sea levels, the water table also rose as drainage deteriorated (Buckland 1979: 66). The lowland landscape thus began the long process of paludification that would give ultimate rise to the formation of the wetlands and raised mires that would later characterise the levels for millennia (Ellis 1997: 7; Dinnin 1997: 32; Buckland and Smith 2003: 32). This process might have been exacerbated by anthropogenic activity (Buckland 1979), as temporary clearances are implied in the vicinity of Thorne Moors that would almost certainly have resulted in poorer drainage (Buckland 1979: 67-68). Peat formation might have begun in some parts of the levels as early as 6000 BC (Chapman and Geary 2013: 147). At the northern end of Hatfield Moors, radiocarbon dates recovered from basal sands suggest that paludification in the topographically lowest parts of the landscape began c. 5470-5220 cal. BC (Chapman and

Geary 2013: 122; Mansell *et al* 2014: 15). A mosaic of environments would have gradually taken form including patches of deciduous forest, heathland vegetation, and carr woodlands (Van De Noort 2004: 29; Chapman and Geary 2013: 147; Mansell 2014). Wetlands, indeed, would have begun to develop in low lying areas further upstream along the Don and Idle river systems themselves (Coles 2006: 89), probably to be characterised by alder dominated carr woodland as in other parts of Britain (Parker *et al* 2007: 171), but in a rich and diverse series of habitats including more open areas with grasses and sedges (see below). This process, it has been suggested, was accelerated by the burning taking place in the uplands that reduced the ability of the upland landscapes to retain water, creating increased run off (Dinnin 1997: 32). Due to the reduced presence of trees, more soils were also being distributed down river as sediments that helped to infill rivers that then began to meander in a more dynamic fluvial environment.

In the river valleys, we must now also return to the presence of an animal briefly mentioned earlier: the beaver. The following summary of their nature and impact is largely derived from the work of Bryony Coles, who with colleagues undertook detailed study of present populations in Europe in order to inform archaeological interpretations.

The beaver until recent centuries was a native part of the fauna of these islands (Coles 2006). Beavers inhabit river valleys, and while prepared to travel considerable distances in order to find a mate or new home, once settled will normally remain within 50-100m of water (Coles 2006: 3). They are able to occupy all variations of streams and rivers whether upland or lowland, or the banks of lakes (Coles 2006: 4) and are equally at home in woodlands, marshes, agricultural fields or wilderness. However, raised mires are one of the few wetland landscapes that they will avoid (Coles 2006: 59), possibly because raised mires are ombrotrophic in nature rather than spring or river fed, acidic and poor in nutrients. They do not, therefore, offer an attractive resource base for beavers to exploit.

Beavers do not always build lodges or dams, but do so when necessary in order to provide secure homes, and water that is deep enough for their needs. Beavers feed on the twigs and leaves of shrubs and bushes during the spring, reeds, rushes and semi-aquatic plants in the summer and fruits in the autumn (Coles 2006: 4). Their main source of food throughout the year, however, is tree bark. They obtain this by felling trees and systematically stripping the logs of their vegetation and bark, often by rolling and manipulating them in open water.

The effect of beavers upon the environment can be profound, not because they fell enough trees to create large open areas, but because their activities create diverse microenvironments. They diversify rather than clear woodlands, encouraging scrub vegetation and naturally coppiced trees which create less dense woodland, reducing woodland density by as much as 50% (van Vuure 2005: 256). Beaver ponds create habitats that provide water, food and shelter for a diverse range of fish, water fowl, birds and other animals (Coles 2006: 51). Their structures provide ways to navigate marshes and cross streams and rivers, and once they have abandoned a location, the former pools, when drained, leave open areas with sediment rich soils that provide meadows. It is historically attested from North America that European settlers would seek out "Beaver Meadows" for their stone free and organic rich soils (van Vuure 2005: 257; Coles 2006: 52).

It is likely, therefore, that the effect of beavers would have been to reduce forest cover along the river valleys and enhance their attractiveness for other species that utilised such environments. This, in turn, is likely to have made such environments more attractive for the human populations believed to have exploited such environments (Buckland 1976: 90; Coles 2006: 88; Chapman and Gearey 2013: 150).

One of the species, or groups of species, that are believed to have particularly favoured the environments described above are the large herbivores suggested by Vera as being responsible for his postulated mosaic of park-like landscapes. This includes red deer, roe deer, wild boar and even possibly at the beginning of the Mesolithic moose and the giant deer Megaloceros Gigantous (Hodder and Bullock 2005: 40). Limited space precludes detailed discussion of all these species, but the example of aurochs discussed below serves to illustrate the impact of herbivores on the landscape.

It is well documented that aurochs prefered low lying wet pastures along the banks of rivers and lake edges, and in marshlands of the sort described above (van Vuure 2005: 72; Hodder and Bullock 2005: 43; Hall 2007: 4; Figure 5.3). This is because their preferred foods during the summer include the sedges and grasses that proliferate in such environments (Vera 2000: 54; 347; van Vuure 2005: 186; 215-20). In the winter cattle, with the absence of anthropogenically generated hay, rely much more on browse and bark from trees (Vera 2000: 54; 354). Holly is well documented in recent times as providing tree fodder (Radley 1961; Spray 1981), but other foods include the twigs, small branches and bark of deciduous species (Vera 2000: 54; van Vuure 2005: 221-28; Spray 1981).

Figure 5.3: Cattle grazing on wet pasture at Old Moor RSPB in the Dearne valley, South Yorkshire. In the background rise well wooded slopes that recall the probable tree cover in earlier prehistory along much of the Magnesian Limestone ridge that flanked the east side of the valley. Source: author.

On the basis of the above discussion, it is worth considering and summarising what some of the aforementioned developments imply about the likely character and extent of forests across the landscape during the Mesolithic. The distribution of archaeological data proves that the whole landscape was traversable, and not an impassable morass as implied by van Vuure. The concentrations enable us to suggest that much of the landscape was being utilised more permanently or repeatedly. This is consistent with the assumption that early on, much of the landscape was free of dense tree cover. The burnings of the Later Mesolithic in the uplands, if accepted as being anthropogenic, are consistent with the model of increased tree cover in a changing environment being responded to by people wishing to retain good grazing for ungulates.

In the present study area the river valley bottoms would also have been relatively free from dense tree cover during the drier Early Mesolithic, as pioneer species such as birch and pine established themselves in the gradually warming climate. With a more favourable climate however, and expansion of the forest with more deciduous species appearing, their extent would have been partly checked due to the increased wetting of the low lying areas, which favoured some tree species but not all. The spread of tree cover would have been restricted further by the presence of large herbivores such as aurochs that inhabited such environments. Beavers would have contributed significantly to what must have been a relatively hostile environment for trees in the areas where ungulates and beavers were active, including at this date much of the Humberhead Levels. The steeper valley sides by the Later Mesolithic would probably have been well wooded with a dense canopy, but at higher altitudes in the uplands might well have been relatively open in places that had been burned to encourage ungulates to graze.

The valleys and low hills of the Coal Measures Sandstones and the well drained ridge of the Magnesian Limestone are more difficult to make judgements about because of lack of environmental data. Limited data recovered recently from Elmton, North Derbyshire, indicates the presence of a small localised wetland there in the past, but without enough detail to reconstruct a historical sequence (Cockrell *et al* 2015; 2015b). However, the Magnesian Limestone is replete with the evidence of human activity, as will be seen in the next chapter and there is, as has already been shown in the chapter on formation processes, good grounds for assuming a similar level of activity on the Coal Measures Sandstones areas. By the late Mesolithic, in the warmer conditions prevailing it is likely that lime dominated woodlands existed on the Magnesian Limestone, as across many of the Limestone substrate contexts in southern Britain (Parker *et al* 2007: Hosfield *et al* 2007). If one accepts the hypothesis of Jacobi *et al*, there is no reason to suppose that similar strategies to encourage the presence of ungulates were not also in place here, in which case while being well wooded, it is reasonable to expect that episodes of clearance would have kept some parts relatively open, perhaps in locations that were repeatedly the scene of Mesolithic activity (see Figure 5.9 below). The slopes and ridges of the Coal Measures Sandstones were probably similar in character and in terms of human impact, to judge from the presence of material culture alluded to earlier.

The Neolithic

The so called Climatic Optimum, when the climate was warmer and drier at the end of the Mesolithic and when winters were milder than at present relates approximately to the period 6000-3000 B.C. (Parker and Goudie 2007: 170). This period thus extended into the Early Neolithic, when important changes began to take place. The woodlands were by now dominated by oak and elm across much of the landscape away from the wetter areas on the floodplains of the rivers, excepting the probable dominance of Lime on the Magnesian Limestone, as already suggested. Lime was also an important component of lowland forests in general (Buckland 2005: 72; Mansell 2014: 13). The beginning of the Early Neolithic, however, coincided with the elm decline (Mansell *et al* 2014: 15). The decline of the elm, as well as the better documented clearance of parts of the uplands (see below), probably increased the erosion of soils on upland areas alluded to earlier. This probably facilitated greater run off that accelerated wetting of the Humberhead Levels due to increased sedimentation (Dinnin 1997: 36-38).

The evidence of insect fauna dependant on the presence of dead and decaying wood from Thorne Moors suggests that woodlands persisted on the levels in an environment becoming wetter during the Early Neolithic, characterised by alder carr and willow along river channels, presumably with gaps where the activities of beavers had reduced localised areas of trees. However, mixed oak woodland seems to have persisted in some parts of the moors, with dendrochronological studies suggesting that they were present between 3777-3017 cal BC (Chapman and Gearey 2013: 142).

The sea level was within a metre or two of present levels by approximately 5000 B.P. (Buckland and Smith 2003: 32; Gaunt in press: 14). There is little evidence for estuarine transgression from within the study area (in contrast to the Ancholme valley in north east Lincolnshire; Smith 2002: 88). However, the raised water table would have impeded drainage into the Trent and Humber and exacerbated flooding and the expansion of fens. As larger deciduous trees became moribund in this environment and died off, peat formation began to increase, at first in the vicinity of Thorne moor and later at Hatfield moor. At Thorne moor, radiocarbon dated material from basal peat deposits indicates that this had begun by 3380-2920 cal BC at the latest in some places (Chapman and Gearey 2013: 141). However, high tree pollen counts attest to the continued importance of woodlands in those places where particular species were able to thrive, with lime characterising much of the lowland forest landscape at this time (Mansell *et al* 2014: 13).

The density of the woodland, however, is likely to have been less than previously thought due to the activities of beavers along the banks of the Idle and grazing by cattle as discussed earlier. This is supported by the evidence of pollen data elsewhere, showing increases in *Plantago Lanceolata* and other taxa associated with pastoral activity across Thorne Moors, dated to 2290-1880 cal BC (Chapman and Gearey 2013: 145), indicating that at least some areas across the levels were open and grassy in the Late Neolithic, possibly on the higher areas such as the vicinity of present day Doncaster, Lindholme Island and Wroot. Beavers and aurochs notwithstanding, this must mainly relate to anthropogenic activity. The evidence of the so-called *ulmus* decline supports this, with low values for *ulmus* pollen being largely attributed by Smith (2002: 48) to the activities of Neolithic inhabitants. Thus, the levels are likely to have consisted of a very mixed range of environments at this time, before paludification had created ombrotrophic mires.

Evidence from upland contexts in the southern Pennines suggests that clearance of small areas became common there in the Early Neolithic, if still temporary and of short duration (Hicks 1971). Such clearances were often succeeded by forest regeneration (Heath 2003: 36). The data for this consists of pollen diagrams with taxa that include *plantago lanceolata* and other non arboreal species that prefer open areas in full sunlight (Heath 2003: 35). Species represented also include cornflower and nettles all of which Hicks (1972, quoted by Heath 2003: 35) associates with pastoral rather than arable activity by local inhabitants. This is supported by the lack of archaeological data relating to permanent structures such as field boundaries and dwellings from across the region. Some pollen data suggest the cultivation of cereals, but too little to suggest that arable farming was an important activity.

Recent work on Neolithic pottery residues (Cramp *et al* 2014) strongly supports the interpretation that Neolithic inhabitants across Britain practised a largely pastoral lifestyle. Detailed work in North Yorkshire indicates that in the earlier Neolithic forested areas were gradually becoming more open and characterised by greater plant diversity than in the Later Mesolithic (Innes *et al* 2013: 96-97), probably due to grazing by domesticated cattle (Innes *et al* 2013: 95). It has been plausibly suggested that early pastoralists practiced a strategy of coppicing woodland, creating winter wood pasture by facilitating re-growth on stumps until the stumps eventually died. They would then be burnt and removed allowing the cleared areas to be used either for grazing or small scale and temporary arable activity (Innes *et al* 2013: 95-96).

From the Late Neolithic, peats also began to form in the upland areas of the southern Pennines, as well as in the Humberhead Levels (see above), at first in the slightly dished plateaux that exist at various locations in the uplands (Figure 5.5), and then as conditions became wetter, on the slopes (Conway 1947: 161; Hicks 1971: 647-54; Tallis 1964a: 371; Tallis and Switzur 1973: 340; Figure 5.4). Deciduous forest, characterised by oak and alder still seem to have been the norm across most parts of the uplands to judge from the numerous finds of wood recovered from basal peats at various locations (Conway 1947: 158; Hicks 1971: 647-51; Figure 5.2). The progress of peat formation was slow, sporadic, and the onset began at different dates between c. 5000-3000 B.C. (Tallis 1964a: 371; Tallis 1991: 400). It began in the southern Pennine uplands earlier than in most other regions of Britain, although dates from the Black Mountains in Wales have a similar range of c. 7610- 4250 B. P. (Tallis 1991: 412).

Figure 5.4: The east end of Totley Moss, South Yorkshire, facing east. An upland bog on a "dished" plateau. Source: author.

Some archaeological evidence from Wombwell Wood in South Yorkshire, consisting of possible Middle to Late Neolithic ditched enclosures (Lloyd and Morris 2002) supports the idea that by that date greater landscape management and organisation is in evidence than previously thought within the study area. The proposed date is based upon the recovery of part of a Mortlake bowl in one ditch. The existence of greater management of parts of the landscape with a reduction in tree cover is supported by arboreal pollen counts, which show that tree pollen accounted for 75-80% of pollen in the Early Neolithic, but by the Middle Bronze Age only 30% (Heath 2003: 36). A date of c. 2595± 65 B.C. obtained from a fragment of birch in a core sample from Stoke Flat in North Derbyshire including cereal and grass pollen, also supports this scenario of a landscape in the uplands gradually taking on a more open character (Long *et al* 1998: 511).

Broadly speaking, the developments described above form part of a pattern observed elsewhere to judge from studies conducted in the South-west, albeit with localised variation and with differing dates of inception (Geary *et al* 2000a: 428-41; 2000b: 501-03; Wilkinson *et al* 2007: 66). Data from the South-west and more general studies must also help inform the likely situation prevailing in the river valleys of the study area, due to the lack of environmental data already noted. These would suggest that the valley bottoms and floodplains continued to be dominated by alder carr woodland and reed beds (Wilkinson *et al* 2007: 69; Parker *et al* 2007: 171), with increased sedimentation and occasional flooding due to the clearance activities on the higher ground (Macklin *et al* 2010: 1567). The assumption by Heath (2003: 13), that heavily disturbed and historically utilised valley bottoms are largely beyond understanding is perhaps to overstate the situation:

archaeological data have been recovered from some valley bottom locations of the present study area (see following chapters below and Figure 5.5), and it has already been noted that it is very likely that the chief subsistence strategy of the Neolithic consisted of pastoral agriculture.

It could be argued that the most likely context for the concentration of the above activity was not so much on the cleared upland areas where most attention by scholars has been drawn to, but in the environment where ungulates such as domesticated cattle and aurochs are most at home, which is on the wet margins of rivers and wetlands. However, the only firm data are those which have been recovered on the uplands and levels, discussed above. To summarise, this indicates that in the upland areas small scale clearance was taking place between c.2920-2590 B.C. according to dated profiles (Heath 2003: 38), in a context that suggests little evidence for arable activity in landscapes characterised by open mixed woodland.

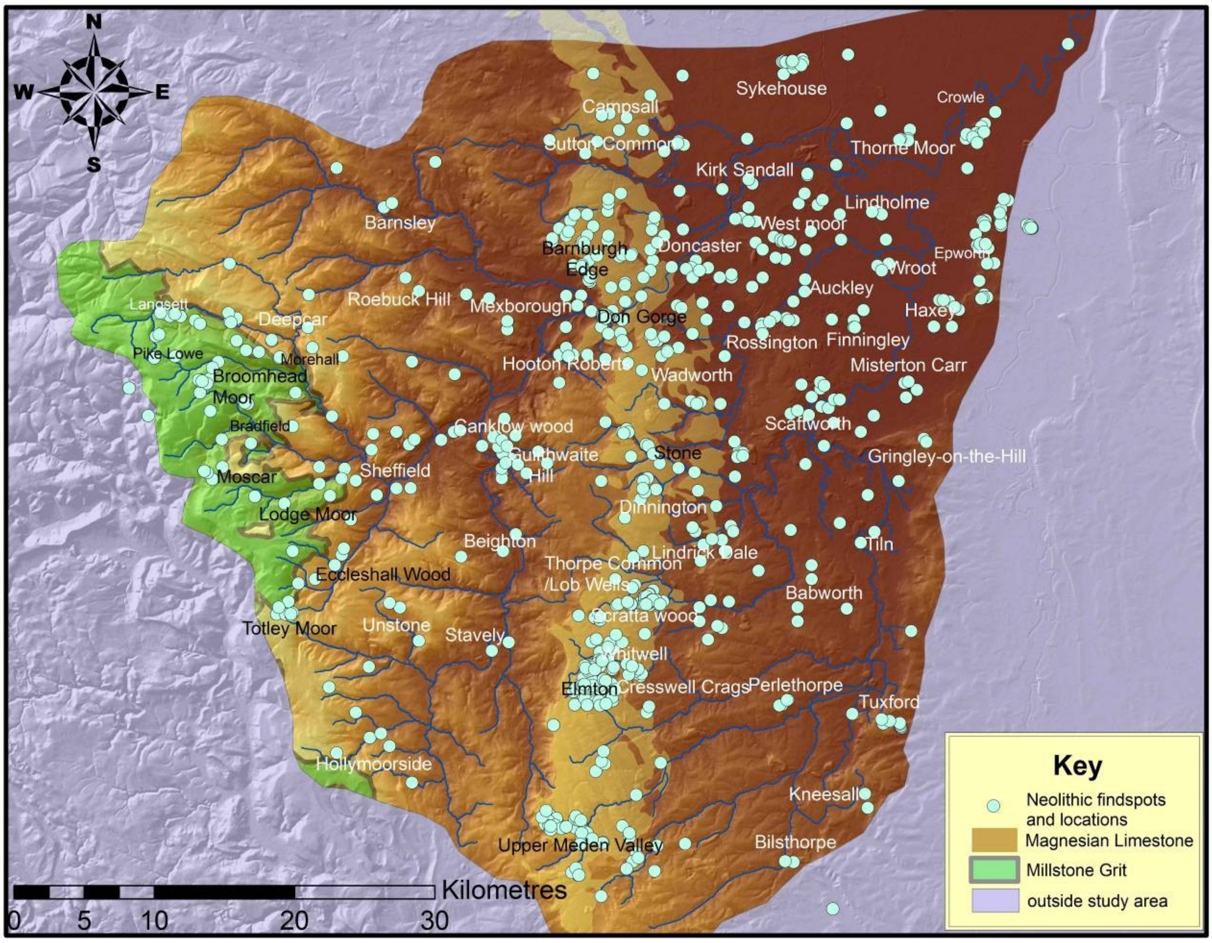


Figure 5.5: Distribution of Neolithic findspots and monuments across the study area. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Nevertheless, the aurochs had become extinct in these islands by the Late Bronze Age, with no remains found dating to later than 1300 B.C. (van Vuure 2005: 55; Hall 2007: 1). The reasons why are open to question, but it has plausibly been suggested by van Vuure, that the major reasons for the gradual contraction of their distribution across Europe and eventual extinction were to do with loss of habitat due to human activity. The favoured habitat in question was low lying floodplains alongside rivers that included fens, carr woodlands and marshes, and meadows rich in sedges and grasses (Van Vuure 2005: 72; 186; Hall 2007: 4). Historical references suggest that Aurochs competed in such environments with pastoralists herding domesticated cattle (Van Vuure 2005: 216). These are the very environments that are suggested for the low lying areas by the pollen and insect fauna records in the study area.

Studies of insect fauna across England support this idea: the dominant species before c.3000 BC were associated with trees (Buckland 2005: 75), but after that date increasingly come to be dominated by those associated with grazing herbivores. It is probable therefore that pastoralist activities in those areas most suitable for domesticated cattle denied suitable habitats to the aurochs. Beyond the valley bottoms, on the slopes and in the upland areas the landscape was either unsuitable for such fauna or they were prevented from grazing in those environments by the other human activity already suggested. Aurochs remains have been recovered from far higher altitudes than those prevalent in the uplands of the study area (Van Vuure 2005: 50), but the clearance episodes already discussed indicate that human pastoral activities here are likely to have been no more conducive to peaceful co-existence with the aurochs than they were in the valley bottoms. To that we must add those places where peat formation was also advancing rapidly again, albeit in a localised manner at different dates (Conway 1954: 141; Tallis 1964a: 372; Tallis 1964b: 324; Tallis 1964c: 340; Tallis and Switzur 1973: 340).

The significance of what is known about aurochs preferred habitats, and their distribution, is that they appear to be the same as those favoured by pastoralists. The extinction of the animal in Britain therefore is probably linked to the gradual expansion of pastoral activity. The higher slopes and uplands were not places that the animal could not venture to, but by the Late Bronze Age were unsuitable due to peat formation on the high plateaux and expanded agricultural activities.

The Bronze Age

Radio-carbon dated basal peat deposits from Misterton Carr giving dates of 4330±100 B.P. furnished pollen counts that suggest that there were still high numbers of trees in parts of the levels in the Late Neolithic and Early Bronze Age (Buckland 1976: 140). This is supported by the continued presence of insect taxa associated with birch and oak (Buckland 1979: 50-

54). Pollen assemblages dating to 3570±70 B.P. and 3865±65 B. P. indicate the presence of dense woodlands on higher ground in the vicinity of Hatfield Moor (Smith 2002: 32). However, charcoal layers are indicative of burning for clearance, and the recovery of plant taxa including *plantago lanceolata, rumex, artemisia, urtica,* chenopodiceae *and pteridium aquilinum* relating to the Early Bronze Age and Middle Bronze Age, evidence some areas of a more open and grassland type associated with pastoral activity. At Thorne Moor the presence of similar plant taxa to the above, as well as taxa indicative of areas of open water is supports the idea of a landscape where pastoral farming was undertaken (Smith 2002: 35-36), including in the vicinity of the trackway dated to the Late Bronze Age. lower numbers of trees are implied by the pollen counts, and the presence of hazel as well as grasses and sedges suggested to Buckland (1979) and Smith (2002: 36) that the woodlands were of an open character, and that on some of the drier raised areas of the levels, such as Wroot, cereals probably continued to be cultivated.

Alder and birch carr fens characterised much of the northern and central areas of Thorne Moors by the Bronze Age (Chapman and Gearey 2013: 141). The beginning of peat formation there has already been noted, but fens persisted in some areas for approximately another 1200 years (Chapman and Gearey 2013: 141). These fens appear to have waxed and waned in a relatively rapid series of "pulses" (Chapman and Gearey 2013: 145) that are indicative of a complex mosaic of micro-environments during the Early Bronze Age.

Significant changes are implied by the drastic reduction in oak pollen at the trackway site at Thorne Moor, material from which was dated to 1450-950 cal. B.C. (Chapman and Gearey 2013: 29, based upon Birm.358; 2980± 110 B.P. (Buckland 1979: 16)) along with an increase in the presence of insect fauna associated with wet environments (Buckland 1979: 47; Buckland and Smith 2003: 42). This increased wetting is unlikely to be connected with cooling and greater precipitation, as the continued presence of insect fauna that prefer warmer temperatures suggests that the climate remained warm at least until the Middle Bronze Age (Buckland 1979: 136). Evidence from southern England supports this, where the earlier to Middle Bronze Age appears to have remained dry for the most part, implying that localised reasons why bog surface wetness increased in the present study area must be assumed (Parker *et al* 2007: 173). Birch-alder woodland is likely to have been more common than larger trees, but oak was still present, especially along the margins of the slowly forming pools and small lakes as well as river edges, albeit in an increasingly moribund state as water levels rose (Buckland 1979: 54; Buckland and Smith 2003: 42).

Evidence at Leash fen, from the uplands of the Southern Pennines, supports the suggestion that clearance activities and grazing continued here, with a sample dated to c.1790 B.C. indicating pastoral activity (Heath 2003: 35). Samples from Hipper Sick containing cereals suggest that at least some of this cleared land was utilised for arable, and that clearance seems to peak around 1500B.C. (Heath 2003: 35). Material dated to c. 1396-1000 B.C.

containing cereal pollen suggests that some of this landscape continued to be used for arable until the Late Bronze Age. Thereafter, cereal pollen declines in an environment that witnessed the renewed expansion of peat (Heath 2003: 40).

The expansion of the peat formations must be seen in the context of deteriorating temperatures and increased levels of precipitation locally and across Britain (Long 1998: 517; Hendon *et al* 2001: 145; Parker *et al* 2007: 174; Heath 2003: 35; Charman 2010: 1545), along with the aforementioned decline in cereal production (Long 1998: 517-18; Heath 2003: 38). This is detected in bogs and in separate fluvial studies that record episodes of flooding from across Britain (Hendon *et al* 2001: 145; Charman 2010: 1543-45). Nevertheless, the decline in arable in the upland areas is probably to be associated with adaptation to changed conditions rather than complete abandonment: dense forest did not return. Podsolisation of soils due to the aforementioned burning and grazing, creating iron pans that impede drainage, makes the renewal of woodlands very difficult (More 1993: 220) but the continuance of open environments across the uplands is probably due mainly to their continued use for grazing.

It is from the Bronze Age that much more archaeological data for the existence of structures that are probably to be directly associated with agricultural activities are found in the uplands. These mostly consist of cairns, cairnfields and house platforms (Heath 2003: 16-18; Figure 5.4). Many of these are associated with barrows and other ceremonial monuments such as ring-cairns, standing stones and stone circles (Hicks 1971: 659-61; Heath 2003: 16; Hoaen and Loney 2013: 137). Most of these features remain unexcavated, particularly to modern standards, as much of the work that has been undertaken took place during amateur activities, as has already been noted (see chapter on formation processes). What datable work has been carried out, however, furnishes dates that tend to cluster in the Early to Middle Bronze Age (Heath 2003: 17-18).

It has been suggested (Hoaen and Loney 2013) that the monumentalising of the landscape is indicative of much closer ties to specific places in the landscape than is sometimes assumed, given the lack of evidence for dwellings before the Iron Age. In particular, the "mundane" nature of some monument types such as clearance cairns represent investments in time and effort at specific locations which can be seen as proxies for the kinds of repeated routine activities that are indicative of permanent settlement. If this is so, it suggests a form of human impact on the environment that differs from what went before both in scale and nature.

The features noted above exist almost exclusively in the upland districts. In recent years, however, more sites and potential sites have been detected across the rest of the study area, mainly through aerial photographs and developer funded work (see chapter four). This includes a single confirmed rock-cut ditched enclosure dating from the Late Bronze Age (Manning 1995), within which was recovered a saddle quern, at Tibshelf in North East

Derbyshire, and barrows with urn burials at Goldthorpe in the Dearne valley and at Rossington to the immediate south of Doncaster (Biggs 2011; A. Lines pers. comm.; P. Weston pers. comm.). The funerary contexts are ceremonial rather than mundane, in landscapes that are almost bereft of surviving features of the mundane type known from the uplands. In the uplands however, such contexts are recorded in association with small features associated with field systems and clearance. With that in mind, it is possible to suggest that similar ceremonial monuments across the rest of the study area are also likely to have been associated with similarly constituted agricultural features.

The monumental data might indicate collectively that communities during the Middle to Late Bronze Age were becoming much more sedentary than earlier (Figures 5.6-5.7). However, the continued lack of evidence for domestic structures contradicts this interpretation, supporting the idea that while the monumental data is indicative of the importance of particular places, that importance must relate to different phenomena. This issue will be explored in later chapters. As before, recovered material culture suggests that all parts of the landscape were utilised (Figure 5.8). These data, along with the excavated evidence for enclosures on the watershed of the Rother catchment and monumental burials from Dearne valley, support the view that the Coal Measures Sandstones areas were probably as active with human use as the uplands.

The aerial photography data, for the most part relating to the Magnesian Limestone in the north of the study area (see formation processes chapter and Figure 5.4), and recovered material culture (Figure 5.8) indicate that this part of the landscape was no less in use by Bronze Age communities. The lack of environmental data does not allow us to confirm the nature of vegetational cover or human interaction in detail, but the abundance of archaeological information suggests that similar levels of interaction with the landscape to that known in the uplands prevailed, probably of a similar nature.

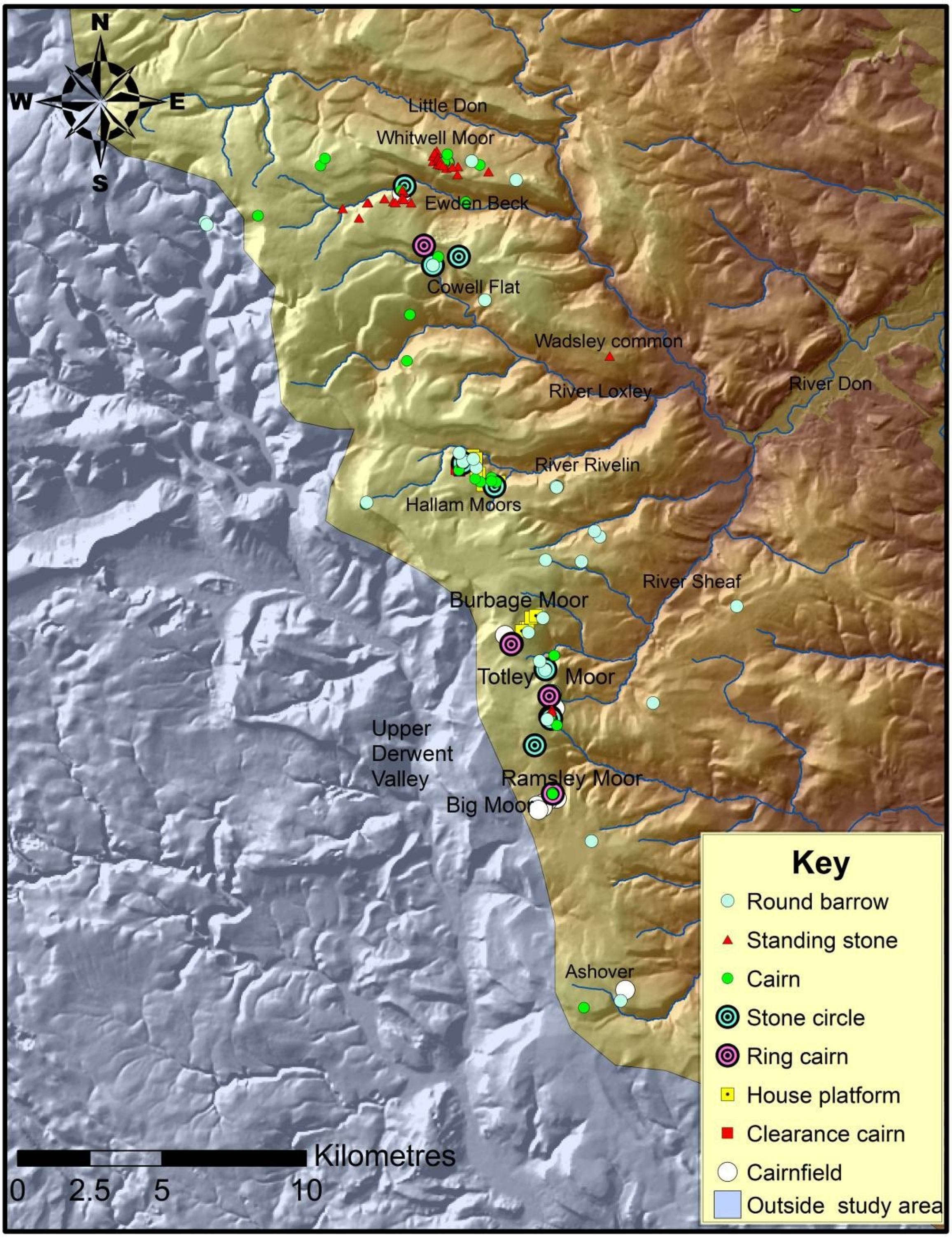


Figure 5.6: Distribution of Bronze Age Monuments in the uplands. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

In the Humberhead Levels, by the Late Bronze Age the *Sphagnum* mosses of the raised mires were beginning to dominate the flora in a landscape with few trees remaining, to judge from the paucity of relevant insect taxa (Buckland 1979: 61), and with open water and reedswamps common, with some heathland present (Smith 2002: 43; 49; Buckland 1976: 208-9; Chapman and Gearey 2013: 138; Figure 5.9). Willow swamp and fens probably still flanked the meandering rivers, with the fens gradually being replaced by the encroaching raised mires. Run off from cleared areas on the Magnesian Limestone, in addition to that already noted on the uplands probably accelerated this process, as supported by the varying amounts of elm and lime pollen from the Bronze Age recovered in samples from the Levels (Buckland 1976: 212; 1979: 63), and the presence of taxa on the levels to be associated with calcareous water originating on the Magnesian Limestone (Smith 2002: 91). The transformation to ombrotrophic mire is likely to have accelerated relatively rapidly during the Late Bronze Age, taking place between 1300-1000 cal BC in the southern parts of Hatfield Moors for example (Chapman and Gearey 2013: 138). However, this is unlikely to have been a synchronous event, with different parts of the levels transforming to acid bog at different rates, but all of the palaeo-environmental evidence suggests that raised mire was well established by the end of the Bronze Age (Chapman and Gearey 2013: 140).

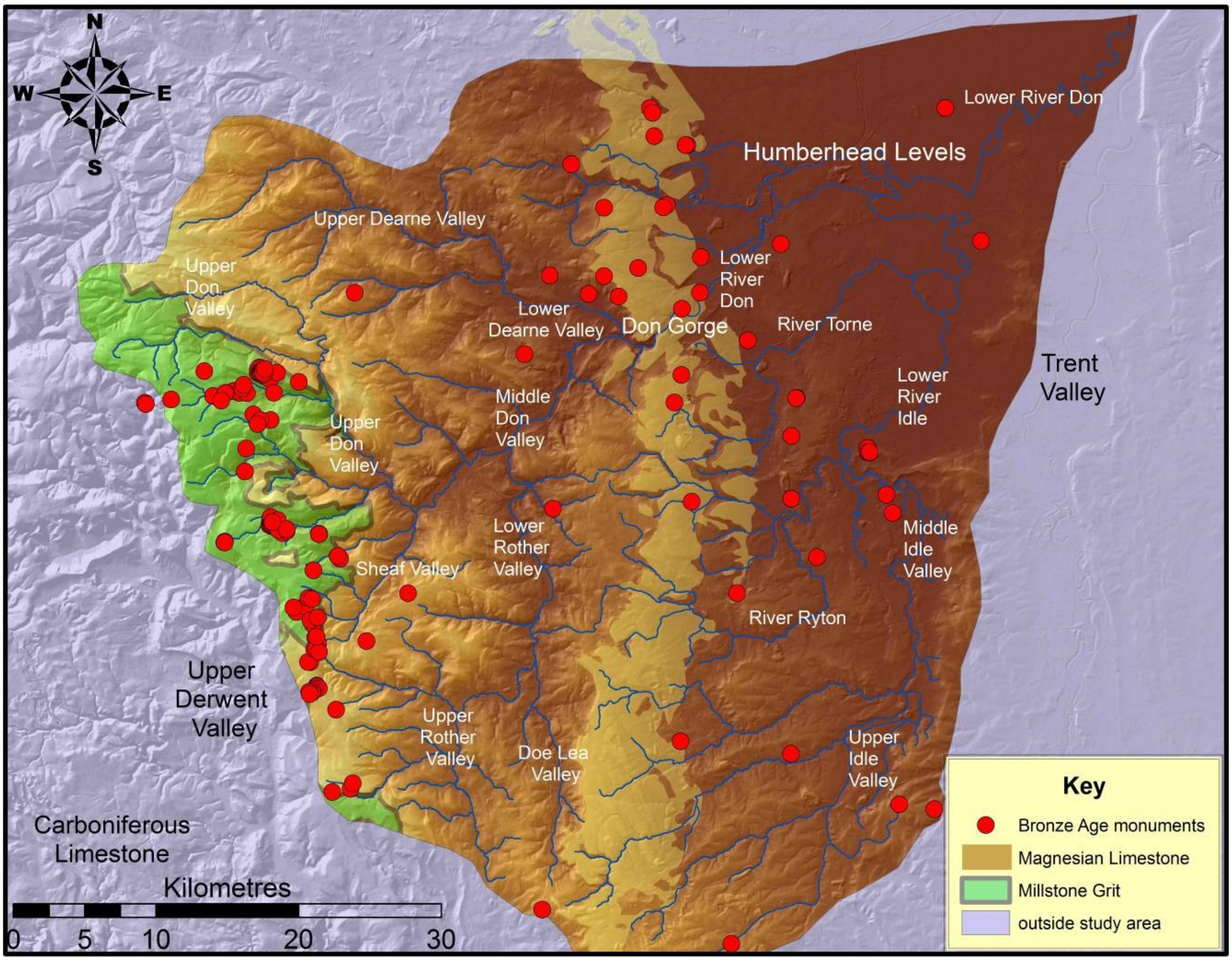


Figure5.7: Bronze Age monuments across the study area. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

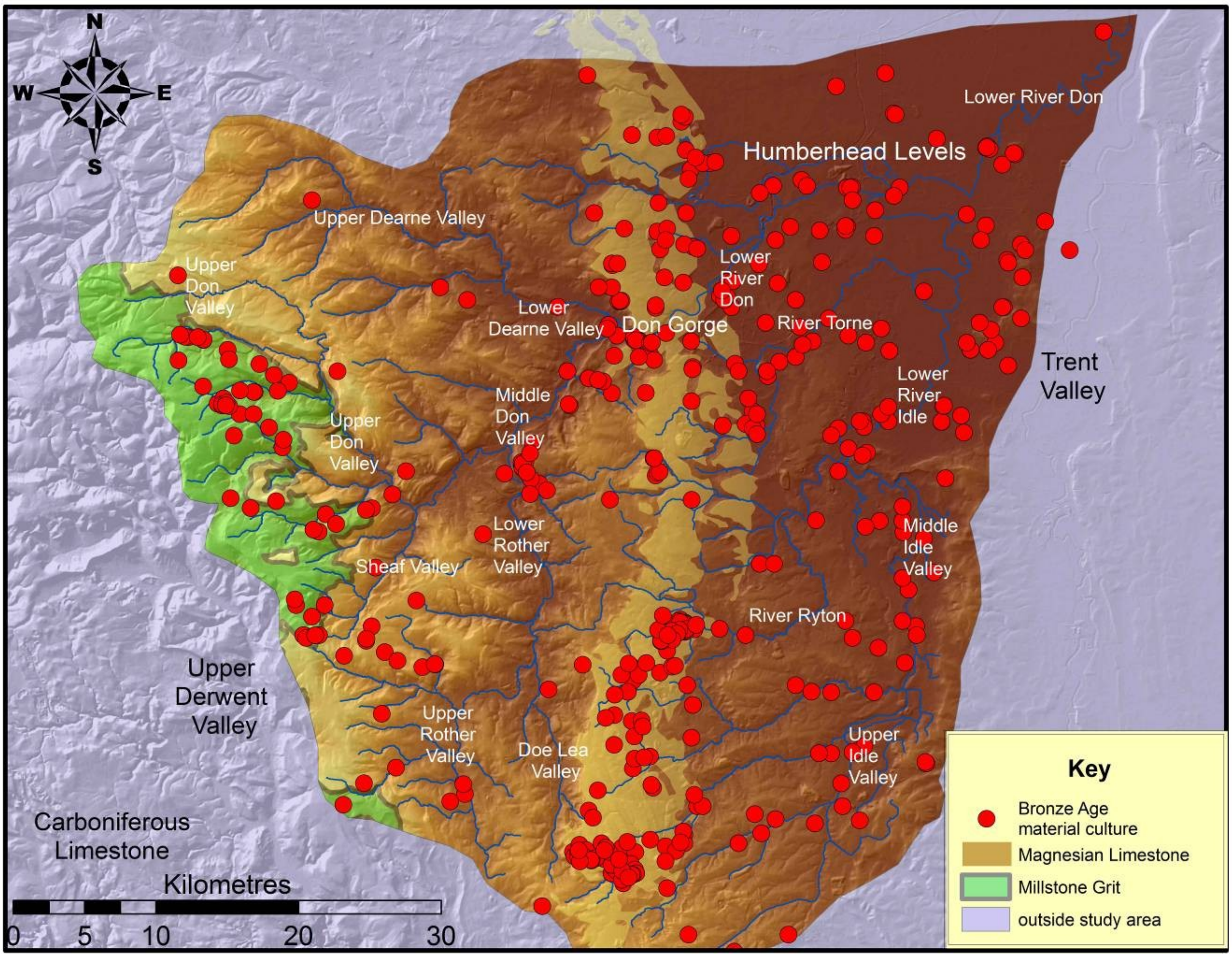


Figure 5.8: Findspots of Bronze Age material culture. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Increases in *plantago lanceolata* in pollen diagrams during the Bronze Age from the vicinity of Hatfield Moors, from approximately 1540-1280 cal BC, suggest that on the remaining drier areas agricultural activities of a probable pastoral nature were still taking place (Smith 2002: 32). Similar increases of indicators of grassy environments are recorded from Thorne Moors that are dated to the end of the period, c. 870-540 cal BC, indicating that though much of the levels by now were raised mire, human interaction with them was no less intense than before on the higher and drier parts (Smith 2002: 36). This impression is reflected across the levels (Smith 2002: 49), albeit with localised variation as indicated above. The implication for human interaction with the environment is that it was largely of a pastoral character, with some evidence for arable activities (Smith 2002: 49).

Figure 5.9: Open water bordered by scrub and trees at Hatfield Moor, South Yorkshire. Source: author.

It is worth noting at this point that the raised mires of the Humberhead Levels in their developed form were not merely confined to the areas visible on modern maps, which reflect the extent of what survived of these mires at the beginning of the 20th century. The raised mires extended across most of the levels, except in raised areas such as Wroot and Lindholme, and the areas bordering the levels such as the Isle of Axholme (Buckland and Smith 2003: 38; Gaunt in press: 16-18).

Discussion and summary

The difficulty with taking either the traditional view of the early landscape of the British isles (closed canopy forest), or the revised view (open park-like mosaic of cleared areas and woodlands), is their generalised nature. Neither position takes into account localised variation due to local differences in climate, precipitation, elevation and soils. In a different, more homogenous study area, or at the scale of a continent this might not matter. In the present study area it is vitally important, due to the diverse nature of the study area: as long ago as the 18th century Edward Miller (1804: 6) observed that the climate in the vicinity of Doncaster was key to understanding its horticultural fruitfulness, being more mild than other parts of England, so he claimed. This is supported by the evidence of insect taxa from the area: insects form a substantial body of data that are particularly sensitive to environmental change (Buckland 2005: 70), and in the Humberhead Levels are characterised by a relatively continental nature even up to the present day (Buckland 1979: 136). At the present date, not surprisingly, it is in the uplands of the west where the wettest, coolest and windiest weather prevails and the eastern lowlands that enjoy the warmest and driest climate (Chapman and Geary 2013: 17; Met. Office 2014). These kinds of differences can have a profound effect on the nature and extent of flora and fauna (Figure 5.10), and, it has been argued, on one's sense of place and identity (Pillatt 2012: 33-34; 40; Chadwick and Gibson 2013: 10).

Figure 5.10: A dragonfly on Hatfield Moor. Anecdotally, dragonflies of this size (approximately 15cm wingspan) are not known in other parts of the study area by the author. Source: author.

Such differences are sometimes recent or contemporary, and it is not suggested here that they were the same throughout prehistory, or remained unchanged. Quite the contrary in fact. However, that localised differences did exist is beyond dispute, whatever their nature, as is well understood by those who have undertaken relevant research (Buckland 1979; Tallis 1991; Smith 2002). The significance of this for the models argued about above is that it follows that they are too simplistic to be applicable at the regional level, at least in the study area in question.

The beginning of the Mesolithic is the point in time when the present study area is at its most homogenous in environmental terms. Birch and pine were starting to colonise a landscape essentially lacking in wetland areas, which was open and free of woodlands. It was at this time that species of animals that had been confined to southern Europe during the last glacial now also re-colonised the landscape. The waterways of the study area crossed the Humberhead levels in well defined and deep channels, banked by dunes and ridges of sand that were broken up by winds depositing aeolian sediments (Gaunt in press).

Sea levels began to rise and the climate to warm and in this favourable setting deciduous tree cover expanded across the entire landscape, including those low lying areas immediately adjacent to the middle and lower reaches of the region's rivers. By the Late Mesolithic however, the lower reaches of the rivers had infilled with sediments washed down from the uplands into channels in which drainage was inhibited by rising sea levels, creating rivers that meandered across the levels in braided channels. At this time, burning of parts of the uplands, whether natural or anthropogenic, resulted in increased run off and sedimentary action which began to accelerate the wetting of the lowlands. Similar interaction with the landscape is likely to have taken place elsewhere across the study area to judge from the distribution of material culture. The landscape would have been mixed as a result, with dense woodlands in places and more open areas between. Along the river valleys the activities of large herbivores and beavers would have created many open areas, alternating with wooded areas (Figure 5.11). On the levels pockets of dense forest would have competed with areas of open water, and increasing numbers of carrs and fens (Figure 5.9; Figure 5.12).

Figure 5.11: The meandering River Idle in North Nottinghamshire. Source: author.

Figure 5.12. Shirley Pool, South Yorkshire. Source: author.

In the Neolithic, with sea levels similar to the present, rivers backed up and the water table rose to levels that precipitated paludification, facilitating the later development of the raised mires. The variable pollen diagrams indicate that by the Late Neolithic clearance of a sporadic nature might have affected the tree cover on the neighbouring Magnesian Limestone ridge, producing a mosaic of dense woodlands and open areas (Figure 5.13).

In the uplands peat formation also took place, earlier than in other regions of this part of the British Isles, and probably accelerated by the burning events alluded to earlier. Clearance became more frequent here and probably across the rest of the landscape between the uplands and lowlands, as essentially mobile communities of pastoralists sought to maximise grazing available for animals.

By the Bronze Age, with paludification complete, the raised mires that were to define the landscape of the Humberhead Levels began to develop, albeit at different rates across the levels. Clearance of upland areas for pastoral and limited arable agriculture continued to increase until the Middle Bronze Age, when the rate of clearance stagnated, and then began to decline with the fall in temperatures and increased precipitation that date from the Late

Bronze Age. By the end of the Late Bronze Age the Humberhead Levels had taken on the character that was to remain largely unaltered until the medieval period. In this environment the forests that had formerly covered much of the levels completely disappeared. In the uplands open landscapes persisted despite the reduction in arable activity, partly due to the renewed expansion of podsolized upland bogs but for the most part mainly due to the continued use of the landscape for grazing.

Figure 5.13. High Melton, South Yorkshire. This photo shows a dry "forested" environment with open areas between stands of trees that conveys well the likely character of much of the Magnesian Limestone plateaux during the Neolithic and Bronze Ages. Source: author.

The above analysis and characterisation of the environment, and how it developed over the study period will help to inform and contextualise the analysis of the archaeological data that is to follow. It has been shown that from the Early Mesolithic differences existed in the character of different parts of the landscape, which began to be significant in the Later Mesolithic, its flora and fauna, and in particular between the river valleys and lower valley slopes and the upland areas. These differences became greater with the passage of time. The Humberhead Levels with its broad expanse of slowly spreading wetland environments, and eventual transformation into raised mires furnish a yet further contrast.

Chapter 6:

Methodology

Introduction

In chapter two, I argued both ethnographically and historically that senses of regional identity are expressed materially, and in a landscape context including natural and artificial places of significance. Movements through, and activities within, those landscape contexts help to define the geographical parameters of such regions (Ingold 2000). Waterways affording ways through such landscapes can be crucial to this. Archaeologists such as Andrew Sherratt, Richard Bradley, Matt Edgeworth and David Mullin have noted the correlation of artefacts, monuments, and such places of significance, and in particular with the courses of waterways.

Is it possible to detect senses of regional identity, and possibly micro regionality, and how those senses have changed over time in the Don drainage basin in prehistory?

Routine activities within and movement through landscapes, and the navigation of those landscapes using distinctive and familiar places lie at the heart of these considerations. The general research question can be sub-divided into five parts. (1) How do distributions of artefacts and monuments relate to movement along routeways defined by waterways? (2) Where are there concentrations of artefacts and monuments within the study area? (3) What are the relationships between these concentrations and topographically distinct places? (4) To what extent are there repeated patterns across the study area that might be indicative of common cultural practices that include material culture, monuments, and landscape contexts? (5) Were there different senses of regional identity across the study area?

To answer these questions the methodology needed to address problems of research scale. This was in order to ensure that enough data was collected that is appropriate to compare at the given scale of analysis. Disparate sources were accessed, which were created under very different conditions, with widely differing recording methodologies. Various sources of data are available to cover the study area, ranging from national data sets such as the Portable Antiquities Scheme database, regional databases such as those in Historic Environment Records, publications, unpublished reports, archaeological archives deposited in museums, the results of fieldwork by myself, and the *ad hoc* collections of members of the public that are entirely undocumented elsewhere. Some of these overlap and duplicate records. All of this needed to be understood within the context of an environment that has undergone considerable changes in its nature over the millennia.

Environmental changes were discussed in chapter five, but aspects of the environment that were assumed to remain broadly constant for the purposes of the research include bedrock geology, landforms and elevation, and the fluvial system. Superficial geology changes more rapidly, but still slowly in terms of human generations, and also had a bearing on formation processes. The bedrock and superficial geological data was sourced from the British Geological Survey 1:10,000 scale raster via the Edina digimap supplied service. Landforms and elevation were represented by 1:1000, 1:10,000 and 1:50,000 scale Ordnance Survey (asc geospatial data) DTM files also via Edina. The fluvial system was created by myself as a polyline in ArcGIS, based upon data available on the 1:10,000 scale raster Ordnance Survey map, supplemented by Tomlinson (1887). Named rivers and streams were utilised. Modern drains, except where they mimic or preserve the line of former major river channels, were not utilised in the study. In addition, the urban areas in chapter four were similarly constructed as polygons based upon the 1:10,000 scale raster Ordnance Survey map. The open cast mining areas in chapter four were also created as polygons based upon data available from the Coal Authority (www.gov.uk/government/organisations/the-coal-authority).

Pilot study

Ultimately, the data was analysed principally within a database consisting of a Geographical Information System, incorporating an Access database with two tables. Testing both the functionality and efficacy of the database, as well as exploring ways that the disparate nature and scale of the data to be analysed could best be approached was an early goal to be achieved before proceeding with the main project.

An initial test using data collected from the vicinity of Broomhead Moor (North Sheffield District) was undertaken, in order to become comfortable and proficient in the preparation of a GIS database using ArcGIS. After this, a larger pilot study area was designed. This consisted of the collection district of Doncaster Museum. The area was chosen because Doncaster is located between varied environmental and landscape contexts, enabling the testing of the software to ensure that the kinds of comparisons and techniques that were used at the analysis stage of the project functioned appropriately with the level of detail collected. The amount of data to be collected was large enough for these tests to be meaningful, and for the level of detail to be collected to be assessed for adequacy, without being too much to process in the time allowed.

Initially, data was obtained for the pilot study area from South Yorkshire Historic Environment Record over a number of weeks, and then added to by collecting data from Doncaster Museum itself. The entire process took 12 months.

The collection of data proceeded as planned. No major obstacles were encountered, although it was noted that duplication of some data was a potential problem, with the possibility that time could be wasted while checking for and deleting duplicates. It was noted also that the data, both in breadth and detail, was superior in Doncaster's own database to that available from South Yorkshire HER, and that actual duplication was minimal. The superiority of the museum database had implications for the extent to which HER databases should be relied on for anything more than a provisional impression of the extent of archaeological distributions. More importantly, the implication was that museum databases, and potentially museum collections, are far more extensive in relevant content than might have been thought. Later, as the research broadened out beyond the pilot study this became acutely noticeable in some of the study area's smaller museums.

The level of detail recorded about individual artefacts was minimal for the largest body of material (flintwork). This generally consisted of recording whether the artefact was debitage or a tool, and if it was a tool what kind it was, and its provisional date where available or discernible. Whether the artefact was chert or flint was also recorded, although not which variety. I felt that to attempt to record these items in more detail would take far too long, and would not be appropriate given the scale of analysis between often very differently recorded datasets. What have been termed "elaborate artefacts", were recorded in slightly greater detail where possible, often accompanied with a photograph. "Elaborate artefacts" are defined here as those implements that by their morphology, form or material can be judged to have had greater skill and time invested in their acquisition and/or crafting than other implements. The elaborate artefacts occurred in much lower frequency than flintwork and included such items as polished flint or stone axes, and metalwork.

Several important lessons were learned during the pilot study. One was the reaffirmation that the broad brush approach to detail was correct in the context of the present study; detailed artefactual analysis should not be attempted over such a wide area and diverse classes of data. Another was that to be able to compare the larger scale datasets while adding data from museums was highly desirable, in order to save time and prevent duplication of records. Another was to confirm that understanding environmental change was crucial to interpreting deposition in the study area.

Summary of data collection methodology for the expanded project

A strict schedule had to be adhered to for the remainder of the project, beginning with the uploading of large scale datasets, with minimal detail, to the GIS in order that comparisons may be made with the data to be collected from museum archives. As and when duplicate records were noted, references to the regional and national dataset records were included in the project database record (the working assumption being that museum archival information would be of superior quality, and would form the basis for the project database). Where it is clear that no other record exists other than the one in the national or regional dataset, that record instead formed the basis for the project database record.

Database contents and attributes

To the above ends the following data and attributes were recorded:

In table 1;

findspot (name of),

Class (tool, debitage*, vessel, monument)

Dimensions (where possible)

Type (blade, flake, axe, urn, long barrow, for example)

Material (flint, chert, group VI (Langdale Tuff), copper alloy, earth, stone, ceramic, wood, for example)

Modifiers (worked, utilised, cortical, polished, ground, decorated etc)

Damage (broken, fragmented, burnt, worn)

Provisional date (given by period; “Mesolithic” for example)

Quantity (where possible)

Locational accuracy (good (within 100m radius), poor)

Event (stray find, fieldwalking, survey, excavation)

Source (of information, acting effectively as a database record reference, relating to table two below)

Associated with Other finds, or archaeological features.

In addition to the above, where excavated material is being recorded the following information is also recorded where possible;

Context number

Context (general, such as ditch)

Trench number

In table two:

Source (repeating that given in table 1)

Other references (other database, publication, and current location)

Other (additional information not easily categorized, such as descriptive locational details)

Table two served to record information that might otherwise be recorded in multiples, in the case of numerous artefacts recovered from the same location, by the same individual or group, usually on the same occasion. It also included additional potentially useful information that might not easily be incorporated elsewhere, often of a locational nature. The main value of the table was to save valuable recording time.

The data above was extrapolated, as far as possible, from existing regional and national datasets as explained above. Ideally, macroscopic inspection and recording by photograph of all data followed, to confirm or augment existing records. In practice, due to the sheer volume of material to be recorded, and the difficulty in accessing museum archives, sampling was necessary. In the case of the smaller items (effectively all flint and chert artefacts, also constituting the vast majority of artefacts), this was not done on a systematic basis unless new data was presented to myself (not documented elsewhere) by members of the public. The items which were designated "elaborate artefacts" above, including adzes, maces, axes and spearheads of all periods, and all metal artefacts, were visually analysed and recorded by photograph as far as possible. This was particularly important where existing records were inadequate (axes described as "stone" for example, with no indication of petrology or modifications).

Data interrogation

Communal senses of identity, including regional identity, are formed at both the conscious and unconscious level, and in various contexts. This was argued in chapter two, with reference to studies of contemporary, recent, and historical research undertaken across the world. The relevant patterns in distribution of artificial, and artificially constituted, places and artefacts do not demonstrate this for the prehistoric past in any simple or straightforward manner. That is why different kinds of information, including radically different kinds of materially constituted human activity, needed to be analysed in comparison with each other and in their landscape contexts.

The dataset is diverse as well as large. It consists of 12234 individual records. It includes, for example, 257 polished stone axes, more than 70,000 artefacts of chipped stone, and 71 possible round barrows. To be able to manage the interrogation, and draw meaning from it, required an approach that contributed towards the answering of the research question in manageable steps, in a logical sequence. The following discussion lays out the thinking behind those steps. After the discussion, a summary of the steps themselves will be presented, along with some of the analytical tools used during the analysis.

Since it is argued that along the ways that travellers take there will also be features in the landscape that are physically distinctive and prominent, and help to frame the navigation of discrete areas, it follows that such places must be detectable along any routeways that are identified. Waterways have been postulated as the most distinctive and prominent of such features, and by their nature connect different parts of the landscape as they flow. The completion of the analysis confirmed that there were relationships between movement through landscapes, distinctive features within those landscapes, and especially waterways. Proximity analysis of elaborate portable artefacts, and some monument types, contributed to answering these questions by establishing what percentage of artefacts fell within close proximity to waterways. To allow for both the disturbance and movement of surface finds, as well as the changing courses of streams and rivers in their middle and lower reaches, an allowance of 500 metres to either side of watercourses was given.

Analysis of the proximity of monuments and artefacts to major waterways, as explained above, formed the basis of the analysis, to determine if there was a correlation between these and routeways. The identification of distinctive locations that correlate with routeways was more problematic, since the variables that could constitute a place that is "distinctive" are likely to be considerable, and visually constituted. Probably the most common factor was be that they stood out from what was in their vicinity, and this along with other relationships between people and landscape features have been drawn attention to elsewhere in British prehistory (Tilley 1996). Features must have been easily recognizable and memorable, since these attributes are what would render them useful in framing movements around a landscape. Scarp edges, high points or low points, gaps between prominences, passes through ridges, isolated wetlands, river confluences, and river meanders, are all likely to be distinctive, particularly if in close proximity to each other, emphasising their differences.

A simple way to begin the process or look at the correlation of material culture, monumentality and distinct places in the landscape at the largest scale of analysis was to examine how the data related to geological zones. This approach was taken by Barrowclough (2008) with some success. Barrowclough argued that people in prehistory must have been well acquainted with basic geology, on the grounds that they exploited different kinds of stone for different reasons. In my view the way the geological substrates influenced the character of the topography are more important. The consequent topographical changes manifested themselves by distinct differences in the nature of vistas, and elevation. These, by their nature, were likely to produce places that were visually striking or at least recognisable to inhabitants with an intimate knowledge of the landscape. By using geological data, in conjunction with hydrological data and elevation, It was possible to detect concentrations of activity, monuments, and deposition of elaborate artefacts (see below) that correlated with these characteristics at the large scale of analysis. Once identified, such locations were then analysed macroscopically using photographs and by making visits to better nuance understanding of their distinctive elements and relationships.

Concentrations of implements and material which were indicative of domestic related activity were analysed to determine their spatial relationship with routeways and distinctive places in the landscape. An important conceptual consideration here is that I assumed that inhabitation happened across the entire landscape, rather than merely at discrete "sites". The validity of "sites" as part of a standardised methodology for attempts to compare diverse datasets across wide areas of landscape has been brought into question (Whitcher 2006: 63). More useful than attempts to develop standardised methodologies for recording and comparing datasets (impossible in retrospect) are theoretical approaches that attempt to interpret them, with formation processes in mind (Whitcher 2006:47-48; and see chapter four). The term "Concentrations" is preferred here and are defined as being parts of wider inhabitation where higher densities of material culture were in evidence than elsewhere. Sometimes such places might be where large assemblages were located, such as the material recovered from the vicinity of Misterton Carr in North Nottinghamshire in different archaeological events (Buckland 1973; Van De Noort and Ellis 1997: 267-369), or in the diverse activities resulting in the Elmton assemblage (Knight *et al* 1998; P. Finch unpublished archive, Cresswell Crags Visitor Centre), North Derbyshire. In other cases much smaller concentrations were drawn attention to, in the context of their higher density in a given area in comparison with the rest of the study area. At the broadest scale of analysis, these were equally useful in demonstrating greater use of and commitment to particular areas of the landscape.

To determine the aforementioned densities, I employed the point density analysis tool in ArcGIS. Point density analysis (Connolly and Wake 2006; Figure 6.1) works by analysing the distribution of "points" (findspots) across a "neighbourhood" (maximum extent of the distribution of a given item). The weighting given to the value of each point (findspot) can be enhanced by stipulating that the population field is set to "quantity", rather than the default "none" designation when performing the calculation. The method can obscure subtle variation between assemblages (Wheatley and Gillings 2002: 185-186), but since in this study the method has been used for the most part at the widest scale of analysis, in order show broad patterns and variation, this is not an issue. The tool generates a roundel at a given radius for each point. The radius can be varied (Wheatly and Gillings 2002: 185). In this study, they have been varied in order to draw out from the data relationships at different scales. Below (Figure 6.1) for example, the radius was set to draw attention to the relationship between concentrations and different parts of the landscape expressed in terms of geological substrates, used as a proxy for differences in landform and elevation. In chapter seven a larger radius was chosen in order to draw out differences between chert and flint at the scale of the entire study area. The initial result of using the point density tool covers the neighbourhood under analysis, visualised as in figure 6.1 for example.

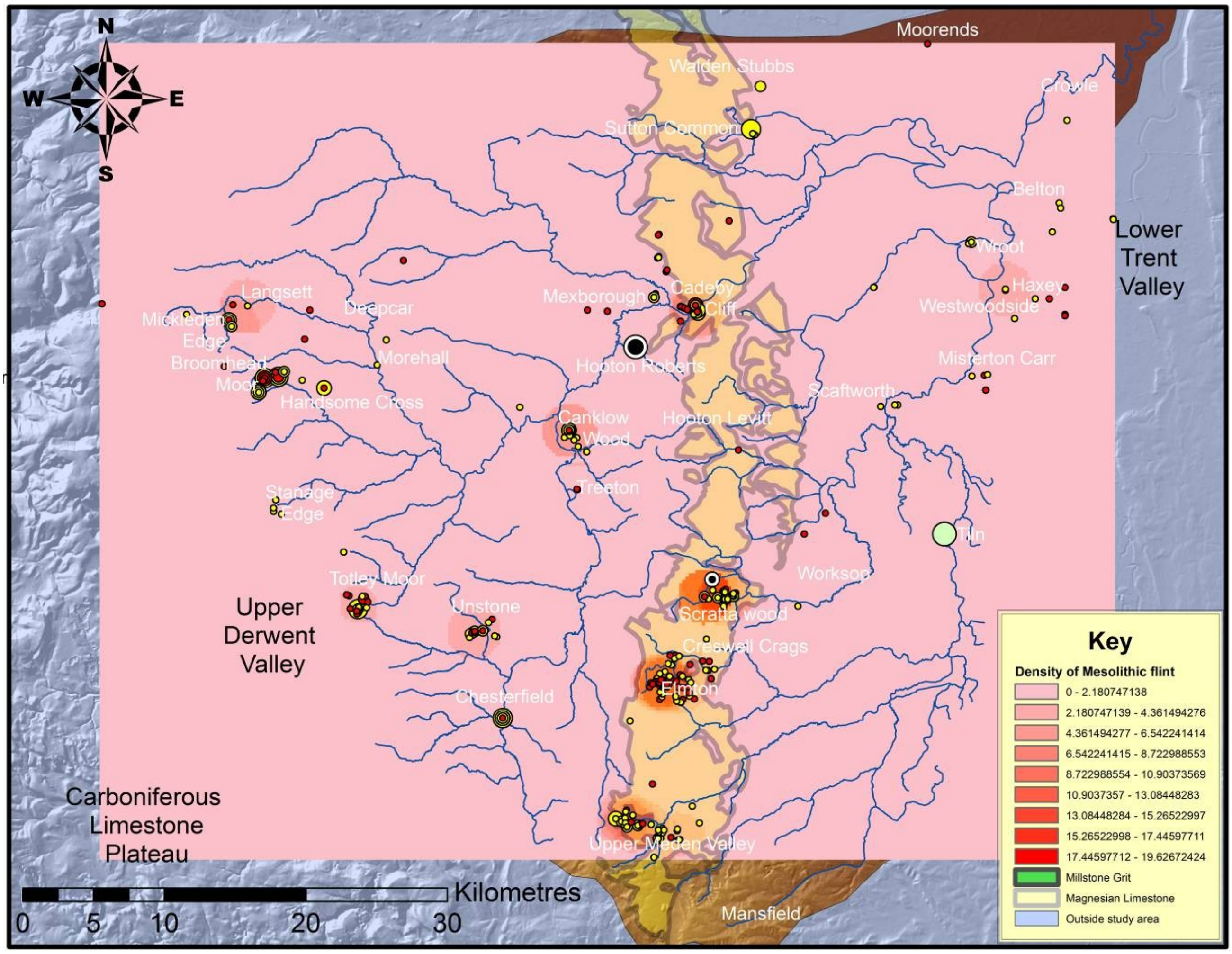


Figure 6.1: Initial result of analysing the density of undifferentiated Mesolithic flint from its distribution across the study area. The point density tool shows how its density varies across the total area of its distribution. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The result in figure 6.1, though valid, includes what might be termed the background noise of the total analysed dataset rather than those areas that I wished to draw specific attention to because of their higher density. It is the relatively higher densities, and their locales, which were most important for providing evidence in support of the interpretations, rather than the total spread, or the absolute quantities involved themselves. The initial analysis therefore was then subjected to filtering, in order to draw attention to the higher densities. Each layer of density has a separate shade of colour, shown as bars in the key of figure 6.1. Highlighting the areas of higher density was easy to achieve by the simple expedient of disabling the colour values for the bars that were not desired (Figure 6.2).

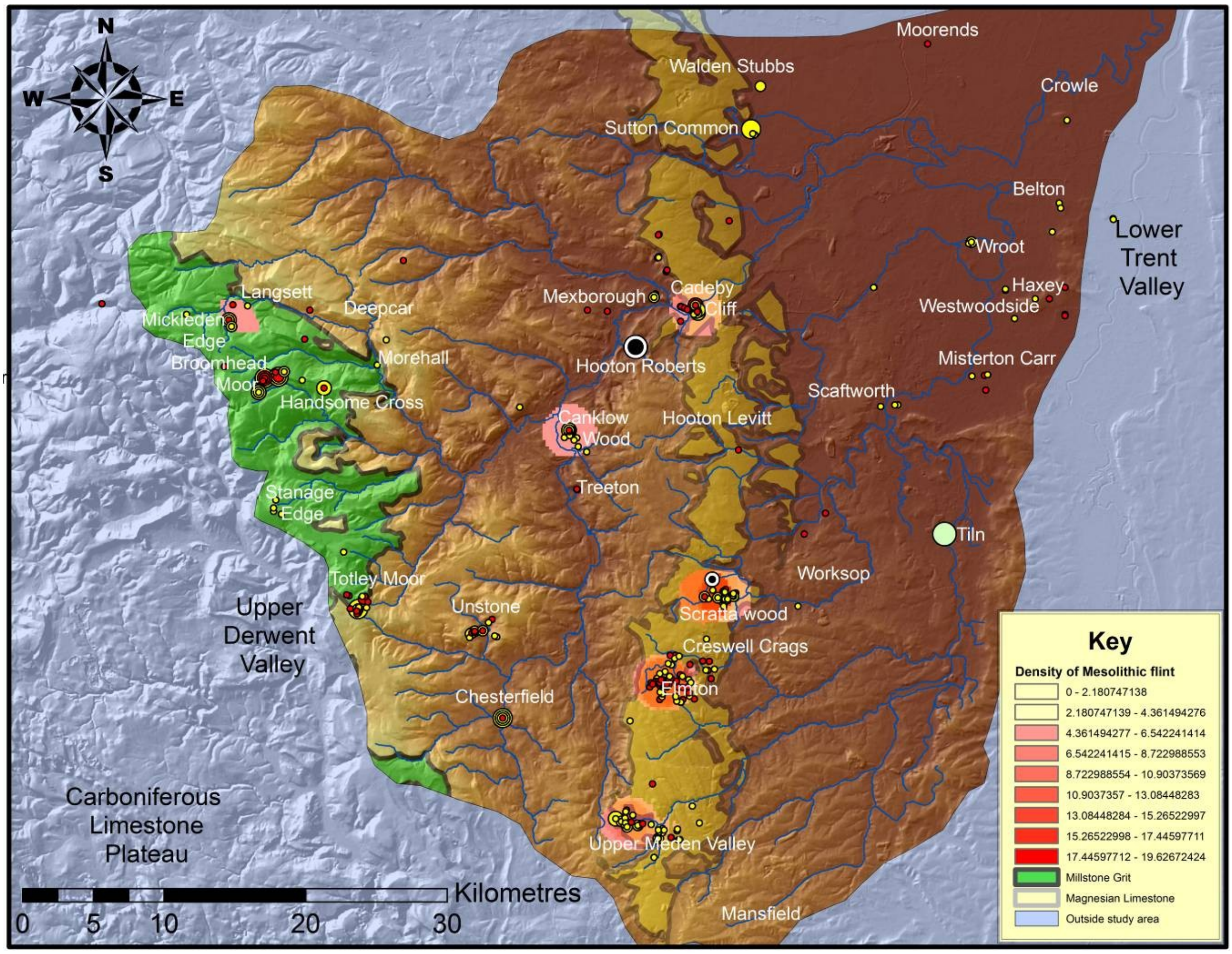


Figure 6.2: Edited version of figure 1, with visualisations of lowest densities disabled. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Further editing simplified the key by removing the disabled colour bars and reducing the number of bars shown, so that only the information necessary to understand the general meaning of the differently shaded areas of density was given. The numbered column to the right, showing the numbers of items expressed as proportional ranges indicating relative density could then be reduced to two decimal places for convenience (Figure 6.3).

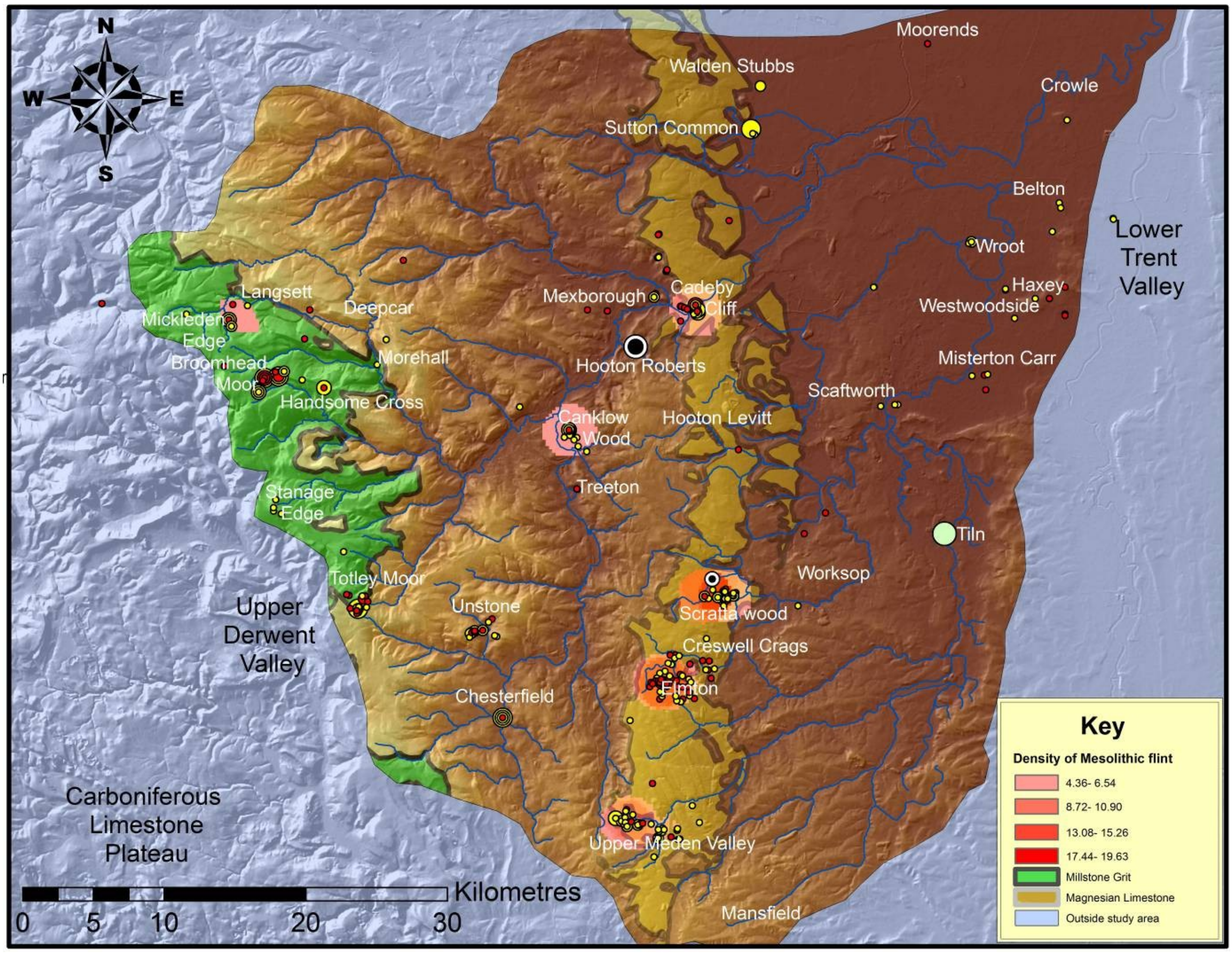


Figure 6.3: Final edited version of the map showing the distribution of undifferentiated Mesolithic flint, with areas of higher density indicated by pink roundels. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The ideas discussed earlier about how particular landscapes are moved through and perceived in terms of their significance for regional identity were confirmed where deliberate acts to draw attention to them were detected archaeologically. To that end, the "elaborate artefacts" that by their morphology, form or material could be judged to have had greater skill and time invested in their crafting than ordinary implements were also analysed in terms of their spatial relationships with the aforementioned routeways and distinctive places in the landscape. Monuments were similarly analysed to determine if there were relationships between them, distinctive places in the landscape, and routeways.

Deliberate acts that drew attention to a prominent and distinctive place in the landscape, perhaps modifying the landscape feature itself, supported the interpretation that natural features themselves were perceived as important by inhabitants. When attention was being drawn to similar landscape contexts in the same way using monuments and material culture, a common vocabulary of *place* was being attested to in that area. Conversely, if differences were detected across the study area, in terms of distinct practices being manifested in different kinds of landscape context, this evidenced different senses of what it is to belong to a given community.

The above implied two things in terms of data collection and analysis. The first is that the large datasets spread across a large area, what might be termed "the big picture", were most likely to bear fruit. It is at this level that definition appropriate to regional patterning was discernible. The second is that the sheer volume of data to be evaluated precludes the investigation of fine detail, such as detailed distribution of artefacts at the site level, or the study of use-wear, or production sequences in the crafting of goods for example. These might indeed bear results that, in an ideal world, would be worth having. However, the amount of time and effort involved in such research was prohibitive, and unnecessary in seeking differences at the regional level.

Just as, in an ideal world, the visual examination and recording of all artefacts by photograph was preferred, the same applied to monuments within the landscape and the landscape itself; maps, and sophisticated Geographical information Systems are wonderful aids to understanding landscapes and its constituent parts, including its historic record, but are no substitute for direct observation. They are only as accurate as the information used to create them, and the recording of that information is subject to the needs of their creators, and the errors that can occur. They cannot take into account the constantly changing significance of certain kinds of vegetation, and trees in particular (Edmonds 2006: 173). Insights can be gained, therefore, which while being personally and culturally situated add considerably to the process of archaeological interpretation (Edmonds 2006). Only by experiencing the landscape can scales, size, lines of sight and spatial relationships be appreciated, using the most sophisticated analytical tools yet in existence – our eyes and other physical senses.

As with material culture, it was not a practical proposition to visit and record every findspot in the database and its landscape context. Therefore a strategy for sampling the landscape was required. The research criteria laid out above formed the basis for the strategy, not in a sampling of arbitrary, if interesting landscapes, but in the visiting of places in the landscape where the convergence of archaeological data and landscapes identified on the basis described above were noted during the course of data collection and analysis.

A summary of the analytical sequence

No study of wide ranging classes of monuments and material culture, in conjunction with their landscape contexts, and examined over very long periods of time can take place by one act of analysis alone. There are too many variables, too many aspects to the overall notion of what it is to belong to a particular regional group for that to be practicable, even allowing for the fact that the surviving database consists of a fraction of all that was originally created. The work had to take place in a series of steps that lead from one analysis to the next in a sequence that culminated in the formation of the interpretation to follow.

The discussion in the previous section lays out the steps taken in a way that justifies its individual elements. Here follows a summary of those concepts and elements, with reference to some of the analytical tools employed.

1) Proximity of data to waterways set at 500 metres to either side was plotted in ArcGIS. Waterways have changed course and been artificially altered countless times over the millennia, and been subjected to considerable artificial alteration in the post-medieval period. However, their general trajectories remain the same in broad terms, except in the lower reaches of the major rivers traversing the Humberhead levels. The distances indicated to what extent there is a correlation between the presence of data and the lines of rivers: where patterning suggested progressively fewer examples of particular data the further one moves away from the river courses, then support was given for the interpretation that the courses of rivers acted as conduits of movement. Again, in the interests of mitigating for the lack of highly accurate information regarding the precise courses of rivers at any given moment in time (as well as for the data itself in some cases), this was undertaken at the largest scale of analysis, incorporating the entire study area.

2) Four major geological zones traverse the study area from west to east (see chapter four), giving different physical characteristics to the study area that were probably known to its inhabitants, as suggested by Barrowclough (2008). Some of these characteristics are clearly visible, are often striking, and in some places the interfaces between geological formations can be dramatic. Changes in elevation are closely related to those different characteristics. At the largest scale of analysis therefore, the extent to which the different geological zones related to distinctive forms of dwelling could be explored. The data was analysed to determine which elements were distributed across individual zones, diachronically as well as synchronically, to see if the aforementioned differences correlated with different patterning of the data.

3) Elevation has been mentioned above, often relating to geological zones, but not exclusively. Some classes of data were analysed to determine how it was distributed by elevation. This is so that data could be related to how low lying wetland expansion

developed, and to the floodplains of rivers in their middle and lower reaches. As with proximity to waterways, elevation was banded, at 0-30 metres and 30-50 metres OD.

4) The results of steps 1-3 above were compared to determine if patterns suggestive of cultural differences across the study area could be seen. More detailed analysis at the smaller scale was attempted using case studies from the different parts of the study area. The number and detail of these case studies was determined by how many could be identified, and how much time remained in order to undertake them. An example of this is the landscape in the vicinity of the confluence of the River Don and the River Dearne in South Yorkshire discussed in chapter eight.

Finally, the analyses described above were undertaken in a historical sequence utilising the traditional period based divisions of Mesolithic, Neolithic and the Bronze Age. Absolute dates were used where possible, but the traditional framework facilitated the inclusion of all data, including that for which more accurate dating was not available. This was appropriate in the context of a study taking a broad approach at the widest scale of analysis.

Chapter 7:

The Mesolithic

Introduction

The Mesolithic is divided into two sub-periods - the Early Mesolithic and the Later Mesolithic. The span of time is long, approximately relating to the years between 9500 BC and 4000 BC, which are subdivided on the basis of changes in chipped stone technology that took place at approximately 7500 BC. Within the present study area, the date range must now be extended until c. 3800 BC. Griffiths (2014) has argued for this date after applying Bayesian statistical modelling to radio carbon determinations from 58 locations across Yorkshire and former Humberside. The date takes into account work undertaken across the north of England and the midlands (Griffiths 2014: 25).

The changes in chipped stone technology at the end of the Early Mesolithic possibly relate to climatic and environmental developments taking place that witnessed the eventual inundation of a very large swathe of European lowland landscapes in the area now occupied by the North Sea (Coles 1998; Gaffney *et al* 2009: 51). That swathe of landscape lies outside of the present study area, but it is possible that people inhabiting the present study area ranged across that landscape during the Early Mesolithic and the earlier part of the Later Mesolithic. It has been suggested that for much of the Early Mesolithic, the dynamic and continually evolving North European Plain probably furnished rich coastal and estuarine environments that encouraged population concentration and even expansion (Coles 1998: 74; Mithen 1999: 53; Gaffney 2009: 120; Leary 2015). Later technological changes might well relate to the gradual loss of this land, forcing communities to adapt to smaller and different geographical ranges, resources that were more dependent on inland environments, and concomitant social and political re-adjustments and changes (Donahue and Lovis 2006: 256; Leary 2015: 57). Such possibilities need to be borne in mind, since they bear upon the lives of inhabitants in the study area. However, the direct investigation of lands now under the North Sea falls outside of the remit of the present study.

The environments that are of direct relevance to the above developments were discussed in the previous chapter, but its chief characteristics should be summarised. During the Mesolithic, as the water table rose and temperatures increased, the former deeply incised channels of the region's major waterways began to infill, eventually impeding drainage from across the study area. Tree cover expanded, and was probably responded to by human populations through attempts to manage and reduce that expansion by burning areas of woodland in the uplands. By the latter part of the Later Mesolithic, that form of land management had the unintended consequence of increasing run off from the uplands, and increased sedimentation of the already infilled river channels, exacerbating drainage difficulties and accelerating the onset of the wetting of the lowlands. In the lowlands, the floodplains of the middle and lower reaches of the major rivers, as well as the margins of the Humberhead Levels, were probably kept more free of dense woodland by the rising water levels (unsuitable for some species of trees) and by the actions of grazing and browsing animals such as deer, wild cattle and beavers. This probably resulted in a mosaic of micro-environments including woodlands and more open areas.

The Mesolithic is represented by two classes of data; evidence for structures (Courtney n.d.; Radley and Mellars 1964), and the chipped stone assemblage. The chipped stone data for the Mesolithic is proportionally the largest datable component for the entire study period, by some considerable margin (tables 7.1 and 7.2).

The total assemblage includes the cores and debitage that can be associated with the knapping of stone for the manufacture of tool blanks (blades and flakes), tools associated with the processing and manipulation of resources (scrapers, burins and awls) and tools associated with gathering and hunting (microliths, points). Many of these have been recovered unsystematically either during the course of non-archaeological excavations and working in the landscape, or other "stray" finds by members of the public (table 7.1 and table 7.2).

Systematically recovered chipped stone artefacts														
	pre.	**E.Mes**	**Mes**	**L.Mes**	**Mes-Neo**	**E.Neo**	**Neo**	**L.Neo**	**L.Neo-EBA**	**EBA**	**BA**	**MBA**	**LBA**	**Total**
flint	20246	32911	6750	3103	3111	500	365	89	526	87	233	2	10	67933
chert	755	270	657	333	154	9	1	4	20	2	5			2210
Unsystematically recovered chipped stone artefacts														
	pre.	**E.Mes**	**Mes**	**L.Mes**	**Mes-Neo**	**E.Neo**	**Neo**	**L.Neo**	**L.Neo-EBA**	**EBA**	**BA**	**MBA**	**LBA**	**Total**
flint	2055	24	1139	159	374	30	432	21	326	34	234	1	3	4832
chert	107		31	44	8		1		3	2	1			197

Table 7.1: chipped stone data.

Systematically recorded chipped stone scatters													
pre.	**E.Mes**	**Mes**	**L.Mes**	**Mes-Neo**	**E.Neo**	**Neo**	**L.Neo**	**L.Neo-EBA**	**EBA**	**BA**	**MBA**	**LBA**	**Total**
40	2	21	1	4	0	5		19	0	0	0	0	88
unsystematically recorded chipped stone scatters													
pre.	**E.Mes**	**Mes**	**L.Mes**	**Mes-Neo**	**E.Neo**	**Neo**	**L.Neo**	**L.Neo-EBA**	**EBA**	**BA**	**MBA**	**LBA**	**Total**
79	1	48	1	4	0	14	0	29	0	9	0	0	186

Table 7.2: chipped stone scatters of unknown composition.

The general advantages of "stray finds" over data recovered through systematic archaeological fieldwork have been discussed earlier (chapter four). In short, their wide distribution supplements what can be understood from more systematic work, and is indicative of widespread activity in the landscape (Figure 7.1, Figure 7.2). This is an important point, for as will be seen below uncritical analyses of the distributions of systematically recorded data beyond the study area have in the past given support to questionable models for Mesolithic inhabitation.

The majority of finds were recorded in systematic fieldwork (table 7.1; table 7.2). It is common for archaeological studies to base interpretations at the regional level on small numbers of well excavated sites (Clark 1972; Donahue and Lovis 2006; Jochim 2006: 210; Grassam and Weston 2015: 6-7). The model of Clark (1972) in North Yorkshire falls into this category, with interaction, movement and lifeways being informed by the limited distribution of sites that have been subjected to the detailed investigation of excavation, following an approach that assumes adaptation to the environment and subsistence strategies as the only significant motivations for movement and interaction. In this context, Clark's model assumed that subsistence was based on the seasonal following of herds of deer between uplands and lowlands. The approach was informed by the uncritical use of ethnographic interpretations of the activities of more recent hunter-gatherer societies, shown to be simplistic and sometimes erroneous (Spikins 1999: 69; 75; 2000: 109). More detailed analysis of recent hunter-gatherer societies has shown far more complex patterns of settlement amongst groups of greater diversity in size and composition (Spikins 2000: 111). Unfortunately the earlier less sophisticated model appeared superficially to be supported by the aforementioned limited distributions of excavated assemblages.

Later scholarship, though better informed by more data and more nuanced development of the interpretation, essentially used a similar model to Clark (Mellars 1998: 232; Spikins 1999: 54; 2000: 106-107; Young 2000; Donahue and Lovis 2006). The research referred to above falls outside of the present study area, but in a region directly to its north and in a series of landscapes that bear considerable similarity to that of the present study area.

In the present analysis, many locations of activity detected through fieldwalking are considered in addition to excavated sites. These, with the backdrop of activity indicated by the aforementioned stray finds, present a very different impression of the level and nature of activity in the landscape to that given by earlier scholarship. Some of this fieldwalked and excavated data exists in concentrations. Such concentrations are indicative of investments in particular places that might be ascribed to various kinds of routine activities of a utilitarian kind. Nevertheless, such activities take place in specific contexts that are not necessarily intrinsic to the activities themselves. Patterns of distribution will be shown that are indicative not only of widespread landscape inhabitation, along routeways defined by the courses of the study area's significant waterways, but which are also suggestive of micro-regional variation.

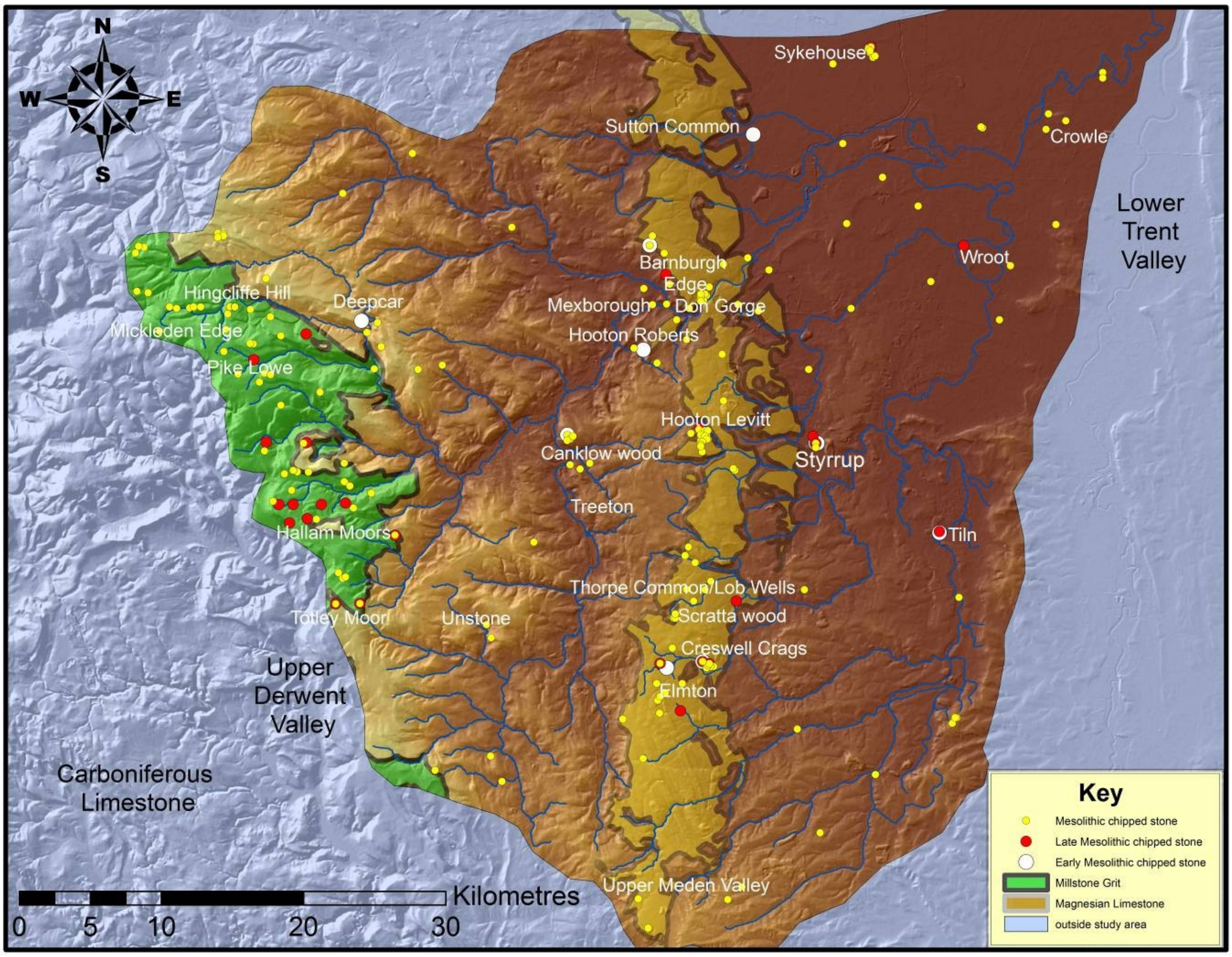


Figure 7.1: Distribution of unsystematically recorded Mesolithic finds. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

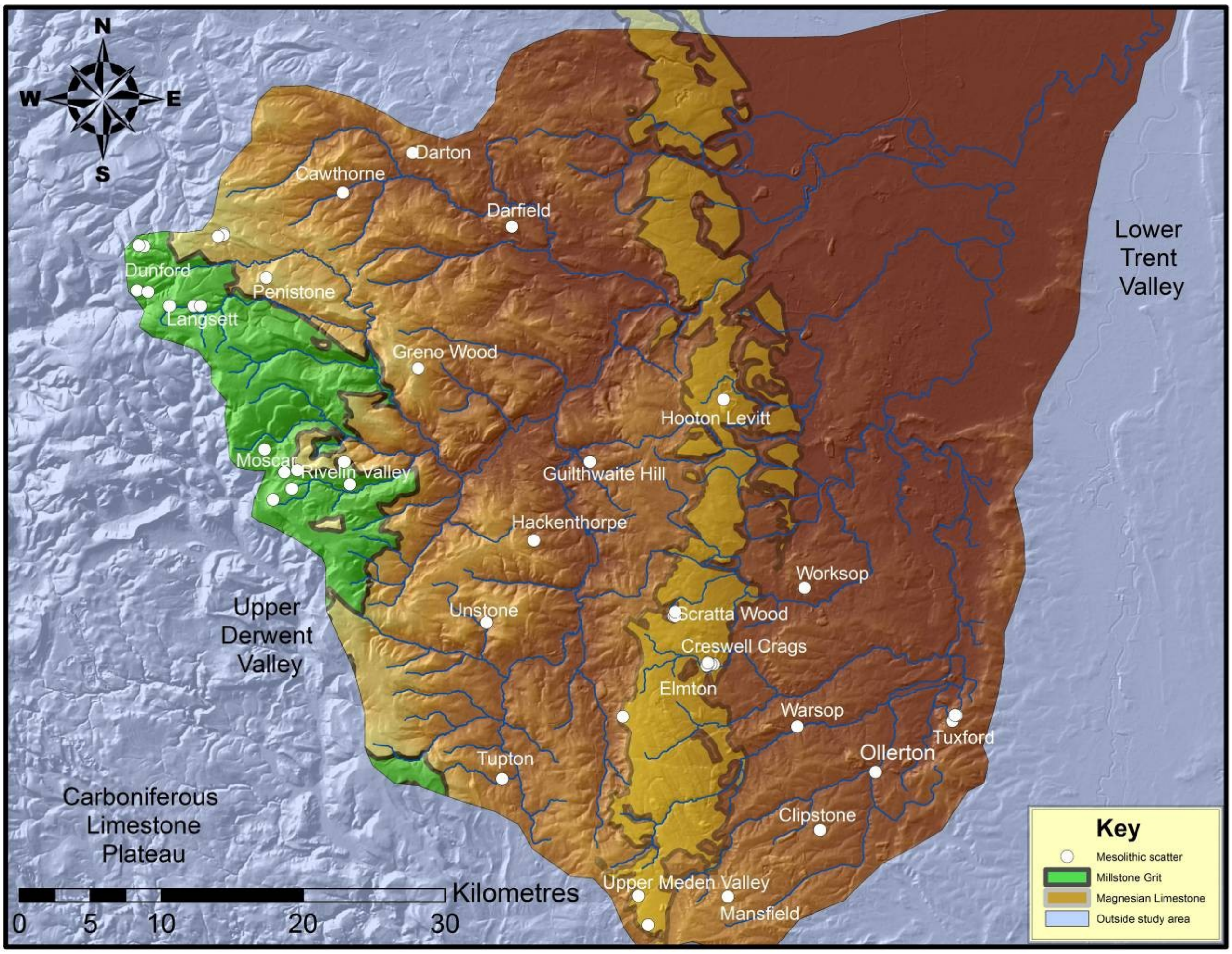


Figure 7.2: Distribution of unsystematically recorded Mesolithic chipped stone scatters. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Early Mesolithic distributions

Data that has been systematically recorded appears to be closely associated with the lines of waterways, and larger assemblages have been recorded in the uplands than elsewhere in the study area (Figure 7.3).

The existence of upland sites in the Pennines, isolated from coastal sites such as Star Carr, and comprising assemblages with little evidence for domestic activity has been interpreted in earlier studies as offering evidence for the existence of transient destinations in a cycle of movements, connected with the seasonal exploitation of resources. In this scenario, the upland areas were being exploited for hunting in the spring and summer months (Clark 1972; Lovis and Donahue 2006; Spikins 2002; Gaffney *et al* 2009: 46). Star Carr is regarded as being an outlier of more such sites that were probably located in the now inundated landscapes occupied by the North Sea, and which in the Early Mesolithic was an immense lowland plain of meandering rivers, coastal salt marshes and other wetland environments (Coles 1998: 48; 50; Gaffney et al 2009: 120; Leary 2015).

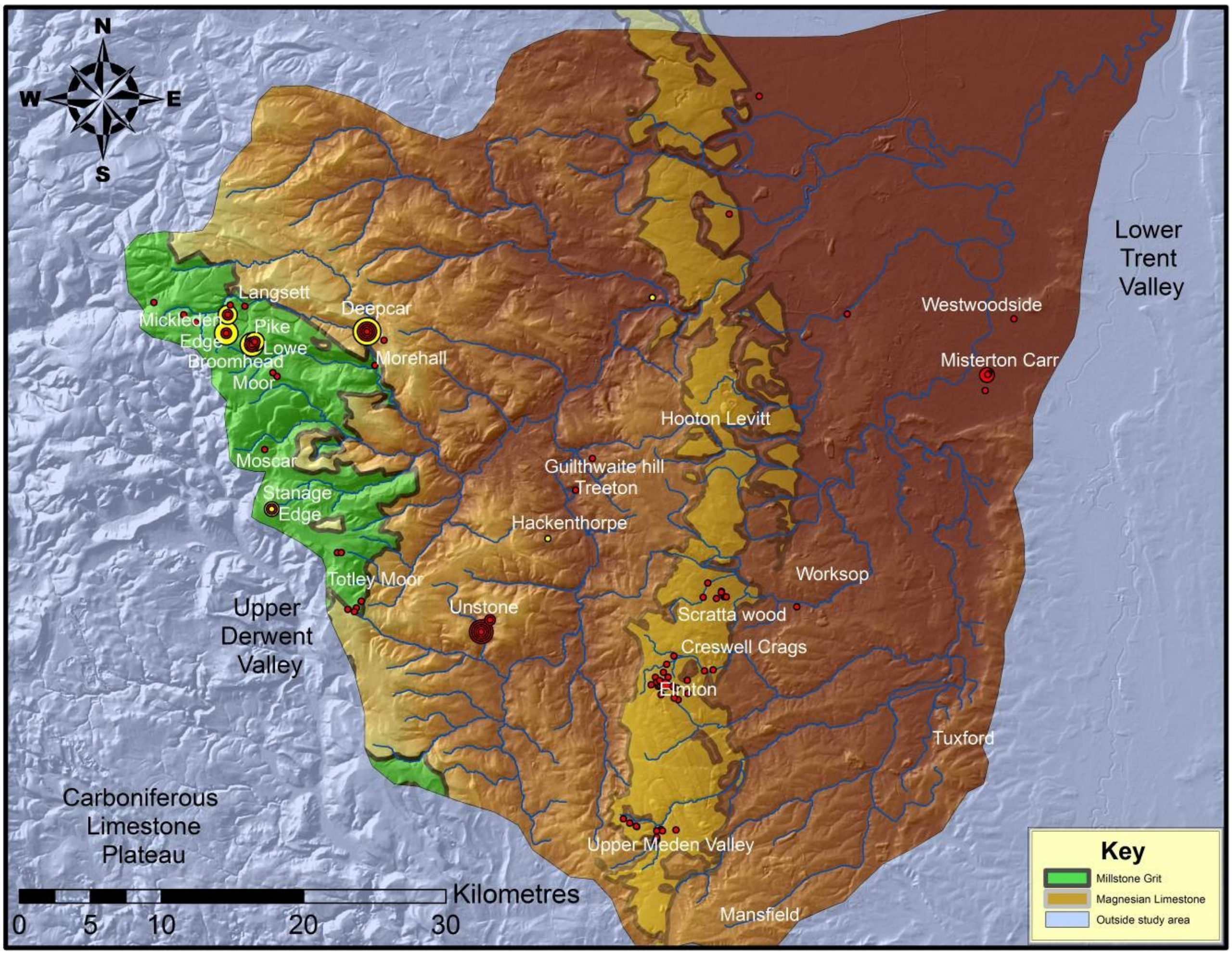


Figure 7.3: Systematically recovered Early Mesolithic chipped stone (debitage: yellow, overlain with tools: red). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

It has been suggested that in the Don Valley (Greaves 2011) at least some of the transient upland sites were places that had greater significance than being merely the temporary camps for the opportunistic exploitation of resources. They were places that were returned to, because their distinctive characteristics made them familiar and easy to find again (Donahue and Lovis 2006: 252; Greaves 2011: 42). Waterways have been suggested as routeways in these kinds of movements elsewhere (Coles 1998: 73; Jochim 2006: 206), supported by the distribution of findspots associated with them. This scenario of sites being returned to is supported in the present study by evidence from the Early Mesolithic site at Unstone in North Derbyshire (Courtney n.d.). At this location, several phases of use are known to have taken place, with the construction of structures and hearths overlying each other in at least two phases (Myers 1986: 325; Barrowclough 2008: 62), and in a highly distinctive landscape setting close to the confluence of four waterways (Figure 7.4; Figure 7.5).

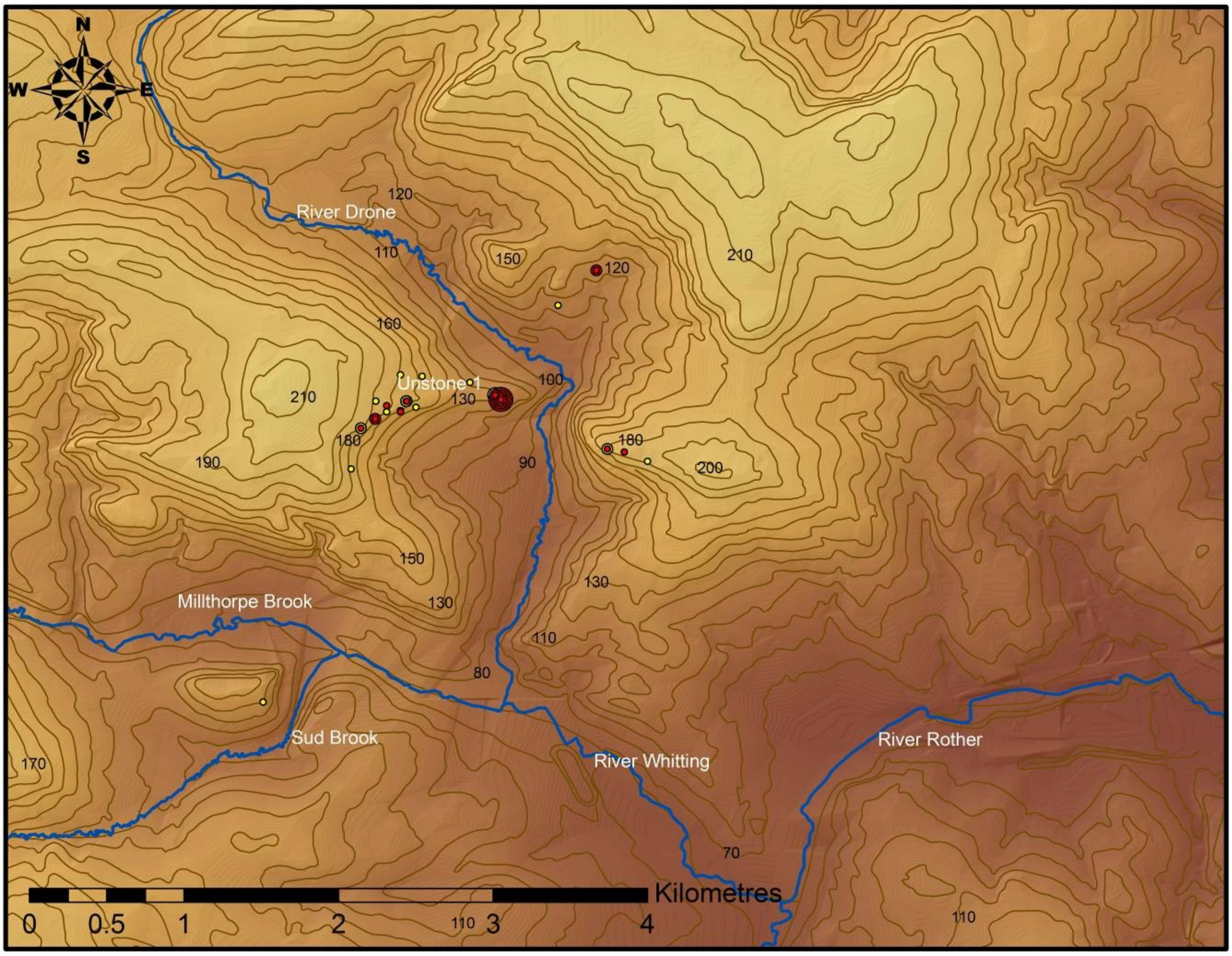


Figure 7.4: The excavated site of Unstone 1, and locations of fieldwalked data. Data shown is debitage (yellow) overlain by tools (red). Figures indicate height in metres OD. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Figure 7.5: Unstone 1 (left centre), North Derbyshire, facing south-east. Source: author.

In the model discussed earlier, the relationship was between temporary upland sites in the Pennines, sometimes returned to, and more permanent lowland sites in the now submerged areas of the North Sea, with Star Carr in the Vale of Pickering being a remnant of those lowland settlements (Figure 7.6). However, figures 7.1-7.8 shows that not only is one of the most important sites, with its evidence for repeated use, not in the Pennine uplands itself, but that there is ample data from the Magnesian Limestone belt that this area was also the scene for significant inhabitation, invested with routine activities as demonstrated by the presence of chipped stone assemblages. The locales are also associated with significant waterways, but they rise on the Magnesian Limestone rather than progressing up to the Pennine uplands. These waterways form part of the River Idle drainage basin in North Nottinghamshire. This is an area of landscape notoriously bereft of archaeological data (see chapter four), but even here a scatter of Mesolithic chipped stone is recorded from a sand dune overlooking the floodplain before a large bend in the river Idle at Tiln, North Nottinghamshire (Challis 1997; Figures 7.2-7.3). The impression of more dispersed activity across the study area than traditionally assumed is completed by the existence of the Early Mesolithic site of Misterton Carr in North Nottinghamshire (Buckland and Dolby 1973).

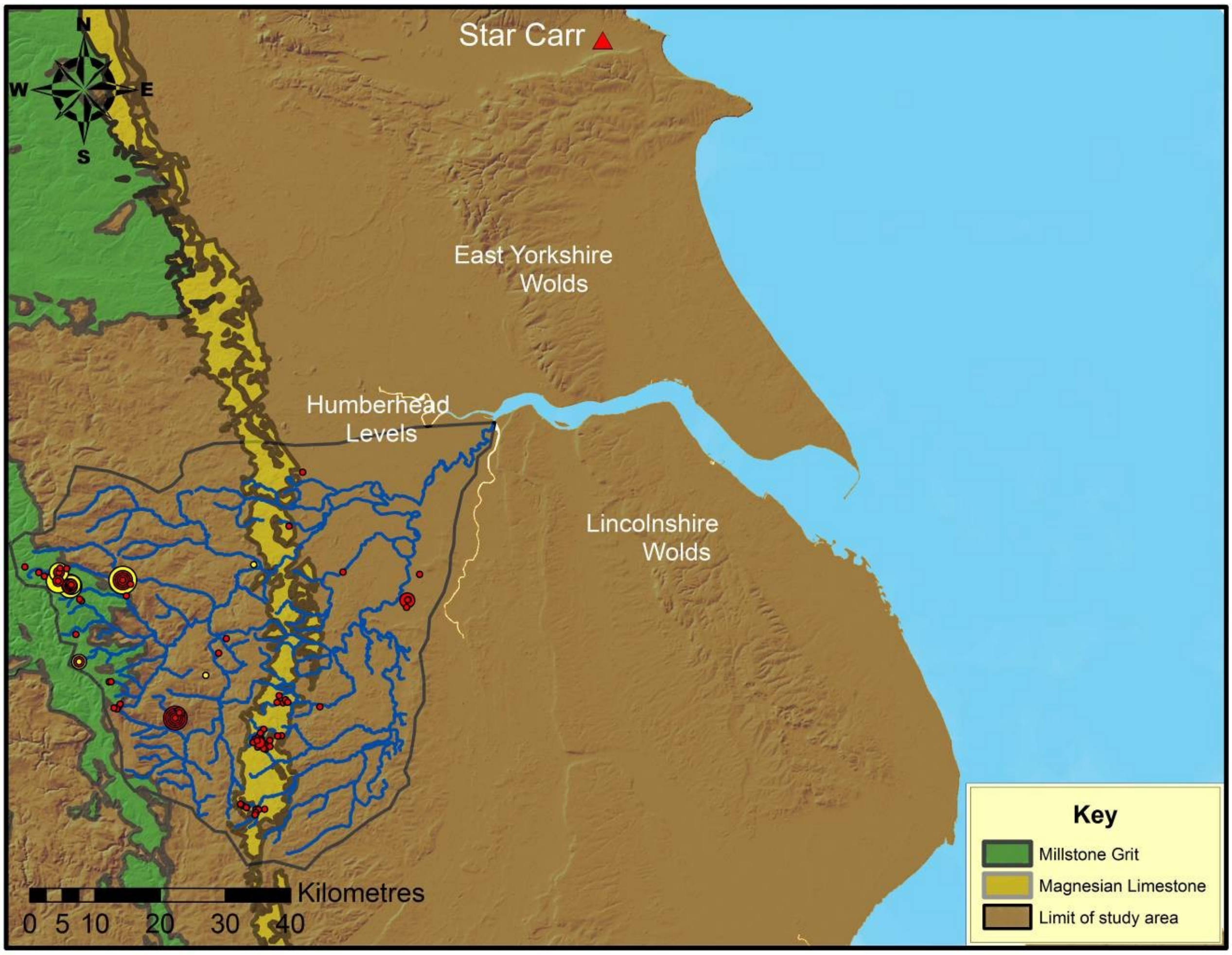


Figure 7.6: The location of Star Carr, in North Yorkshire, in relation to the present study area, with systematically recovered Early Mesolithic finds shown in yellow (debitage), overlain by red (tools). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The lowland settlement-upland resource exploitation model was developed in the context of North Yorkshire. The comparison was between the lowland coastal site of Star Carr and assemblages in the Pennine uplands to its west. It was assumed that the relationship between the upland and lowland sites was determined by seasonal movements between these environments, and only with adaptive subsistence strategies in consideration (Clark 1972; Donahue and Lovis 20006: 249; 257). However, the data from the current study area, which studies a similar transect of eastern England, supports the suggestion that interaction with the landscape was more complex than this, and took place across the whole landscape rather than only at locations which fit with a transhumant subsistence strategy style model.

This observation of more complex interaction with the landscape during the Early Mesolithic has been noted elsewhere (Jochim 2006), with greater numbers of locations of activity facilitating a more sophisticated interpretation that recognizes movements and interaction indicative of regional diversity. Such interpretations have been possible due to a combination of recognizing more sites where domestic activities have taken place, in conjunction with the correlation of assemblages of tools utilising specific sources of raw material with different specific landscape contexts (Jochim 2006: 210-11). Jochim’s work, in southern Germany, supports the idea that similar patterns in the present study area are not anomalous, and reflect more general phenomena. Jochim's more complex archaeological interpretation is supported by a more sophisticated analysis of ethnographic data proving that interaction with landscapes by hunting and gathering societies is more varied, dynamic and complex than traditionally assumed (Myers 1986: 13; Spikins 1999: 69; 73; 2000: 111; Conneller 2008: 169), and includes reasons for movement around landscapes that encompass social intercourse and other non utilitarian reasons (Whallon 2006; Conneller 2008: 169).

Later Mesolithic distributions

The pattern of landscape use described above is continued in the Later Mesolithic with, in broad terms, activities taking place at the same locations (Figure 7.7; Figure 7.2). Roebuck hill in South Yorkshire can now be added to the list of places. The site is located on the south facing slope of and just below the summit of a ridge overlooking a deeply incised short valley that leads down to the nearby River Dearne (Figure 7.7).

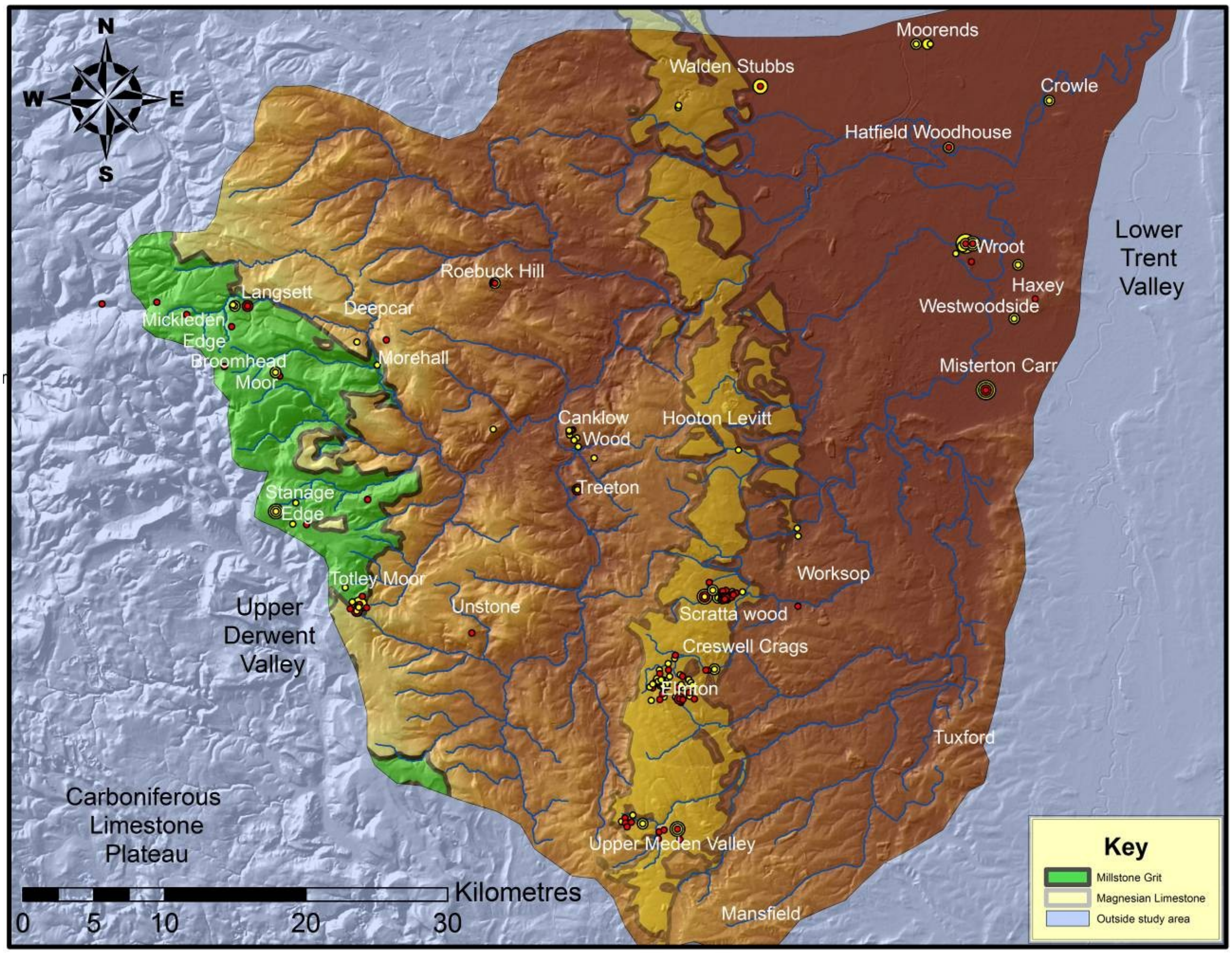


Figure 7.7: Distribution of Late Mesolithic chipped stone recovered in systematic fieldwork. Finds shown in yellow (debitage), overlain by red (tools). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Although the upland sites are still important, significant activity can be seen elsewhere: on the Magnesian Limestone belt in the southern half of the study area in the vicinity of Scratta Wood in North Nottinghamshire, Elmton in North Derbyshire and in the vicinity of the headwaters of the River Meden (Figure 7.7) in North Nottinghamshire. Many of these Late Mesolithic locales are places where earlier clusters have also been recorded (Figure 7.1; Figure 7.3). These include, as well as the foregoing locations, Mickleden Edge and Langsett Reservoir in South Yorkshire, Totley Moor and Creswell Crags in North Derbyshire, and Misterton Carr in North Nottinghamshire. To these can be added new locales such as the aforementioned Roebuck hill as well as Canklow Wood on Coal Measures Sandstones upland sites. Either continuity of use or re-visitation at these places is in evidence. It is therefore appropriate to add now the data that is Mesolithic, but undifferentiated between the early and later sub-periods.

Mesolithic distributions

The densest concentrations of undifferentiated Mesolithic artefacts are located in the Pennine uplands and on the Magnesian Limestone belt. Large gaps appear between those areas, and on the east side of the Magnesian Limestone (Figure 7.8).

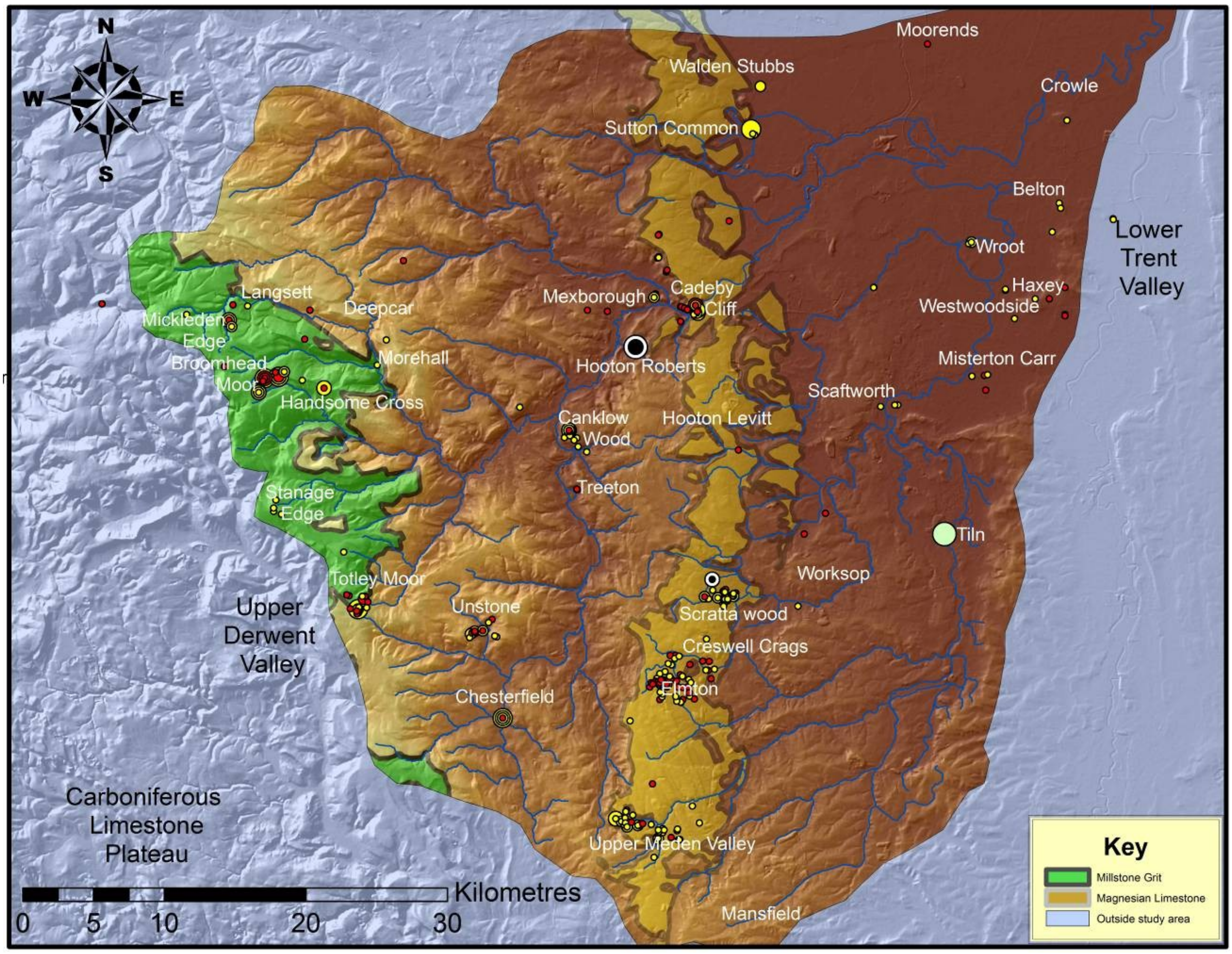


Figure 7.8: Distribution of systematically recovered undifferentiated Mesolithic data. Red (tools) over yellow (debitage), and unsystematically recorded undifferentiated Mesolithic concentrations. Black (tools), over white (debitage). The undifferentiated Mesolithic assemblage of Tiln is shown in pale green (tools/debitage). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The extent of the gaps present are more apparent than real, as has been discussed already in the chapter on formation processes. The significant assemblages from Chesterfield, Unstone, Canklow, Roebuck Hill and Hooton Roberts are more likely to be representative of what was once the scale of inhabitation on the Coal Measures Sandstones geological series than the remaining landscape, masked by urban and industrial activity. Similarly, enough data survives on the flanks of the Humberhead levels in the vicinity of Misterton Carr, Sutton Common, and the Isle of Axholme to be indicative of the scale of activity there. Figures 7.1, 7.2 and 7.8 show that even in the Idle valley there is evidence to support the interpretation that people were active during the Mesolithic, in association with the valley's major waterways.

The suggestion being made here then is not that the previously well known upland sites foregrounded in the discussions of earlier scholars in contrast to lowland sites such as Star Carr are insignificant, but rather that the rest of the landscape was almost certainly as important and well inhabited. The notion that the vast expanse of landscape between the Gritstone uplands of the Pennines and the coastal areas and inundated plains of North Europe were merely a corridor *between* areas of activity does not stand up to scrutiny. They were areas of activity in their own right.

Broadly speaking, the locations for the undifferentiated Mesolithic activity are consistent with what can be observed from the better dated material and assemblages. The detailed evidence for repeated activity, possibly over a relatively short period of time of a few decades (Courtney n.d.) at Unstone in North Derbyshire is not available for other sites. However, broad patterns of re-visitation are discernible at many locations. Hingcliffe Hill, Mickleden Edge and High Neb in North Sheffield district, Totley Moor and Elmton in North Derbyshire, the Upper Meden Valley area, Scratta Wood, Misterton Carr and possibly Tiln in North Nottinghamshire all include material spanning the entire Mesolithic period.

Activities in the landscape

It has been seen above how activities spanning the entire Mesolithic period were taking place at numerous locations across the study area, and that many places across the study area were the location for repeated activity. Some parts of the study area contain more data than others, due in part to the formation processes and sample bias that affected its recording. This kind of sample bias has also been observed in North Yorkshire (Spikins 2000: 112). Nevertheless, concentrations of activity have been shown that set particular places apart from the rest of the study area. To understand the significance of the concentrations for the research questions, the elements of those concentrations need to be considered, contextually.

The landscapes themselves have already been considered briefly, in the form of our understanding that there is a clear relationship between the locations of assemblages and significant waterways, as can be seen in Figures 7.2-7.6. The waterways, linking assemblages, shall be returned to later when considering the landscape contexts for assemblages. Before that the nature of those activities will be considered, and how those activities vary from place to place diachronically.

The separation of site function on the basis of relative proportions of scrapers and microliths has recently been brought into question (Jochim 2006: 70). The assumption that scrapers must always equate with processing activities and microliths with hunting lies behind the critique. Scrapers might easily have been used in crafting activities (G. Fregni, pers. comm.), and use wear analysis of microliths has shown that they have been used for purposes other than merely projectiles (Mithen 1999: 38; Conneller 2008: 167), including as borers and piercers (Spikins 2002: 42), and possibly for the processing of vegetable foods (Myers 1986: 177; Gaffney *et al* 2009: 51). The variety of shapes and forms of microliths over time has also suggested to scholars a greater range of activities than hunting (Donahue and Lovis 2006: 253; Jochim 2006: 70).

For the above reasons, the determination of site function by the percentile proportions of scrapers to microliths will not be pursued here. From the point of view of the research questions and present scale of analysis, the precise nature of activities is not the most important issue in any case. What matters most is that activities of a routine nature were being performed, and repeatedly so at specific locations and in particular environmental contexts.

Nevertheless, activities at their broadest scale will be differentiated on the basis of whether they are more or less likely to belong to one of three categories as defined by implement type. The activities to be analysed will be tool making, domestic related activities and hunting related activities. "Domestic" here refers to activities that can be related to the processing of skins and leather for the most part. These are the locations of what are sometimes designated "residential" activities (Myers 1986; Donahue and Lovis 2006: 252). Scrapers form by far the largest tool component that is commonly assumed to have related to that kind of activity (Spikins 2000: 109), although it is probable that burins, awls and piercers might also have been used for the working of leather (as well as potentially wood, bone and antler). Microliths and points are generally thought to have been components of composite tools that were used in hunting related activities. The aforementioned objections notwithstanding, it is assumed here that their presence is most likely to be indicative of that activity, if not necessarily exclusively so. Debitage most commonly associated with the crafting of tools include cores, bladelets and microburins.

Early Mesolithic

Domestic activities were located at 10 locations, including the major locations of Unstone in North Derbyshire, and at Deepcar and Pike Lowe in South Yorkshire (Figure 7.9, table 7.3).

Smaller concentrations are located at Mickleden Edge and Hooton Roberts in South Yorkshire (Figure 7.9). Both Unstone, Deepcar and Hooton Roberts overlook confluences at points in the landscape where higher ground dramatically rises above and behind them, but where their locations provide good visibility of the places where the waterways come together, although the confluences themselves are not easily visible. Pike Lowe is different, being at the highest point in the locality. However, the valleys of Ewden and Mickleden Becks are clearly visible, as are the valley of the Little Don or Porter and the location of its confluence with Mickleden Beck. Mickleden Edge overlooks the deeply incised Beck of the same name, but is overlooked itself by the slopes of Pike Lowe and the watershed of the Don drainage basin to its immediate west.

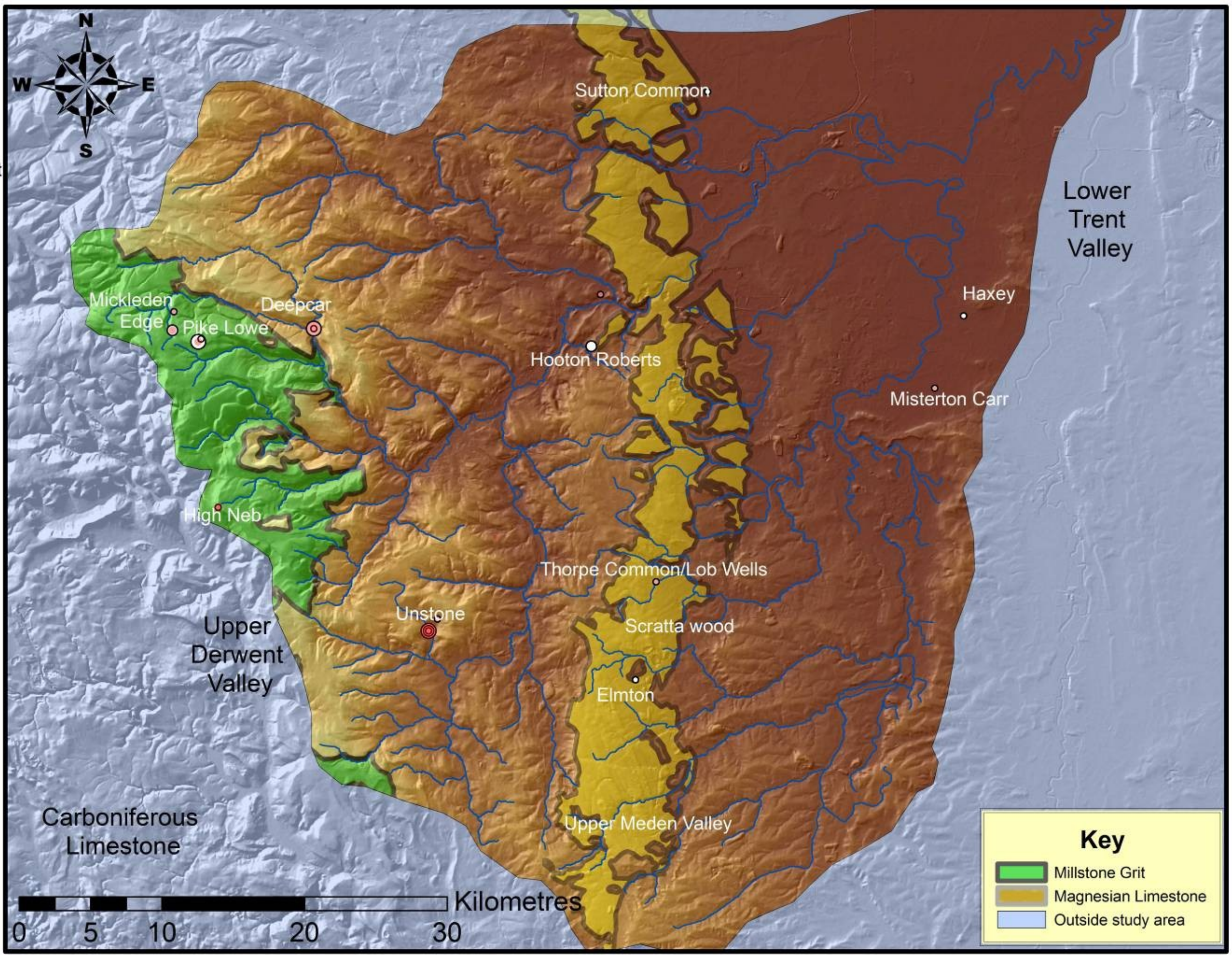


Figure 7.9: Distribution of Early Mesolithic domestic tools (white) and tool making related debitage (red), and both (pink). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

	Early Mesolithic	Late Mesolithic	Mesolithic	Prehistoric	Totals
Deepcar	***	*			1, 1, 2
Langsett res.	*	**	*		1, 3
Hingcliffe Hill		**			1, 1
Mick. Edge	***	**	***		3, 2, 3
Pike Lowe	***				1, 1, 1
High Neb/Stanage	***	*	**	*	3 ,3, 1
Handsome Cross			*		1
Broomhead	*	*	*		3
Lodge Moor		*		*	1, 1
Totley Moor	*	***	***	*	3, 2, 3
Wharncliffe Crags	*	**	**	*	1, 2, 3
Morehall	*	**	***	*	2, 2, 3
Wincobank		*	*		1, 1
Canklow		***	**	*	3, 2, 1
Treeton	*	***	***	*	3, 2, 3
Guilthwaite Hill	*				1
Birley Spa	*				1
Roebuck Hill		**			1, 1
Wath			*		1
Unstone	***		***	*	3, 2, 2
Chesterfield			**		1, 1
Mexborough	**		**	*	3, 2
Hooton Roberts	*		**		1, 1, 1
Cadeby/Don Gorge			***	*	2, 1, 1
Barnburgh Edge				*	1
Marr Thick			*		1
Barnsdale Bar		*		*	1, 1
Walden Stubbs		**	**		2, 1, 1
York Road	*				1
Thorpe Common	**	***	***	*	4, 2, 3
Lob Wells	*	***	***	*	3, 2, 3
Scratta Wood	*	**	***	*	3, 1, 3
Cresswell Crags	*	**	*	*	1, 1, 3
Elmton	**	***	***	*	3, 3, 3
Markland	*	**	*		1, 3

Grips					
Glapwell			*		1
Ault Hucknall	*	***	***	*	3, 2, 3
Upper Meden	*	***	***	*	3, 2, 3
Tiln			*		1
Edwinstowe				*	1,
Steetly		*		*	1, 1
Carlton		*		*	1, 1
Hodsock				*	1
Misterton Carr	**	***	**	*	3, 2, 3
Bawtry			*		1
Scaftworth			*		1
Westwoodside	**	*	*	*	3, 1, 1
Crowle			*		1
Haxey		*	*		2
Belton			*		1
Epworth				*	1,
Wroot		**		*	1, 1, 1
Nutwell				*	1
Moorends		*			1
Hatfield Woodhouse		**	**		2, 1, 1
Hatfield Chase				*	1
Barnby Moor				*	1
West Moor				*	1
Went Bridge				*	1
Sutton Common			**	*	1, 1, 1
Totals	10, 7, 23	14, 25, 23	24, 20, 28	33	81, 52, 74

Table 7.3: Distribution of findspots and locations relating to domestic activity (green), tool making activity (black) and hunting related activity (red).

Elsewhere domestic activity is represented by much smaller assemblages, although it is hinted at with a handful of tools on the Magnesian Limestone and on the periphery of the Humberhead Levels (Figure 7.9, table 7.3). Locations indicative of the manufacturing of tools have an almost identical distribution to the locations of concentrated domestic activity at Unstone and the upland sites, with six out of seven locations being the same (Figure 7.9, table 7.3).

When tools associated with hunting are added, all of the above sites, with the exception of Hooton Roberts, include hunting related tools within their assemblages also. However, the distribution widens to include many more locations (Figure 7.10, table 7.3).

The wider distribution, *prima facie*, is indicative of the differences between the activities. Namely, that hunting related activities require mobility and that the processing and related activities require the opposite. A narrower range of environments is indicated for the less mobile domestic activities, and environments that have much in common in terms of their landscape contexts.

The significance of the differences noted is that we are able to identify at least three broad categories of routine activity, or tasks to use Ingold's parlance (Ingold 2000), in specific contexts. two of them (tool making and resource processing) occur in the same contexts, while the third, hunting activities, has a wider distribution across more diverse locations.

That wider distribution includes contexts that bear similarities with those connected with the domestic related locations, as well as differences. The clearest similarity is with the connection to probable wet places, and especially riverine locations. With hunting, however, the nature of those wet locations is more varied. It includes the sources of waterways such as those at High Neb and Totley Moor in the Pennine uplands. On the Magnesian Limestone, the sites in the upper Meden valley bear close similarity, with activity clustered on steep valley sides with streams converging at a confluence. Elsewhere on the Magnesian Limestone, the sites at Lob Wells and Thorpe Common occupy rock shelters at points along the same small gorge (with stream flowing through). Locations that appear markedly different to the above are the important sites of Elmton, and Misterton Car.

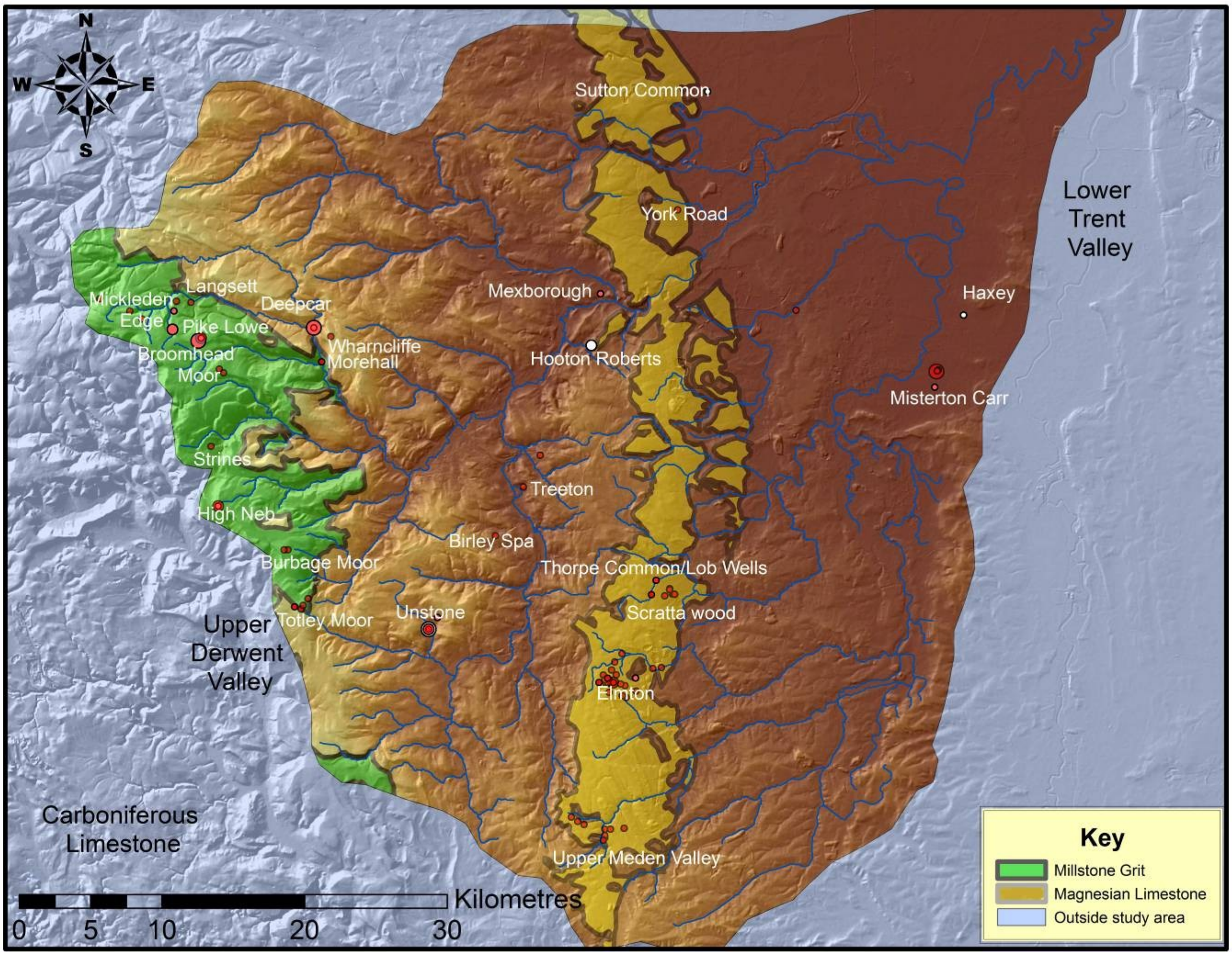


Figure 7.10: Distribution of hunting tools (red) overlying domestic tools (white), and both (pink). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Elmton, at the border between North Derbyshire and North Nottinghamshire, has a concentration of Early Mesolithic hunting related tools (but not domestic related) that clusters between the sources of two significant waterways that feed into the River Idle drainage basin. The assemblage does not appear to gravitate around either river, but rather the location directly between them. However, upon closer inspection, the assemblage centres round a distinct elongated dip in the landscape that might once have been a small gorge (Figure 7.11), particularly along a scarp edge on the west side. The bottom of this dip or gorge is wet in places and even includes standing water, a very unusual feature on the Magnesian Limestone, which is well known for its shallow well drained soil. Nevertheless here the wet place is one of probable standing water and possible marsh rather than the flowing water of the significant waterways. A recent auger survey at Elmton for the prospection of organic deposits did not recover sufficient data to reconstruct the environmental history of the locale, but did confirm that wetland floral species such as sedges were in evidence there in the past (Cockrell *et al* 2015a), possibly flanking a former spring.

Misterton Carr in North Nottinghamshire is sited on the very low lying Humberhead Levels, and over a kilometre from the banks of the Idle, its nearest significant waterway (Figure 7.12). To its south rises the high ground that marks the southern edge of the Humberhead Levels at Gringley-on-the-Hill. It has none of the distinctive landscape features which characterise the locations of similar assemblages in the study area, other than the probable standing water noted at Elmton. Nevertheless, it lies on the fringes of a landscape that in the Early Mesolithic would have included meandering river channels as well as slowly developing areas of fen. It is likely that Misterton Carr lies close to a palaeochannel, many of which cross the Levels (Grassam and Weston 2015: 7). In general terms then its association is still with watery places, probably very similar to that at Tiln in North Nottinghamshire (Challis 1997).

Figure 7.11: The southwest end of the putative gorge at Elmton, North Derbyshire. Source: author.

Figure 7.12: The view North West across the Humberhead Levels towards Misterton Carr (middle distance) from Beacon Hill, Gringley-on-the Hill, and North Nottinghamshire. Source: P. Buckland.

To summarise the above, related instances of routine activities can be repeatedly detected in specific environmental and topographical contexts. For domestic activities the locations are sheltered by higher ground and look out over river valleys and confluences. Hunting activities are also related to such places, but in addition take in more varied locations, albeit ones closely associated with waterways and other probable wet environments. These patterns are consistent with what is known about understandings of regional and micro-regional identities discussed earlier (chapter two), with routine activities being repeatedly undertaken by familiar groups in locations and environments considered to be the norm for such activities. Enough information exists to support the interpretation that the rest of the landscape was inhabited (see above), but the association, in almost all cases, of assemblages with significant waterways proves the connection between waterways and routes through the landscape. People were not necessarily using the water itself for transportation, but rivers and streams define their geographical locations, linking places upstream or downstream.

That the locations in question were the contexts for repeated activity, undertaken by groups returning to the same locations is supported by the overall distributions both geographically and chronologically, and strongly supported by the evidence from Unstone: here a community was not simply returning to the same general location, but was demonstrably returning to and erecting structures on precisely the same site. It is not at all clear that this has any utilitarian function. On the contrary, to erect structures by digging post holes into the backfill of earlier structures would seem, *prima facie*, counter-productive. It is likely to have resulted in structures with weakened structural integrity. To embed posts or steaks into loose, disturbed, soil suggests that special importance was accorded to the site for the returning community. It was not merely a convenient place from which to undertake subsistence activities, but was invested with significance that transcends utilitarian use.

Beyond the study area, the Early Mesolithic site at Unstone is not unique in the aforementioned respects; recent work at Star Carr has recorded the remains of a similar structure that is reputed to be the oldest residence recorded in the British isles (Milner *et al* 2013: 65), and includes the repeated construction of hearths on the same spot. Another structure of this kind, dating to the Later Mesolithic, has been recorded at Howick in Northumberland (Brück 2008: 249; Milner *et al* 2013: 31). The Howick structure has phases of hearth construction that suggests the site was repeatedly used over a period of a century.

More substantial structures indicative of considerable investment in particular locations by groups during the Mesolithic have been recorded at Stonehenge, Hambleden Hill, Boscombe Down and at various locations across Scandinavia (Cummings 2002: 112; Conneller *et al* 2012: 1016; Boethius 2016). Similar evidence for substantial structures not normally associated with hunter gatherer societies in Europe (although common elsewhere, such as Japan for example; Habu 2007; Imamura 1996) have been recorded at Star Carr since the 1980s (Conneller *et al* 2012: 1007; Milner *et al* 2013: 54-58). The workmanship of the timber working at Star Carr, moreover, suggests that as early as the Early Mesolithic carpentry skills were of a sophisticated order (Conneller *et al* 2012: 1016). The scale of the construction, it has been suggested, is indicative of a considerable collaborative effort by large numbers of people (Milner *et al* 2013: 60-61).

The above circumstantial evidence from beyond the study area strongly supports the interpretation that by as early as the Early Mesolithic period, particular places and landscape features had acquired special significance for inhabitants, as has been suggested elsewhere (Barton *et al* 1995*;* Mithen 1999: 1017; Cummings 2002; Brück 2008: 249).

However, Unstone, the only similar site in the present study area, is only one site. The well known site at Deepcar, South Yorkshire, which also has evidence for a structure incorporating a hearth does not appear to have been repeatedly re-used. One site does not prove that attachment to particular locales was a general phenomenon or that the group that occupied it had any sense of regional identity. We might be able to explore that possibility at the regional scale by comparing assemblages across the study area, in their localised contexts. Unfortunately Early Mesolithic sites in the study area are insufficient in number to be statistically significant, and we do not have the same kind of contextual evidence from other sites and concentrations in order to establish detailed local sequencing. We can, however, consider undifferentiated Mesolithic data, some of which is presumably Early Mesolithic in date, and complete the analysis with Later Mesolithic data. Circumstantial support can be provided by then analysing data that is of undifferentiated prehistoric provenance. That much increased dataset will furnish enough locations to be statistically significant, and over more than one sub-period will provide a simple sequence that will establish at the broadest scale of analysis the extent to which particular places in the landscape were returned to. If it can be established that locations were returned to in order to carry out the same activities then the importance of those places will be proved. The question then will be what does that importance signify?

Undifferentiated Mesolithic activities

Undifferentiated Mesolithic domestic tools can be mapped at all of the locations mentioned above (Figure 7.13, table 7.3), with the exception of Deepcar and Misterton Carr, from which better dated information is available. Unstone has Mesolithic material, but this was generated in earlier fieldwalking by the Hunter Archaeological Society (Courtney n.d.), rather than during the excavations which followed. The undifferentiated Mesolithic data includes those sites that did not include domestic tools that can be specifically dated to the Early Mesolithic, such as the Upper Meden Valley sites and Elmton (Figure 7.13, table 7.3). New sites can be added with this data, including the small site at Morehall, in the Upper Don Valley, Langsett Reservoir in the Little Don Valley, Chesterfield in Derbyshire, Mexborough in South Yorkshire, Scratta Wood in North Nottinghamshire, Cresswell Crags in North Derbyshire/North Nottinghamshire and the Don Gorge in South Yorkshire. All of these places with the exception of Scratta Wood and Canklow Woods are situated by significant waterways. Almost all are also either on or in very close proximity to river confluences. The assemblage at Chesterfield occupies a scarp edge overlooking a confluence, similar in that respect to Deepcar. Both Morehall in the upper Don valley and the Don gorge locations below Cadeby Cliff are situated on river terraces overlooking small floodplains. These are towered over by precipitously sided high ground.

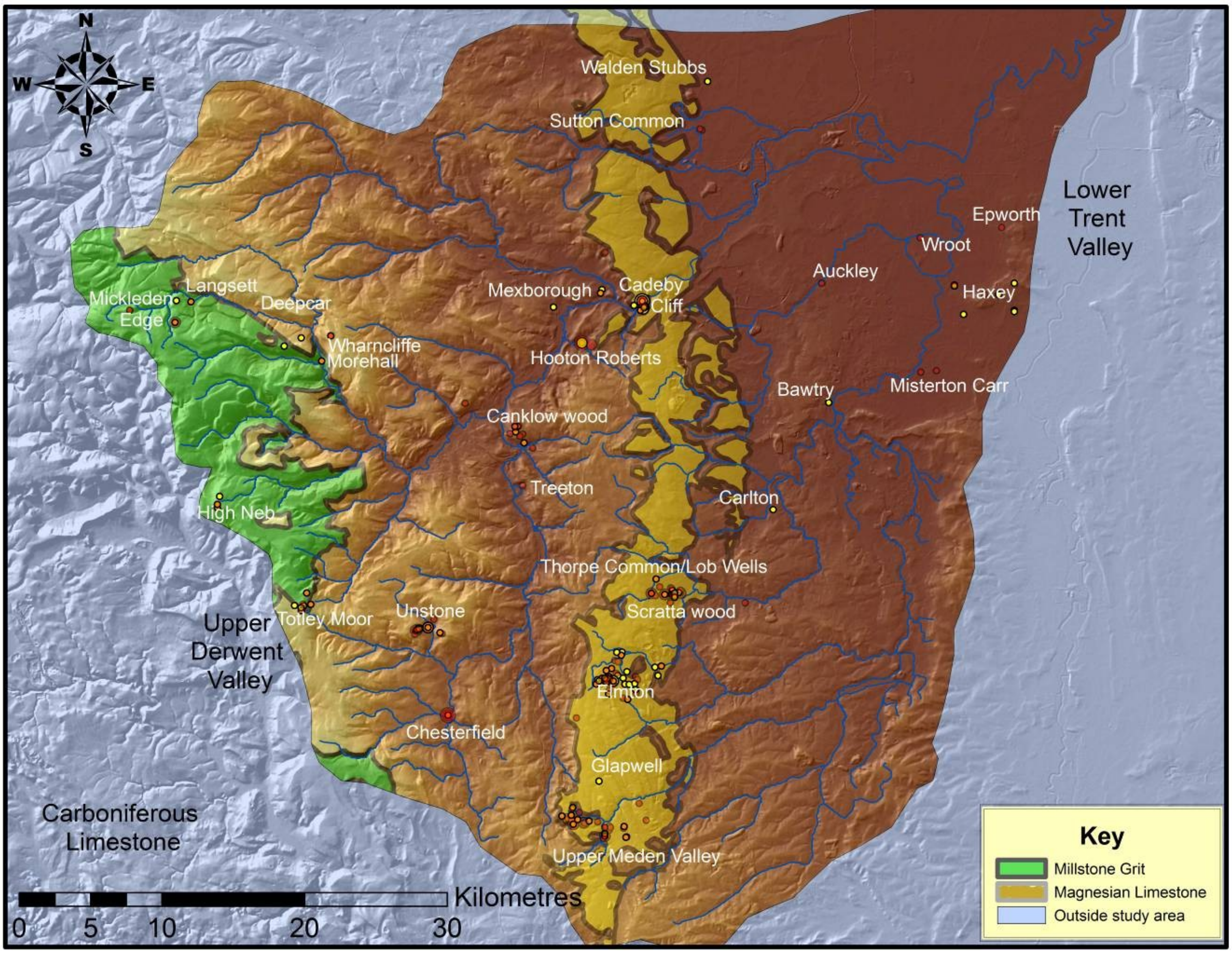


Figure 7.13: Distribution of Mesolithic domestic related tools (yellow), tool making related artefacts (red) and both (orange). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Scratta Wood lies between two streams that have their confluences with the nearby river Ryton, a tributary of the Idle. It is slightly unusual in being less clearly sited by a waterway than is the case elsewhere, and in occupying a gentle north facing slope overlooking the Ryton Valley, rather than in a more sheltered position. To that extent it resembles the site at Elmton.

The addition of tool making related artefacts follows the pattern noted for the Early Mesolithic, with an almost identical distribution to that learned from domestic related tools (Figure 7.14, table 7.3).

Hunting related tools also occupy the same contexts for the undifferentiated Mesolithic, with the exception of High Neb, which has no hunting related tools and Sutton Common, which has no relevant domestic related artefacts and only a single tool making artefact (Figure 7.14, table 7.3). Sutton Common occupies a landscape context similar to Misterton

Carr in most respects, facing the Levels on a small "island" of slightly raised ground (Sides and Symonds 1987; Van De Noort and Ellis 1997), with higher ground behind, to its west. In this it also resembles the sand dune overlooking the floodplain of the river Idle at Tiln, North Nottinghamshire, where approximately 3000 chipped stone artefacts were recovered (Challis 1997).

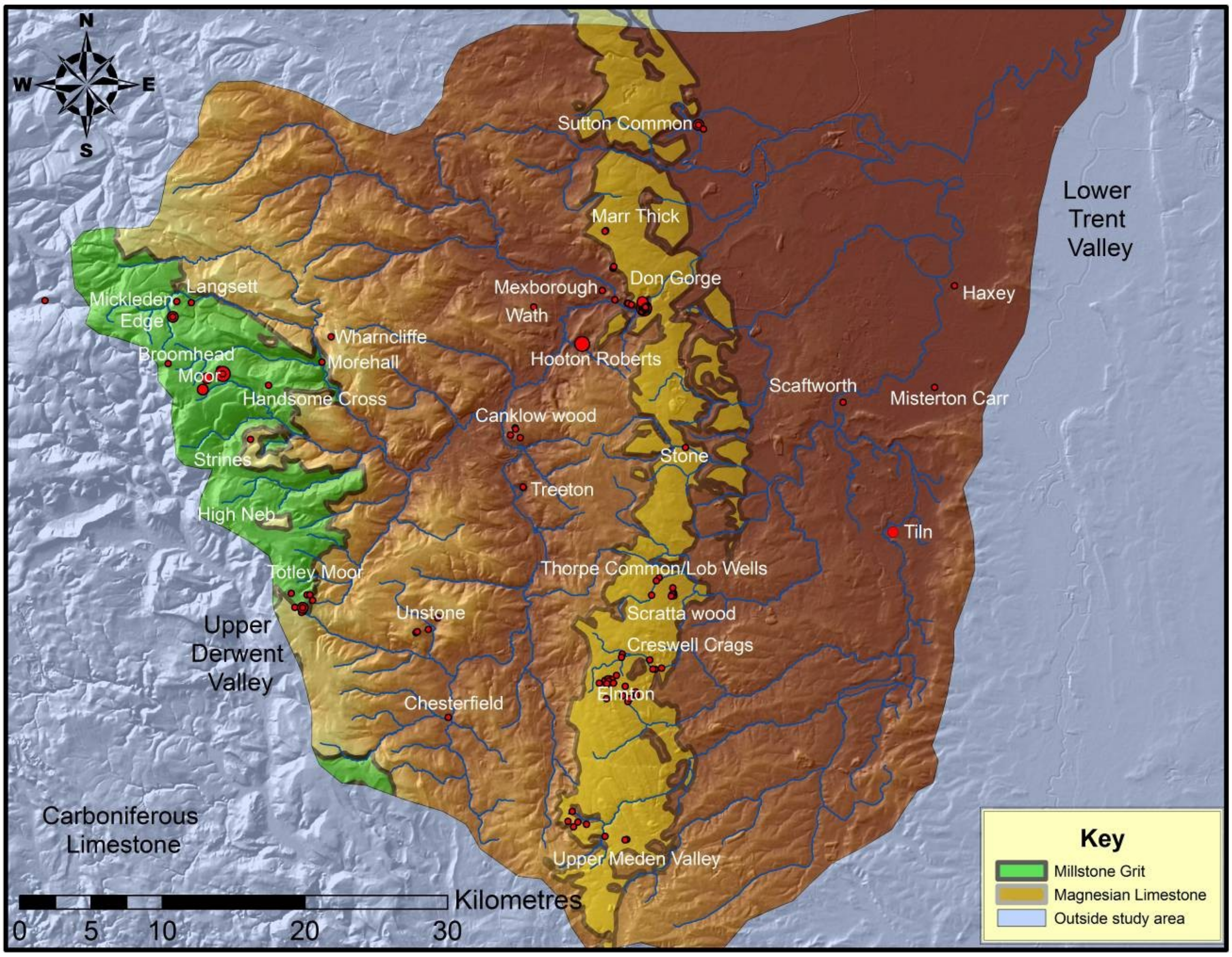


Figure 7.14: Distribution of Mesolithic hunting related tools. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

There is very little that is significantly different from the Early Mesolithic in terms of the contexts for undifferentiated Mesolithic activity, the main contribution of which is to add more sites, in very similar contexts, and greater volumes of data. The most important difference is to note that hunting related activities appear to have broadly speaking the same distribution as other activities.

Late Mesolithic activities

Late Mesolithic artefacts were as widely dispersed as the undifferentiated Mesolithic artefacts (Figure 7.15, table 7.3). The disappearance of evidence from Unstone suggests that the fieldwalked material collected by the Hunter Archaeological Society, from in and around the confirmed Early Mesolithic site of Unstone 1 prior to its excavation, was almost certainly of Early Mesolithic provenance on the balance of probabilities. Data relating to the Late Mesolithic is now available from Wroot, a raised area in the Humberhead Levels that by that period was probably becoming increasingly isolated in an environment that was developing fens and bogs (chapter five). The volume of data for tool making activities increases (Figure 7.16), which is probably a function of the specific core reduction strategies employed in the Late Mesolithic, and which must have, weight for weight, generated greater numbers of individual artefacts (Spikins 2000: 114; Figure 7.16).

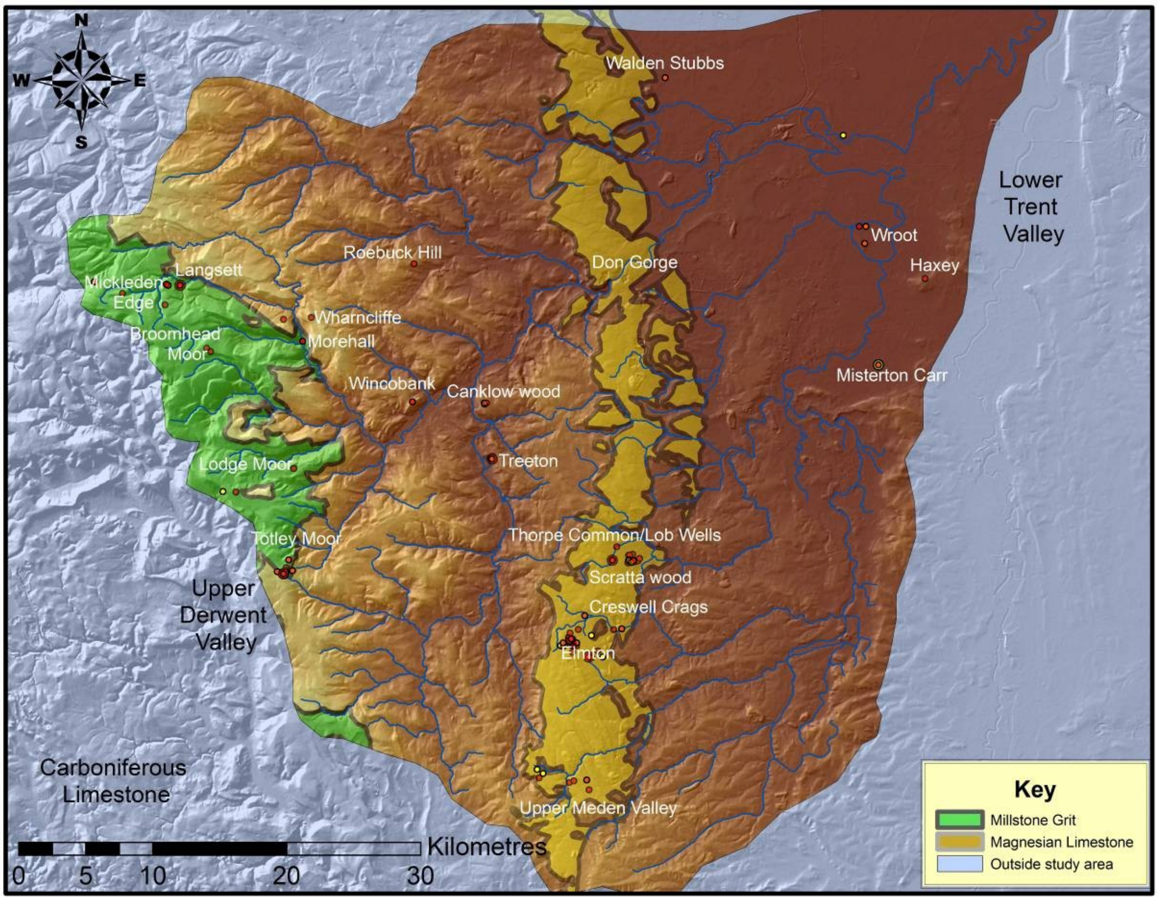


Figure 7.15: Late Mesolithic hunting related tools (red) overlying domestic related tools (yellow) and both (orange). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

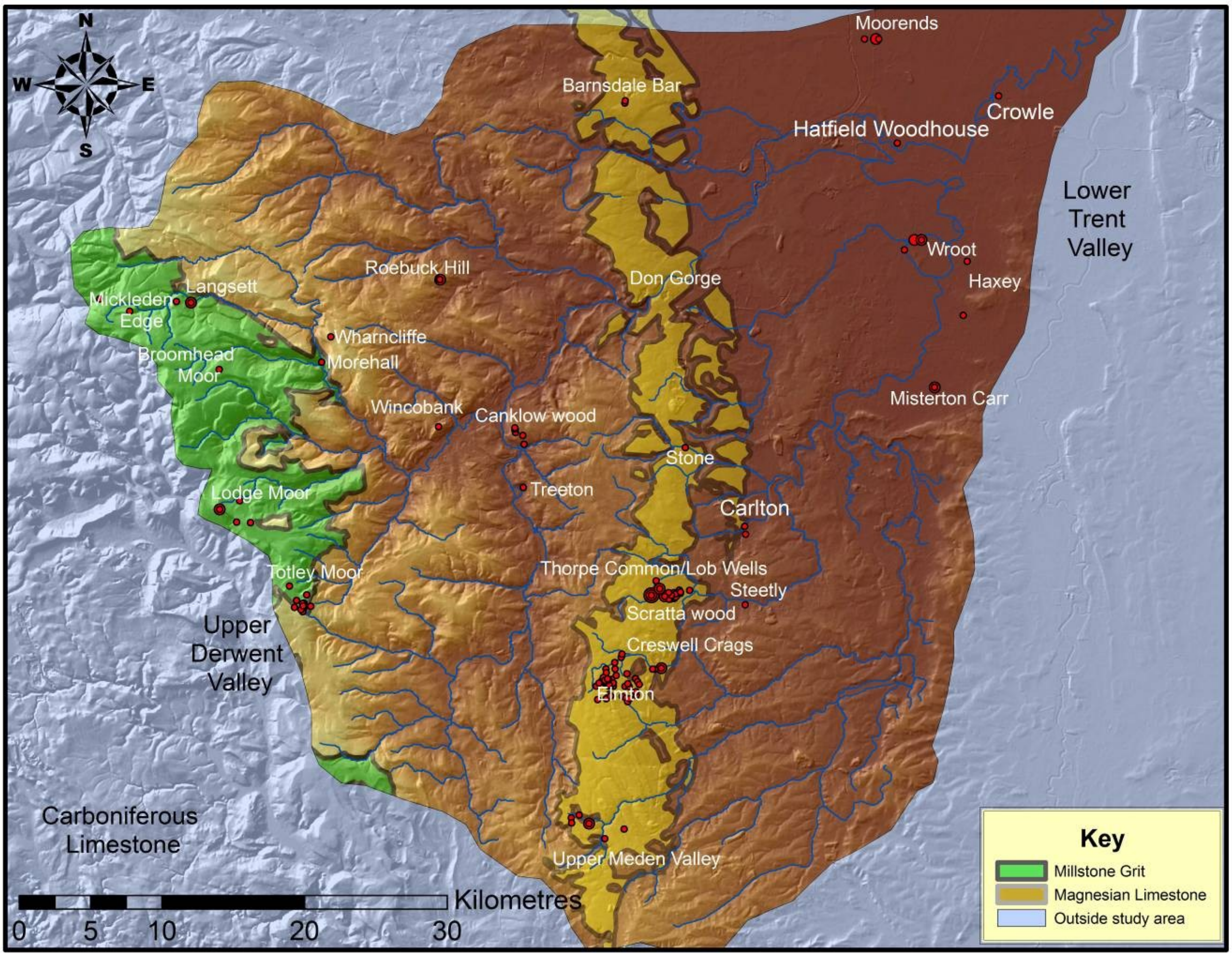


Figure 7.16: Late Mesolithic tool making related artefacts. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Undifferentiated prehistoric artefacts

Artefacts in the database that are designated as "prehistoric" could easily be dismissed as being of very limited use when attempting to understand changes over time. They could potentially relate to any period of human activity until the end of the Bronze Age and possibly even beyond (Ford *et al* 1984). Nevertheless, they can be used as supporting circumstantial evidence in places from where dated assemblages have been recorded, particularly at locations where only one period is represented. Figure 7.17 and table 7.3 shows the distribution of domestic related artefacts that fall into this category.

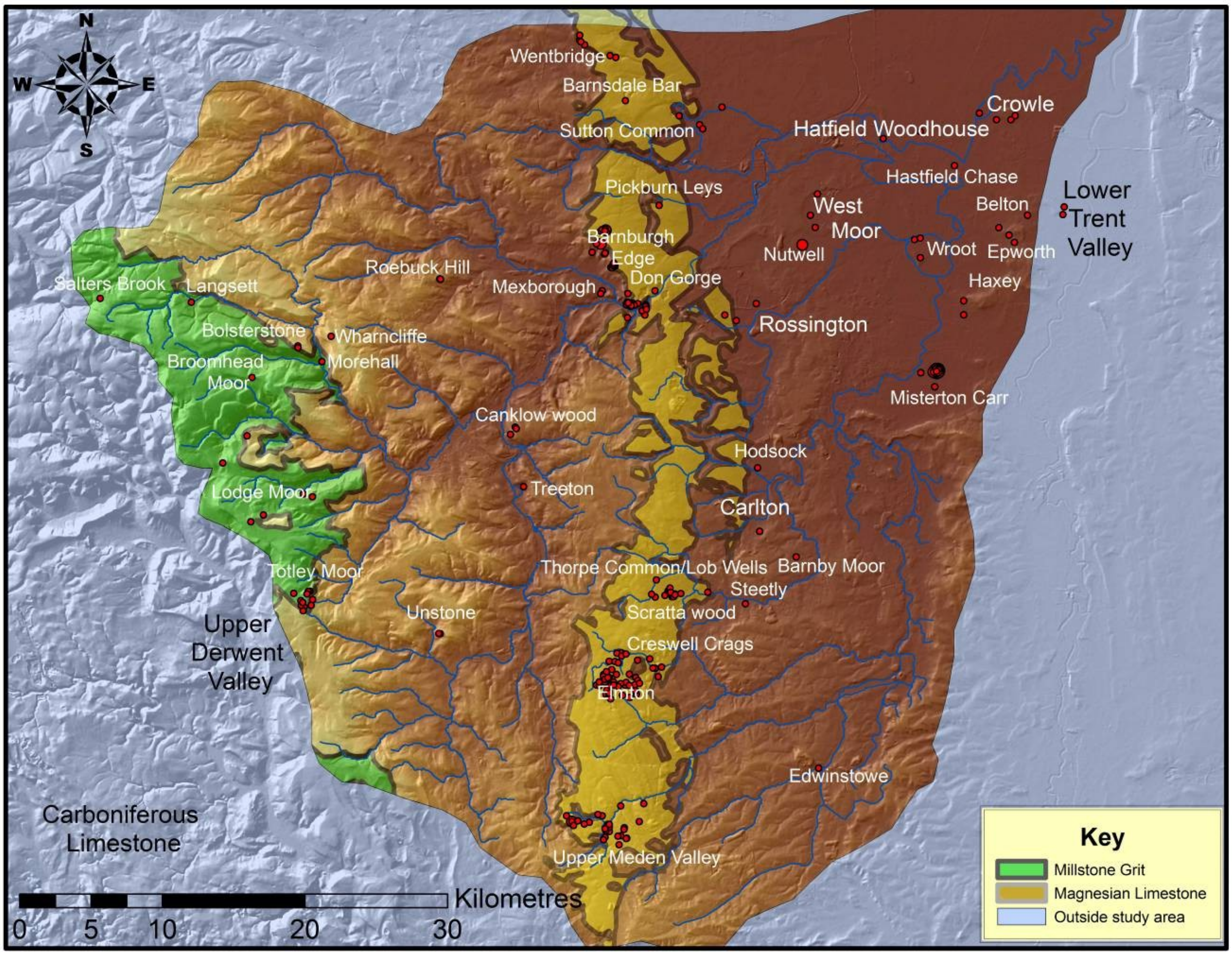


Figure 7.17: Distribution of "prehistoric" domestic related flint artefacts. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

It will be noted that Unstone, a discrete Early Mesolithic site, records such finds. Other sites of Mesolithic date recording "prehistoric" domestic tools include Treeton, Roebuck Hill, Sutton Common, Thorpe Common Rock shelter and Lob Wells Rock shelter in South Yorkshire. The assemblages from Lob Wells and Thorpe Common were analysed by myself, and dated only on typological grounds rather than contextual. In the case of these sites the assemblages as a whole belong to the Early Mesolithic. Sites with modest amounts of later material, but of essentially Mesolithic character, that record "prehistoric" domestic tools include Morehall, Canklow, and the Don Gorge in South Yorkshire, Wroot in North Lincolnshire, and Misterton Carr in North Nottinghamshire. Sites of a more broad multi-period nature with a Mesolithic presence include Scratta Wood and the Upper Meden Valley sites in Nottinghamshire, and Totley Moor and Elmton in North Derbyshire.

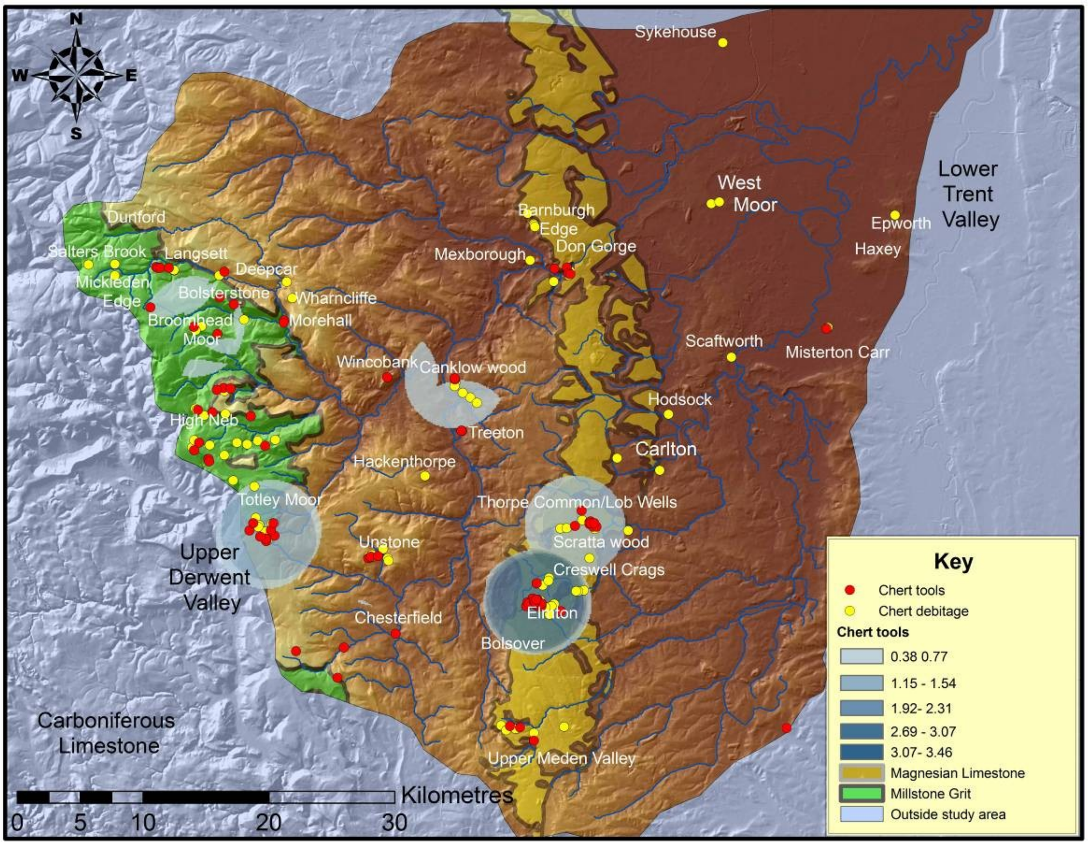
Even if one assumes that most of this "prehistoric" material relates to later periods (anecdotally, the Palaeolithic has almost no presence in the database, although several probable Palaeolithic artefacts were recorded from Elmton), this data adds to the impression that domestic related activity was the norm at all of the above sites during the Mesolithic.

The difference between chert and flint

One more important aspect of the data needs to be examined in broad terms. That is the character of the materials used for chipped stone tools. It is well known that there is nowhere in the study area where there are good sources of appropriate raw material for crafting stone tools. All material must therefore have been brought from elsewhere. A profitable potential source of investigation in this respect would be a study of the different sources of raw materials used across the study area, in the kind of detail that has been undertaken on Early Mesolithic assemblages in southern Germany (Jochim 2006).

Unfortunately constraints of time and the broad nature of the present study have not allowed such work to take place. However, I have taken note during data collection of the differences between artefacts made from flint and chert. Anecdotally, almost all chert recorded is of the glossy black variety that is believed to have originated in the vicinity of Monsal Dale in South West Derbyshire (Edmonds and Seaborne 2001: 29). The source was most widely accessed in the Later Mesolithic, and later in the Peak District (Edmonds and Seaborne 2001: 29; Garton 1991). Within the study area its presence collapses in the Early Neolithic (table 7.1). The majority of the flint recorded is of the pale grey variety mottled white that is known from the North Lincolnshire and East Yorkshire Wolds, or translucent pebble flint known from drift deposits on the adjacent east coast (Needham 2008: 317; Barrowclough 2008: 63). These are the nearest sources of adequate quality raw material to the study area.

The distribution of Later Mesolithic, undifferentiated Mesolithic and Prehistoric chert (assumed to mainly relate to the Later Mesolithic on the basis of the above), shows that chert is almost entirely absent on the eastern side of the study area (Figure 7.18).



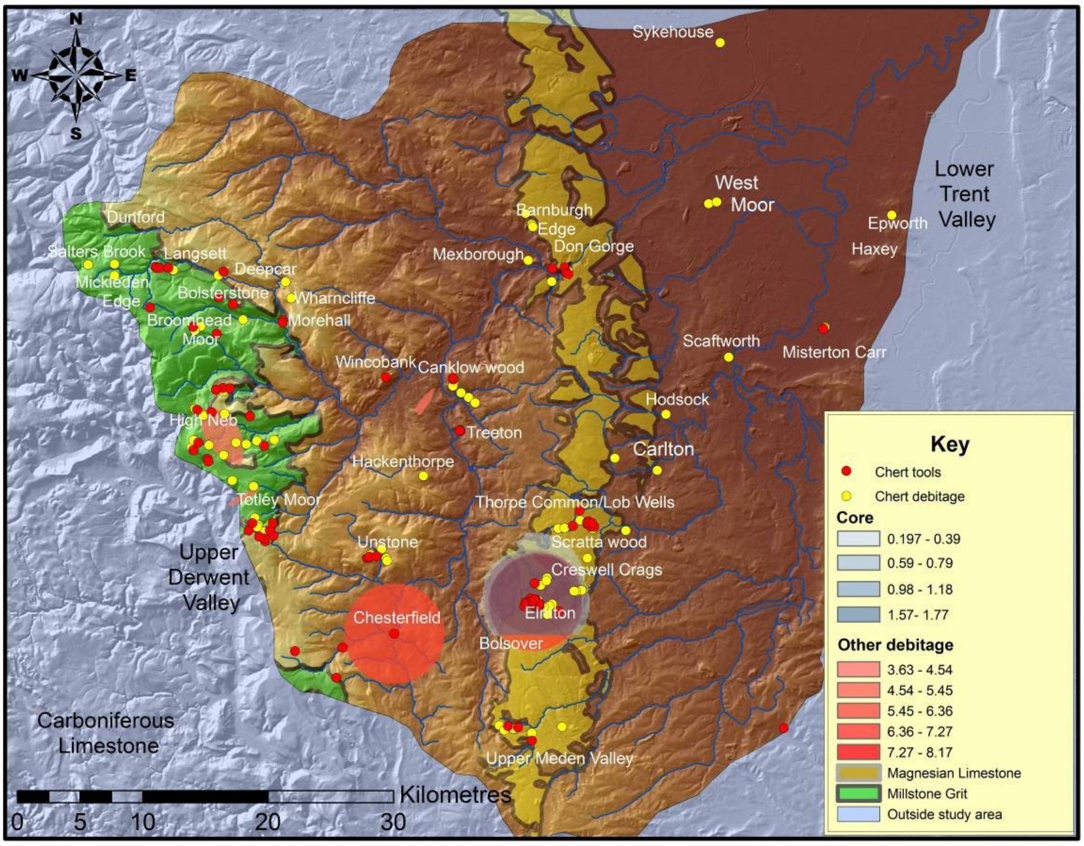
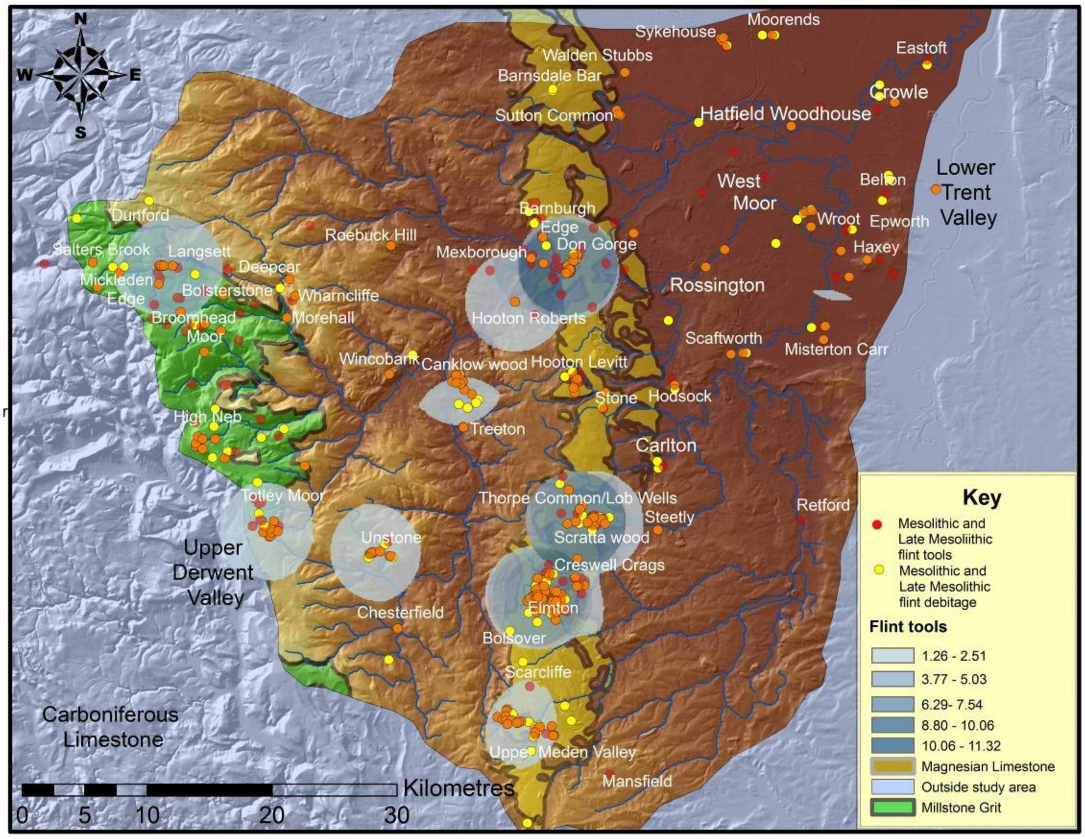


Figure 7.18: Locales with higher densities of chert tools (top) and debitage (below). Higher density of cores and other debitage together are purple. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.



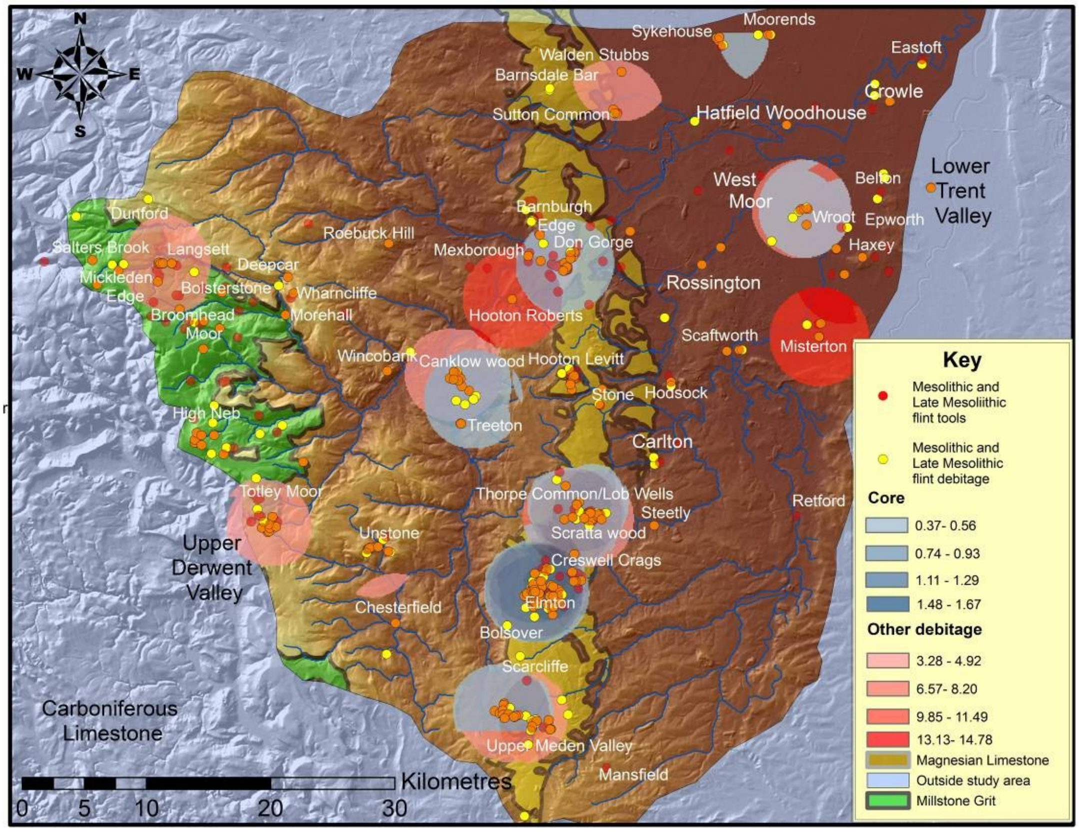


Figure 7.19: Locales with higher densities of flint tools (top) and debitage (below). Orange findspots include both. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The distribution pattern reflects the location of the source for the majority of chert, with material being recovered to the south and west of the study area in most cases. The further away from the source, the more limited becomes its distribution. However, the distribution of flint does not reflect the aforementioned in quite the same way (Figure 7.19). In fact more tools are recovered in the west than in the east, where its probable main source is located (Figure 7.19). This, and the disparity in quantities (table 7.1), supports the interpretation that journeys to the east to obtain raw material were more routine than to the south-west. Chert was somewhat unusual in the study area and its distribution indicative of the unusual nature of journeys to its chief source from within the present study area.

More detailed study of the distributions of debitage and tools can enhance the foregoing interpretation. This includes the analysis of density of artefacts across the whole of those parts of the study area to which their distributions relate. Comparison of the distribution of areas with higher densities of debitage and tools shows that greater densities of flint debitage are located on the eastern side of the study area than in the west (Figure 7.19, lower map). Moreover, higher incidence of cores relates to the Magnesian Limestone and eastwards. This does reflect (almost literally) the pattern observed in chert distribution, where cores have a slightly narrower and more south-westerly distribution of higher incidence than other debitage (Figure 7.18). In general, debitage is more densely distributed nearer to the most important probable source in both cases, with cores more so.

The caveat to the above is the unknown detail concerning the many "scatters" of chipped stone (table 7.2). Until very recently, the assemblage at Tiln in North Nottinghamshire belonged to this group in the database, but I now know it to consist of approximately 3000 artefacts. The detail needed to include the assemblage in the analysis above concerning differences between chert and flint, and the different kinds of artefacts is still lacking. The inclusion of this data and the other "scatters" might alter the interpretation, which must therefore remain provisional.

The distributions and quantities of the respective materials, and how they relate to journeys in order to obtain raw material correlate with the drainage of the study area. This is most clear for the Later Mesolithic, since it is believed that Chert artefacts generally relate to the Later Mesolithic (Spikins 1999: 10). The waterways, as we have seen, define the locations of concentrations of chipped stone and related locales. Movements along routeways defined by the courses of the study area's waterways brought stone for the making of most tools from the sources that lay beyond the lower reaches of the River Don to the east and north-east.

Discussion

There is little appreciable difference between the kinds of environmental and topographical contexts that were the preferred locations for the various activities analysed, when examined diachronically. Diachronic differences that do exist indicate that domestic related activities were undertaken at fewer locations in the Early Mesolithic than later. The contexts for more widely distributed hunting related activities noted for the Early Mesolithic, tend also to encompass domestic related activities as time progresses.

It has been suggested (Donahue and Lovis 2006: 252) that the association of Early Mesolithic sites with distinctive features in the landscape, and with river confluences in particular, is a manifestation of the need of people in a colonising phase of activity to be able to identify and re-identify specific places in order to return to them. This idea, applied to an area of eastern England to the immediate north of the present study area, is supported by the analysis here which recognises the same correlation. Moreover, since this practice evidently continued beyond the Early Mesolithic at the same locations, and same kinds of locations, it can be concluded that not only had specific sites come to be regarded as places to which people returned to engage in routine activities, but that new places which shared similar characteristics were looked upon with special favour. However, the extent to which this represents merely a “colonising” phase of activity, or colonisation at all is open to question.

Differences in the spatial distribution of different landscape contexts are detectable, including at locations that are known to have been revisited. In broad terms, concentrations that are located along the middle and upper reaches of the Don and its tributaries in their upper reaches occupy locales overlooking or adjacent to confluences, frequently themselves overlooked by higher ground. Such locales include the Don Gorge, Mexborough, Hooton Roberts, Roebuck Hill, Unstone, Morehall, Deepcar and the Upper Meden Valley sites. Those at the apex of high ground include Canklow, Totley Moor and High Neb. Both Totley Moor and High Neb lie at the watershed and where tributaries of the Don rise in springs. Moreover, Totley Moor lies at the headwaters of springs that feed in to a tributary of the Rother as well as the Don, and lies only a short distance from the Upper Derwent Valley. It is no surprise that this locale in particular features so often in the distribution maps above throughout the Mesolithic. It lies at the interface between the zones of distribution of chert and flint as well "at the meeting place of many different worlds" (Kitchen 2000: 25). Canklow is unusual in occupying a high point in the landscape that is largely surrounded by the confluences of a number of the waterways, but where the location itself has no known spring as at High Neb or Totley Moor, and where the significant waterways are not immediately adjacent to the site.

The other broad landscape grouping concerns those associated with the Humberhead Levels. These include Sutton Common, Wroot, Hatfield Woodhouse, Scaftworth, and Haxey.

That there might be an association between these low lying locations on the edges of the Levels and cultural choice that goes beyond mere adaptation to local environments is suggested by the presence of similar concentrations on the Magnesian Limestone in the south of the study area, where the concentrations at Scratta Wood and Elmton do not fit easily with the general pattern noted for those on the Middle and Upper Don. They are not located so unambiguously in association with significant waterways, unlike the sites on the Upper Meden valley in the extreme south of the study area. To that extent the Upper Meden locations have more in common with those in the Middle and Upper reaches of the Don.

The locations at Scratta Wood and Elmton are near waterways that feed into the Idle river system. The Idle and its valley are low lying, with its east facing slopes descending into the valley bottom in a gradual gradient reminiscent of that which descends from the Magnesian Limestone north of the Don Gorge into the Humberhead Levels (Figure 7.20; Figure 7.21). Some of the concentrations on the Humberhead Levels are associated with significant waterways, but in a landscape that was probably replete with channels in the Early Mesolithic and more so later, with the development of areas of standing water. It is possible that, being used to an environment where a variety of wetland contexts were utilised and associated with, people inhabiting the vicinity of Scratta Wood and Elmton were comfortable not being associated as directly with significant waterways as people used to inhabiting the middle and upper reaches of the Don.

The differences above are broadly consistent with the differences between the distributions of chert and flint, and their locales of higher density. They also potentially correlate with significant likely differences in the micro-climates of the areas to the east side and west side of the Magnesian Limestone, as discussed earlier in the chapter on environmental changes.

The developing interpretation is consistent with patterns noted in studies that show differences in lifestyles between people utilizing coastal resources and inland resources (Coles 1998: 74). Analyses of bone-isotope ratios in animals and humans from various Early Mesolithic contexts in northern Europe indicate that there are differences between groups based in coastal contexts and inland contexts (Clutton-Brock and Nyargard 1990: Donahue and Lovis 2006: 254). Data from Seamer Carr and Star Carr indicate that predominantly coastal resources were utilised in the lower vale of Pickering (Coles 1998: 74; Clutton-Brock and Nyargard 1990: 648), whereas locations in Sweden are often indicative of predominantly inland resources. These are suggestive of lifestyle differences and, crucially, that they had ranges of seasonal movement that were separate, and did not routinely include both coastal and inland environments (Coles 1998: 74). The implication of this is that separate groups of people understood their ways of life in different ways, and in different parts of the landscape. The same phenomenon has been observed in southern Germany, where Early Mesolithic groups using differently sourced raw materials have been mapped in assemblages occupying different kinds of landscape context (Jochim 2006: 210-11).

Figure 7.20: The Idle basin from Elmton, North Derbyshire, facing north-east. Source: author.

Figure 7.21: The Humberhead Levels from Bilham, South Yorkshire, facing East. Source: author.

The distributions of chert and flint, along the significant waterways, support the suggestion that the east flowing river systems defined the main routeways through the landscape, and that most journeys connected with the procurement of raw material were to and from the east. The chert, in most cases, is associated with the aforementioned locations of the Middle and Upper reaches of the Don and its tributaries, although significant quantities of chert have also been recovered from Elmton.

The implication of the above is that different assumptions about what constituted a suitable environment to be based in for routine activities existed in the uplands to the west and the lowlands, to the east side of the Magnesian Limestone. The Magnesian Limestone belt itself was an area of more diverse inhabited character, where groups with arguably different approaches to life interacted more closely.

Concluding remarks

I have shown above that routeways through the landscapes of the study area that are defined by the courses of the study area's significant waterways existed throughout the Mesolithic period. Other research has also drawn attention to the link between assemblages and riverine environments in the study area (Greaves 2011; Grassam and Weston 2015). It does not follow from this that people did not traverse the landscape in other ways, and finds that have been recovered in other contexts confirm that. It does, however, support the interpretation that to navigate the landscape by routes defined by waterways was probably more routine. As has been suggested for North Yorkshire (Donahue and Lovis 2006: 252), and along the Don Valley (Greaves 2011), such routine journeys were conducted as part of travels to and from the east during the course of routine movements by mobile communities. It was shown in chapter two how hunting and gathering groups in more recent times have understood themselves as regionally based groups by the extent to which they recalled and shared memories of journeys through familiar landscapes. This is consistent with the suggestion made by Buckland and Dolby (1973: 25-26) that the Early Mesolithic flint assemblage at Misterton Carr had closer affinities with the assemblage from Deepcar in the Upper Don Valley than with elsewhere. At the broadest scale of analysis then, I would like to suggest that associations contributing to senses of regional identity in the study area were strongest with the east, rather than other parts of the British mainland. The south-west, however, also fell within the orbit of groups whose centre of gravity lay in that direction.

The evidence from Unstone indicates that at least one community in the Early Mesolithic repeatedly returned to the same site and erected structures that, taken as a merely practical expedient, do not make sense. Special significance was invested in the precise location of structures which transcend practical considerations. I have further argued that differences exist between the contexts for groups of locations throughout the Mesolithic that cannot easily be explained in utilitarian or practical terms alone. The evidence is only discernible at the broadest scale of analysis, but supports the idea that groups in the middle reaches of the Idle drainage basin might have had closer affinities with people living on the Humberhead Levels than elsewhere in the study area in the Later Mesolithic. The different characteristics between such locales can be interpreted as being indicative of regional differences in senses of group identity. This is broadly supported by the differences in the distributions and densities of chert and flint.

The site at Unstone is intriguing, but In order to have better evidence for the specific association of communities with particular places, places which have had time and effort invested in them, clearer evidence for those investments are needed. For there to be patterns of those investments which suggest affinities between communities more examples are also required. In the next chapter, these possibilities will be explored with a dataset that is smaller in volume but much greater in diversity, as lifestyles began the gradual change from wild resource exploitation to increased management of resources that were domesticated, in the Neolithic period.

Chapter 8:

The Neolithic

Introduction

Chapter two explained, using examples drawn from ethnographic, historical and social geographical scholarship, how senses of regional identity have been expressed over time. The works cited were drawn from across the world, although particular emphasis was placed on examples from the present study area. Common features drawn from this survey included the undertaking of routine activities, and especially work related activities, with familiar people in familiar environmental contexts. I then suggested that such places might be deliberately commemorated by their embellishment with structures or monuments, confirming their status as places of specific importance. For the locales themselves to be the significant factor (rather than being coincidental) repeated revisiting of sites for the undertaking of activities, and their deliberate marking by the deposition of artefacts and the construction and modification of monuments would need to be demonstrated.

In chapter seven I showed how specific locales were the locations of concentrations of activity, and how many of those places were locations that were revisited over time. These places in the landscape were differentiated in the distributions of chert and flint, indicating that groups whose ranges of movement included either landscapes to the south-west of the present study area or to the north-east overlapped on the south western side of the present study area. One of the locations, Unstone in Derbyshire, yielded evidence of a probable domestic structure repeatedly erected on the same site that proved a commitment by people to a specific location.

Chapter eight begins with a brief summary of the most important classes of data relating to the Neolithic. Along with the chipped stone, these include polished stone axes, adzes, and pottery. Data that straddles the beginning of the Bronze Age is also considered, such as petroglyphs and maceheads. For the first time, monuments will be considered as a class including long barrows and henge monuments. The summary serves to characterise a large and diverse dataset, and facilitate more easily the discussion to follow. Further detail can be sought in the project database.

The discussion that follows the summary of data adopts a similar approach to chapter seven. It will consider which parts of the landscape were the foci for routine activities, and which places were deliberately chosen to deposit artefacts, create and modify monuments or otherwise mark the landscape. Patterns discerned in that process will then be considered in the light of the research questions. First, however, the Neolithic and its date range will be defined.

The difficulties and complexity of defining the date range for the Neolithic and other periods are well known (Clay 2006: 71; Bradley 2007: 88-91; Needham 2012) with variants on a number of schemes being in common use. This has been further complicated by the recent custom of combining the Late Neolithic with the Early Bronze Age (Clay 2006: 71), culminating in the proposal for (in Britain) a new period division of the Chalcolithic (Needham 2012). There are good grounds for following this based upon the acknowledged similarities between the Late Neolithic and Early Bronze Age. These include the advent of copper metallurgy and Beaker pottery for example (Needham 2012), and a plethora of diverse manifestations of increased and materialised "complexity" perceived by a number of scholars (Roberts and Frieman 2012: 30; Sheridan 2012: 41-43; Heyd 2012: 110). However, my view is that to introduce this new period division risks replacing one chronological orthodoxy of questionable historical validity with another. Here, therefore, chapter divisions are loosely based on the more traditional divisions.

The "Neolithic" here incorporates elements from the end of the Mesolithic period and the onset of the Bronze Age. This might seem awkward and lacking in elegance, which is precisely the point: the chronological periods do not have neat beginnings and ends, and too great a preoccupation with the construction of archaeological "periods" are a distraction from the task of attempting to understand complex changes in the archaeological record. The scheme followed here draws upon Griffith (2014) with the Early Neolithic starting at 3800 BC, and the Later Neolithic at c. 3000 BC. The date of 2200 BC is taken to mark the end of the period, in line with the preferred scheme of Bradley (2007).

The archaeological evidence from the Neolithic has much in common with the preceding Mesolithic, in that chipped stone forms a dominant part of the dataset (Table 8.1; Table 8.2). The character of the chipped stone alters over the course of the Neolithic, but in its earlier phase Neolithic working traditions changed slowly. Yet changes did take place over time, with the ubiquitous microlith based composite tools giving way to the leaf shaped arrowheads common in the Earlier Neolithic, and with narrow bladelets giving way to broader blades (Butler 2005: 120-21; Myers 2006: 71). The introduction of pottery represents an entirely new class of material culture. Monumental architecture in the form of long barrows also feature in the Early Neolithic. More radical changes in chipped stone working traditions took place during the later Neolithic and new forms of material culture made their appearance along with henge monuments (Richards 1999: 23; 54; Harding 2003; Butler 2005: 155). These developments help to inform the chronological framework in the absence of calibrated radio carbon dates or other scientifically derived forms of absolute dating, although these are used where possible.

The character of the assemblage and its content

Chipped Stone

The clearest change from the Mesolithic is that quantities of artefacts are much reduced overall. This in part relates to differences in reduction sequences, with changing tool making traditions resulting in fewer, larger artefacts. It also partly relates to the increasing difficulty in identifying datable artefacts, and especially debitage. Distinctive forms of debitage such as bladelets, bladelet ends, microburins and worked out bladelet cores are no longer produced. Their successors are difficult to distinguish chronologically. Consequently, later material to a considerable degree becomes subsumed within undifferentiated "prehistoric" assemblages (chapter seven: tables 7.1 & 7.2).

For the sake of convenience, the relevant data included in tables 7.1 & 7.2 in chapter seven are reproduced in 'Tables 8.1 & 8.2' below.

Systematically recovered chipped stone artefacts				
Meso-Neo	E.Neo.	Neo	L.Neo	L.Neo-EBA
3265	509	366	93	546
Unsystematically recovered chipped stone artefacts				
Meso-Neo	E.Neo.	Neo	L.Neo	L.Neo-EBA
383	30	434	21	329

Table 8.1: Chipped stone artefacts.

Systematically recovered chipped stone scatters				
Meso-Neo	E.Neo.	Neo	L.Neo	L.Neo-EBA
4	0	5	0	19
Unsystematically recovered chipped stone scatters				
Meso-Neo	E.Neo.	Neo	L.Neo	L.Neo-EBA
4	0	14	0	29

Table 8.2: Scatters of chipped stone of unknown quantity and character.

Another notable change from the Late Mesolithic marks the almost complete cessation of chert in use as a source of raw material during the Earlier Neolithic (table 8.3). The implications of this for the research questions will be discussed later.

Systematically recovered chipped stone artefacts													
	Pre.	**Early Mes**	**Mes**	**Late Mes**	**Mes-Neo**	**Early Neo**	**Neo**	**Late Neo**	**L.Neo EBA**	**EBA**	**BA**	**MBA**	**LBA**
Flint 64933	20246	32911	6750	3103	3111	500	365	89	526	87	233	2	10
Chert 2210	755	270	657	333	154	9	1	4	20	2	5		
Unsystematically recovered chipped stone artefacts													
	Pre.	**Early Mes**	**Mes**	**Late Mes**	**Mes-Neo**	**Early Neo**	**Neo**	**Late Neo**	**L.Neo EBA**	**EBA**	**BA**	**MBA**	**LBA**
Flint 4832	2055	24	1139	159	374	30	432	21	326	34	234	1	3
Chert 197	107		31	44	8		1		3	2	1		

Table 8.3: The total chipped stone assemblage distinguished between flint and chert.

Pottery

Within the study area, pottery is limited. In later prehistory it is virtually absent (Chadwick 1999: 155; Cumberpatch in Buckland *et al*: n.d). Nevertheless, more is possibly in evidence than commonly realised, certainly within the present study period (table 8.4). Moreover, some specific locations from which pottery has been recovered are worthy of consideration in the present study, as will become clear later.

	E.Neo	Neo	L.Neo	L.Neo-EBA	Neo-BA	EBA	MBA	LBA	BA
Complete Vessels	6	2				5	7		13
Sherds	3	15	15	2 269(16)	9	27(2) 1		135(2)	16
Sherd scatters									2

Table 8.4: Chronological distribution of pottery across the study area. Figures in brackets represent approximate number of vessels where known. "Scatters" refers to surface collected sherd assemblages of unknown quantity and character.

Although, broadly speaking, the geographical distribution of the Neolithic pottery coincides with that of long barrows it does not, with one notable exception, come from the long barrows themselves. The remains of six Early Neolithic carinated bowls recovered from the long cairn at Whitwell in North East Derbyshire are the exception. This is the only significant assemblage from the Early Neolithic in the study area, with the remainder of finds consisting of small numbers of sherds or isolated finds of sherds that are of unknown type. Such bowls are characteristic of the Early Neolithic in Britain, with the carinations on the body rendering sharply defined shoulders (Gibson 2007: 69).

Two assemblages of Later Neolithic or Early Bronze Age sherds were recovered in developer funded excavations at Auckley, South Yorkshire, in the Humberhead Levels (Atkinson and Chadwick 1994; Chadwick 1995) and at Pastures Road, Mexborough, South Yorkshire (Weston 2012). Both assemblages include sherds recovered from pits. At Auckley, this includes sherds identified as three Food Vessels (Chadwick 1995), eight Beaker vessels and approximately five other vessels. Food Vessels and Beakers are often found in association with each other in funerary contexts, and the term "Food Vessel" was first coined by early archaeologists in order to distinguish them from the Beakers, on the assumption that since Beakers were deemed to be drinking vessels, the other type most probably were designed to contain food (Gibson 2007: 95). Functional assumptions notwithstanding, Beakers relate to the Late Neolithic and Early Bronze Age, and Food Vessels probably slightly later in terms of inception, relating to the Early Bronze Age.

Pottery sherds were also recovered from the site of the putative henge monument at Cadeby Cliff (Peace 1981), and from the rock shelters at Thorpe Common (Richards 1989) and Lob Wells (unpublished archive held by Creswell Crags) in South Yorkshire, and from Whaley rock shelter in North Nottinghamshire (Armstrong 1949: 71). Part of a Mortlake vessel was recovered in developer funded excavations near the putative hengiform feature at Wombwell, South Yorkshire (Mudd and Webster 2001; Morris and Lloyd 2002). Mortlake vessels belong to the impressed ware (or Peterborough ware) tradition which also includes Ebbsfleet ware and Fengate ware. These variants were until recently believed to form a chronological sequence, with the earliest form being the Ebbsfleet variant, related to the earlier carinated bowl tradition. The Mortlake variety followed from this and Fengate ware represents the latest phase. The sequence might still be valid, but the style as a whole was also thought to relate to the Late Neolithic. However, a recent re-evaluation of associated radio carbon dates has shown that all variants of the tradition were firmly established by 3000 BC, and had ceased production by the middle of the third millenium BC (Gibson 2007: 78). The style, therefore, belongs rather to the Middle Neolithic than the Late Neolithic (Woodward 2008: 290). Rudston ware sherds, and Beaker sherds, were recovered in developer funded work at Armthorpe in South Yorkshire (Rose and Richardson 2004), Rudston ware being a variant of Peterborough ware with a regional distribution in northern England (Richards 1999: 111).

Axes, adzes and mace heads

There are a total of 257 axes and fragments of axes from across the study area. Following Clough and Cummins (1988), of the major petrological groups present, 33% are Group VI artefacts, 25% flint, 8% Group I, 7% Group VII and 20% are ungrouped (Table 8.5).

Polished stone axes by known petrological group																		
I	VI	VII	VIII	IX	XV	XX	Flint	jade	Sand.	Grey.	Basalt	Dol.	Fels.	Hem.	Carb. Lime.	Mud.	Ign.	?
2	22	11	1	1	2	1	66	1	1	1								
Polished stone axes by probable petrological group																		
18	63	6						1			1	2	2	1	1	1	1	51

Table 8.5: The distribution of whole and fragments of polished stone axes by known petrology. The petrological determinations are those derived from Clough and Cummins (1988). The table also includes probable sources for those artefacts that have not been subjected to petrolographic analysis, but have been macroscopically examined either by the author or others.

The axes and adzes have almost all been recovered as surface finds, and the majority as stray finds. This makes the dating of the artefacts problematic beyond the designation "Neolithic". However, studies of the corpus of British stone implements concentrating on those recovered from securely dated contexts, or in association with better dated material have been useful in narrowing down the date ranges of all the major classes (Roe 1968; Smith 1979; Manby 1979). Polished stone axes are known to have been produced from the end of the fourth millennium BC, and in the case of Group VI (Langdale, Cumbria) axes perhaps as early as c. 3700 BC (Smith 1979: 18). The distribution of axes, however, at this early date is believed to have been limited to locales that were close to the sources of production (Smith 1979: 13; Edmonds 1995: 50). The present study area does not possess sources either of flint or other raw materials. Therefore, with the exception of the two Jadeite examples (Table 8.5; Figure 8.1; Sheridan 2007; Sheridan *et al* 2011), and the few derived from glacial erratics, the polished stone axes of the study area must date from approximately the time of the subsequent dispersal of axes later in the Neolithic. Group VI began to be dispersed from c. 3400-3000 BC (Smith 1979: 18; Bradley and Edmonds 1993: 40), as did Group IX (north east Ireland, Smith 1979: 20). Group VII (Graig Llwyd, North Wales) and Group VIII (South Wales) began dispersal from c. 2750 BC (Smith 1979: 19). Group I axes were probably distributed outside of Cornwall from c. 2000BC (Smith 1979: 17). Group XX (Charnwood, Leicestershire) probably relate to the late third millennium BC (Smith 1979: 20). All of the aforementioned petrological groups appear to have gone out of use during the first quarter of the second millennium BC (Smith 1979) and therefore overlap with the Early Bronze Age.

Of the two Jadeite examples, one, the Wroot axe from North Lincolnshire (Figure 8.1), is almost certainly of Ansteldt type to judge from its morphology. It is therefore probably a finished import of a type known to have been in production from late in the fifth millennium BC (Sheridan 2007; Sheridan *et al* 2010), and imported to Britain in the early centuries of the fourth millennium (Sheridan 2011: 415).

Flint sources of the river Trent gravels and the Wolds of Lincolnshire and East Yorkshire are significantly closer to the present study area than any other important source of raw material. However, it is likely that the vast majority of flint axes in the study area were crafted from flint derived from the boulder clays of the coast of East Yorkshire (Manby 1979: 71).

Figure 8.1: The Wroot axe. Courtesy of North Lincolnshire Museum. Source: author.

Adzes are sufficiently similar in morphology to axes that sometimes they can be mistaken for each other. The main distinguishing feature is that adzes are flat along one face including the cutting edge, much like a modern carpenter's plane, whereas axes taper at one end to the cutting edge on both faces. For the purposes of the present study, they will be analysed as a single category, since their precise (and arguably indistinct) technical function is somewhat irrelevant in terms of the research questions and scale of analysis. Of the 16 adzes, 12 are of flint, two Group VI (one petrologically confirmed), one quartzite and two undifferentiated "stone" examples.

Fifteen maceheads are recorded for the study area. Only one, recovered from Beauchief in Sheffield, is of confirmed petrological identity (Group XVIII), with the others consisting of quartzite (4), flint (2), an igneous stone example and others of unknown source. Three have been designated as Early Bronze Age (Hexthorpe (Doncaster), Epworth in North Lincolnshire and Lidgate near Totley Moor). An example from Wroot, North Lincolnshire, is claimed to be Mesolithic in date. As a group they probably therefore relate to the Late Neolithic or Early Bronze Age. This assumption is supported by studies elsewhere, in which it has been noted that where they have been recorded in situ they are most often associated with Grooved Ware pottery and chipped stone implements including plano-convex knives and transverse arrowheads (Roe 1968: 155-156; Edmonds 1995: 109-110). Sometimes they are found deposited in or close to the ditches of Late Neolithic henges such as Arbor Low in Derbyshire and the ring of Brodgar in Orkney (Bradley and Hart 1983: 186; Bradley 2007: 136). They are considered here along with axes on the grounds that they are made from similar types of material, are of a similar size, were probably also hafted, and were subjected to similar modification (polishing). It is, however, clear that chronologically they relate to the latest phase of the tradition of stone axe crafting (Smith 1979: 16) and perhaps continued to be produced slightly later into the Early Bronze Age than their antecedents.

Petroglyphs

Richard Bradley (1997: 34-49; 102; 217) distinguishes between petroglyphs that are simple and those that are complex. Simple petroglyphs consist only of cup marked stones of one or more cup marks, or cup marked stones that are surrounded by a single ring. Those deemed complex consist of cup marks either surrounded by multiple rings, or arrangements including interconnected rings that do not surround each other. These definitions are followed in the present study.

The assemblage in the present study area consists of 8 petroglyphs, 5 of which have been recorded by the author (two at Totley Moor, Derbyshire, two at Whitwell Moor, South Yorkshire and one at North America Farm, South Yorkshire). Three of these, including two at Ecclesall Wood, Sheffield, and Hollymoorside, North Derbyshire, fall within the category that Bradley terms "complex" (Figure 8.2; Figure 8.3), while the remainder consist of simple petroglyphs of cup marked stones without rings (Figure 8.4). All appear to be marked on small boulders rather than outcrops, with one exception: the cup and ring marked outcrop at Hollymoorside, North Derbyshire. In the case of the petroglyph at North America Farm, it is not possible to confirm whether or not the markings are carved on an outcrop without excavation (Figure 8.4).

Petroglyphs display characteristics in both their designs and settings in the landscape that demonstrate regional patterning (Bradley 1997: 79; 89-90; 215-16). Sometimes the settings for complex and simple variants was distributed in accordance with elevation, with the simple versions frequently occupying lower lying contexts and the more complex versions being located at higher altitudes in Britain (Bradley 1997: 102; 217). There is, however, considerable variation (Bradley 1997: 130). Bradley has also argued that their locations are associated with the courses of waterways, thresholds or in distributions that suggest paths or trails through landscapes (Bradley 1997: 217).

Of the three complex examples from the present study area, two from Ecclesall Wood (Figure 8.2; Figure 8.3) display attributes that have affinities with both the regional groupings of the Peak district, and West Yorkshire (Barnatt and Frith 1983: 41). They include sub-oval rings characteristic of Peak District examples, but with smaller numbers of cup marks within them that are typical of examples from Ilkley Moor. One (Figure 8.2) also has the unique feature of a central ring with the form of a raised boss-like feature (Barnatt and Frith 1983: 41). The cup marked stones recorded by myself constitute examples of the "simple" variety, and bear a very close resemblance to recently published cup marked stones from Rombalds Moor and Burley Moor in West Yorkshire (Boughey 2016). One of the examples from Whitwell Moor and the examples recorded at Totley Moor are engraved on the aforementioned small boulders. These are very similar to small cup marked boulders that were recorded at a cairn on Burley Moor in West Yorkshire recently (Boughey 2016: 60; 62).

The dating of petroglyphs is contentious, since for the most part they have not been recorded with in situ diagnostic artefacts. At Ilkley Moor in West Yorkshire, a group of petroglyphs were recorded in association with two assemblages of Grooved Ware and other Late Neolithic artefacts (Bradley 1997: 61). Bradley has suggested that the origins of petroglyphs might, however, be as early as c.3100 BC and has cited the example of Peterborough Ware sherds from Northumberland inscribed with semi-circular motifs that are similar to local examples of petroglyphs. Identical pottery from Scotland has been dated to c.2900 BC (Bradley 1997: 66). Examples of petroglyphs from the Peak district include a group recorded in excavations of Barbrook II ring cairn, in the vicinity of the watershed of the present study area (Barnatt and Reeder 1982: 42). These were simple cup marked stones incorporated within the structure, recalling those from the cairn at Burley moor in West Yorkshire referred to above. The cairn at Barbrook II was dated on the strength of the radio carbon dating of cremated remains to c.1500 BC (Barnatt and Reeder 1982: 42). Presumably the petroglyphs were reused items, in which case their original significance and use must predate 1500 BC, by which date their original function was redundant.

Figure 8.2: Cup and ring marked stone at Ecclesall wood, Sheffield. Source: author.

Figure 8.3: Cup and ring marked stone at Ecclesall wood, Sheffield. Source: J. McNeil ©South Yorkshire Archaeology Service.

Figure 8.4: Cup marked stone at North America Farm, to the immediate south of Langsett reservoir, South Yorkshire. Source: author.

Long Barrows

There are 16 long barrows within the study area (Table 8.6). Both stone constructed cairns and earthen mounds are present, varying in size between 12-70 metres in length and between 3-46 metres in width. The variation relates in part to their different materials, with the mounds being of significantly larger size that their stone counterparts. Only one of the barrows (Whitwell Long Cairn, North East Derbyshire) has been excavated to modern standards, revealing a dated sequence of construction, remodelling and activity which is comparable with that known from similar sites in southern England (Vyner and Wall 2011; Richards 1999: 131; 135; 139; Meadows *et al* 2007; Bayliss *et al* 2007).

The earliest phase of Whitwell long cairn consisted of a narrow wooden box-like structure housing the remains of 5 individuals (Vyner and Wall 2011: 10). Next came a crouched inhumation burial overlain by a small round cairn. This was followed by the first version of an oval cairn approximately 9m long by 7m wide, followed by a modified version 13m long. The oval cairn was succeeded by the first of two versions of a trapezoidal structure of a minimum of 22m length by 11m width at its northern end and possibly 17.5m at its southern. This was enlarged slightly in its final phase to 12.3m wide at its northern end, its remaining dimensions 16.4m wide at the point where it was truncated by modern quarrying, and a possible length of not less than 23m. The orientation of this series of structures varied marginally from phase to phase, but was essentially SW-NE. All of this activity began c. 3790-3710 cal. According to the Bayesian modelling employed, it lasted for no longer than 140-210 years, with a 68% probability (Vyner and Wall 2011: 40).

The Whitwell cairn has an unusually complex sequence of remodelling by the standards of Britain as a whole, but as mentioned above, conforms to practices seen at better known sites to the south such as Haddenham in Cambridgeshire, West Kennet and Wayland's Smithy. This suggests a possible relative chronological sequence for the development of such monuments whereby small oval cairns are modified into larger ones and then finally into trapezoidal cairns (Richards 1999: 139).

Another such cairn has been subjected to limited antiquarian excavation (King Hengist Rein in South Yorkshire), while two more can be interpreted as Neolithic long cairns on the strength of the accounts of their morphology and contents at the time of their destruction in the 19th century (Hangman Stones Lane long cairn and Dinnington long cairn, both in South Yorkshire). Rossington, in South Yorkshire, was described as an upstanding earth monument in 1977, but not subjected to excavation. Melton Warren in South Yorkshire and Gringley-on-the-Hill in North Nottinghamshire remain particularly large upstanding earth monuments that have not been tested with excavation (Figure 8.5). However, Melton Warren (Barnatt and Reeder 1982: 491) is reputed to be superseded in size in northern England only by the barrows at Great Heslerton in the Yorkshire Wolds and Ayton Moor in North Yorkshire and is well above the average length of these monuments in Britain. Upper Whiston and Kirk Sandall, both in South Yorkshire, are cropmark features detected by myself during a search of digitized aerial photographs. The remaining features are also cropmarks detected from Google Earth (Figure 8.6) or other aerial photographs.

Figure 8.5: The 70m long south facing flank of Beacon Hill long barrow, Gringley-on-the-Hill, North Nottinghamshire. Source: author.

Location	Type	Variant	Dimensions	Damage	Associations	Source
Whitwell, North East Derbyshire	Cairn	Round, Oval, Trapezoidal SE-NW	0.9mx0.9m 12x13 23x12-17	Destroyed	Chipped stone, pottery, human burials	Vyner and Wall 2011
Dinnington, South Yorks.	Cairn	Long	unknown	Destroyed	Skeletons	Armitage 1939;
Upper Whiston, South Yorks.	Mound	Trapezoidal E-W	71x46-20	Destroyed	Skeletons	E.H. digitized A.P.
Gringly-On-The-Hill, North Notts.	Mound	Sub-rectangular E-W	70x30	eroded		NMR sk79sw7; P.Buckland
Wadworth, South Yorks.	Cairn	oval N-S	15x4			HER MSY10100
Wadworth, South Yorks.	Cairn	oval N-S	20x3			Doncaster Museum
King Hengist Rein, South Yorks.	Cairn	Long. Chambered. forecourt N-S	20 wide	Truncated	BA Sword	Lukis 1864
Melton Warren, South Yorks.	Mound	Long E-W	81x15	Eroded		J. Radley archive; Barnatt and Reader 1982
Hangman Stones Lane, South Yorks.	Cairn	Long	unknown	Destroyed	Skeletons	Hunter 1828
Kirk Sandall, South Yorks.	Mound	Sub-rectangular E-W	67x37	Destroyed		E.H. digitized A.P.
Campsall, South Yorks.	Mound	Long	unknown			HER MSY5163
Rossington, South Yorks.	Mound	Long NE-SW	50x30			Magilton 1977; P.Robinson
Edlington, South Yorks.	Cairn	Long, chambered E-W	23x15	eroded		Ramm 1973
Worksop, North Notts.	Mound	Trapezoidal E-W	40x10-5	Destroyed	Hengiform feature	SLAP 836
Perlethorpe, North Notts.	Mound	Long NE-SW	35x10	Destroyed	Hengiform feature	SLAP 931
Ault Hucknall, Derbyshire	Mound	Oval, N-S	45x16	Destroyed	Triple ditch	Figure 5

Table 8.6: Long barrows in the study area.

Figure 8.6: The possible long mound at Ault Hucknall, North Derbyshire. Source: ©Google Earth.

Henge Monuments

Henge monuments have been defined as structures consisting of a circular bank and internal ditch, with 1, 2, or 4 entrances (Wainright 1989: 14; Edmonds 1995: 99; Richards 1996: 317). There are, however, many variants on the form (Clare 1986a: 281; Harding 2003: 83-84; Clay 2006: 80; Scarre 2007: 88). In the Vale of York for example, the Thornborough henges are characterised by having external ditches as well as internal ones (Wainright 1989: 14; Richards 1996: 331; Harding 2003: 90; Scarre 2007: 88). It has been claimed that henges vary in size between 20-100m in diameter (Parker-Pearson 1993: 69), although examples are known that are as small as 10.6m in diameter and as large as 300m (Wainright 1989: 15). Very small hengiform features of 15m in diameter or less are well attested at various locations across Britain including Dorchester in the Thames Valley (Harding 2003: 27-29), Whitton Hill, Northumberland (Miket 1985), and Pullyhour, Caithness (Bradley and Lamdin-Whymark 2008). Such variation of attributes and scales between these circular earthworks suggests that archaeologists should be cautious in interpreting what can and cannot constitute a "henge" and what we mean by the term. The term itself was one coined by archaeologists in recognition of physical similarities between a range of broadly similar earthwork features relating to the same phase of the Neolithic. The term was coined as recently as the 1930s (Wainright 1989: 14). It is not a class of monument that would necessarily have been recognised as a discrete class by contemporary later Neolithic inhabitants, and the term "henge" might therefore mislead archaeologists (Clay 2006: 80). These monuments did not necessarily have the same use or meaning during their period of use, or in different localities and regions.

With the above caveats in mind, seven henges or hengiform enclosures have been identified in the study area, five in South Yorkshire and two in North Nottinghamshire (Figure 8). These will be discussed in more detail below. Table 8.7 summarises their main characteristics.

Location	**Approximate external diameter**	**Form**	**Damage**	**Assoc. with**	**Source**
Wombwell, South Yorks.	80 metres	Upstanding circular external bank and ditch	Eroded. Tree root disturbance.		HER 08249/01
Cadeby, South Yorks.	55 metres	Upstanding circular platform and bank	Plough eroded	Chipped stone; polished stone axes, pottery	Roberts et al 2010; C. Merrony; P. Robinson
Wadworth, South Yorks.	unknown	Upstanding circular external bank	Eroded. Tree root disturbance. Truncated		HER01893/01
Stone, South Yorks.	53 metres	Circular cropmark. 4 entrances	destroyed	Round barrow	E.H. digitized A.P. Roberts et al 2010
Whitwell Moor, South Yorks.	23 metres	Upstanding circular bank	Eroded	Cairn; pollisoir; cup marked stone	Cockrell forthcoming
Worksop, North Notts.	60 metres	Sub-circular cropmark.	destroyed	Long mound, small hengiform feature	SLAP 836
Perlethorpe, North Notts.	60 metres	Sub-circular cropmark.	destroyed	Long mound, round barrow	SLAP 931

Table 8.7: Putative henge monuments in the study area.

With the exception of Cadeby, none of the putative henges have been tested by excavation, but all of them possess attributes found at better known henge monuments elsewhere in the British Isles. The most characteristic of those attributes are an external bank and internal ditch, which the site at Wombwell demonstrably has, albeit in an eroded state (Figure 8.7; Figure 8.8). It is possible that the badly eroded remnant of an internal bank is also present at Wombwell. The plan of Leslie Butcher indicates the presence of an entrance to the south-east of the enclosure, although whether or not this is a true entrance or an eroded section of the bank and ditch is not clear from personal observation, and part of the feature as recorded by Butcher, on the north east side, has since been destroyed (personal observation). The external diameter of the feature suggests that this monument constitutes a large example of a henge monument, in terms of its area and circumference to judge from the size range preferred by Parker-Pearson (1993).

Figure 8.7: Part of the north-east side of Wombwell Henge, South Yorkshire, showing the bank and ditch. Source: author

The morphology of the bank at Wombwell Wood, and the width of its profile, is very reminiscent of the bank of another such feature in the study area, at Wadworth Wood (Figure 8.8). The surviving section of bank at Wadworth is much more clearly defined than at Wombwell, but in other respects the enclosure is poorly preserved (Figure 8.8). This is largely due to its truncation by public footpaths and the existence of a field of arable agriculture approximately 30 metres to the east of its surviving portion. The curvature of its bank appears, from personal observation, to be of a similar order to that at Wombwell, suggesting that its scale was of a similar magnitude. Although no ditch is visible, the level of the ground surface adjacent to its internal edge appears to be lower than that on its external edge, suggesting that the remains of an in-filled or silted up ditch might be present. Too little remains of the monument to be sure from surveying whether or not it had formal entrances.

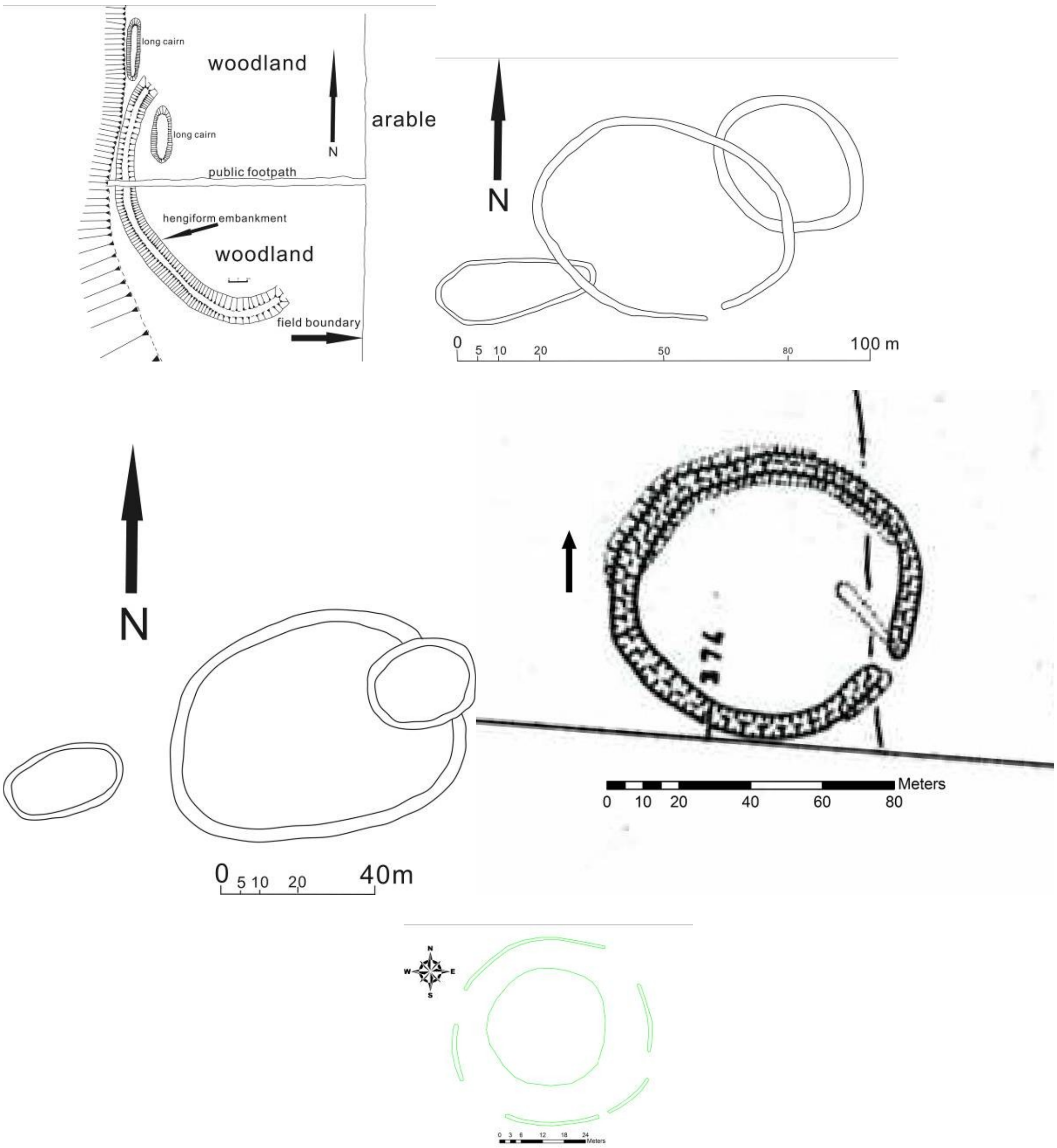


Figure 8.8: Hengiform features across the study area. Left to right, top to bottom: Wadworth, South Yorkshire (source: author), Worksop, North Nottinghamshire (source: author, drawn from a geo-referenced aerial photograph), Perlethorpe, North Nottinghamshire (source: author, drawn from a geo-referenced aerial photograph), Wombwell, South Yorkshire (source: L. Butcher, unpublished archive, MuseumsSheffield), and Stone, South Yorkshire (Source: Historic England).

The hengiform feature at Stone exists only as a sub surface feature (Roberts *et al* 2010: 18; Figure 7). It is approximately 53 metres in diameter and has four entrances. At its centre is a possible later round barrow, although of large size if that is what it is. Such an arrangement and monumental sequence is by no means unique, and has been encountered on a number of occasions elsewhere including Cairnapple in West Lothian (Piggot 1948; Bradley 1998: 140-43; Barclay 1999), West Ashby in Lincolnshire (Field 1985), and most recently Sittingbourne in Kent (bajr.co.uk 2014), all of which have been confirmed through excavation.

The putative henge at Cadeby, at 55m in diameter, is very similar in scale to that of Stone. It exists as a badly eroded upstanding earthwork in a ploughed field overlooking the Don Gorge (Kitchen 2000: 303; Roberts *et al* 2010: 41; Figure 9; Figure 10; Figure 11; Figure 12). When investigated in an auger survey, the results suggested that the feature might be a natural phenomenon (C. Merrony pers.comm.), and another suggestion has been that it might be a post-medieval feature (Roberts *et al* 2010: 41). However, the feature is associated with material culture recovered by Alan Peace during work undertaken by him in the vicinity during the 1970s (Peace 1981). It includes an assemblage of chipped stone that is multi-period in nature, covering the period from the Late Mesolithic to the Bronze Age (Peace 1981; Kitchen 2000: 303). It also includes fragments of polished stone axes (Figure 11). Henge monuments are frequently associated with this kind of material (Bradley and Hart 1983: 186; Clare 1986b: 459).

Research excavations in 2015 supervised by myself and colleagues, under the auspices of Brodsworth Community Archaeology Project, have confirmed that the feature is natural, albeit one of intriguing character. In plan it consists of a wide sub-circular embankment of magnesian limestone enclosing an undulating area with deposits of subsoil that are approximately 0.5m deep (Figure 8.9; Figure 8.11; Figure 8.12; normally, the very thin topsoil layer covers the bedrock directly, with subsoil existing to any significant depth only within rock cut features). Very few finds of any period were recovered from the topsoil layer from the two trial trenches and two test pits excavated, although the majority consisted of flintwork. The only diagnostic pieces, a scraper and blade, probably relate to the Late Mesolithic and Early Neolithic periods respectively. This is broadly consistent with some of the data recovered by Alan Peace in fieldwalking, but not consistent with a specifically Late Neolithic date. Only a single find, a flint flake of indeterminate date, was recovered from the aforementioned subsoil (at the base of the embankment). No finds were recovered in association with the embankment itself below the topsoil. At the south end of trench one, on the outer slope of the embankment, a context of re-deposited magnesian limestone boulders might conceivably be a remnant of an artificial embankment, but the only find recovered from there was a minute chip of early modern glass slag. No continuation of this feature was detected in other trenches placed over the embankment. No evidence to support the postulated alternative activity in the post-medieval period was recovered.

Figure 8.9: Community volunteers and students from the universities of Hull and Cardiff excavate and record trench 1, Cadeby, South Yorkshire, facing east south east. Source: author.

If Cadeby "henge" is not an artificial monument, there is a case for arguing that the distinction between "natural" and "artificial" was of little concern to local inhabitants in prehistory. This suggestion has been made elsewhere for the Neolithic by archaeologists drawing upon numerous examples from ethnography, archaeology and history (Bradley 2000; Cummings 2002). An example of this is the setting for an arrangement of standing stones at East Pinsford in Somerset (Gillings *et al* 2010: 303). A resistivity survey there showed that the setting took advantage of the presence of outcropping rock; the stones were placed and orientated on the line of the outcrop itself. Furthermore, the setting overlooked two more areas of outcrop where a break of slope 121m to the northwest overlooked the valley bottom. The feature at Cadeby similarly includes a prominent break of slope, overlooking the Don gorge and the middle reaches of the Don valley (Figure 8.10).

The multi-period assemblage recovered by Peace shows that Cadeby Cliff was a place repeatedly revisited throughout prehistory. It is possible that one reason for such visitation is the distinctive character of its topography. The "embanked" area might have been wet at certain times of the year, and its distinctiveness would have lent itself to description and memory. The view west includes the distant east facing flank of the Pennines as well as most of the middle reaches of the Don Valley (Figure 8.10). This would have been an invaluable aid to navigation in an era before maps.

Figure 8.10: The trenches at Cadeby "henge" facing west, with the break of slope on the edge of the feature indicated by the arrows. The west end of the Don gorge is to the left. Source: author.

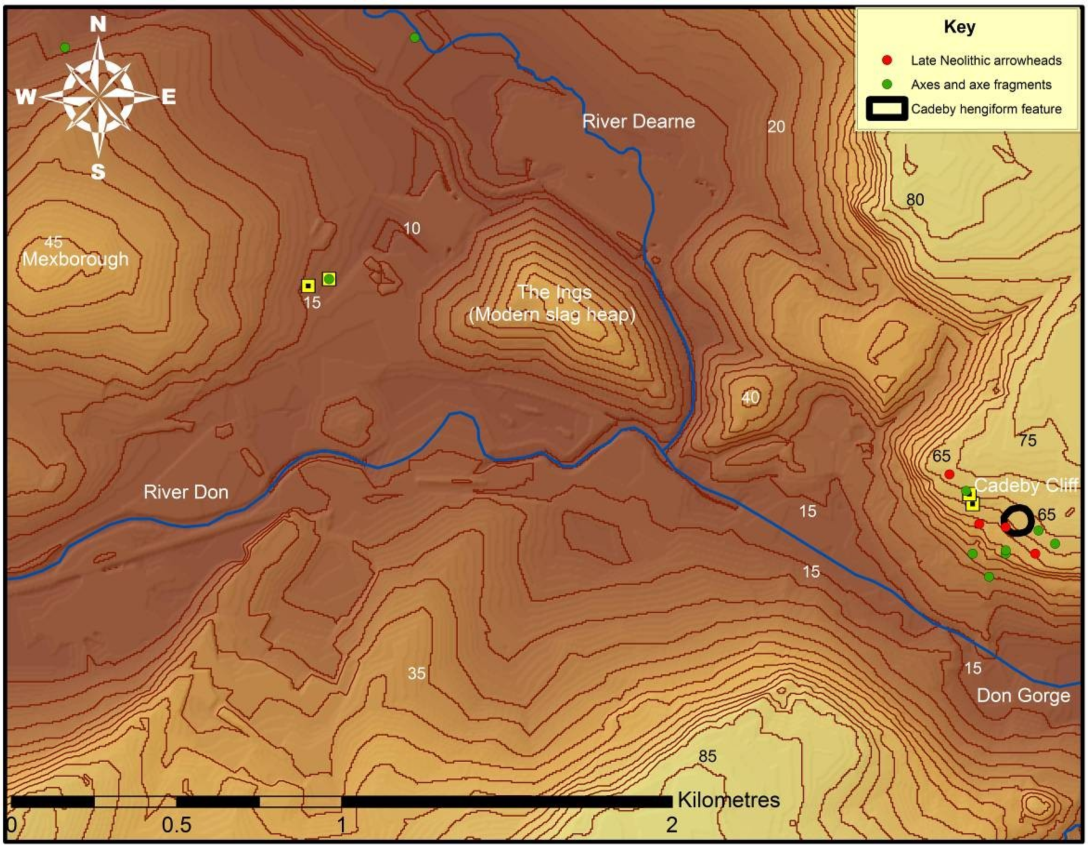


Figure 8.11: The west entrance to the Don gorge at the confluence of the Don and the Dearne. Figures indicate height in metres OD. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

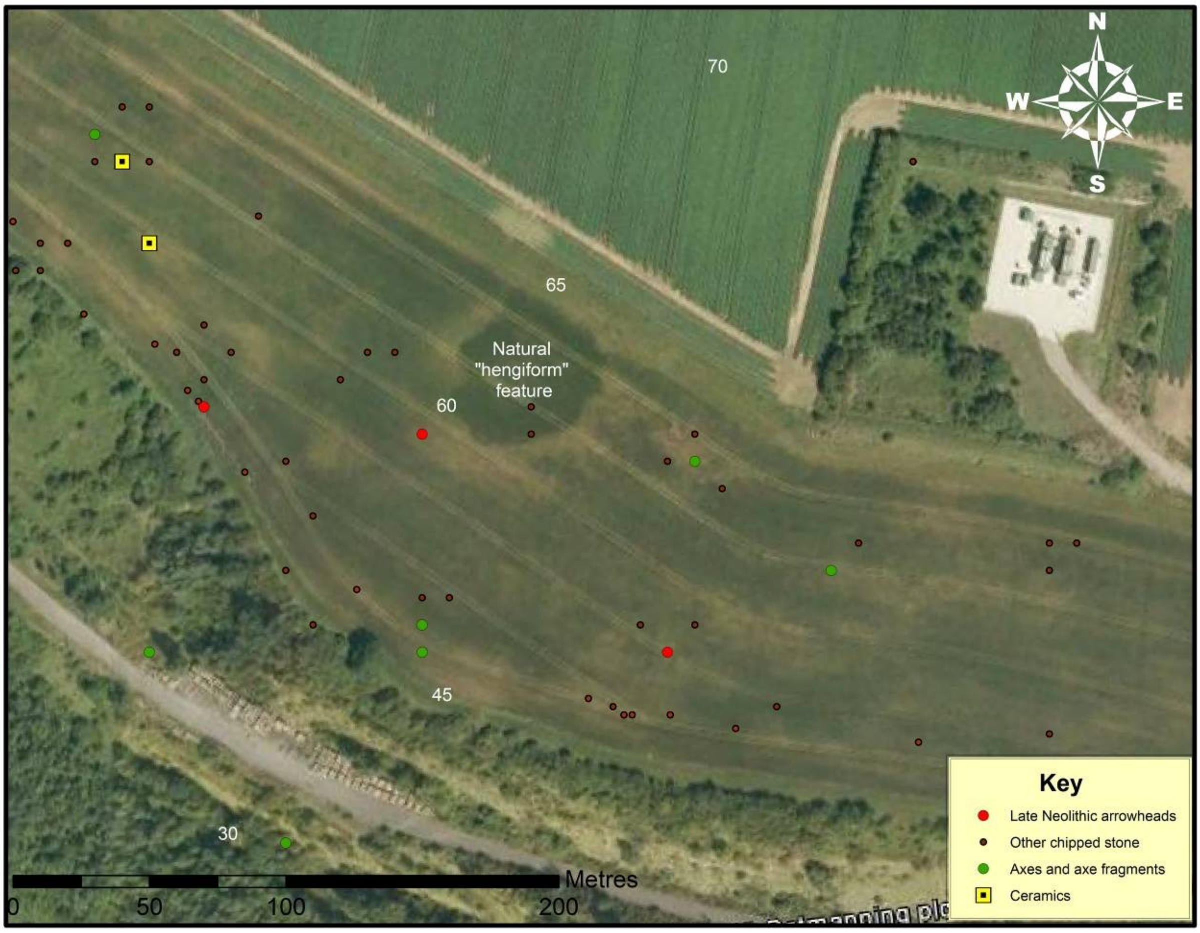


Figure 8.12: Parchmark at Cadeby Cliff showing the form of the natural depression formerly suspected of being a henge monument, with fieldwalked assemblage. Figures indicate height in metres OD. © Google Earth 2014.

The last of the enclosures to be described is also the smallest in diameter, at 23 metres. It is located at Whitwell Moor, to the north of Sheffield. It consists of an upstanding circular bank, without ditch, which is well preserved along most of its circumference, albeit cut by a narrow path on its east side and badly eroded on its west side (Figure 8.14). It is possible, as with Wombwell that the eroded section is the site of a former entrance, although this is by no means certain. Even by the standards of the present study area, the height and width of the surviving sections of bank are small at approximately 0.5m wide and less than that in surviving height. The feature could be argued to be a possible ring cairn on this basis, and conforms to the description of one variant of the form identified by Jeff Radley (1966). This, however, does not preclude the feature from the designation "henge"; recent excavations at Pullyhour in Caithness have recorded a smaller diameter henge monument with a bank of similarly diminutive girth (Bradley and Lamdin-Whymark 2008). Hengiform features with similarly diminutive girth to their banks and ditches have been recorded in the Millfield basin in Northumberland (Miket 1985).

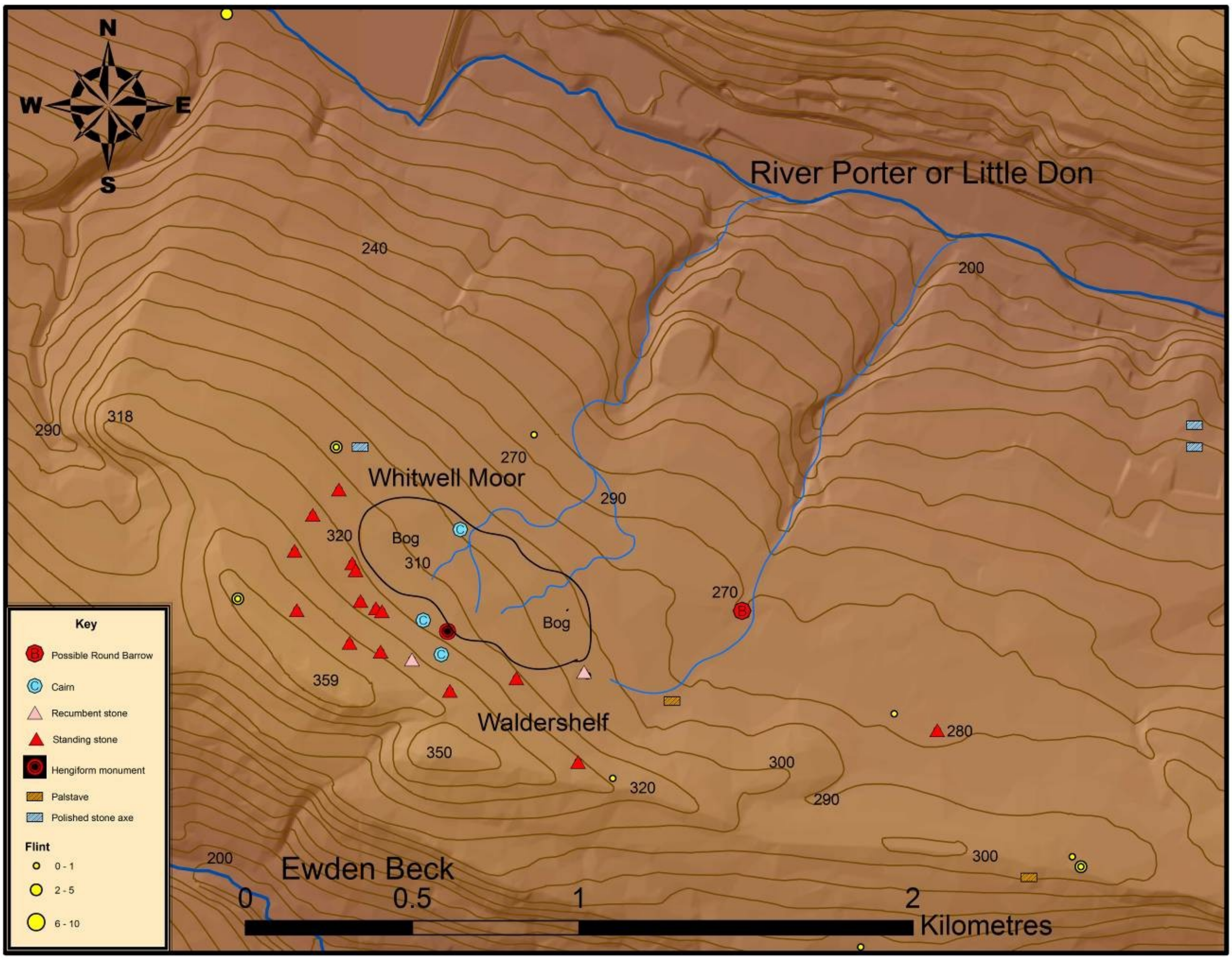


Figure 8.13: Whitwell Moor, South Yorkshire. The present bog is denoted by the area bounded by the sub-oval black line. Figures indicate height in metres OD. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The diminutive girth and scale of the monument is reflected in the character of those that surround it: Whitwell Moor is partly encircled with standing stones that are for the most part no more than 0.5m in height, framing an area of upland bog and springs which the hengiform monument are adjacent to (Figure 8.13). Standing stone settings of very similar nature and of almost identical morphology have long been known from upland districts of the West Country, namely Dartmoor, Bodmin Moor and Exmoor (Burl 1993: 82; 88; Gillings *et al* 2010: 298), Burl coining the term "minilith" to describe them (Burl 1993: 88). They are generally attributed to the Late Neolithic or Early Bronze Age (Gillings *et al* 2010: 297). The attribution is based on their similarity to better understood stone circles and stone rows, and their proximity to round barrows and cairns (Gillings *et al* 2010: 297). Recently, miniliths of identical morphology have been excavated elsewhere in the southern Pennines (Shepherd *et al* 2016: 67).

Figure 8.14: The bilberry covered bank of the hengiform monument at Whitwell Moor, South Yorkshire, facing east. Source: author.

From Late Mesolithic to Early Neolithic

Recalling the introduction, the summary description of the most important classes of data given above will be analysed and discussed in approximate chronological sequence below. The patterning, and how that changes over time will be used to inform answers to the research questions.

The contentious and much discussed transition from the Mesolithic to the Neolithic has been problematic for scholars in terms of both its nature and significance (Edmonds 1995: 16; Bradley 1998: 119-10; Myers 2006; Clay 2006: 69). It is now generally recognized that there was no simple or elegant change of mobile gatherers and hunters living in temporary encampments into (or replaced by) sedentary agriculturalists building permanent settlements and ceremonial monuments (Whittle 1999: 59; Richards 1999: 223; Clay 2006: 69).

To begin with, there is increasing evidence for the construction of sometimes very substantial structures throughout the Mesolithic (Chapter seven; Cummings 2002; Conneller *et al* 2012: 1016; Milner *et al* 2013: 31; 65). Moreover, there is only limited evidence for the existence of permanent villages or settlements across the British Isles during the Neolithic, and none within the limits of the present study area (Richards 1999: 223; Rathbone 2013). The extent to which individual "houses" as have been recorded are purely domestic in nature, or domestic at all, has also been brought into question (Brück 2008: 251; Rathbone 2013: 41-42; Bradley 2013).

The difficulty that contemporary scholars have had in interpreting and understanding how changes took place at this time, and their significance, might in part be due to the nature of their own world views, rather than anything experienced by people in the remote past. Terms such as "Mesolithic" and "Neolithic" were devised by earlier archaeologists in order to place cultural artefacts in a chronological sequence, as well as to describe lifestyles (Edmonds 1995: 16). This was done in order to attempt to understand cultural changes in a historical sequence, in the context of the movements of "peoples" with discreet packages of material culture. Concomitant with this has been the work of contemporary scholars who specialise in one period or the other. They often employ different methodologies utilising different theoretical approaches that are not applied to each other's specialist epoch (Bradley 2007: 21-22). Mesolithic specialists, for example, have tended to concentrate on subsistence strategies while Neolithic specialists frequently choose to study social developments (Bradley and Edmonds 1993: 22). These scholarly developments have contributed to the reification of the aforementioned terms as discreet cultural epochs, of markedly distinct and easily definable characteristics that have little basis in historical reality. Archaeological thinking has changed and developed over time but the chronological periods, and arguably their reification, have remained.

As noted earlier, the core reduction sequence did not change significantly over the period covering the Later Mesolithic and the Early Neolithic transition, but the nature of some of the tools did, with the abandonment of microlith based composite tools in favour of leaf shaped arrowheads for example. Point density analysis of the chipped stone over this time period indicates the presence of concentrations at the locations shown in Figures 8.15 & 8.16. Of the concentrations in Figure 8.16, 40% are at places where concentrations existed in the Late Mesolithic. There is no significant fall in the overall quantities of data (table 8.3), which suggests that the 60% change in locations is due to real changes in settlement rather than mere abandonment of the study area. The 60% reduction in concentrations reflects reduced dispersal of activities and a growing emphasis on the importance of the Magnesian Limestone plateaux as the location for settlement. This is where the least change in locations of activity has occurred.

In chapter five it was shown how by the end of the Mesolithic period, changes in the environment, whether anthropogenic or not, had resulted in increased wetting in the study area, and the beginning of the expansion and development of substantial wetlands in the low lying areas. With this in mind it is possibly no coincidence that during the period covering the Late Mesolithic-Early Neolithic the only remaining important concentrations of chipped stone on the Humberhead Levels are on the margins (Figure 8.15).

This does not directly explain the significant reduction in activity in the Southern Pennines. Moreover, the other most notable change visible in table three is a 58% reduction in the use of chert during the transition. The use of chert was noted in chapter seven as being concentrated to the south and south west of the study area, on the uplands. Its collapse in use cannot therefore relate directly to the wetting of the landscape taking place in the Humberhead Levels and the wider valley bottoms. However, it is possible that the reduction in the use of chert reflects social or economic changes affecting either communications or movement between The Peak District and the present study area that might be linked indirectly with developments in the lowlands. It was noted in chapter five that wild cattle prefer lower lying wetland margins for grazing, and environmental data indicates the spreading of species of plants that are associated with pastoral activity on the Levels. Moreover, recent work on the residues of Early Neolithic pottery across Britain further indicates a rapid adoption of dairy products in Early Neolithic diets (Cramp *et al* 2014). If changes in lifestyle included a move towards more pastoral activities during the Early Neolithic at a time when wetlands were expanding towards the east, this would explain a greater focus for settlement activity on the adjoining drier slopes of the Magnesian Limestone, and a marked reduction in settlement in areas away from locales such as the uplands of the southern Pennines.

The concentrations discernible in the Early Neolithic from Figure 8.17, with the exception of West Moor, are now entirely located on the Magnesian Limestone upland. They represent 17.5% of those mapped in the preceding sub-period, and a mere 10% of those from the Late Mesolithic.

The continuing trajectory of development is indicative of major changes taking place by the Early Neolithic. The drastic reduction in datable artefacts has a potential bearing upon this (table 8.1). However, this reflects the increasing difficulty in identifying verifiably datable artefacts, given that the majority of chipped stone in the database were recovered as surface finds.

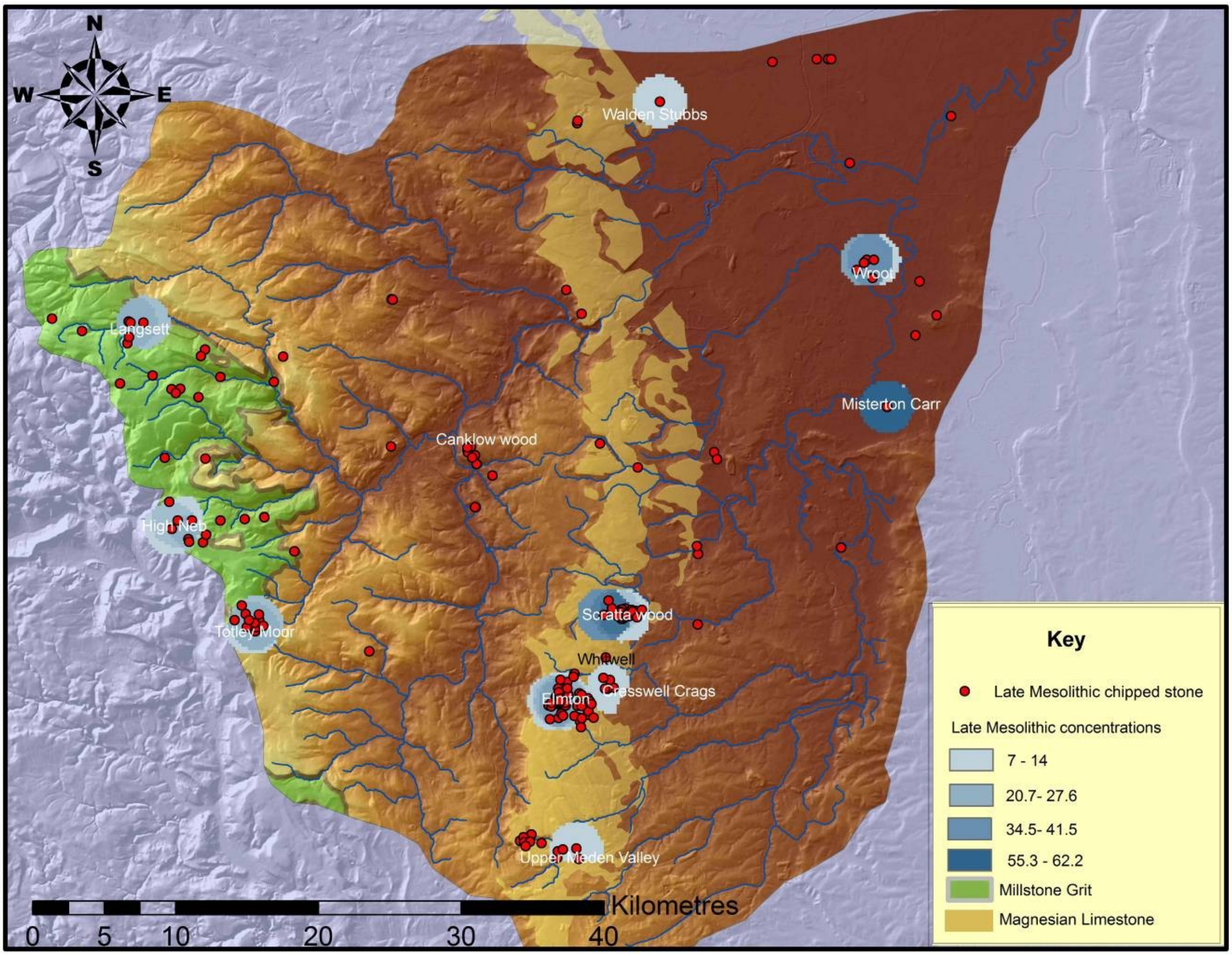


Figure 8.15: Concentrations of chipped stone during the Late Mesolithic period. The roundels indicate concentrations, with darker shades representing larger quantities. Subsequent figures containing point density roundels follow the same convention. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Figure 8.18 mitigates for this problem to some extent by showing how datable concentrations relate to undated concentrations. With the exception of Hooton Roberts and West Moor, all of the concentrations of Early Neolithic material overly similarly dense concentrations of "Neolithic" or "prehistoric" data. Apart from the aforementioned, these are all places that were noted in chapter seven for their Mesolithic activity, but it must still be assumed that a significant proportion of the undifferentiated data relates rather to activity in the Early Neolithic period. Sufficient confidence, therefore, can be placed in the significance of the securely datable Early Neolithic data concentrations.

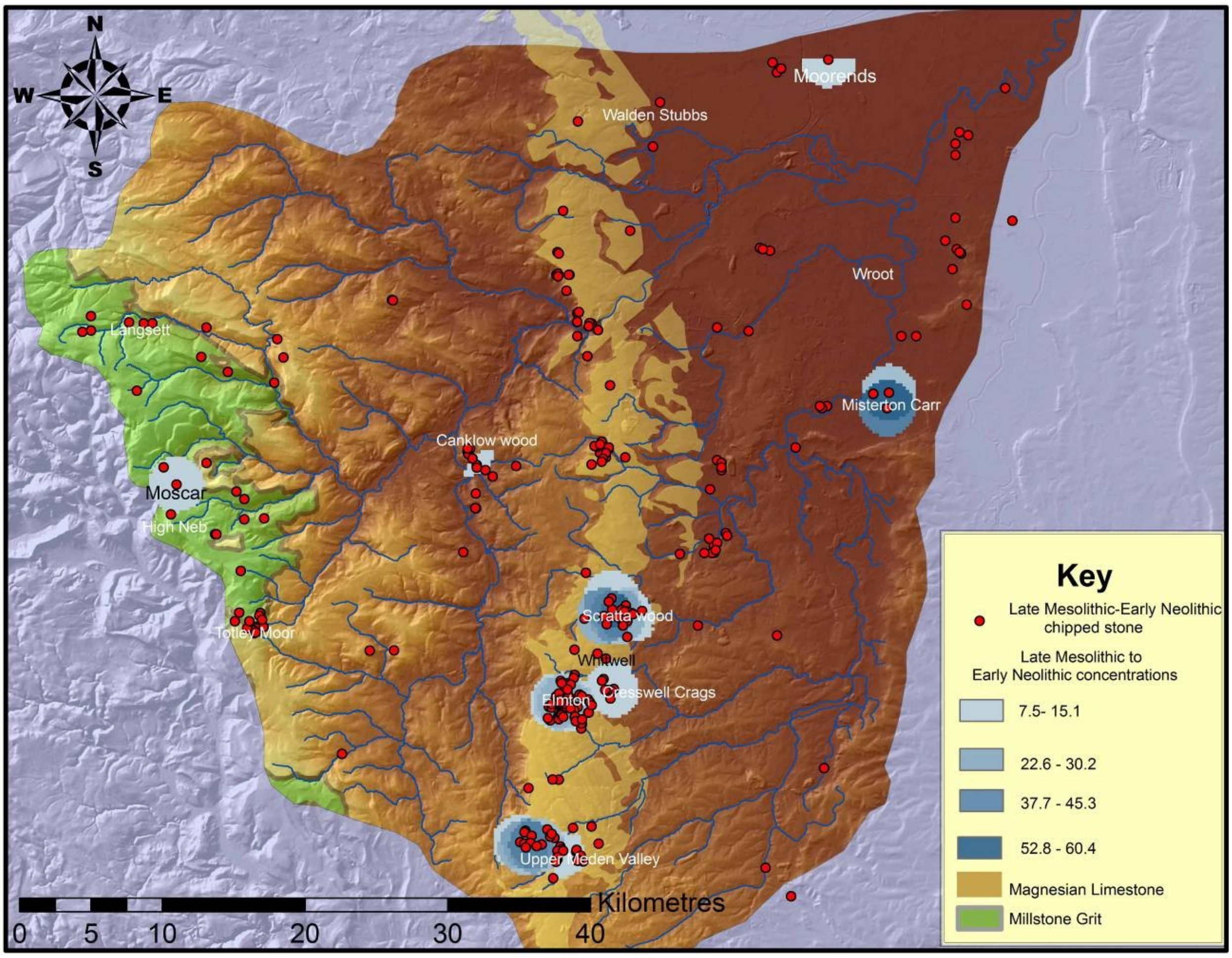


Figure 8.16: Concentrations of chipped stone during the Late Mesolithic-Early Neolithic transition. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

This supports the suggestion made above that settlement was being concentrated on the higher, drier, areas of the landscape in general, and on the Magnesian Limestone ridge in particular as the Early Neolithic progressed. Also, by now the use of chert as a raw material had virtually ceased completely (table 8.1). Conversely, in the Peak District the use of chert appears to have increased with time (Bradley and Hart 1983: 186). The coalescence of settlement on the Magnesian Limestone coincides with the development of wetland environments, but not as an environmentally deterministic response. This is proved by the fact that the largest single concentration lies not there, but on a spur of sand protruding into the Humberhead Levels at West Moor (Figure 8.18). In all probability, it was the changed lifestyle based much more on pastoral activity that precipitated the move. The cessation of the use of chert for the making of tools, along with the retreat from the Pennines in favour of the Magnesian Limestone and the margins of the Humberhead Levels, suggests that connections with the east, the main source of flint, became more important than the west. Routines of connectivity and interaction with the west that had prevailed up to the Early Neolithic, reflected in the use of chert, were now severed as settlement and day-to-day activities became focussed on the areas adjacent to the wetlands that were most conducive to pastoral activity.

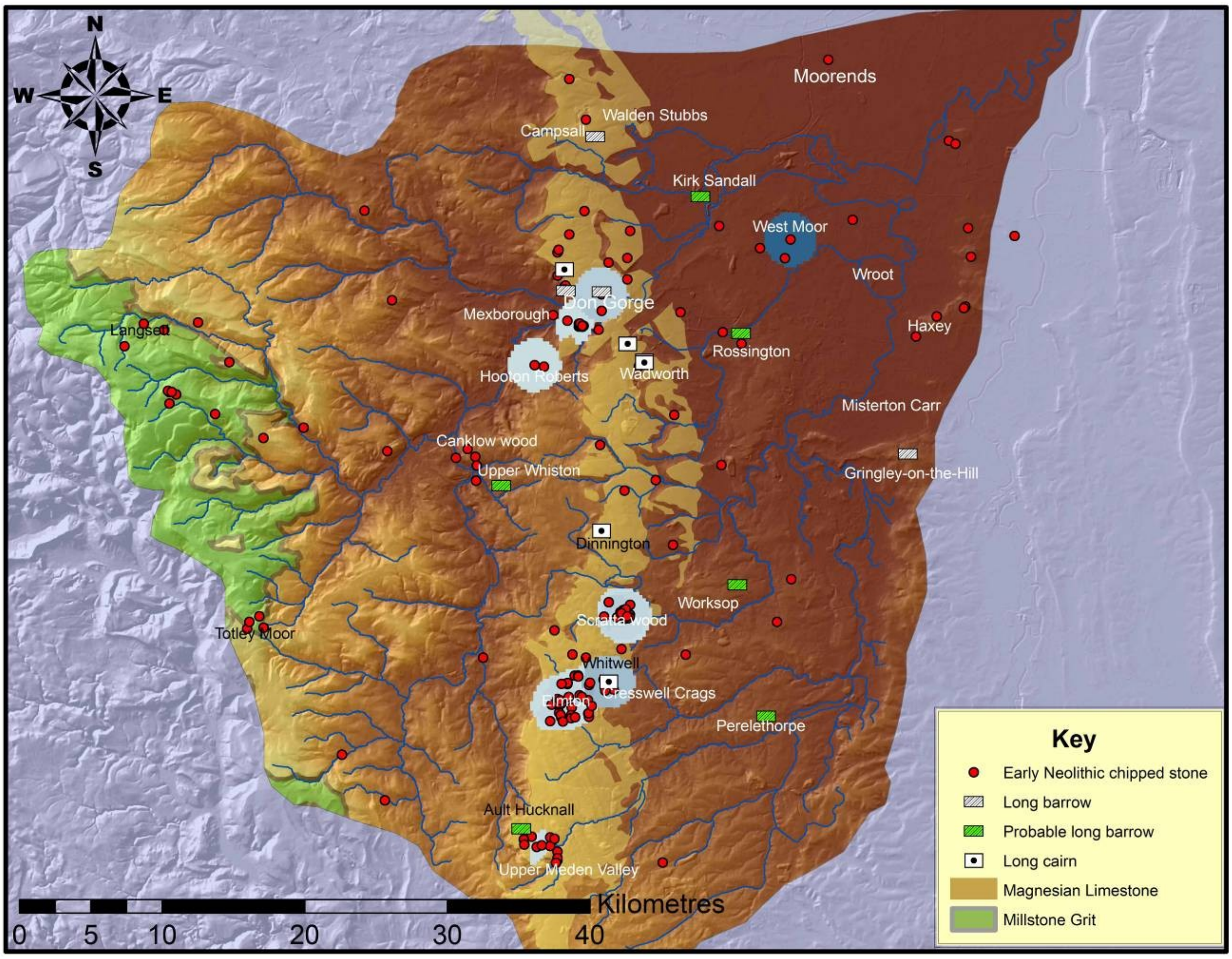


Figure 8.17: Concentrations of Early Neolithic chipped stone in relation to long barrows and Magnesian Limestone geology. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

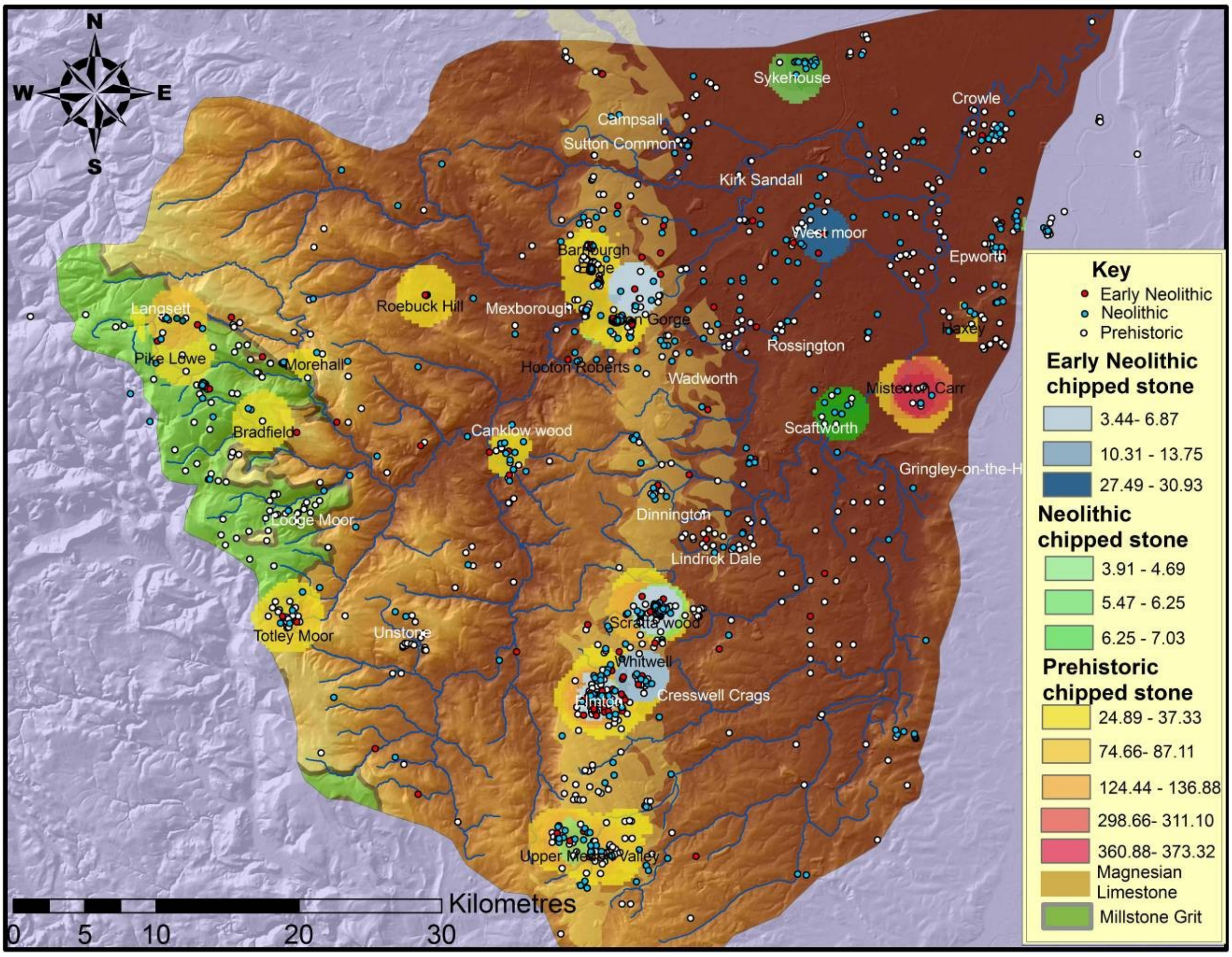


Figure 8.18: Concentrations of Early Neolithic chipped stone (blue) overlying concentrations of undifferentiated Neolithic chipped stone (green), and undifferentiated prehistoric chipped stone (orange). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The significance of long barrows and burials in the Early Neolithic

In chapter two it was shown how in relatively recent historical times the importance of place in informing people's senses of regional identity has been of considerable importance. People have frequently seen themselves as communities in terms of those places, and the activities undertaken at them. Such places have frequently been characterised by prominent or distinctive environmental contexts and topographical features such as confluences and bends in rivers, or scarp edges for example. The extent to which people valued them is indicated by the level and frequency of activity at them, in contrast to those places lacking in such investment.

It does not follow from the forgoing that parts of the landscape lacking concentrations of material culture were not inhabited at all, as has been amply demonstrated (Foley 1981). The value of stray finds and systematically investigated areas of landscape producing limited amounts of data is in showing that people were present and ranging across and interacting with entire landscapes (Foley 1981: 2; Kitchen 2000: 198), but not always in ways that indicate long term value or commitment to particular places. In other words, a place can only be shown to have particular importance in contrast with areas that demonstrably do not.

At the broad scale of analysis, a study of widely distributed "off-site" material can also be useful in showing how different parts of a landscape might have been interacted with in different ways. These differences might also contribute to what defined people as belonging to a regional community, as demonstrated above. That will be considered below with the analysis and discussion of specific items of widely dispersed material culture. Along with that, the extent to which the building of monuments mark places of importance, and how they relate to those already drawn attention to by the siting of concentrated activity will be considered.

In figure 8.17, the locations of concentrations of Early Neolithic chipped stone are shown in relation to the locations of the study area's first monuments. Four of the study area's long barrows coincide with the centres of localities where concentrations of chipped stone have been recorded, or places immediately adjacent to them (such as Ault Hucknall and Hangman Stones Lane). The other barrows are located in places where excavation of the monuments has not taken place, and where systematic surface collection has not been undertaken. The absence of concentrations at those locations is not therefore significant, since the absence of data is probably due to lack of fieldwork.

The Early Neolithic is well known as being the period when earth and stone monuments were first constructed in Britain. In the database, any artificial structures or features modifying the landscape define "monument", and in principle that remains the same here.

Sometimes it is assumed that structures belong either to the "domestic" or "economic" spheres and can be separated from those of a more commemorative or symbolic nature in a straightforward fashion (Richards 1999: 26; Brück 2008: 253; Bradley 2013). This is questionable, since there are numerous historical or ethnographic examples from around the world demonstrating that such distinctions frequently do not exist (Brück 2008: 253; Richards 1996: 316). Below, for example, Figure 8.19 shows the interior of a building in contemporary Japan belonging to the owner of a construction company. It shows a reception hall which incorporates the family shrine. Clients are received here by the head of the company, for whom this room is also partly home. The "sacred" and "profane" occupy the same space, in what also could be described as a "domestic" setting.

Figure 8.19: A tatami room, incorporating living space, meeting space and the spirits of the ancestors. Source: author.

In practice, the structures in consideration here dating to the Early Neolithic are those collectively known as long barrows (table 8.10). It was, until recently, thought that this first phase of monument building lasted during c.4000-3300 BC (Whittle *et al* 2007a: 25). More sophisticated approaches to the use of radiocarbon dating, and in particular the use of Bayesian modelling for dates in southern Britain, has enabled the refinement and differentiation of different phases of monument building activity (Whittle *et al* 2011).

While accepting that the above dating projects lie outside the present study area, it is still reasonable to extrapolate from the results. The single example within the study area (Whitwell long cairn) that has been studied in a similar fashion using Bayesian modelling (Vyner and Wall 2011), has been dated from 3790-3740 cal. BC (68% probability) until cessation of activity at 3630-3540 cal. BC (95% probability), (Vyner and Wall 2011: 40). This, along with the morphology of the monument and its development (see above), is very similar to the examples used by Whittle and his colleagues in their detailed examination of similar monuments in southern Britain (Whittle *et al* 2007c; 2011). The results are in fact sufficiently similar for the example of the Whitwell cairn itself to have been referenced in their study (Whittle *et al* 2007c). The results of their work suggest that the date range for the construction and re-modification of these monuments in Britain, and the ceremonial activities that were undertaken at them relates to c.3750-3400 cal BC (Whittle *et al* 2007c: 127-128).

Of the remaining examples within the study area three (Wadworth Wood one and two, and Edlington Wood) bear a close resemblance in morphology and scale to the earliest phases of the long cairn at Whitwell. One (King Hengist Rein), bears a close similarity to the later phases of the Whitwell cairn. Two of those destroyed in the 19th century (Hangman Stones Lane and Dinnington); bear a close enough resemblance in terms of their building materials and contents when cleared to assume a probable similarity (in their latest phases) with the later phases of Whitwell long cairn. The trapezoidal shape and the scale of the cropmarks at Upper Whiston in South Yorkshire and Worksop in North Nottinghamshire suggest that they also are likely to relate in their final forms to the latter part of the date range suggested by Whittle and his colleagues. The few remaining structures in the study area include Melton Warren, which bears a strong resemblance to better known bank barrows in southern Britain such as those at Maiden Castle (Richards 1999: 139), suggesting that this is a late example of a long barrow in the region, and the substantial long mound at Beacon Hill at Gringley-on-the-Hill, North Nottinghamshire. The scale and material (earth) of Beacon Hill has more in common with Melton Warren than the other barrows in question but its morphology is more similar to the long cairns, indicating that it is most likely to be a genuine sepulchral construction such as those, rather than a bank barrow.

From the date range extrapolated from the work of Whittle and his colleagues, supported by the data recovered from Whitwell long cairn, it is likely that the phenomenon of barrow building in the Early Neolithic in the study area relates to a relatively short span of time of no more than a few generations. At Whitwell, the complex sequence of building and remodelling covering several phases took place over perhaps as little as 90 years. The phenomenon did not begin at the onset of the British Neolithic, relating to the period of the transitional changes noted earlier, and visualised in Figure 8.16. Barrow building relates to the period that is approximately contemporary with the data distributed in Figure 8.17, when the majority of concentrations were located on the Magnesian Limestone upland. This is likely to coincide with the onset of the Neolithic in the study area, at c. 3800 BC (Griffiths 2014). At this point, only 10% of concentrations are located at places where Late Mesolithic activity was also concentrated. The largest concentration, at West Moor on the Humberhead Levels, was entirely new.

The implication of the above is that despite the continuities in core reduction strategies alluded to earlier, significant changes were underway in the Early Neolithic, and that the most intense time of change was during the short period of monument building. New forms of tools, such as leaf shaped arrowheads, were being developed. Monuments were rapidly being built and rapidly being subject to modification, and ceremonies were undertaken at them to deposit human remains. This was accompanied by the deposition of the newly redesigned tools, such as the assemblage of deliberately broken leaf arrowheads at the rock shelter burial in Scabba Wood, South Yorkshire (Buckland n.d). Whitwell long cairn furnishes another example of the deposition of an assemblage of leaf shaped arrowheads, this time at the site of the cairn itself (Vyner and Wall 2011). Along with this, entirely new forms of material culture were being similarly deposited, such as the remains of six carinated bowls at Whitwell long cairn (Vyner and Wall 2011).

The dynamic and rapidly changing situation described above was, however, taking place against a backdrop that was in some senses little changed. Lifestyles in the British Neolithic are thought to have remained essentially mobile, if with regional variation that included elements of sedentism (Clay 2006: 69-74). This is because nationally there is little evidence for the existence of permanent settlements, landscape organisation of the sort implied by the existence of static boundaries such as the ditched enclosures that were to feature in later prehistory, and very little evidence to support the notion that arable farming was widespread. The present study area offers no evidence to contradict most of these details, but does show a contraction in terms of the main focus of settlement activity, implying reduced mobility. What has been termed the "persistent" nature of inhabitation (Barton *et al* 1995; Thomas 2008: 66*)* to some extent is attested to by its continued presence at locations such as Elmton and Creswell in North Derbyshire, Scratta Wood in North Nottinghamshire, and at Cadeby cliff in the Don Gorge in South Yorkshire (Figure 8.12), together representing the majority of concentrations in the Early Neolithic.

It is against the aforementioned backdrop that an important point needs to be made about the phenomenon of long barrow construction in the Early Neolithic of the study area: Of the 16 barrows, six are located within 6km of the Don Gorge. Another, at Rossington, is 7km from the gorge. Ten of the barrows are located on the Magnesian Limestone upland, where it has been noted that the majority of chipped stone concentrations are located.

Examples of such "complexes" exist in southern England in the regions of the Cotswolds, Wessex and the Upper Thames Valley (Richards 1999: 170; 184-96). It is therefore possible that the concentration of monuments in the vicinity of the Don Gorge is another such grouping.

Above, it was shown how some burials are associated with the deposition of leaf arrowheads, some of which appear to have been deliberately broken for the occasion (Buckland *et al* n.d; Vyner *et al* 2011: 58). The overall distribution of leaf arrowheads in the region indicates that the activities associated with them were widespread, just as their Mesolithic counterparts the microliths had been (Figure 8.20). This supports the continuity model for an essentially mobile lifestyle. Concentrations of arrowheads exist at Hooton Roberts, Scratta Wood and the Don Gorge (Figure 8.20), as well as centred on Whitwell long cairn. This does not contradict the interpretation regarding dispersed mobile lifestyles; such concentrations might indicate that some areas were particularly favoured as hunting grounds for example. However, their presence in funerary contexts, sometimes deliberately broken, suggests that the importance and significance of arrowheads went beyond the merely prosaic.

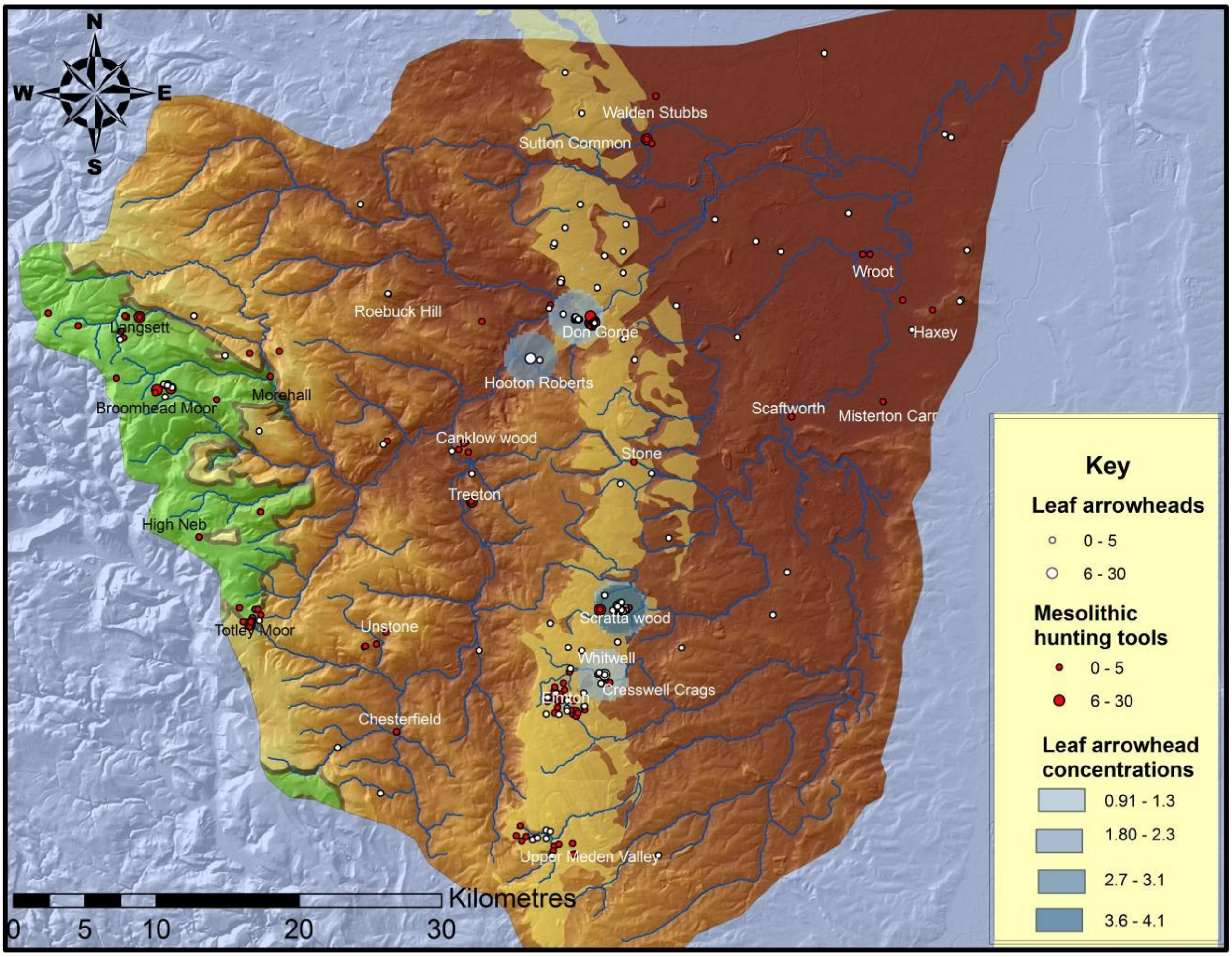


Figure 8.20: Distribution of findspots of Mesolithic/Late Mesolithic hunting related tools (red) overlain by Early Neolithic leaf arrowheads (white). Higher density of leaf arrowheads are shown with the blue roundels. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

It has been suggested that Early Neolithic burials formed part of the means by which identities were established by communities (Thomas 1999). Some burials, containing paraphernalia such as arrowheads adorned bodies that almost certainly did not reflect their activities in life at the time of their deaths (Thomas 1999: 159). This is shown by the physical ailments affecting some people, preserved in skeletal material. It is likely, therefore, that such grave goods project ideas about the desired or socially acceptable ways in which the occupants of long barrows were supposed to be perceived or understood, as opposed to how they actually necessarily lived (Thomas 1999: 159). Thomas also suggests that the collection of the remains of the dead together in such monuments, often in a disarticulated state, communicates a communal identity, expressed in a corporate fashion.

With the above possibilities in mind, it is possible in the present study area that in the time of flux and volatility represented by the sometimes rapidly remodelled long barrows, the significance of arrowheads as artefacts of symbolic value were being specifically deployed in funerary contexts. The six mounds and single rock shelter burial in the vicinity of the Don Gorge are also in close proximity to concentrations of arrowheads in areas of landscapes as surface finds (Figure 8.17; 8.20; 8.21). Chipped stone tools that are likely to relate to different activities are concentrated at other locations (Figure 8.20) to the south. In the area of the gorge at Creswell Crags a slightly different pattern can be seen. Whitwell long cairn, with its assemblage of leaf shaped arrowheads, exists in close proximity to concentrations of domestic related material. The nearest concentration of arrowheads as surface finds lies close to the north at Scratta Wood (Figure 8.7), where there are no known barrows or other funerary contexts. Another, smaller concentration, of leaf shaped arrowheads lies along the south edge of a small plateau on the upper Meden valley in North Nottinghamshire. On the north edge of the same plateau is the location of the probable long mound at Ault Hucknall. Gaps in data present in the vicinity of some monuments, such as Dinnington long cairn and the long mound at Gringley-on-the-Hill are largely due to the absence of surface collection noted earlier in chapter four.

The factor in common to the aforementioned locales is that monuments are prominently located along distinctive escarpments in relation to important stretches of significant waterways: the river Wellon, for example, at Creswell Crags is overlooked by Whitwell long cairn, situated on a spur of Limestone with a south and south west aspect directly above a bend in the river. The river Doe Lea in North East Derbyshire is overlooked by the cropmark feature at Ault Hucknall, also located on a spur of the Magnesian Limestone. The area of the Don Gorge is commemorated by no less than six such monuments, as related earlier. This is remarkable, for while the density of barrows across the study area appears to be consistently dispersed in character, arguably because they served the needs of separate communities, the concentration in the vicinity of the Don gorge is thus thrown into high relief. This gives added weight to the interpretation suggested above that the Don gorge was of particular significance.

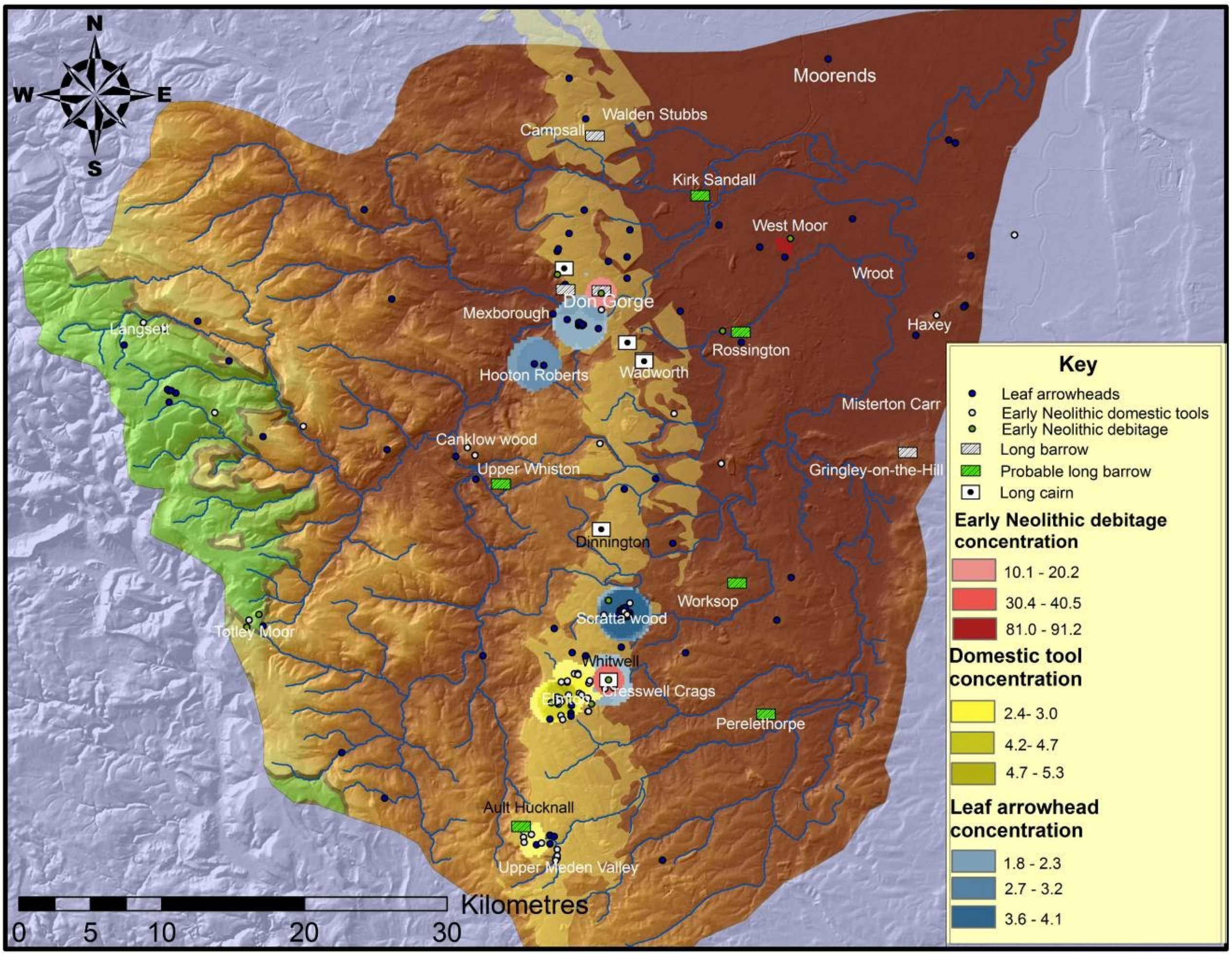


Figure 8.21: Concentrations of domestic related tools (yellow), overlying Early Neolithic debitage (red) and leaf shaped arrowheads (blue), with long barrows. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The suggestion I am making here is that movements and activities beyond the locations of domestic related activities at the headwaters of the waterways, rising on the Magnesian Limestone, were deemed of particular importance in the study area. Those additional activities, employing hunting related material culture, were of great significance to the communal identities of people. During a time of rapid social change they were incorporated in the commemoration of places of special value in the landscape during the short phase of barrow building and modification. Those places, the waterways and gorges, were not merely ways through the landscape, but in a time of volatility were places invested with considerable resources of material culture and monumental construction. This not only reflects the special importance of such places during a moment in time of flux, but underlines their ongoing significance over a longer period of time as places where routeways existed and various activities were traditionally undertaken. Such places were targeted in an intense and particular way, with the deposition of the remains of the dead, material culture communicating valued forms of identity, and the construction of imposing monuments. The different emphasis placed on the importance of arrowheads suggests considerable variation in how people used these artefacts in the construction of social identity in different parts of the landscape.

That the above activity was being undertaken in a part of the landscape where settlement was clearly being concentrated, gravitating around the plateaux of the Magnesian Limestone, suggests a particular association with that landscape, deliberately commemorated. This is given greater emphasis in the vicinity of the Don Gorge. These points would not have been lost on those traversing the study area between east and west through the region's gorges and river valleys.

The Middle Neolithic and beginning of the Late Neolithic

The recent reassessment of the significance of activities at long barrows discussed above has allowed interpretations to move away from perceptions of them as timeless scenes of cultural activity taking place over the course of an age. Instead they have come to be understood almost in terms of discrete events, or phenomena akin to them, that relate to a particular point in history. This chronological contraction of activity has allowed a more detailed and nuanced interpretation of a crucial period of the Early Neolithic to take place. Consequently, a large gap between the end of this phase and the next phase of monument building in the Late Neolithic presents challenges. The sequence of barrow building ended by approximately 3400 BC and perhaps earlier, with a gap of at least 400 years until the onset of the Late Neolithic. No ceremonial monuments were constructed during this time and changes in chipped stone technologies are not easily discernible. However, this gap in datable material culture can, in part, be bridged by the development of the crafting and dispersal of polished stone axes.

The polished stone axes of the study area are almost entirely those recovered as surface finds. As unstratified finds, even relative dating sequences are not normally considered possible. Sometimes, for example, they are claimed to be produced from the beginning of the Neolithic with little further comment (Thomas 2008: 58). The unstated assumption is that stone axes relate for the most part to an undifferentiated "Neolithic" period (Butler 2005: 139; 148). More can be made of them however for two reasons; as explained earlier, the different petrological groups were utilised as sources at slightly different times (Bradley and Edmonds 1993: 166). Moreover, the majority of important sources were located at remote places far to the west of the study area. Initially, their distributions were localised: Dispersal of the artefacts across Britain did not begin until sometime after their initial use. Therefore, their presence in the present study area must largely relate to the period after which dispersal began.

One of the largest petrological groups represented in the study area is also one of the earliest to have been exploited as a source. Group VI axes, it was noted earlier, date from approximately 3700 BC, making their incipient use roughly contemporary with the onset of barrow building. Whether this is coincidental, or signifies another aspect to the rapid changes relating to that particular moment in history, is open to question. However, in terms of the present study area it is unlikely to have a direct relationship since dispersal did not reach a significant level, if at all, until the end of the phase of barrow building at c.3400 BC. The next significant group in the likely sequence of dispersal is Group VII, at 7% of the total. Dispersal of Group VII relates to the period after c. 2750 BC (Smith 1979: 19).

The other single largest petrological group to be represented in the study area is flint. The nearest sources of flint to the present study area, on the Wolds of North Lincolnshire and East Yorkshire, and the gravels of the river Trent are significantly nearer than the nearest source of igneous or metamorphic stone. The Trent gravels have been claimed to be a probable source for flint axes in the East Midlands area (Moore 1979: 85). However, Henson (1989: 11) pointed out that the till deposits of the Trent are of far more eroded and battered character than those of the East Yorkshire coastal deposits, resulting in somewhat smaller pebbles. The likelihood of such a source providing an adequate supply of flint suitable for the crafting of axes, therefore, is questionable. Perhaps this is why there is a dearth of flint axes in the Peak District compared with Group VI (Moore 1979: 82).

The vast majority of flint axes in Yorkshire are known to be derived from the glacial till deposits on the East Yorkshire coast (Manby 1979), with only 5% deriving from the East Yorkshire Wolds (Barber *et al* 1999: 24). This is probably because Wolds flint is of poor and unreliable quality, rendering it unsuitable as a source for large tools such as axes (Henson 1989: 10; Durden 1995: 410; Barber *et al* 1999: 23), and is very difficult to extract due to the hardness of the chalk deposits on the Wolds (Henson 1989: 10; Durden 1995: 410). Given this, it is notable that on the geologically identical Lincolnshire Wolds, local sources were extensively utilised for axes by local communities (Barber *et al* 1999: 24).

The only known sites for mined flint are located in Wiltshire, Sussex and Norfolk (Holgate 1991: 10; Bradley and Edmonds 1993: 37; 166; Barber 1999: 1; 3; Waddington 2004: 7; Butler 2005: 148-49). The Wiltshire sites are little understood, but the Sussex sites were probably exploited in the Earlier Neolithic (Bradley and Edmonds 1993: 37; 166; Butler 2005: 149). The most well known location, Grimes Graves in Norfolk, appears to have been exploited largely in the Later Neolithic period, with its peak occurring around 2500 BC (Bradley and Edmonds 1993: 38; Butler 2005: 149). These sources are known to have been located at some distance from areas of settlement, which is consistent with what is known about the remote character of the most important sources of igneous stone (Bradley and Edmonds 1993: 38).

A remarkable aspect of the nature of the assemblage of stone axes from Eastern England, and Yorkshire in particular, is that it is the location of the largest concentration of axes of Group VI and Group I stone in Britain. More finished artefacts of these groups are known from here than in their sources of origin (Bradley and Edmonds 1993: 40). As noted earlier, Group VI as a proportion furnishes 33% of the assemblage in the present study area, with Group I forming 8%. Flint axes, as a proportion of those from Yorkshire form approximately 25% (Manby 1979: 71, table 11), 95% of which are of coloured flints sourced from the boulder clays of the east coast of Yorkshire (Manby 1979: 71). This proportion of finds (25%) is identical to that noted earlier for the flint axes of the present study area.

An important point of note is that the boulder clays (glacial till) of the East Yorkshire coast that were the source of most of the Yorkshire flint axes furnished variations in colour and inclusions not present in the aforementioned mined sources. Its location, moreover, is close to areas of dense settlement in East Yorkshire (Manby 1979). This is at variance with the more remote character of the mined sources and sources of igneous stone. These differences are highly likely to relate to changes in the status and control of material sources and concomitant social developments that date to late in the Late Neolithic period (Bradley and Edmonds 1993: 186-99). Emphasis was being given to the localised control of sources, in preference to those more distant such as Group VI in Cumbria or Group VII in north Wales. It is likely, therefore, that the majority of flint axes in the present study area come late in the sequence, along with Group I axes (Smith 1979: 17).

When added together, flint and Group I amount to the same proportion of the assemblage in the present study area as Group VI, an intriguing coincidence that is worthy of note given the suggestion that they were utilised in sequence: first Group VI, then Group I and flint. By comparison, in the Derbyshire Peak District there is a concentration of Group VI and Group VII axes (Bradley and Hart 1983: 186; Clay 2006: 77), but flint axes form only 5% of the total (Moore 1979: 82). This plausibly relates to the impossibility of controlling and manipulating access to the Trent gravels at the end of the Neolithic (Henson 1989: 17). Such a postulated resource management problem in the locale would explain the result, which is a difference in the regional character of axes at the end of the Late Neolithic between the Peak District and the present study area, where till flint derived axes probably predominated at that time, and with the situation in the Lincolnshire Wolds, where local sources were common. This is indicative of measured and significant differences in choices being made that recall the patterning noted earlier for the use of flint and chert in chipped stone tools.

The distributions of the major petrological groups described above, in their proposed sequence, are described in figures 8.22 and 8.23 below. Minor groups in the database and ungrouped axes are excluded from the analysis.

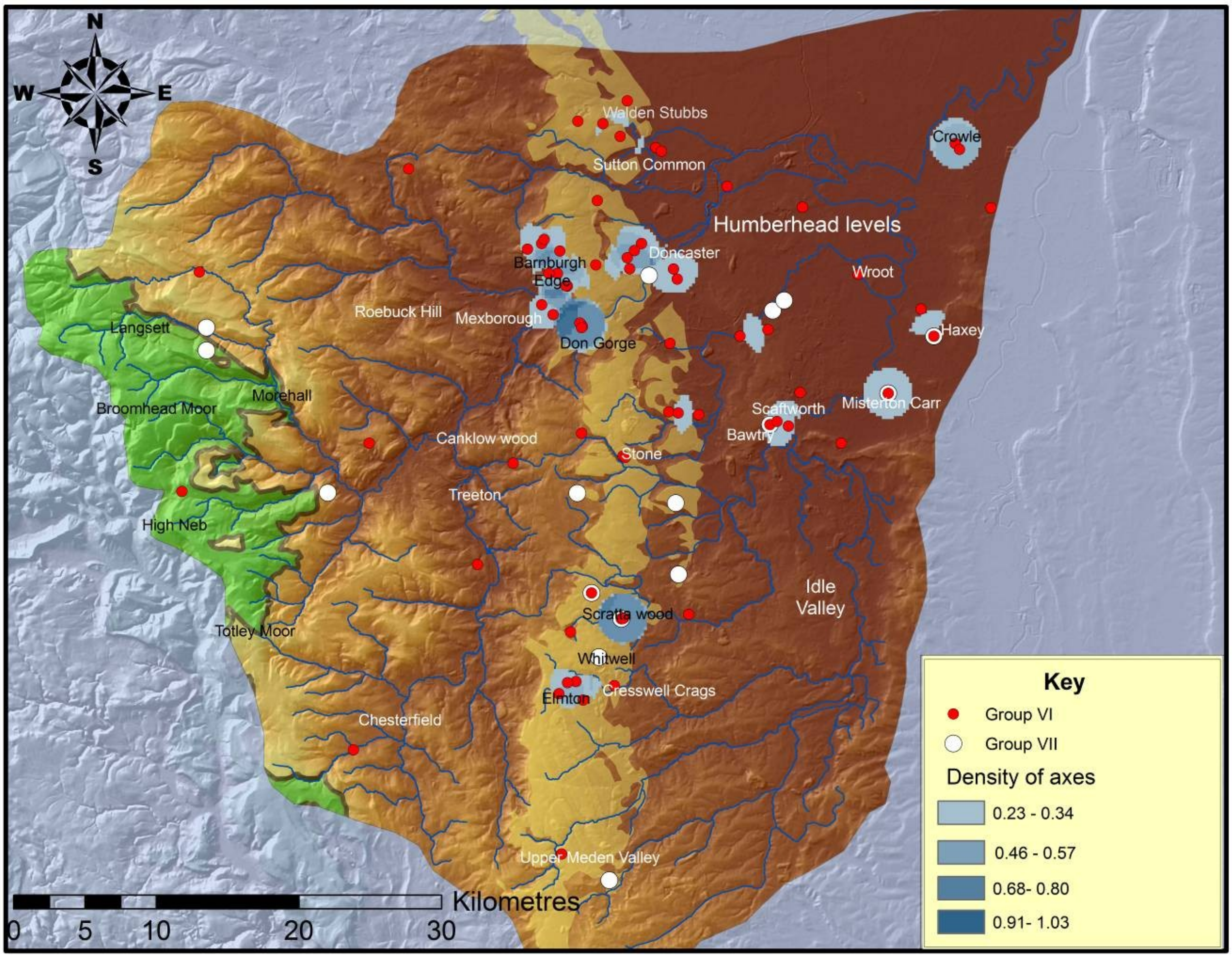


Figure 8.22: Distribution of major Middle to Late Neolithic groups, with areas displaying higher density of Group VI axes shown as blue roundels. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

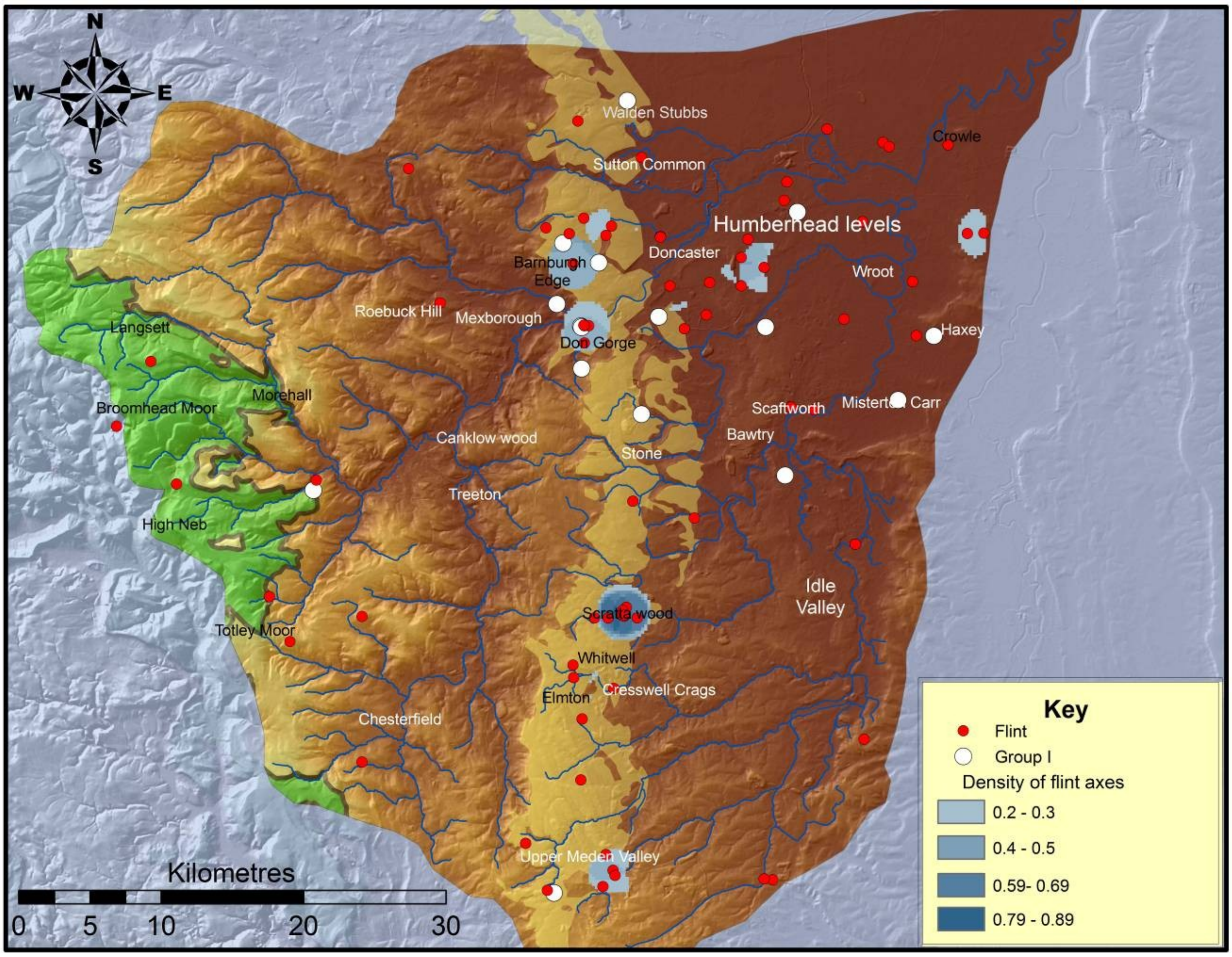


Figure 8.23: Distribution of major Late Neolithic groups, with areas displaying higher density of flint axes shown as blue roundels. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The wide distribution of polished stone axes across the study area is indicative of how widespread the movements of people were, and how important the study area's waterways were in that: Thirty five percent of the total assemblage (including minor and ungrouped axes) was recorded within 500m of the course of the River Don and its tributaries (Figure 8.24). This is remarkably high given the historic levels of urban, extractive and industrial activity along the river valleys that has introduced negative bias into the sample (see chapter four). The locations of the concentrations show, as with the data previously considered, the extent to which activity was concentrated on the Magnesian Limestone. The pre-eminence of the Don in this as a conduit through the Magnesian Limestone suggests that this place was still one to which a mobile population looked with special favour when ranging across or travelling through the landscape. Moving beyond the period of barrow building, more of the activities associated with axes were concentrated on the Magnesian Limestone ridge, and in the vicinity of the Don gorge in particular.

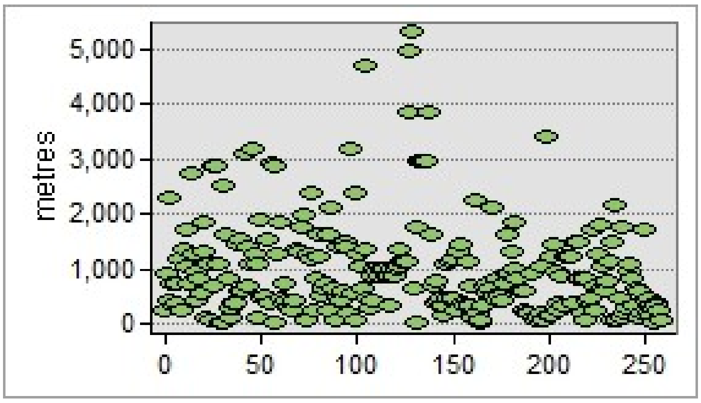


Figure 8.24: Proximity of polished stone axes to the waterways of the study area (left column).

Based on the results of the point density analysis (Figure 8.22; Figure 8.23), activities were concentrated on the margins of the Humberhead levels as well as the Magnesian Limestone. The absence of such concentrations in the valley systems of the Rother and the Dearne is, in part, due to the mining activities and urban expansion of recent times (see chapter four). In the Idle valley, the modest level of relevant archaeological activity has had a similar effect. However, sample bias of this kind is not applicable to the uplands of the southern Pennines, which is similarly sparse in numbers of axes (Figure 8.22; Figure 8.23; Manby 1979: 75). This supports the interpretation that the densities on the Magnesian Limestone and Humberhead Levels genuinely reflect the importance of settlement at these locations during the Middle and Later Neolithic.

Across the study area, locales on the margins of the wetlands appear to be privileged, such as the cover sands of present day Doncaster, and at Armthorpe and Dunsville where they encircle the basin of West Moor where flint concentrations were noted earlier. There is, moreover, no significant difference in either the distribution or density of finds between the earlier and later phases of axe deposition.

The margins of landscapes that were becoming increasingly wet were therefore becoming increasingly important to inhabitants of the study area at this time. Given the likely predominance of pastoral activity noted earlier, this is not to be surprised by. The margins of fens might have been the focus of settlement, which has been suggested for similar contexts in Lincolnshire, Cambridgeshire and Norfolk (Moore 1979: 83), and some concentrations might relate to fording places across rivers, which has also been a suggestion for concentrations in the vicinity of Lincoln and Nottingham (Moore 1979: 83). Another possibility is that such sites had value of a symbolic nature; polished stone axes are well known to have been deliberately deposited in rivers or other wet places that are strongly suggestive of such value (Moore 1979: 83; Richards 1996: 85-86; Whittle 1999: 65; Butler 2005: 151). It does not follow from this that such needs were necessarily separated. Such separation of function is unlikely to have been a characteristic of prehistoric societies

(Edmonds 1995: 51; 59; Richards 1996: 93). In other words, to inhabitants of landscapes dominated by the presence of wetland environments, the need to deposit items in wet places, lavished with time consuming embellishment (polishing), frequently crafted from materials of exotic source, and later of exotic character, might well have met needs that were diverse and possibly complimentary.

Earlier, the greatest numbers of long cairns and mounds were located very close to these scenes of activity around the Don Gorge. It is evident from the areas with higher density of axes that this place was still a focus for later settlement activities. Lesser concentrations are centred on Scratta Wood and at Elmton/Markland Grips some distance to the south. The intensity of earlier activity, represented by the construction and modification of barrows, returned to the much lower pace present before, but the significance of the Magnesian Limestone ridge and its gorges did not diminish. To be explicit, the building and modification of the barrows in a relatively short if intense period of activity, while important, are not the most important points to be drawn in terms of the research questions. Their value and significance in the present study is to draw attention to locales that were important over much longer periods of time, but it is the locales themselves with their distinctive characteristics which matter the most, not the monuments.

It is possible, however, that as wetland environments developed, their unique characteristics began more systematically to be the focus of a variety of activities of diverse nature and significance. This seems particularly to be the case on the margins of the Humberhead levels and its approaches, where concentrations of undifferentiated "prehistoric" flintwork were noted earlier. The levels lie within the region where till derived flint was utilised for axes, as opposed to the Lincolnshire Wolds to the east and south where, despite its challenges, Wolds flint appears to have been the main source (Barber *et al* 1999: 24). To the west and south, in the Peak District, flint of any kind appears to have been utilised rarely (Moore 1979: 82).

The Late Neolithic, and beginning of the Bronze Age

Developments across Britain occurred from approximately 3300 BC that imply shifts in both the character, sophistication and possibly scale of societies that herald a changed world (Bradley and Edmonds 1993; Bradley 2007; Pollard 2008: 7). Some of those changes have begun to be addressed above within the study area, with the change noted for the difference between the procurement of distantly sourced polished stone axes at an earlier phase and more locally sourced materials, and in particular flint, for a later phase. Such changes have been attributed to the possible need both to control sources, and produce artefacts with increasingly exotic and differentiated attributes (Bradley and Edmonds 1993: 187-99). Other polished stone artefacts also now began to be crafted, such as maceheads that were generally sourced from the same petrological groups as polished axes (Roe 1968; Whittle 1997: 211). This coincides with changes in chipped stone crafting that mirror these developments. The blade based reduction sequence that had been typical of the Mesolithic and Earlier Neolithic was replaced by more crudely executed flake based strategies. This implies the manufacture of simpler, less typologically distinct tools that are more wasteful of material and therefore less suggestive of the need to curate flint carefully. Conversely, the range and sophistication of certain tool types increased significantly: Arrowheads in particular were now produced in a variety of complex forms that must have demanded considerably enhanced skills. This includes ripple flaked arrowheads, hollow based and oblique arrowheads, chisel arrowheads and petit-tranchet arrowheads. All of the aforementioned forms have been recorded in the present study area (Figure 8.25).

Figure 8.25: An oblique arrowhead from near the headwaters of Ewden Beck, South Yorkshire. Courtesy of Museums Sheffield. Source: author.

Pottery styles also began now to be more elaborately decorated, with the advent of Peterborough ware and then Grooved ware. Pastes used in the crafting of ceramics were almost certainly sourced very close to locations of deposition, to extrapolate from research undertaken in south-west England and in the Derbyshire peak district (Parker-Pearson 1990; Cootes 2012: 240-45). The combination of the new characteristics in chipped stone crafting, more localised and locally controlled sourcing of materials, exotic and elaborate new forms and materials such as those above have suggested to some scholars that the mobility that seems to have characterised earlier times was beginning to give way to a more sedentary, or at least less mobile, way of life that was to increasingly become the hallmark of settlement across Britain in the centuries to come (Bradley and Edmonds 1993: 185; 198-99). The advent of copper metallurgy, that probably dates from around 2500 BC on the basis of associated radio carbon dates (Barber *et al* 1999: 18), belongs to this phase of burgeoning cultural diversity.

Probably as a result of the changes in core reduction strategies mentioned above, combined with the reliance on fieldwalked assemblages and surface finds in general, chipped stone artefacts that are clearly related specifically to the Late Neolithic are few in number across the study area (table 8.1). They are, however, of a diverse and elaborate character, which suggests that their importance as individual artefacts invested with time and effort outweighs their modest quantity. Enough arrowheads exist (117) for small concentrations to be identified at various locations around the study area (Figure 8.26).

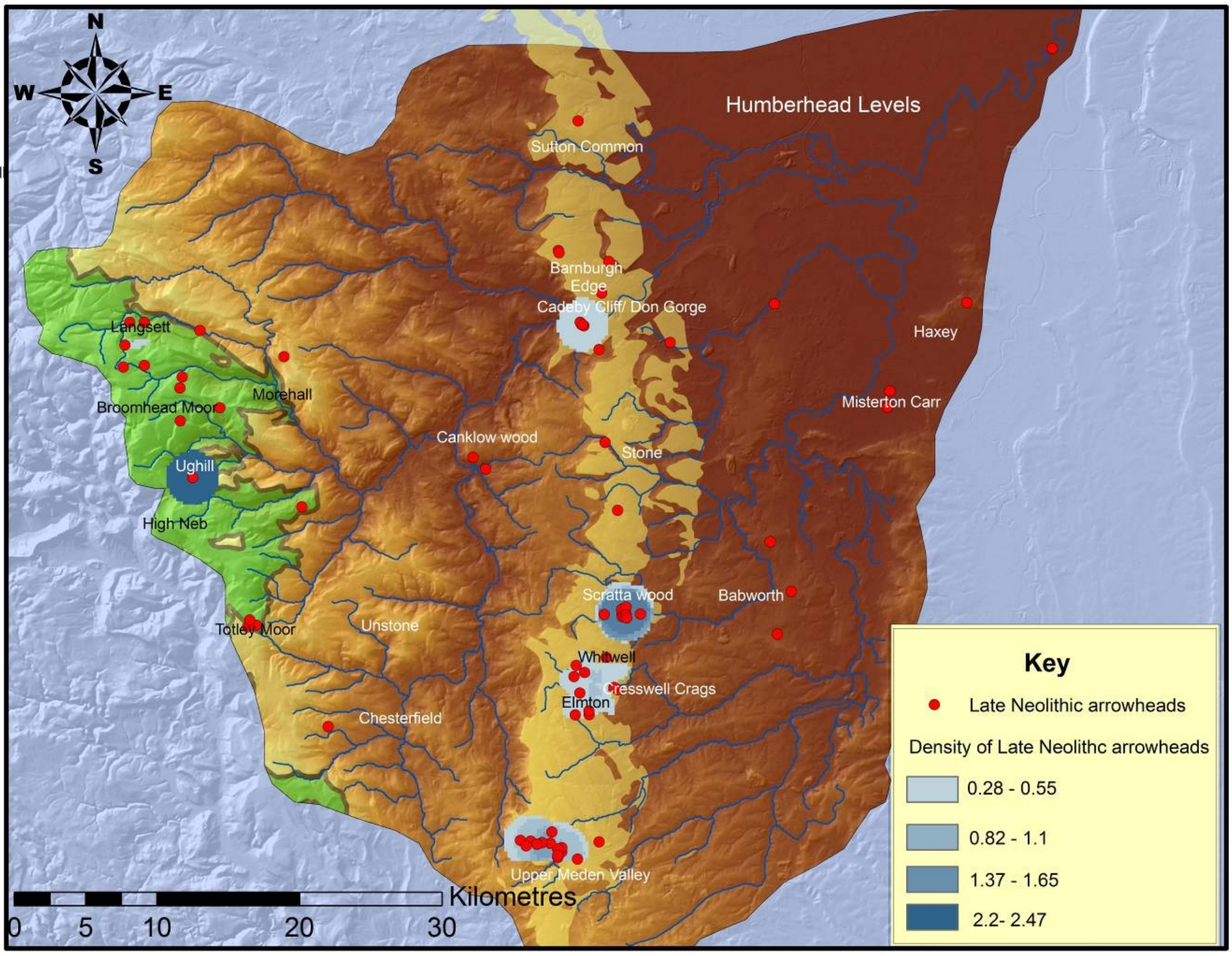


Figure 8.26: Incidence of Late Neolithic arrowheads across the study area, derived from point density analysis. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The largest of the concentrations is at a location not hitherto noted in the present study, at Ughill in South Yorkshire. The assemblage, of 28 petit tranchet arrowheads, was recovered by Leslie Armstrong during collecting activities in the early 20th century (Riley 1962). Surveys across Britain have shown that concentrations of elaborate Late Neolithic artefacts are often located at or near monuments (Edmonds 1995: 105). An example of this would be the concentration of polished stone axes and maceheads in the vicinity of Arbor Lowe in Derbyshire (Bradley and Hart 1983: 186). No monuments are known at Ughill, but the location and its setting are strikingly prominent, dominating views along the Loxley valley and far into the Don valley to its east (Figure 8.27).

The remaining concentrations are at locations that have featured before in the present study: in the upper Meden valley in North Nottinghamshire, the vicinity of Elmton and Creswell in North East Derbyshire, Scratta Wood in North Nottinghamshire and the Don Gorge in South Yorkshire. The Don Gorge examples, three hollow based arrowheads and a transverse arrowhead, all come from the site of multi-period activity noted at the distinctive henge-like natural feature at Cadeby cliff. All of these locations, with the exception of Cadeby, lie at the headwaters of tributaries of the river Idle, on the Magnesian Limestone plateaux. Cadeby cliff, however, overlooks the river Don where it bisects the Magnesian Limestone. With the exception of Ughill, all of the aforementioned locations are not only those where activity relating to specific chronological periods has been noted earlier, but also significant quantities of undifferentiated prehistoric chipped stone recovered.

Figure 8.27: Ughill (centre) at the west end of the Loxley valley, South Yorkshire, viewed from the Don valley between Sheffield and Rotherham. Source: author.

Thus, not only were these elaborately crafted artefacts being deposited at prominent and distinctive places in the landscape such as the Don Gorge and Ughill, but also at probable areas of settlement that had been the scenes of repeated visitation and use since the Mesolithic.

Other artefacts of elaborate nature were also being deposited: the polished stone axes being a case already discussed above, but another artefact type earlier identified as having very similar attributes are maceheads (Figure 8.28). Two distinctions can be observed in the distribution of maceheads in the study area: their absence from those areas identified as being the locations of repeated concentrated activity, and their correlation with the courses of the study area's waterways. Eight out of the 15 maceheads were recovered within 500m of the major waterways of the study area.

Another notable feature of the distribution is their approximate geographical orientation, as a group along a north-east, south-west axis. If this orientation was extended it would describe a line between the Derbyshire Peak District and East Yorkshire. Those two regions have been identified as centres of regional concentrations of maceheads (Bradley and Edmonds 1993: 188). To the immediate east, Lincolnshire presents another slightly more dispersed concentration. The present study area, then, provides both a link between the

Peak District and East Yorkshire demonstrating connectivity but also a regional difference where maceheads are less in evidence, except along the lines of its waterways.

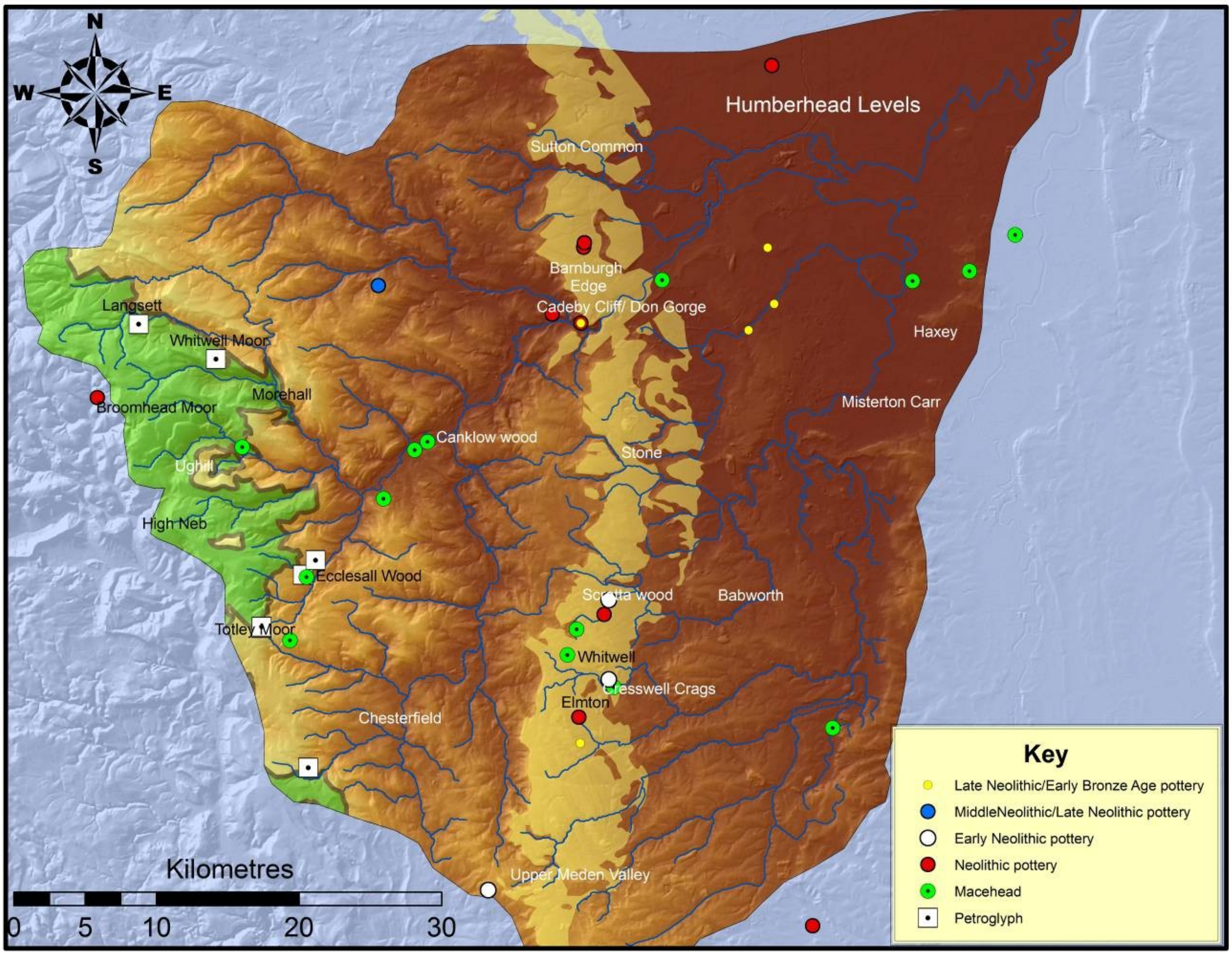


Figure 8.28: Distribution of Neolithic pottery (yellow, blue red and white roundels), with petroglyphs and maceheads."Neolithic" (red) is pottery without better dating. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The lines of the waterways are given added emphasis by the distribution of two more classes of data: pottery and petroglyphs (Figure 8.28). Table 8.7 and figure 8.28 show that the use of pottery across the study area was very limited. That which is in evidence however is entirely situated at very distinctive locations along the lines of the study area's waterways, with one notable exception. This includes sherds recovered by Alan Peace at the aforementioned Cadeby cliff site overlooking the Don Gorge. Sherds were recovered at the rock shelter sites along the gorge cut by Bondhay Dyke at Lobb Wells and Thorpe Common in South Yorkshire where large Mesolithic assemblages were also recorded. Part of a Mortlake bowl was recovered in developer funded excavations close to the henge monument at Wombwell in South Yorkshire (Morris and Lloyd 2002). Somewhat larger assemblages of pottery were recovered at Parrots Corner along the course of the River Torne, dated to c. 2100-2000 BC (Bishop 2010) and especially at Auckley, down-stream, where 269 sherds representing up to 16 vessels were excavated from a sub-rectangular pit nearly 2 metres long, with a north-west/south-east orientation (Atkinson and Chadwick 1994; Chadwick 1995).

The Auckley assemblage represents the largest quantity of pottery in the database, and the largest assemblage of prehistoric pottery recovered in South Yorkshire and perhaps the wider study area (Chadwick 1995: 70). The sherds mainly relate to the Beaker tradition, although Food Vessels are also represented. All were excavated from the same context. The vessels have been dated to 2000-1750 cal BC (Chadwick 1995: 70). Thirteen worked flints, including a petit tranchet arrowhead, were also recovered from the pit, along with a number of fire-cracked stones. Post excavation analysis of the assemblage showed that many of the sherds and chipped stone artefacts were worn and abraded, suggesting that the material might largely be composed of midden material (Chadwick 1995: 73). However, the morphology of the pit and un-mixed nature of the artefact distribution suggested to the excavator that a deliberately structured deposit might be in evidence (Chadwick 1995: 73). We will return to this soon.

The closest comparison to the Auckley pit and assemblage in the study area is a small shallow sub-circular pit excavated at Pastures Road, Mexborough, also in South Yorkshire (Weston 2012; Figure 8.29). The assemblage is much smaller, at 13 sherds (Figure 8.30), but also associated with flintwork.

Figure 8.29: Pit from which Late Neolithic or Early Bronze Age pottery was excavated at Pastures Road, Mexborough, South Yorkshire. Courtesy of Archaeological Services WYAS. Source: author.

Figure 8.30: One of the sherds recovered at Pastures Road. Courtesy of Archaeological Services WYAS. Source: author.

Given the rarity of pottery finds in the study area, it is notable that the site at Pastures Road, on the east facing lower slopes of the hill between the confluence of the Don with the Dearne, is visible from the location at Cadeby cliff where similar pottery was also recovered in fieldwalking (Figure 8.31).

Figure 8.31: Pastures Road (indicated by the red arrow), Mexborough, South Yorkshire, from Cadeby Cliff overlooking the Don Gorge, facing west. Source: author.

The phenomenon of pit excavation and the deposition of pottery and other artefacts in them had wide currency across Britain during the Neolithic (Whittle 1999: 58; Thomas 1999: 66; Pollard 1999). Beginning in the Early Neolithic, the practice increased in frequency until the end of the Neolithic (Thomas 1999: 69). The examples above show that within the present study area this practice persisted into the Early Bronze Age. The contents of pits varies widely, and Thomas has suggested that though it is probable that the practice had broadly similar significance, the variability implies that localised meaning was paramount (1999: 69). The unstated assumption underpinning this thinking is that deliberately structured deposition was being undertaken, but the variability itself could be interpreted as indicating the more prosaic realities of middening activity, as suggested at Auckley by Cumberpatch and Edmonds (referenced by Chadwick 1995: 73). It is a moot point, but an unusual feature of the assemblage at Auckley is its composition, which includes both Beaker tradition pottery as well as Food Vessel sherds as noted earlier. Pits with Beaker vessels are apparently less common than Grooved Ware vessels in general, and Food Vessel pits almost unheard of (Richards 1999: 69). Localised traditions are thus implied at Auckley, both in terms of its late date and composition.

The rarity of pottery across the present study area, and the relative abundance at Auckley, along with its unique characteristics, suggests something more special than mere dumping. Though less markedly so, the feature and assemblage at Pastures Road must also be considered in the same light, particularly given its very distinctive location, and proximity to the scenes of activity already noted along the west facing Magnesian Limestone escarpment, and in and around the Don Gorge (Figure 8.11).

The digging of pits and deposition of artefacts in them was, so it is claimed, an act that imparted meaning to the location chosen for the act; such commemoration went above and beyond the precise nature of the associated activities themselves (Thomas 1999: 72) and has been explicitly linked with the marking of specific locales (Pollard 1999: 89). The place itself would, thereafter, be associated with those who performed the act as well as the act itself. To this end, the siting of such activities at a place with prominent and distinctive characteristics, particularly if located on a routeway or well known place of repeated activity, would enhance the statement being made about its importance, and possibly explain it. Pastures road certainly is in a distinctive and prominent location, and Auckley lies directly adjacent to the line of the river Torne (Figure 8.32).

Auckley not only lies immediately adjacent to the River Torne, but on the end of a slightly raised spur of higher ground protruding into the floodplain at that point (Figure 8.32). The spur continues on the opposite bank of the river. This distinctive location was deliberately chosen for the act of pit excavation and artefact deposition, probably to be associated with settlement activity, although repeated activity at the site is not in evidence for the study period as a whole. However, the excavator suggested that this might be because more ephemeral evidence has been destroyed by recent agricultural activity (Chadwick 1995: 70) which, given the raised nature of the site (Figure 8.32), would seem a likely prospect. This is consistent with Neolithic settlement across Britain, where pits filled with artefacts are frequently the only remaining archaeological features (Pollard 1999: 77). The Auckley assemblage, though including sherds relating to the Early Bronze Age, in other respects bears close comparison with the Neolithic phenomenon known from elsewhere (Pollard 1999). In particular, the abraded nature of some of the sherds noted above is consistent with the kinds of middening practice that is assumed to have generated the material deposited in Neolithic pits, as is the presence of the petit tranchet arrowhead also noted. Such pit deposits, it has been suggested (Pollard 1999: 89), represent acts of ceremonial closure, upon the abandonment of a settlement site.

The only assemblage of pottery to not lie directly adjacent to flowing water in the study area was recovered a few kilometres to the north of Auckley, at Armthorpe in South Yorkshire (Rose and Richardson 2004; Figure 8.32). The assemblage occupies the west end of the prominent spur of sand which was the location of an Earlier Neolithic flint assemblage, close to its east end. It was noted above that the spur would probably have had an appearance akin to a promontory, protruding into a landscape that was rapidly becoming wet, particularly in the West Moor basin. By the Later Neolithic and Early Bronze Age, wetting of the Humberhead Levels would have been quite advanced, and the sand bar presumably even more prominent, and largely surrounded by wetlands, much as the pit sites at Auckley and Mexborough. Pollen data from taxa such as *plantago lanceolata,* recovered from the nearby Thorne Moors dated to 2290-1880 cal BC is associated with pastoral activities (Chapman and Geary 3013: 145), supporting the continuance of the earlier interpretation for the Levels. Auckley and Mexborough might therefore be the locations of communities dating from the Neolithic that abandoned those locations sometime in the Early Bronze Age.

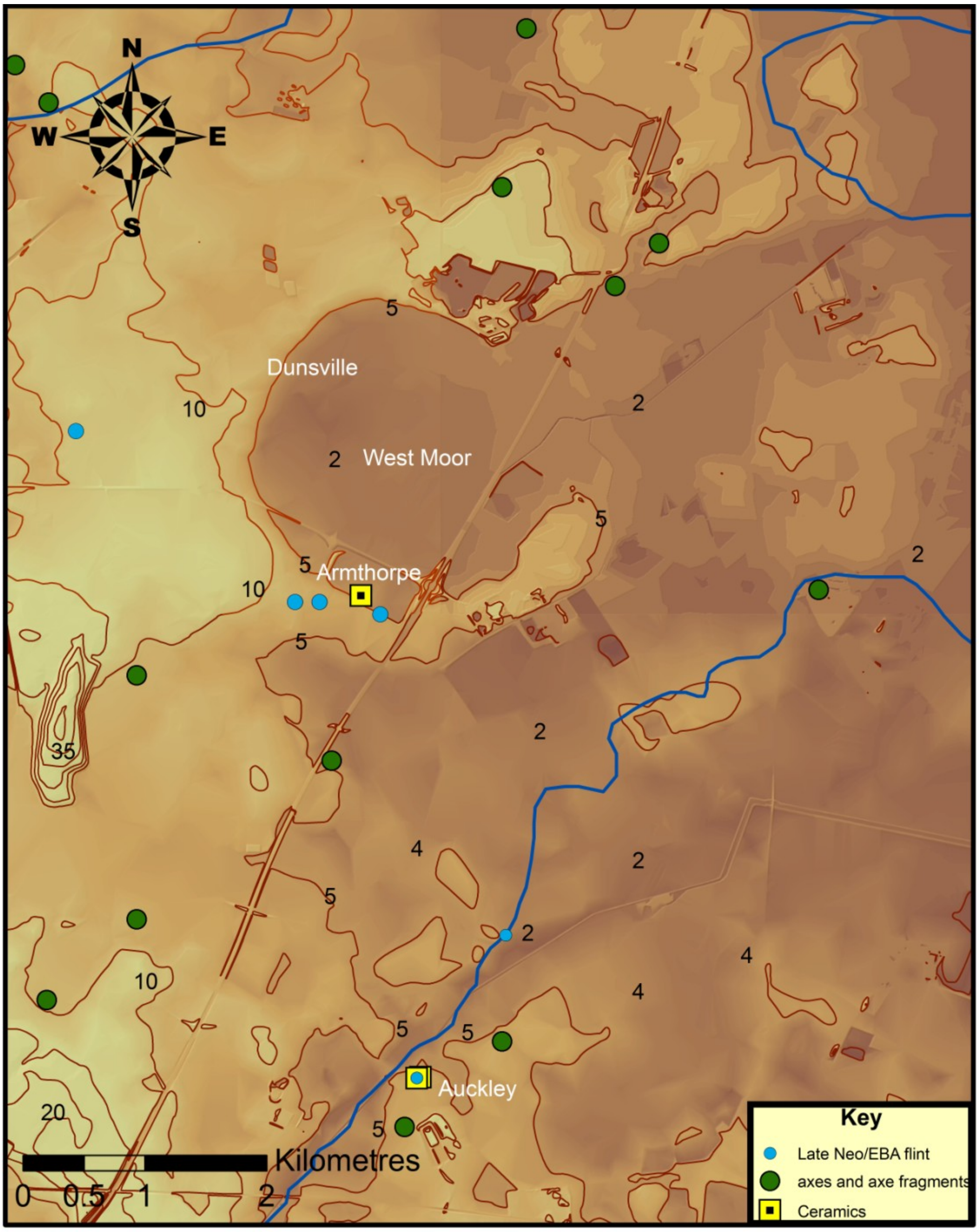


Figure 8.32: The wider topographical setting for the pottery assemblages at Auckley and Armthorpe, South Yorkshire. Figures represent metres above sea level OD. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

From the above we can say two things about what the assemblages have in common: with the exception of Armthorpe, connectivity via the study area's waterways is implied by the locations of the assemblages, and distinctive settings predominate that feature proximity to watery places in all cases. Beyond these factors, however, purely localised characteristics differentiate the locations, and in the case of Mexborough and Auckley, the detailed contents of the assemblages and the features within which they were deposited. The localised differences might represent practices indicative of localised senses of identity. Alternatively they might represent changes over time, since we do not have sufficient information enabling detailed chronological comparisons to be made between all assemblages. However, one more characteristic of the project's Neolithic pottery assemblage as a whole is worth noting: 66 percent of findspots occur on, or immediately adjacent to, the Magnesian Limestone plateaux.

Pottery is portable, but petroglyphs are not, and yet their distribution is also indicative of a relationship between artefacts and the lines of the study area's waterways (Figure 8.28). The marking of routes through the landscape has been suggested earlier as one reason why petroglyphs were created (Bradley 1997: 89-90). The few in evidence in the present study area are exclusively located on the Gritstone uplands of the west, which might, *prima facie,* be suggestive of a micro-regional distinction. The distribution is more likely due to bias in the sample, since suitable stone for the crafting of durable motifs is absent to the east of the uplands. It has been suggested that elsewhere other materials might have been used for a similar role (Barnatt and Reeder 1982: 37), but this is not possible to confirm.

Watery places are again associated with the locations of petroglyphs. They might, as postulated, be connected with the marking of ways through landscapes, but their association with other classes of monument in particular settings argues for a less straightforward role: cup marked stones have been recorded by myself at Totley Moor, which has already been noted as a place of repeated visitation and activity, and at Whitwell Moor by Bolsterstone Archaeology and Heritage Group where they are located on the margins of an upland bog in the vicinity of cairns, standing stones and a possible hengiform monument (Figure 8.14; Figure 8.33). Petroglyphs have sometimes been noted for their association with henge monuments elsewhere (Bradley 2007: 218).

Figure 8.33: Recumbent stone in two pieces at Whitwell moor, South Yorkshire, embellished with cup marks on both fragments. Note the fossilised leaf to the right, spanning the entire width of both fragments. Source: author.

The drawing of attention to particular places by the use of petroglyphs that are not solely placed along routes is therefore strongly implied, and suggests that for the first time since the Mesolithic period, upland locations were being imparted importance to in their own right in the study area, rather than merely denoting lines of communications and ways through landscapes. This is supported by the presence of the assemblage of arrowheads from Ughill discussed earlier, at a particularly prominent and distinctive location on the edge of the Gritstone uplands.

The location of the possible hengiform monument at Whitwell Moor also supports the above suggestion, and is one of the earliest known monuments in the Gritstone uplands of the study area. This was probably constructed at a moment in time when it has already been noted that an expansion in the diversity and craftsmanship of certain portable artefacts such as polished stone axes, maceheads, arrowheads and pottery took place. Greater control of access to such items by local communities, it has been suggested (Bradley and Edmonds 1993), was a function of an increased preoccupation with the need to manage social differentiation and its materialisation.

Henge monuments have been suggested to have played an important role in the regulation and movement of resources such as the above (Bradley and Edmonds 1993; Richards 1996: 320), and in particular polished stone axes. Arbor Low in Derbyshire, for example, is known to have been the location of a particularly dense concentration of axes and maceheads (Bradley and Hart 1983: 186). Unfortunately, none of the possible henge and hengiform monuments within the present study area have been subjected to detailed field research with the exception of Cadeby. This probably explains why axes have not been recorded at or near the possible hengiform features at Wombwell and Wadworth (Figure 34). Ironically, though the feature at Cadeby proved to be almost certainly natural, several complete and fragmentary polished stone axes have been recovered from the location as surface finds (Figure 8.32; Figure 8.34). At Whitwell Moor, a single example of a polished stone axe has been recovered as a stray find from the vicinity of the putative hengiform monument.

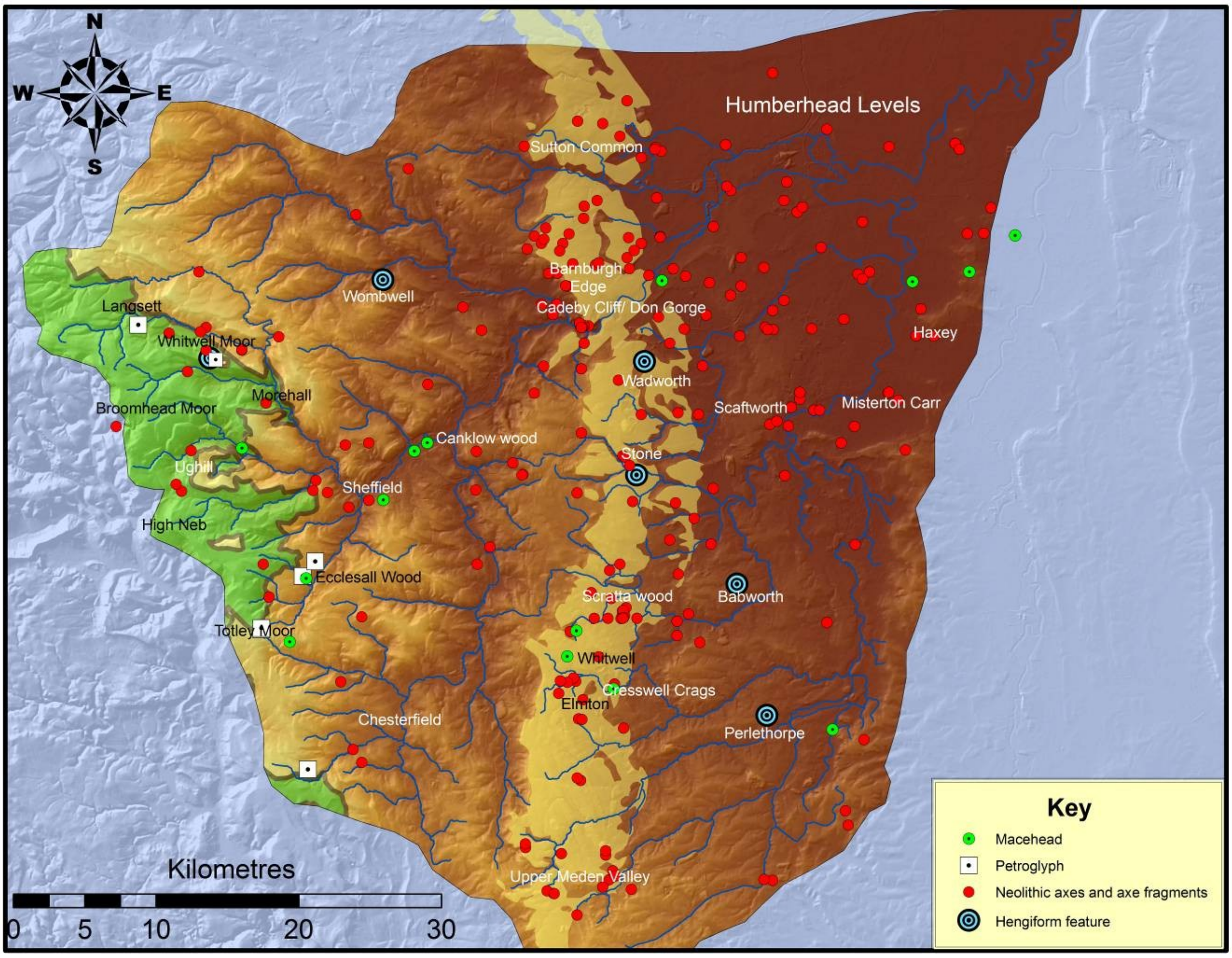


Figure 8.34: Distribution of putative henge monuments across the study area, in relation to maceheads, polished stone axes, and petroglyphs. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Henge monuments, it was noted earlier, are frequently distributed regionally in terms of their defining characteristics, the aforementioned complex of Thornborough in the vale of

York being a case in point (Wainright 1989: 14; Richards 1996: 331). Other concentrations of such monuments exist within Britain such as in the Millfield Basin in Northumberland (Edwards 2007), but a characteristic that defines such monuments in the present study area is their dispersed nature (Figure 8.34). Variability, as we have seen earlier, is another characteristic of hengiform monuments in the present study area. A dispersed pattern for such monuments is not unique, as demonstrated by the distance between the henge monuments of the Derbyshire Peak District (Edmonds and Seaborne 2001: 217). Variation is also not unique, even within supposed "complexes" such as that in the Millfield Basin, where considerable variation has been demonstrated that casts doubt on the presumed synchronic relationship between the monuments located there (Edwards 2007).

Within the present study area, the putative hengiform monuments have in common similar scale external diameters, with the exception of Whitwell Moor, although Stone has four entrances as opposed to an unknown number for the other features. Whitwell Moor is of much smaller scale and possibly has a single entrance. It also lacks a ditch. This represents variation that might relate to localised senses of identity, but not enough to be convincing given the well documented variation amongst henge monuments in general already alluded to, even when in close proximity such as in the Millfield Basin. There is, however, an attribute which all of the features in the present study area do share: diminutive girth of banks and ditches.

Two of the six possible henge monuments are located on the Magnesian Limestone Plateaux, which is consistent with the pattern noted for the Earlier Neolithic, but the remaining four mark a departure. Two are located in the upper Dearne valley at Wombwell and the Little Don valley at Whitwell Moor. They lie close to the upper reaches of the Don. They might partly relate to the control of the exchange of particular forms of elaborate artefacts, as contended by Bradley and Edmonds (1993). If so, the sites are strategically placed to take advantage of movements along the Little Don valley between the west of Britain and east through the gap between Hunshelf Bank and Wharncliffe Chase at Deepcar, and thence to the upper Dearne valley where the hengiform feature at Wombwell is located.

However, the association of the hengiform monument at Whitwell Moor with a spring and upland bog, along with cairns, small standing stones and petroglyphs is indicative of the importance of a place that meant more to local inhabitants than a mere node on a nexus of exchange routes. This is supported by the locations of the features at Wombwell in South Yorkshire and Worksop and Perlethorpe in North Nottinghamshire. They also overlook and are immediately adjacent to wetlands; they are the alluvial floodplains on the edges of the middle reaches of rivers (Figure 8.35). The patterning is suggestive of common value across the study area being placed in locations forming the outlying margins of the Humberhead Levels into which those rivers flow. These lower lying examples at Wombwell, Perlethorpe and Worksop share a similar scale and form. Wadworth, at a higher elevation, nevertheless also lies at the margin of the same wetland landscape and is similar in form and scale.

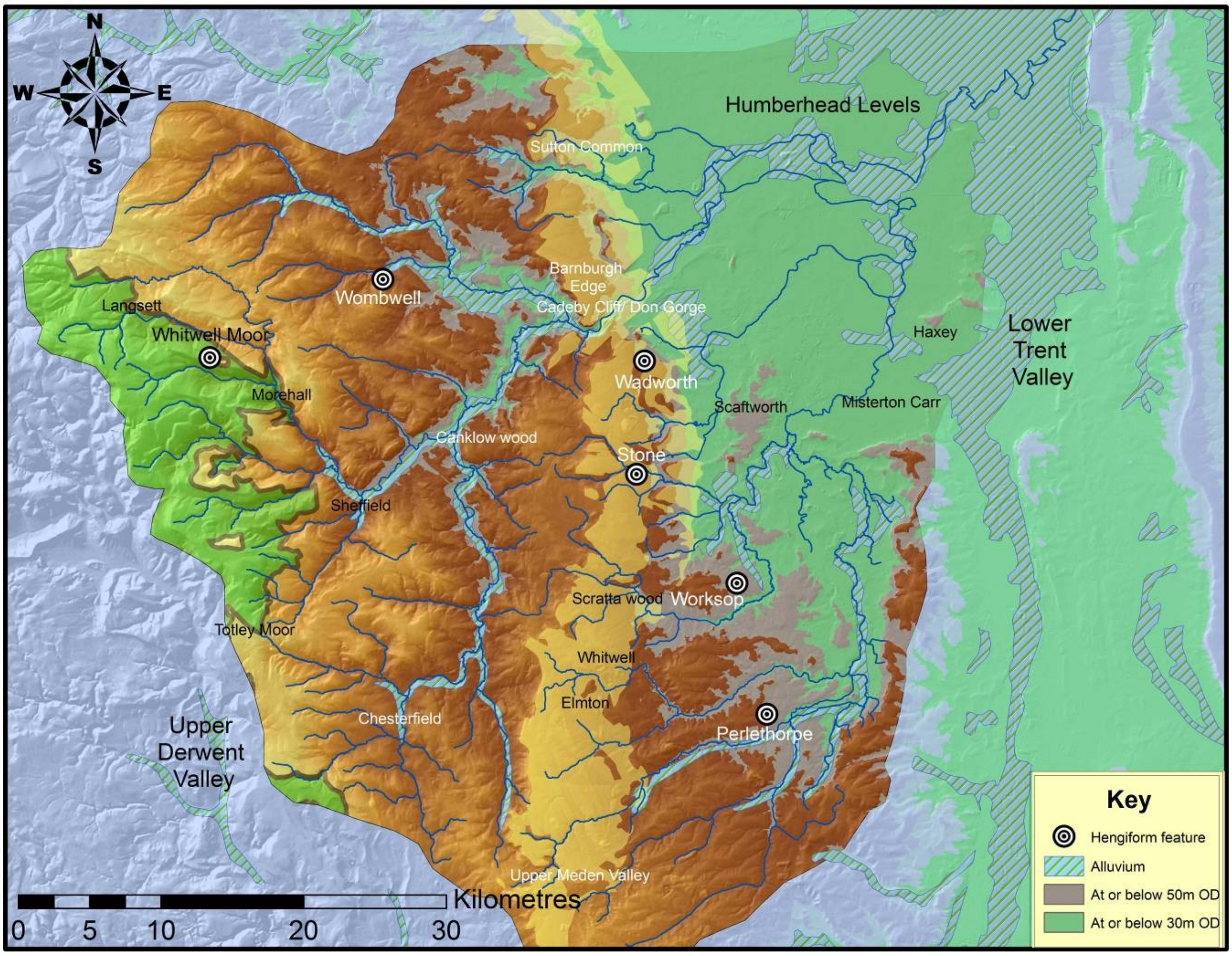


Figure 8.35: Hengiform features in relation to floodplanes and probable former wetlands. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Summary and concluding remarks

It is possible that in the uplands near the watershed with the Derwent Valley to the west communities traversing that landscape had as much a sense of affinity with the immediate west as to the east during the Late Mesolithic. The discontinuity of the use of chert as a raw material on the east side of the watershed during the Early Neolithic might indicate a greater affinity with the east from around that time, since it is known that in the Peak District the use of Chert actually increased during the Later Neolithic (Bradley and Hart 1983: 186).

Point density analysis strongly indicates that settlement activity was concentrated on the Magnesian Limestone in the Early Neolithic. While sample bias and increased wetting of the lowland areas can explain some of this, the absence of monuments, pottery and chipped stone concentrations on the Gritstone uplands argues for an absence of permanent settlement there. The area was certainly utilised, as is demonstrated by the general distribution of chipped stone and polished stone axes, but was not an area imparted with importance by the erection of monuments or the presence of concentrations.

The lack of structures of a domestic or agricultural nature conforms to the impression at the national level of a society that was still essentially mobile in character. However, the concentration of activity around the headwaters of streams on the Magnesian Limestone, combined with the abandonment of the use of chert suggests that the centre of gravity for home ranges had settled on the drier free draining plateaux of the Magnesian Limestone. This is supported by the location of the study area's long barrows that are also located on the limestone, and the high proportion of ceramics distributed across the plateaux noted above.

It can be no coincidence that the barrows and other funerary contexts are located in close proximity to the gorges and valleys and in particular the Don Gorge. These structures and associated activities symbolise not only a commitment to a particular locale, but also to ways through it. Those ways, delineated by the courses of the River Don and its tributaries are marked by the deposition of elaborate artefacts of polished stone and pottery, beginning around the time that the barrows were erected.

In the Middle and Later Neolithic, choices in the use of materials, and in particular flint for the production of polished stone axes indicates a pattern of use that is distinct from the neighbouring regions of the Peak District and Lincolnshire, and yet connects them (Kitchen 2000: 302). The distinction suggests not only an affinity with East Yorkshire, but a difference with it that is consistent with the earlier focus for activity on the Magnesian Limestone: the Magnesian Limestone plateaux are situated mid way between the Peak District, and East Yorkshire and Lincolnshire. This distinction is supported by the distribution of the new forms of arrowheads, which are largely concentrated in the same places in the vicinity of the limestone as earlier material. The margins of wetlands also now seem to be emphasised, reflecting changes in the environment that foreground the importance of such places.

The henge monuments of the Later Neolithic are fewer in number and more dispersed than the barrows of the Early Neolithic. It has been suggested (Thomas 1999: 23), that people in the Later Neolithic were gradually becoming less mobile as more emphasis was being placed on the management of crops and domesticated animals. The appearance of the new form of monument, and its distribution, might be a signature of this changing way of life; their dispersed character servicing the needs of communities that were still mobile, but ranged less far than their predecessors, thus necessitating localised meeting places.

The new emphasis on greater control of the circulation of elaborate artefacts proposed by Bradley and Edmonds at a more localised scale is therefore supported by the existence of hengiform monuments, as might the increased number of elaborate artefacts coinciding with the courses of the study area's waterways. The distributions define the lines of journeys; the proximity to the waterways of hengiform features define where people might gather at certain times in the course of such journeys. Unfortunately, surviving monuments in the present study area do not correlate well with these distributions, although they are hinted at by the features and material culture at Wombwell and Whitwell Moor and the stray finds recovered in the vicinity of Perlethorpe. This poor correlation could be due to formation processes: none of the putative henges have been the subject of fieldwork that could result in the recovery of artefacts. What is clear is that those hengiform features that exist vary to some extent in their morphology and are dispersed. These are not unique attributes in regional distributions, as already noted. However, they do share the attribute that the width and height of surviving banks and ditches are of diminutive size, which is consistent with the scale of standing stones in the uplands, including those in close proximity to the hengiform feature at Whitwell moor.

If a sense of regional identity that associates closely with the Magnesian Limestone Plateaux in the Early Neolithic is implied by the above, this close affinity had changed by the end of the Neolithic: The majority of activity is still centred on the Magnesian Limestone, but that to the west in the Gritstone uplands is closely associated with wet places, mirroring those on the margins of the wetlands on the Humberhead Levels, and in the vicinity of the Don Gorge. Perhaps, at a time when societies were becoming less mobile, as home ranges contracted and were becoming more localised, new foci for the embodiment of the social identity of communities were required.

These new foci were ones for which the familiarity of wet environments commemorated with structures of similar scale were needed. They were part of the routines of life as played out at the scale of a region were pastoral activity was of paramount importance.

Chapter 9:

The Bronze Age

Introduction

The issues over how, or whether, to distinguish between the Late Neolithic period and the Early Bronze Age will not be revisited here. It needs to be reiterated, however, that there is an overlap which needs to be considered. The Early Bronze Age includes data that first entered the archaeological record during the Late Neolithic period. This explains why, inevitably, there will be some repetition necessary in discussing certain classes of material already visited in the last chapter, in order for the overall narrative not to suffer. This will obviously be kept to a minimum.

The relevant data in this chapter and its character has much more in common with chapter eight than with the preceding chapter. Chipped stone continues to decline in importance and much more reliance is placed on other forms of information. The diverse character of that information is increased, but quantities reduced until by the end of the Bronze Age its nature has much in common with the succeeding Iron Age.

As before, the chapter begins with a summary of the character and nature of the most important classes of data. This includes chipped stone, pottery, axe hammers and battle axes, a diverse range of metal artefacts and an equally diverse range of monuments and structures. The second half of the chapter, which brings to a close the narrative of the core chapters of the thesis, sets the array of material culture and archaeological features within the interpretative framework already established to answer the research questions. The historical process, of course, does not end with the close of the present study period and with this in mind the discussion of the data looks forward and anticipates to some extent issues which also have relevance to the aforementioned Iron Age. This is in keeping with the narrative over the three core chapters, recognising as they already have the reality of historical processes that transcend the period based boundaries which archaeologists use to organise their discussions.

The character of the assemblage and its content

Chipped stone

In chapter eight it was noted that there was a considerable reduction in chipped stone data. It was also suggested that this in part reflects the difficulty in identifying Neolithic artefacts and how much of the material must be subsumed within the undifferentiated "prehistoric" assemblage. This applies even more so to the Bronze Age, and it is worth noting that of the modest assemblage shown in table 9.1, 82% consists of tools. This reflects the extent to which the database is dependent upon artefacts recovered as surface finds.

Systematically recovered chipped stone artefacts				
L.Neo-EBA	BA	EBA	MBA	LBA
546	222	122	2	11
Unsystematically recovered chipped stone artefacts				
L.Neo-EBA	BA	EBA	MBA	LBA
329	198	79	1	5

Table 9.1: Chipped stone artefacts.

The trajectory of reduction sequences in chipped stone crafting described earlier for the Neolithic also continues, with artefacts probably to be connected with the undertaking of day-to-day activities being of an increasingly opportunistic and typologically indistinct nature (Clay 2006: 83). Some specialists deem the Middle Bronze Age to be the latest period when regular flint use for tools is in evidence, although a few claim that chipped stone crafting survived into the Early Iron Age (Young and Humphrey 1999: 239). This renders one aspect of the current analysis more difficult, since the undertaking of routine activities at specific locations and in specific environmental contexts is important. However, it is also the case, as in the Later Neolithic, that crafting of certain tools continued to be executed with great care and skill, implying that special or particular significance was given to those artefacts that renders them useful in answering the research questions. This is particularly true of those artefacts that would or could have been used in routine activities and which are also of fine craftsmanship (Figure 9.1). A wider range of specialist tools were crafted than were available before the Later Neolithic, giving rise to the suggestion that mobility was becoming less important (Bradley and Edmonds 1993: 185).

The present assemblage includes 125 barbed and tanged arrowheads. These have been ascribed to various sub-divisions of the Bronze Age in the project database, but most often an undifferentiated "Bronze Age" date when not designated specifically as Early Bronze Age. This reflects the spot dated nature of many of the records of stray finds held by HERs and museum databases, many of which are old. Green (1980: 120) shows that of 15 Beaker settlement contexts associated with arrowheads, 10 included barbed and tanged arrowheads. This accords well with the evidence from burial contexts (Green 1980: 120). Since the earliest Beakers relate to the middle of the third millenium BC (Gibson 2007: 87), barbed and tanged arrowheads probably started to be used from very Late in the Neolithic. These were the simple form known as Sutton type arrowheads, that continued in use until the end of the tradition (Green 1980: 138). Associated radio carbon dates give a broad distribution relating from the Early Bronze Age to the Middle Bronze Age for "fancy" types such as Conygar Hill and Green Low (Green 1980: 137). They are often associated with Food vessels in the case of the Conygar Hill variety, placing them within a ceramic date range between c. 2000 BC (Gibson 2007: 93) to approximately the middle of the second millenium BC (Gibson 2007: 101). The Green Low variety are associated with Beakers that also disappear from around the middle of the second millenium BC. Archery appears to decline in importance from approximately the 15th century BC (Green 1980: 192), and it is possible that in their latest phase the fancy types had more of a symbolic role than practical function, at the time when bronze weaponry was first developing. In the present study barbed and tanged arrowheads are regarded as relating to their floruit in the Early Bronze Age for the purposes of the analysis.

Figure 9.1: Barbed and Tanged arrowhead from Broom valley, Rotherham, South Yorkshire. Source: author. Courtesy of Clifton Park Museum, Rotherham.

Pottery

For the reader's convenience, table 8.7 from chapter eight has been reproduced below as table 9.2. There is little to add to the earlier summary of its characteristics, apart from one important difference: In contrast to the Neolithic period, most of the pottery, and especially the complete vessels, comes from funerary contexts and especially barrows such as those recovered during developer funded excavations at Goldthorpe, South Yorkshire (A. Lines, pers.comm.; Biggs 2011) and Rossington, South Yorkshire (Weston 2012). Some vessels have been recovered from the locations of probable former barrows, such the Early Bronze Age collared urn recovered during groundworks in the centre of Doncaster in 1865 (Smedley 1951: 256; Figure 9.2).

Date	E.Neo	Neo	L.Neo	L.Neo-EBA	Neo-BA	EBA	MBA	LBA	BA
Complete Vessels	6	2				5	8		13
Sherds	3	15	15	2 269(16)	9	27(2) 1		135(2)	16
Sherd scatters									2

Table 9.2: Chronological distribution of pottery across the study area. Figures in brackets represent approximate number of vessels where known. "Scatters" refers to surface collected sherd assemblages of unknown quantity and character.

Figure 9.2: Collared urn recovered during groundworks in Doncaster, South Yorkshire, in 1865. Source: author. Courtesy of Doncaster Art Gallery and Museum.

Axe Hammers and Battleaxes

Only seven "battle axes" are presently known in the study area. These are petrologically similar to axe hammers, and relate to broadly the same date range. Early examples, associated with Beaker pottery burials (Roe 1979: 23; Sheridan 2012: 41-42), are made from petrological Groups I and XIII, as are later examples of maceheads (Roe 1968: 168-69), prompting Roe, and Smith (1979: 15), to suggest that they date approximately from the later period of macehead production. Burials with which maceheads are associated continue until c. 1700 BC (Needham 1996: 131). Early Beaker burials date from around the 25th century BC (Sheridan 2012: 41-42; Needham 2012: 4), but do not seem to have been widespread before approximately 2300 BC in the final phase of the Neolithic (Needham 1996: 127). On the basis of their chief associations being with later maceheads and the floruit of Beaker burials therefore, the battle axe tradition is probably largely contemporary with the Early Bronze Age (Edmonds 1995: 183).

The distribution of battle axes, along with axe hammers, is more densely concentrated in England to the north of the River Trent than elsewhere in Britain (Roe 1979: 28). Considerably more axe hammers have been recorded in the present study area than battle axes (table 9.3), albeit a quantity that is still modest by comparison with elsewhere in northern England: The largest concentration of axe hammers is located in Cumbria (Roe 1979: 26-27), although another significant concentration is located on the east coast of North Yorkshire, which is also the location of the largest concentration of battle axes (Roe 1979: 23; 26-27). While the assemblage in the present study area is small, it is noteworthy that the approximate proportion of battle axes to axe hammers is the opposite to that known for North Yorkshire.

Axe hammers by known petrological group						
Flint	XIV	XVIII	Igneous	Sandstone	Schist	?
		4	4	1	1	
Axe hammers by probable petrological group						
1	2	4		1		6

Table 9.3: Axe hammers by petrological group.

The major distinction between battle axes and axe hammers, in terms of their morphology, is the difference in size; battle axes tend to be smaller (Roe 1979: 29; Figure 3; Figure 9.4). Battle axes, as the name implies, are often assumed to have been weapons of war, while their larger counterparts are assumed to be too large to have had a practical use, and are thought to have been of more symbolic significance (Waddington 2004: 47). This is not the place to embark upon a digression on the subject of their precise respective functions, but it has been noted that, nationally, battleaxes are frequently associated with funerary contexts whereas axe hammers often do not appear in formal deposits of any kind (Waddington 2004: 47). Waddington has suggested that battle axes can therefore be more clearly linked with an aggressive form of male identity on this basis, and Harding (2000: 275) has argued that the tool may have evolved into a more symbolic version of the same at a slightly later date, perhaps explaining the impractical and unwieldy nature of axe hammers.

Figure 9.3: Axe hammer from the vicinity of Doncaster (side elevation left, plan view right). Source: author. Courtesy of Doncaster Museum and Art Gallery.

Figure 9.4: Battle axe from the vicinity of Doncaster (side elevation). Source: author. Courtesy of Doncaster Museum and Art Gallery.

Metal artefacts

Spearheads and axes form by far the largest component of the metallurgical dataset (table 9.4). It is possible therefore to meaningfully analyse their distributions and densities in furtherance of the research questions. Other artefacts are too few in number to consider in this way, but the dataset as a whole has in common the unique attributes of its circumstances of source and nature of crafting to merit their analysis *in toto.*

	BA	EBA	MBA	LBA
Spearhead	13	1	27	8
Axe	15	8	37	29
Dagger		1		
Rapier		2		
Sword			2	3
Knife	1			
Arrowhead	2			
Chisel			1	
Hammer		1		2
Adze			1	
Ring				1
Belt fitting				1
Other adornment	1			
Ingot				4

Table 9.4: Distribution of metal artefacts by chronological period.

It is a moot point as to whether or not the advent of metallurgy signifies the beginning of a new chronological period. Traditionally, of course, this was the case, hence the term "Bronze Age". More recent and more sophisticated approaches to the definitions of periodisation have, however, made the distinction problematic in these terms. If it is assumed that the crucial factor is the advent of copper alloy metallurgy, the beginning of the Bronze Age in the British Isles should be from around 2600 BC or soon after (Pearce 1984: 6-7: Sheridan 2012: 40). Numerous other cultural changes began to take place from around this time including the initial appearance of Beakers, the use of barbed and tanged and hollow based arrowheads, and the adoption of new funerary practices (Sheridan 2012: 42). That is the reason why many scholars combine the Late Neolithic with the beginning of the Bronze Age as a distinct period or sub-period. However, many of these developments do not appear to have been widely embedded within indigenous communities until several more centuries had passed (Sheridan 2012: 45). Moreover, as explained in chapter eight, I take the view that to replace one period based orthodoxy with another does not necessarily serve understanding of historical processes. Retention of old distinctions might be awkward, but serve to remind archaeologists of the artificial nature of the terms we use, and hopefully their true significance. Here then, the Bronze Age is taken to begin from around 2200 BC, from which date approximately the use of tin-bronzes became ubiquitous (Bray 2012: 57).

Figure 9.5 shows an example of an Early Bronze Age flat axe from the project database that has an early form of flange on its flanks, similar to axes recovered from contexts dated to c.2000 BC (Pearce 1984: 8; 14). Axes, at least in the Early and Middle Bronze Ages, are typologically varied and distinct enough to enable a nuanced relative sequence to be established and therefore statistically analysed. Unfortunately, it has not been possible to examine macroscopically sufficient numbers of axes in the present database to do this, so the broad distinctions of Early, Middle and Late Bronze Age have been retained for the analysis.

Figure 9.5: An Early Bronze Age flat axe from Mansfield Woodhouse, north Nottinghamshire, with slightly raised side edges indicative of the transition from the earliest flat axes to the flanged variety. Source author: courtesy of Mansfield Museum.

A similar situation applies to the series of spearheads, which can be divided into phases (Figure 9.6) but which in the present study will be analysed according to the broad period divisions noted above. Only one has been recorded that appears to relate to the Early Bronze Age, which is consistent with the general understanding that they relate mainly to the Middle and Late Bronze age. Harding (2000: 281) has claimed that due to their likely use as thrusting weapons, they probably superseded the dagger as the primary means of inflicting harm from a safe distance. This, one must assume, is why daggers also evolved into rapiers and early swords. These, use wear analysis of blades and experimentation with replicas has shown were probably used for thrusting and slicing (Kristiansen 2002: 320; 323; Molloy 2007: 90; 98-9). Spears, however, were probably the primary weapon in battle due to their length (Molloy 2007: 100).

Figure 9.6: A double looped and socketed spearhead of the Taunton phase of the Middle Bronze Age (c. 1400-1200 BC) from Bawtry, South Yorkshire. Source author. Courtesy of Doncaster Art Gallery and Museum.

Spearheads are assumed here to be weapons for the most part rather than hunting implements. The Bronze Age, it has been claimed (Harding 2000: 275) is the first time in history when weapons were designed for the sole purpose of killing human beings. This is questionable, but the present study is not the place for such a discussion since it will not further answering the research questions. It is, however, reasonable to suggest that it is with the advent of the age of metallurgy that implements which had violence as a chief (although not necessarily sole) purpose are more easily detected. It is hard to imagine why the implement in figure 9.6, for example, would need to be the size it is to hunt animals. Smaller versions exist, and might have been employed as javelins, but why they should be used in preference to bows and arrows for hunting is difficult to answer. As noted, they succeeded daggers, which do not, *prima facie,* appear to be suitable for hunting. Rapiers and swords, that came later in the Middle Bronze Age (Harding 2000: 277), are also highly unlikely candidates for hunting implements or other tools (Kristiansen 2002; Molloy 2007).

Hoards, which are such a feature of other regions, including the neighbouring Trent valley (Scurfield 1997; Davis 1999), and the Ancholme valley in North Lincolnshire (Davis 1999: 28) are absent from the present study area, with the exception of the Kilnhurst hoard (Preston 1956) and the probable hoard from Haxey in North Lincolnshire (Loughlin and Miller 1979: 148; 155). In West Yorkshire, by comparison, no less than nine hoards are recorded (Faull and Moorhouse 1981: 99).The well known Tuxford hoard is located just beyond the eastern watershed of the study area.

Barrows

The remaining discussion of the database will summarise the various structures and monuments, beginning with round barrows. "Barrows" here refers specifically to earthen mounds and ring ditches that are assumed to mark former earthen mounds. Stone cairns of the Bronze Age that are thought to be funerary monuments are known only from the Gritstone uplands within the study area, are significantly smaller, and are sometimes difficult to distinguish from clearance cairns. "Clearance" cairns themselves are known sometimes to have human remains deposited in them as well as material culture, such as those investigated on Eyam Moor, Derbyshire (Hoaen and Loney 2013: 135) and Gardom's Edge, Derbyshire (Barnatt *et al* 2002: 54).

There are 71 round barrows and possible round barrows in the study area (table 9.5). Of these, 20 are ring ditches that have been detected in aerial photography for the most part, although at least one, at Goldthorpe, South Yorkshire, was detected through geophysical survey (Biggs 2011). Twenty six more either remain as upstanding features, or were when originally recorded. Insufficient information is held in the database to characterize the present or past state of the remaining 25 recorded barrows.

Location	I.D.	Variant	Dia. metres	Damage	Associations	Source
Howden moor	213			Destroyed		SMR03191/01
Bradfield	214			Destroyed		SMR04377/01
Bradfield.	215			Destroyed		SMR04378/01
Doncaster	245			Destroyed		SMR01871/01
Sutton Common	429		35			SMR00133/07
High Melton	457					SMR00664/01
Barnburgh	459		small			SMR01214/01
Sprotbrough	461		small	Partially cut		SMR03278/03
Sutton Common	1401		12	Destroyed		Hum.Wetlands
Sutton Common	1402		20	Destroyed		Hum.Wetlands
Sutton Common	1403		14	Destroyed		Hum.Wetlands
Adwick-Le-Street	1891	Ring ditch	29	Destroyed		EHAP
Campsall	1892	Ring ditch	25	Destroyed	Cut by IA/RB ditch	EHAP
Bentley	1893	Ring ditch	12	Destroyed		EHAP
Edenthorpe	1894	Ring ditch	18	Destroyed		EHAP
Loversall Carr	1896	Ring ditch	24	Destroyed		EHAP
Minsthorpe	1897	Ring ditch	50	Destroyed		EHAP
Marr	1898	Ring ditch	10	Destroyed		EHAP
Wath	369102950	Upstanding				Travis2001
Lodge Mooor	369102965			Destroyed		Bartlett1957
Lodge Mooor	369102975			Destroyed		Bartlett1957
Lodge Moor, S. Yorks.	369102976			Destroyed		Henderson1957
Mansfield, Notts.	369103007	Upstanding				Bonser1942
Moscar, S. Yorks.	369103054		18		Cist. Stone Kerb	YAJ1973
Rossington, S. Yorks.	399103487	Ring ditch		Destroyed	Burial urn	Weston2012
Rossington, S. Yorks.	399103488	Ring ditch		Destroyed		Weston2012
Kirk Smeaton, S. Yorks.	369111231	Ring ditch	16	Destroyed		EHAP
Kirk Smeaton, S. Yorks.	369111232	Ring ditch	15	Destroyed		EHAP
Adwick Le Street, S. Yorks.	369111233	Ring ditch	28	Destroyed		EHAP
Sutton Common, S. Yorks.	399103488	Upstanding	17	truncated		NMR13254

Goldthorpe, S. Yorks.	399104680	Ring ditch		Destroyed		A.Webb1997
Goldthorpe, S. Yorks.	399104687	Ring ditch		Destroyed		Biggs2011
Rainworth Water, Notts.	369104844					NSMRL2586
Warsop, Notts.	369106161	Bowl barrow				NSMRL4443
Laxton, Notts.	369106171					NSMRM4098
Laxton, Notts.	369106174					NSMRM4160
Holbeck, Notts.	369106218					NSMRM4374
Worksop, Notts.	369106231					NSMRM18240
Blyth, Notts.	369106236					NSMRM4786
Lound, Notts.	369106254	Cropmark		Destroyed		NSMRM4850
Mattersey, Notts.	369106256	Cropmark		Destroyed		NSMRM18219
Blyth, Notts.	369106269					NSMRM4928
Scarcliffe Wood, Derbs.	369107835	Upstanding	11		6 more possible barrows. Burial.	MDR6541
Ashover, Derbs.	369108141	Bowl barrow				MDR4977
Barlow, Derbs.	369108149					MDR5298
Totley Moor, Derbs.	369108172					MDR4023
Dronfield, Derbs.	369108207				Urns, burial	MDR5166
Hallam Moors, S. Yorks.	369108555					SMR04011/01
Hallam Moors, S. Yorks.	369108556	Cist				SMR02862/02
Ringinglowe, S. Yorks.	369108613					SMR00863/01
Whirlow, S. Yorks.	369108614					SMR03147/01
Whiteley Wood, S. Yorks.	369108615	Upstanding				SMR00928/01
Whiteley Wood, S. Yorks.	369108616	Upstanding				SMR03009/01
Burbage Moor, S. Yorks.	369108625	Upstanding			Hut circles	SMR01219/01
Waldershelf, S. Yorks.	369108713	Upstanding		Disturbed		SMR00541/01
Braithwell, S. Yorks.	369110115	Ring ditch	24	Destroyed		EHAP
Melton Warren, S. Yorks.	369110116	Ring ditch	12	Destroyed		EHAP
Hooton Pagnell, S. Yorks.	369110117	Ring ditch	9.5	Destroyed		EHAP
Tickhill, S. Yorks.	369110118	Ring ditch	17.5	Destroyed		EHAP
Tickhill, S. Yorks.	369110119	Ring ditch	23.5	Destroyed		EHAP
Tickhill, S. Yorks.	369110120	Ring ditch	5.5	Destroyed		EHAP

Graves Park, S. Yorks.	369110224	Upstanding				SMR00872/01
Whitwell Moor, S. Yorks.	369111091	Upstanding				Whit.moor survey
Totley Moor, S. Yorks.	369111123	Upstanding				SMR04380/01
Blacka hill, Derbs.	369111124	Upstanding				SMR00861/01
Houndkirk moor, S. Yorks.	369111127	Upstanding				SMR031331/01
Bailey Hill, S. Yorks.	369111168			Disturbed	Cist, bodies, pot, flint	Cootes2012
Hallam Moors, S.Yorks.	369111256			Disturbed	Standing stones, cairns	HM06
Hallam Moors, S.Yorks.	369111257	Upstanding		Disturbed	Standing stones, cairns	HM06

Table 9.5: Known round barrows and ring ditches in the study area.

Chapter four should be consulted for a fuller description of the ring ditches in particular, and the implications of the formation processes across the study area for the significance of the number of barrows recorded and their general locations. To summarise, however, it is likely that the concentration of mostly upstanding monuments present in the Gritstone uplands is due to the limited development of that land since the end of the Bronze Age. Those that survive in the uplands, therefore, probably represents a high proportion of those originally erected. Surveying of the uplands, however, has been sporadic and patchy over the years, resulting in a far from comprehensive coverage. More barrows undoubtedly remain to be recorded.

In the lowlands to the east a rather more complex situation pertains. On the Coal Measures Sandstones, and along the middle reaches of the rivers Don, Dearne and river Rother in particular, intense and destructive development has rendered most of the landscape archaeologically beyond study. On the Magnesian Limestone plateaux, similarly intense agricultural activity, especially since the second half of the 20th century, has destroyed almost all upstanding remains except where woodlands protect them. However, sub-surface remains in the form of the aforementioned ring ditches still survive in many places, albeit in a constantly and rapidly eroding state due to the vicissitudes of modern mechanised agriculture. Many of these have been recorded in aerial photography as crop marks, many of which have been systematically rectified and digitised in a project funded by the Agregates Levy Sustainability Fund (Roberts *et al* 2010). This project, however, covers specifically South Yorkshire and West Yorkshire meaning that areas to the south in the present study area are not covered. This data has been uploaded to the GIS of the present study and data extracted from it added to the project database. These are referred to in table 9.5 (and the project database) as EHAP (English Heritage Aerial Photograph). For the remaining part of the study area, aerial photographs comprising the archive of the late Derek Riley held by the University of Sheffield (SLAP) were directly consulted.

Ring ditches cannot be equated directly with round barrows as they might arguably represent other features, such as the drip gullies of roundhouses. In practice this is unlikely in the present study, since round houses often have visible entrances, and barrows do not. Only examples that do not have visible entrances have been added to the database. Where some of the ring ditches in question have been excavated, they have indeed proved to be barrows, usually with urn burials such as at Goldthorpe and Rossington in South Yorkshire (A. Lines pers.comm.; Weston 2011).

Where woodlands have protected patches of landscape, survivals of barrows and barrow cemeteries sometimes exist, such as at Edlington Wood, South Yorkshire (Ramm 1973; Chadwick 2008: 1027-1030) and Scarcliffe Wood, north Nottinghamshire (Beresford 2012). In the case of Scarcliffe Wood, up to six barrows survive as upstanding monuments. For the reasons explained, therefore, just as the upland examples are probably representative of a high proportion of original barrows, the lowland examples are undoubtedly very low. Even in terms of what might still survive, we should expect there to be many more features remaining to record, should there be time and resources to do that before they are destroyed.

Other monuments

Given what has been noted above and in chapter four regarding the relative states of preservation between the various parts of the study area, it should come as no surprise to learn that almost all of the small, and in some cases somewhat ephemeral features, listed in table 9.6 are located in the Gritstone uplands. Notable exceptions to this are the trackway recorded on the Humberhead Levels at Hatfield moor dated to 2730-2450 cal BC and the trackway from nearby at Thorne moor dated to 1450-990 cal BC (Buckland 1979; Chapman and Gearey 2013: 28-29; 118-30).

Type	Variant	Provisional date	Quantity
Mortuary/funerary	Wooden structure	EBA	1
Mortuary/funerary	Cist	BA	1
House platform		BA	15
Enclosures/field		BA	14

systems			
Cairnfield	Clearance	LBA	16
Cairnfield	Funerary	BA	4
Cairn	Clearance	BA	27
Cairn	Funerary	BA	117
Ring cairn/stone circle		BA	15
Trackway	Wooden	L.Neo-LBA	2
Standing stone		L.Neo-BA	37

Table 9.6: Other structures/features across the study area.

Most of the data in table 9.6 has been generated in several surveys undertaken by staff and students of the University of Sheffield (Cockrell 2007; 2010; forthcoming; Sidebottom 2014). It is of a contentious nature, since none of the surveyed features have been tested by modern excavation so their interpretations are open to potential challenges. For example, the many small cairns in the vicinity of Ewden Beck embanked stone circle have been interpreted as either the spoil from small stone quarries, or natural earth features with little stone present (Barnatt 1990: 42; Ullathorne 2005). However, in the case of Ewden Beck no evidence is produced to support the suggestions, which, *prima facie,* seem unconvincing; if the features are natural they should be expected to spread beyond the area of their distinct concentration, and presumably be a widespread natural phenomenon. This is demonstrably not the case. If they are medieval day workings (Ullathorne 2005) presumably quarry pits should be in evidence, which also appears not to be the case, or there should be some circumstantial basis for the proposition. There is none that I know of. The circumstantial evidence that does exist consists of the other features and finds from the vicinity of the cairnfield. This includes the aforementioned stone circle, disturbed probable barrows, and artefacts reputed to have been excavated by the antiquarian John Wilson of Broomhead Hall (Hunter 1819: 269; Holland 1837: 137; Kenworthy 1928: 34). The artefacts include calcined bones and a stone "celt". Present in the vicinity of the cairnfield there are also small standing stones (Cockrell 2010; Figure 9.7). These are strongly suggestive of prehistoric activity.

Figure 9.7: Part of the cairnfield at Ewden Beck, South Yorkshire, facing south east. In the low sun many of the cairns are visible as small mounds that straddle either side of the valley of a spring that feeds the nearby beck. They also spread to either side of Broomhead Dike, a linear ditch of probable later date that lies to the south side of the dry stone wall visible in the middle distance. A typical example of a "minilith" (small standing stone) is also visible directly overlooking the spring in the middle distance. Source: author.

Another locale with a similar array of features is the plateau at Hallam Moors overlooking the upper reaches of the Rivelin (Sidebottom 2014). A disturbed cairn here was recorded in more detail during fieldwork in 2006 that appears to be the remnant of a robbed burial mound (Figure 9). The evidence of this feature in the context of its locale offers more supporting circumstantial evidence for the interpretation favoured above.

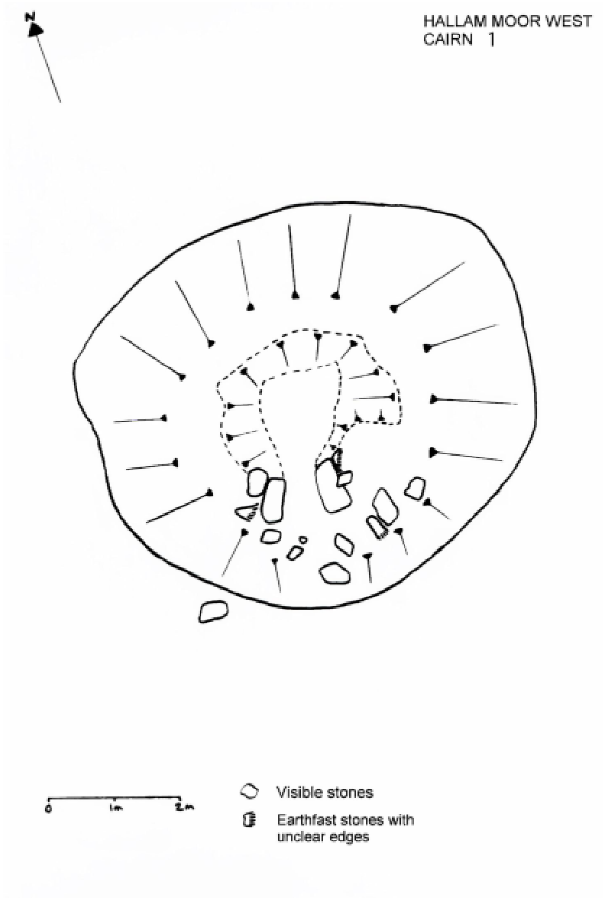


Figure 9.8: Probable robbed out burial cairn from Hallam Moors. Source: Author.

The question of whether standing stones in the locale are prehistoric features, or artificial features at all, is equally contentious. It is conceivable that standing stones are either natural outcropping, or way markers of the medieval period or other historical periods. Outcropping certainly exists in abundance, but has its unique characteristics that can be discerned and discounted (which I regularly do). The standing stones (whether they are prehistoric or not) can similarly be recognised as such by their morphology and setting.

Way markers, indicating routes across the uplands are an alternative possibility that is sometimes suggested to explain the presence of standing stones. These have been documented in various places (Swarbrick 2012: 1), including way markers on Mull that are said to have indicated the path to medieval pilgrims on their way to Iona (Gough 2014: 249). Way markers are not necessarily of medieval date, however, as the existence of early modern examples on Bodmin Moor in Cornwall attest to (Macfarlane 2012: 144).

Way markers must presumably mark a way or a route of some kind across a landscape. The examples referred to on Mull and Bodmin Moor fulfil that function, but few of the stones recorded in the present study can be said to do that: The standing stones on Whitwell Moor, for example, define the perimeter of an area of upland bog, and do not form a single coherent line across it that leads to or from anywhere (Figure 9.31). Some of the standing stones on Hallam Moors could be argued to fulfil that role, but are so diminutive in size that it is very difficult to believe that they could mark a way (Figure 9.11). Others, like the example shown in figure 9.10 or the example from Wadsley Common in Sheffield (Figure 9.12) stand in isolation. They are in prominent locations, but for that very reason it is hard to understand why they should need markers to draw attention to them; the locations are prominent and distinctive enough without the addition of a marker. Finally, none of the examples cited above, nor any of the others in the database are associated either directly or indirectly with corroborating evidence from the medieval or other periods.

Figure 9.9: Packing stones visible beneath a standing stone overlooking the upper reaches of Ewden Beck, South Yorkshire, beside its confluence with Oaken Clough. Trowel for scale. Source: author.

Figure 9.10: A standing stone at Brown Edge, Totley Moor, Derbyshire, facing south-east towards the Sheaf valley. Source: author.

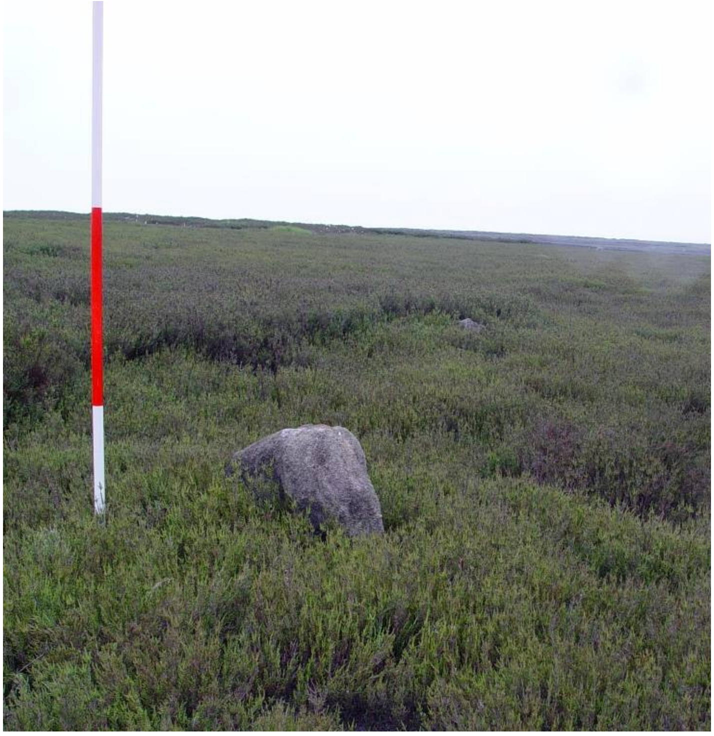


Figure 9.11: Small standing stones, barely visible in the undergrowth, at Hallam Moors, South Yorkshire. Source: author.

Figure 9.12: Staff and students of the Workers Educational Association scrutinising the erosion gullies on the top of the isolated standing stone at Wadsley Common, Sheffield. Source: author.

Figure 9.13: A "large" standing stone at Hallam Moors, South Yorkshire. Source: author.

The contextual circumstances help narrow down the probable date range for standing stones. With the exception of Wadsley Common and Oaken Clough (Figure 9.12; Figure 9.9), all of the standing stones are located in the vicinity of features that probably or definitely relate to the Neolithic or Bronze Ages, or both. These include the aforementioned Whitwell Moor and Ewden Beck. It also includes the small plateau at Hallam Moors with its dense group of probable Bronze Age features (Sidebottom 2014), and it includes Totley Moor in North Derbyshire (Radley 1966). The stones at Totley moor, such as figure 9.10, stand in close proximity to a ring cairn, barrows and cup marked stones (Figure 9.14), in addition to the stone circle. Almost a thousand flints were recovered from a scatter associated with the stone circle and in scatters in the immediate vicinity. These scatters were adjacent to areas of clearance and 33 cairns (Radley 1966: 2; 9-10).

Figure 9.14: Cup marked stone from Totley moor, North Derbyshire. This, and other examples I have recorded bear a close resemblance to published examples from West Yorkshire (see chapter eight). Source: author.

The interpretation above does not stand in isolation; in chapter eight it was shown that "miniliths" of identical character and setting exist in the south west of England (Burl 1993; Gillings *et al* 2010), and in West Yorkshire (Shepherd *et al* 2016). In the extreme north of Scotland at Upper Dounreay in Caithness, fan-like multiple rows of diminutive sized standing stones have also been recorded that relate to the Early and Middle Bronze Age (Scarre 2007: 62), recalling the arrangement on Whitwell Moor in South Yorkshire. There is, to sum up, no convincing reason to doubt that the small standing stones of the uplands of South Yorkshire and North Derbyshire are anything other than what they appear, *prima facie,* to be; miniliths, to use the term coined by Aubrey Burl, in all probability relating to the Bronze Age, or possibly the Late Neolithic.

The Early Bronze Age

Given the problematic character of the chipped stone data from the Bronze Age, explained earlier, and the undiagnostic character of its debitage, the plotting of the data overlying concentrations of generic "prehistoric" data gives a more realistic impression of the true level of human activity (Figure 9.15).

Ninety eight percent of the Early Bronze Age chipped stone is flint, continuing the stark difference in material choice noted in chapter eight. The neighbouring region of the Peak District by contrast is where the use of chert was common at this time (Garton 1991: 18).

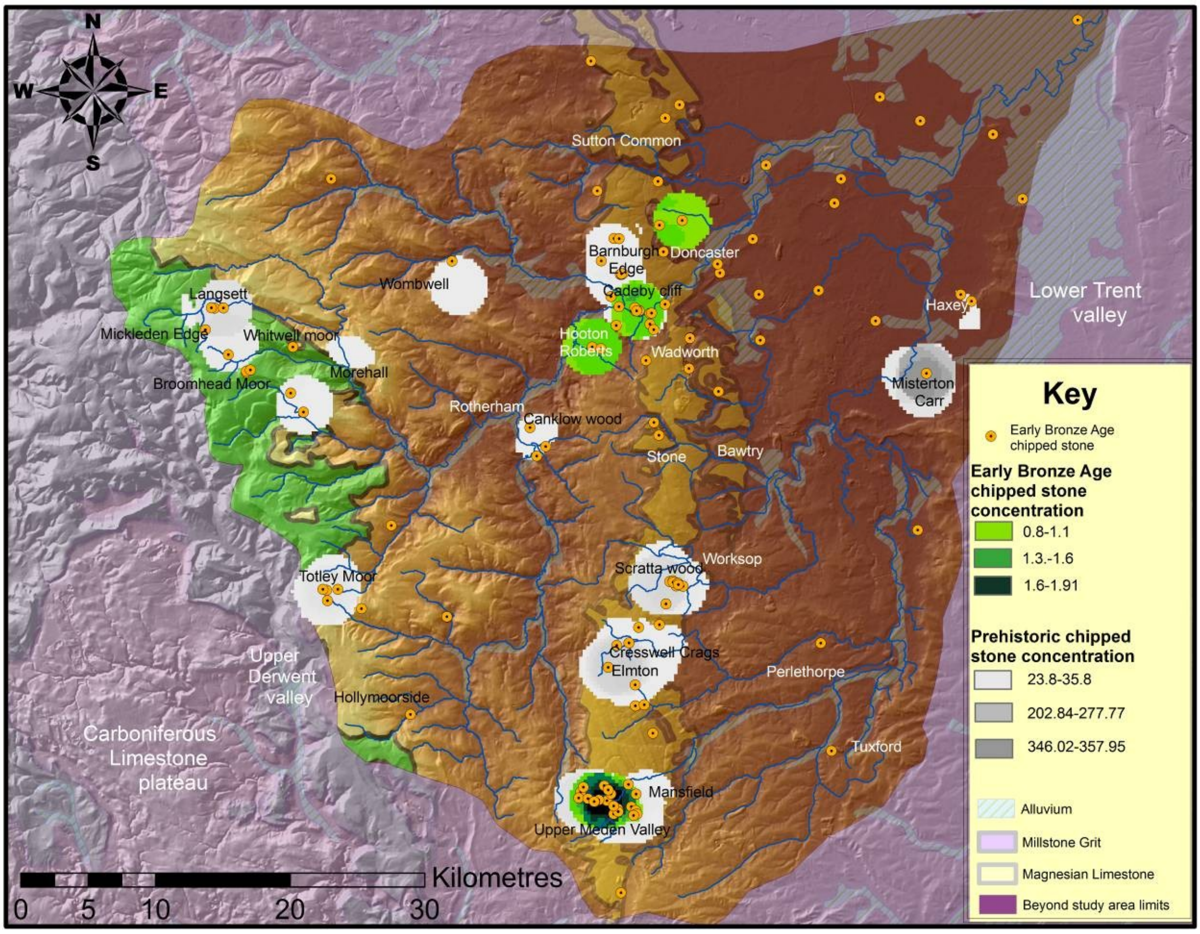


Figure 9.15: Early Bronze Age chipped stone and chipped stone concentrations (green) overlying concentrations of prehistoric chipped stone (grey). This and all subsequent density Analyses were undertaken using ArcGiS point density tool. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

In practice, most of the chipped stone represented by the above consists of the 125 barbed and tanged arrowheads. Arrowheads were used in earlier chapters to indicate both the locations of frequently situated activity and to associate a valued aspect of social identity with the importance of particular places in the landscape. It has been noted elsewhere (Green 1980; Butler 2005: 162-63) that during the Early Bronze Age examples of barbed and tanged arrowheads could either be of crude and simple character or be finely worked, and indicative of symbolic value. This is consistent with developments in the Neolithic period noted in chapter eight. Therefore, arrowheads from the Early Bronze Age continue to be useful in providing evidence to answer the research questions.

Sixty percent of the concentrations of barbed and tanged arrowheads are at the same locations as in the Later Neolithic, 71% of which are located on the Magnesian Limestone plateaux (Figure 9.16).

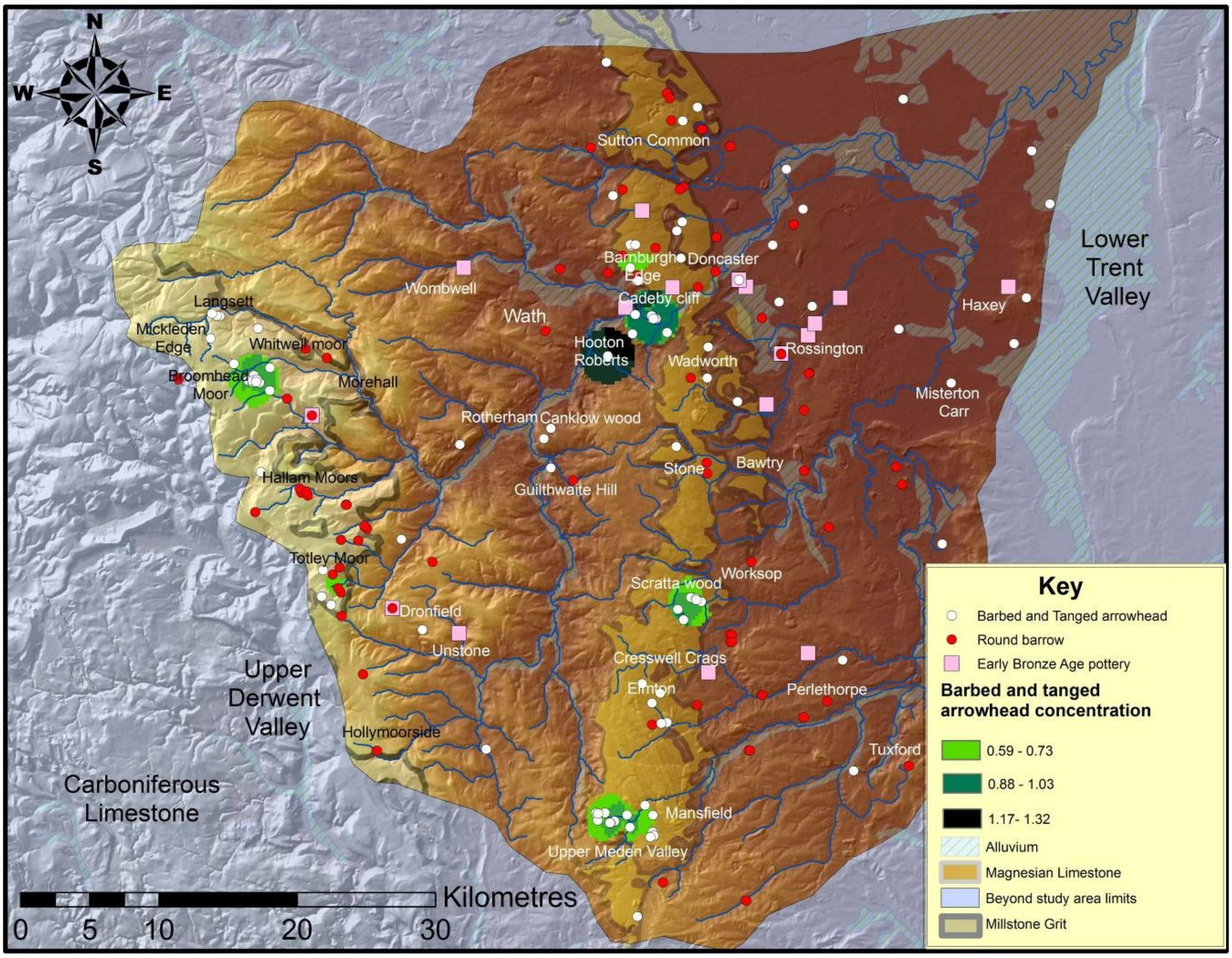


Figure 9.16: Distribution of barbed and tanged arrowheads (white) and concentrations (green), Early Bronze Age pottery and round barrows. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Given the observations made above about the limited differences in the nature of the data between the Later Neolithic and Earlier Bronze Age, the similarity in distribution and concentrations is not unexpected. Although increased activity on the Gritstone uplands to the west is reaffirmed, it does not alter the indication of dominant activity to the east on the Magnesian Limestone plateaux. For this reason, when the distribution of round barrows is added to the analysis, the initial impression given is somewhat surprising (Figure 9.16).

Twenty six percent of round barrows are located on the Gritstone uplands, 20% on the Coal Measures Sandstones, 19% on the Magnesian Limestone and 24% on the Sherwood Sandstone (Humberhead levels, River Idle drainage basin and the ridge separating the Idle from the Trent valley). Ten barrows occupy the narrow bands of other geological formations that separate the Magnesian Limestone from the Sherwood Sandstone. At this point an important point of significance between the different geological zones must be taken into consideration. That significance is the difference in elevation. There are other factors, such as soil condition and vegetation, and the locations of the headwaters of springs, but these also relate to one extent or another with the elevation. It is the aspect and elevation that provides the most obvious differences between the settings when considering the locations of many of the archaeological features and scenes of activity. If we adjust the figures quoted above to take this into account, 7 of the 10 aforementioned barrows are at the same elevation and immediately adjacent to the Magnesian Limestone, while three are at the same elevation and immediately adjacent to the Sherwood Sandstone. With this adjustment, 27% of barrows now fall on the plateaux in the middle of the study area and 27% on the lowland to its immediate east. Moving west to east, that is 26% on the uplands, 20% in the adjacent valleys, 27% on the central plateaux and 27% on the levels and adjacent ridge.

The figures, *prima facie,* are indicative of similar levels of activity, but the narrow bands represented by the Magnesian Limestone/central plateaux and Gritstone uplands when compared with the rest of the study area must be taken into consideration. These are 13% and 7% of the study area respectively. On the uplands in particular, where it can be seen that 26% of barrows are located on 7% of the study area, they are indicative of a scale of activity which is inconsistent with that indicated by the distributions of material culture (Figures 9.16 and 9.17, and Figures 9.18 and 9.19 below). On the Magnesian Limestone, conversely, the opposite appears to be the case.

An explanation for the inconsistency must be sought by considering the formation processes discussed in chapter four. There it was noted that a significant difference between these areas is in their histories of development since the chronological end of the study period. The uplands have had very little invasive development since that time, resulting in the remarkable levels of preservation noted by other scholars (Barnatt 1990: 1; Barnatt and Smith 1991: 23; Kitchen 2000; Edmonds and Seaborne 2001: 139; 155). Therefore, the 21 barrows recorded on the Gritstone upland portion of the study area are likely to represent a high proportion of those that were originally constructed. Moreover, the figure does not, it will be recalled, include cairns on the uplands in which it is known that human remains are deposited. The plateaux of the centre of the study area, by comparison, have been devastated archaeologically by intensive agricultural activity, particularly since the second half of the twentieth century.

On the Magnesian Limestone, only one of the possible barrows recorded was known to be an upstanding monument before it was disturbed by excavation in the 1960s (Beresford 2012). Almost all of the remaining features have been recorded as cropmarks (ring ditches) that do not survive above surface. Most of the features on the adjacent Sherwood Sandstone and many on the Coal Measures Sandstones are similar. We can be confident that most if not all of these features were barrows at one time because some ring ditches have been tested by excavation and have been proven to have been round barrows (Weston 2012, A. Lines pers.comm.). The remainder recorded in the database are morphologically identical with these features. This accords well with the nearby Magnesian Limestone landscape of West Yorkshire, where similar features have also been confirmed as round barrows through excavation (Vyner 2008: 11).

Apart from the ephemeral cropmark survivals, there are some places where features have survived because earlier landforms have been preserved in woodlands and parks. Scarcliffe Park in North Nottinghamshire is a good example. Scarcliffe Park, a small woodland located on the Magnesian Limestone to the south of Elmton (Figure 9.17), had perhaps as many as six barrows still surviving in living memory (Beresford 2012). In the Dearne valley at Wath-Upon-Dearne in the Middle Coal Measures Sandstones another three might exist as upstanding features in Wath Wood (Travis 2001; Figure 9.16). Graves park, Sheffield, preserves a bell barrow in a well preserved landscape of earthworks (Figure 9.17). Other survivals no doubt await to be discovered on the Coal Measures Sandstones, albeit very few in a landscape that has been permanently denuded of archaeology by widespread open cast mining and urban expansion. Although at imminent threat of destruction from sub-soiling (deep ploughing), many more might yet be recorded on the Magnesian Limestone if the limited time left to archaeologists is taken advantage of by positive attitudes towards field research.

Figure 9.17: A bell barrow in Graves Park, Sheffield, facing north-west towards Sheaf Valley. The south-east facing slope of the valley is just visible in the distance between the trees, in the bottom right hand quarter of the photo. Source: author.

It does not follow from the existence of the survivals in Wath Wood and Scarcliffe Park that the whole landscape was populated as densely as at these locations. These probably represent barrow cemeteries, such as those that have been recorded in some antiquarian literature like those at Guilthwaite Hill in South Yorkshire (Copley 1950; Figure 9.17). In the case of Guilthwaite Hill, it is interesting to note that they consisted of pairs of barrows in slightly different locations. Some ring ditches also occur in small clusters that are indicative of the same phenomenon, like the pairs of probable barrows to the south-west of Worksop in North Nottinghamshire (Figure 9.19). The implication of the above is that the recorded number of barrows and ring ditches to the east of the Gritstone uplands represents a very small proportion of what once existed as barrows. This modest total numbers 60 features recorded and assembled in the present study, almost entirely to the east of the Coal Measures Sandstones.

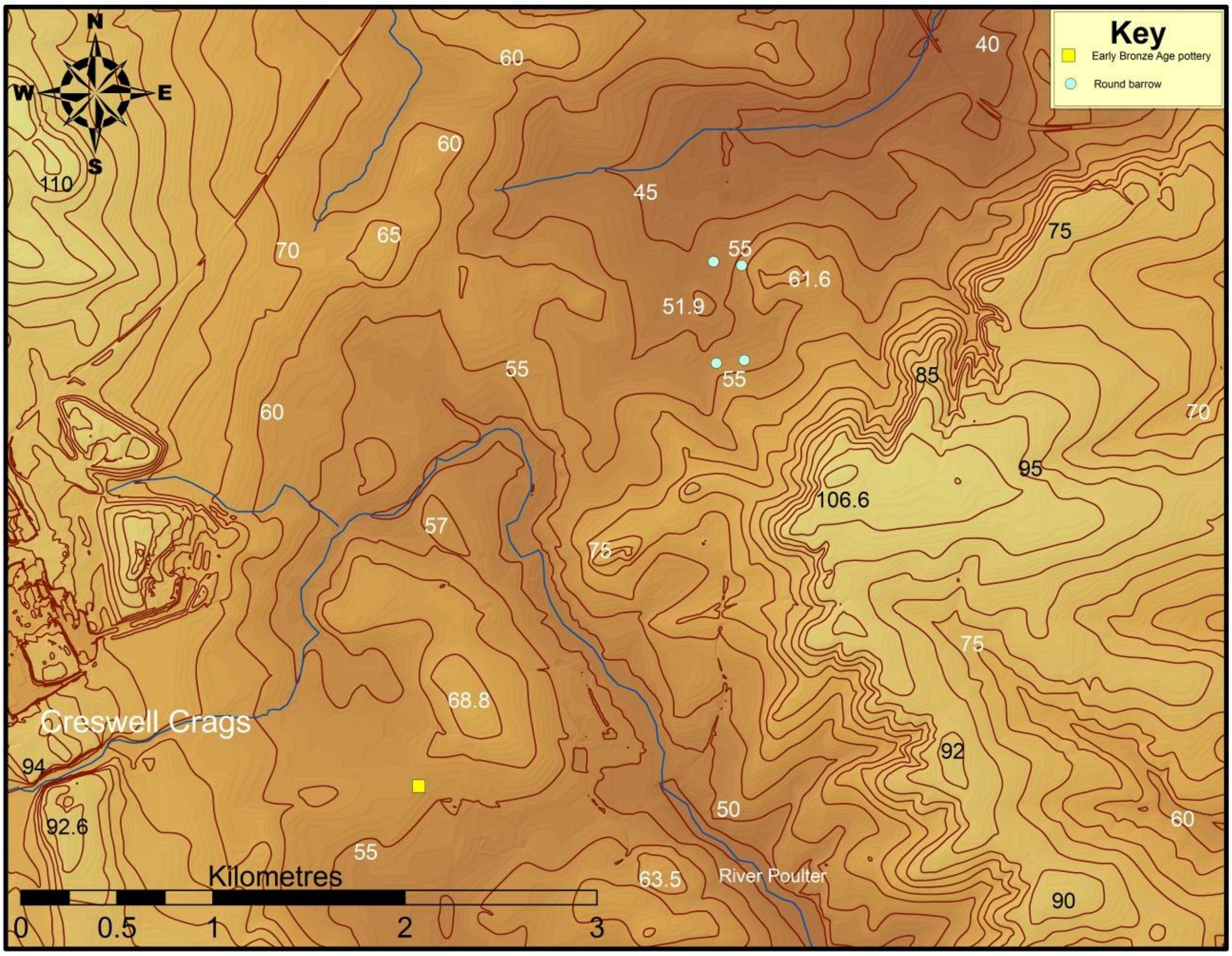


Figure 9.18. Pairs of ring ditches, overlooking the source of a stream tributary to the River Ryton in North Nottinghamshire. Figures represent height in metres OD. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Very large numbers of barrows have been recorded elsewhere in England. For example, In East Anglia 1,185 barrows and 3,772 ring ditches (Lawson, Martin and Priddy 1981, cited by Harding 2000: 86), and in "Wessex" approximately 6000 round barrows (Grinsell 1941: 74). Up to 684 have been recorded on the uplands of the Peak District (Barnatt and Smith 1991: 25), which is also very large compared to the present study area. This is likely to be fewer than originally constructed (Barnatt 1990: 1), but in a region that has seen far less development than on the lowlands of the present study area.

It is possible that the low numbers of barrows across most of the study area reflects real differences in social identity between it and neighbouring regions. If true, this would be remarkable. However, a more likely explanation is the problems with sample bias noted here and in chapter four, and particularly the very low level of field research activity in the study area. It is not, therefore, implausible to suggest that the true figure for barrow building within the present study area, to the east of the Gritstone uplands might have been anything between 600-1,000. This of course is speculation, but plausibly conveys the likely historical level of activity in the area.

If the suggestion made above is broadly correct, we should expect to see this reflected in the relative quantities of portable data between the different parts of the study area. There should be much more to the east. A similar suggestion has been made for low lying fringes of the Derwent Valley in Derbyshire, where subsequent development has denuded locales of upstanding remains, for which portable artefact concentrations might serve as a proxy (Barnatt and Smith 1990: 25). This has already been partly demonstrated with the chipped stone within the present study area (Figure 9.15), and it should be noted that as well as the better characterised assemblages of chipped stone, most "scatters" of chipped stone of indeterminate quantity and character are located to the east (Figure 9.19). Figure 9.16 shows in addition that the majority of pottery sherds and vessels are distributed in the east.

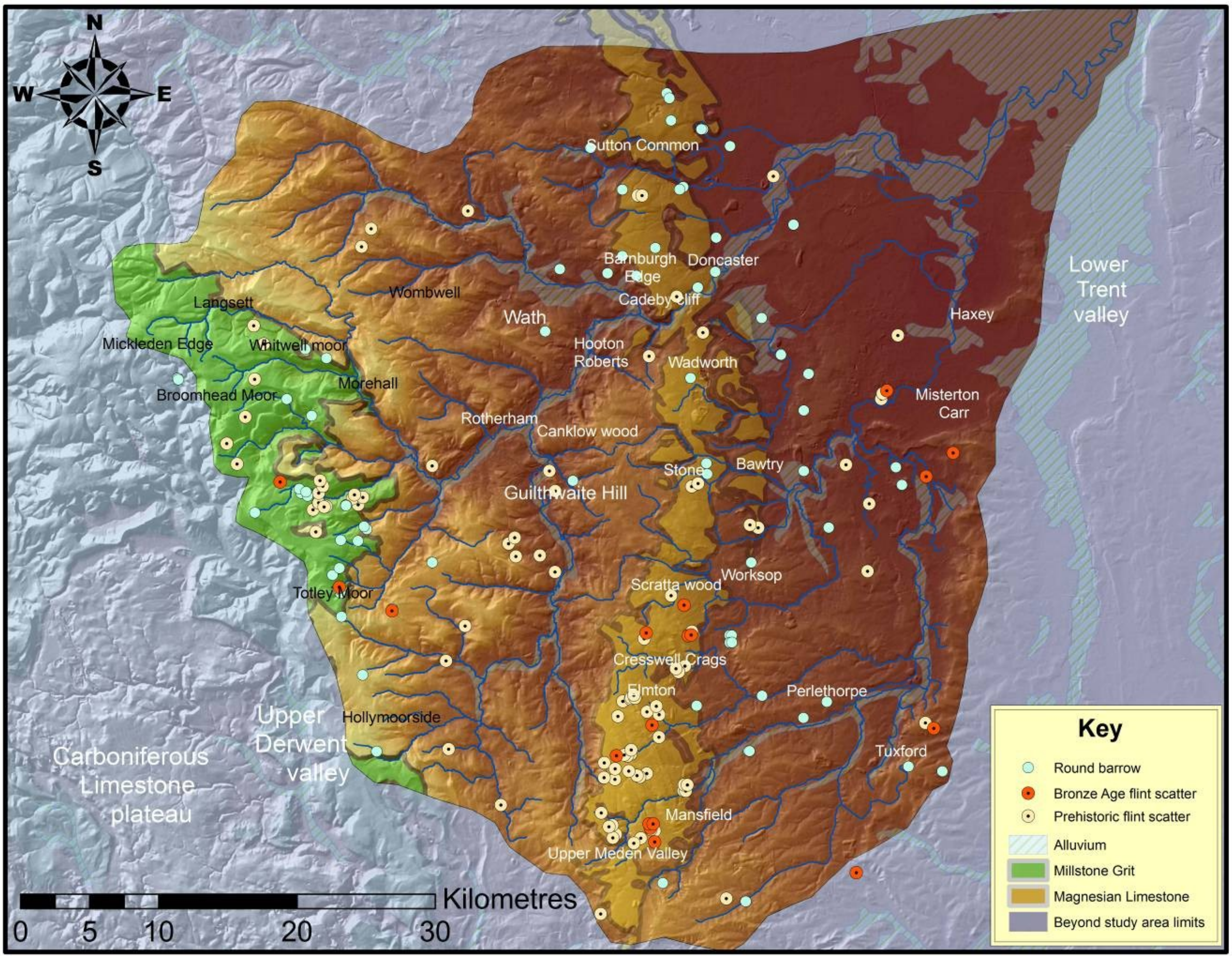


Figure 9.19. Distribution of Bronze Age and undifferentiated prehistoric flint scatters. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The distribution of elaborate artefacts is denser in the eastern half of the study area, (Figure 9.20), supporting the idea that it was here where the focus for a variety of activities was located. The sparse coverage along the middle reaches of the Don and along the Rother and Dearne valleys can partly be explained by the aforementioned formation processes and consequent sample bias. The opposite holds for the Gritstone uplands, with its unusual level of preservation of features, where despite this there is very little relevant supporting portable data.

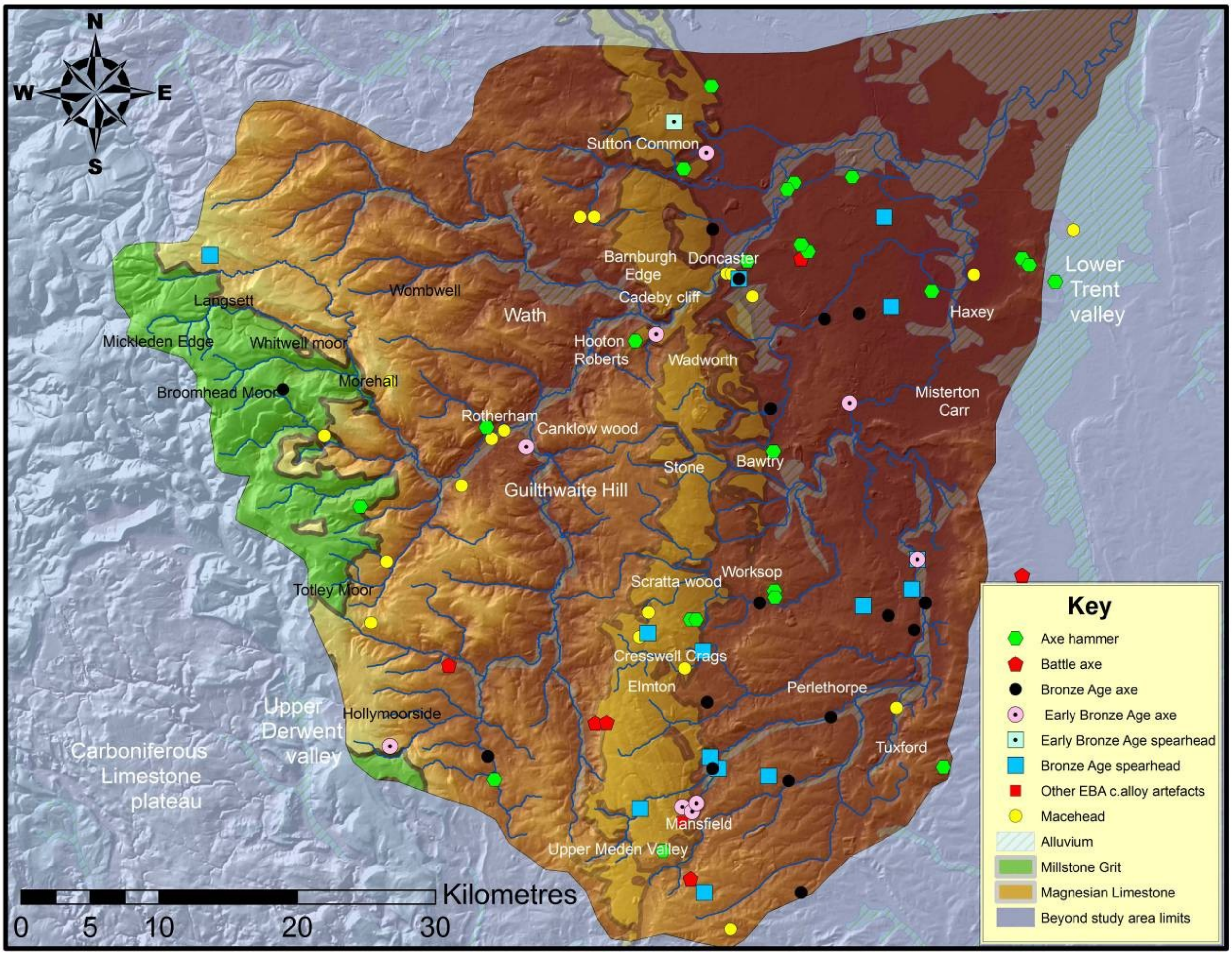


Figure 9.20: Distribution of Early Bronze Age and undifferentiated Bronze Age elaborate artefacts. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

It will be recalled at this point that although round barrows are unusually thickly distributed across the Gritstone uplands, the distribution of the larger scale hengiform monuments are, with the exception of the small feature at Whitwell Moor, distributed for the most part in the vicinity of the Magnesian Limestone plateaux and the Sherwood Sandstone lowlands (chapter eight, Figure 8.34). This is where one would expect to find such monuments if the interpretation of the distribution of portable material culture and barrows suggested above is correct. The significance, therefore, of the existence of the hengiform feature at

Wombwell, in the upper Dearne valley of South Yorkshire, is that it is also indicative of the presence of a community sizeable enough to merit its construction and use, continuing into the Early Bronze Age.

An important distinction between the locations of chipped stone scatters and concentrations, and the distribution of other material culture is also in evidence. Figure 9.21 shows the locations of chipped stone concentrations in relation to elaborate artefacts. Chipped stone concentrations are on or very close to the Magnesian Limestone plateaux and in particular the Don gorge, just as they were in the Neolithic. The elaborate artefacts are concentrated on the margins of the Limestone and in particular to either side of the Don gorge at its entrances. It will be noted that several concentrations occupy locations between 10m OD and 50m OD around the eastern entrance to the gorge, approximately at the location of Doncaster in the present day. Moreover, this area forms the northern edge of a ring of artefact deposits that surround a lower lying basin on the margins of the Humberhead Levels marked by alluvial deposits. This localised basin is to the immediate east of Wadworth and north of Bawtry in South Yorkshire (Figure 9.21). These were to form the wetlands later known as Potteric Carr, Loversall Carr and Wadworth Carr. By the Early Bronze Age these areas, like much of the levels in the Neolithic and Early Bronze Age, undoubtedly already had the characteristics of a developed fenland and carr landscape (see chapter five; Figure 5.23).

The proximity to wetlands in general does not appear to be particularly significant in itself; only 9% of elaborate artefacts of the Early Bronze Age are located at levels at or below 10m OD, and only 6% can be associated with areas containing alluvial deposits. Thirty eight percent of the artefacts were recovered from within 500m of the major waterways of the study area. The figure of 500m is arbitrary, but was chosen to account for the likely shifting of the courses of rivers in their middle and lower reaches. Thirty eight percent is a significant increase in association that is indicative of the importance of flowing water. Thus far then, artefacts of elaborate character are associated not with wetlands in general in the Early Bronze Age, but with specific places in association with them such as the margins of Potteric Carr, or the lines of the study area's waterways. This includes the entrances to the Don Gorge and the Doncaster area especially, but also the vicinity of the confluence of the Don with the Rother, and Blackburn Brook at Rotherham. The margins of the east facing slopes of the Magnesian Limestone in the vicinity of Mansfield and to the immediate east of Creswell Crags are also important (Figure 9.21). These are the locations of the sources of the rivers Meden and Maun that are tributaries of the Idle.

It is well known that henge monuments, though relating principally to the Later Neolithic continue in use as a class of monument as late as the Early Bronze Age (Clare 1986: 282; Parker Pearson 1999: 90-91; Needham 2012: 18-19), and in the case of the present study area the continued significance of hengiform features is demonstrable in the cases of

Perlethorpe in North Nottinghamshire and Stone in South Yorkshire. Perlethorpe has a probable round barrow overlying part of its bank and ditch, recalling the arrangement at Arbor Low in Derbyshire. At Stone, although there does not appear to be a direct stratigraphic relationship, it is difficult to envisage the siting of the possible round barrow at the dead centre of the hengiform monument as a mere coincidence. This is particularly true given the identical arrangement at excavated sites such as Cairnapple Hill in Scotland (Piggot 1948) and West Ashby in Lincolnshire (Field 1985). Another round barrow is situated to the immediate west of the feature at Stone.

Thus, it is likely that there was continued use of such sites during the Early Bronze Age in the study area, a practice well attested to in the neighbouring Peak District (Rogers 2013: 39). This is supported by the relative spatial proximity and relationship of these sites to concentrations of elaborate artefacts and chipped stone of the Early Bronze Age: Perlethorpe lies downstream of just such a concentration in the upper reaches of the Meden. Both Perlethorpe and Worksop lie downstream of similar concentrations and more dispersed material culture on the upper reaches of tributaries of the Ryton and Poulter. In the same area there are two small barrow cemeteries to the south-west of Worksop and other barrows in the vicinity (Figure 9.18). The site of the hengiform feature at Wadworth is situated on the edge of a steep escarpment on its north and west side overlooking a valley leading onto the levels. This is where lie the aforementioned Potteric and Loversall carrs. The site also overlooks the east facing slopes of the higher ground as they descend to the same carrs and fens. This wetland, as we have seen, is bordered by more concentrations (Figure 9.21; Figure 9.26). Even Whitwell Moor on the Gritstone uplands has a possible round barrow on the far edge of the same bog which it is situated next to, and another close by at Walders Low.

The locations of the small concentrations of chipped stone, along with associated undifferentiated "prehistoric" chipped stone and Bronze Age "scatters" indicates that the main focus for settlement activity continued to be along the Magnesian Limestone ridge in the Early Bronze Age. This is supported by the locations of concentrations of elaborate artefacts. The majority are either at the margins of the Limestone or gravitate around it on localised higher ground such as the gravels in the Doncaster area. A similar location is the localised prominence at Mexborough in South Yorkshire at the confluence of the Don with the Dearne, to the immediate west of Cadeby Cliff (Figure 9.21). This importance continued to be recognized by the ongoing activity in the vicinity of the hengiform monuments of Stone and Wadworth on the Magnesian Limestone. It is also implicit in the continued activity at Perlethorpe which, along with Worksop and Wombwell, was intimately connected to the Limestone by the waterways that either cut through it (the Dearne) or rose on it (the tributaries of the Torne and Idle).

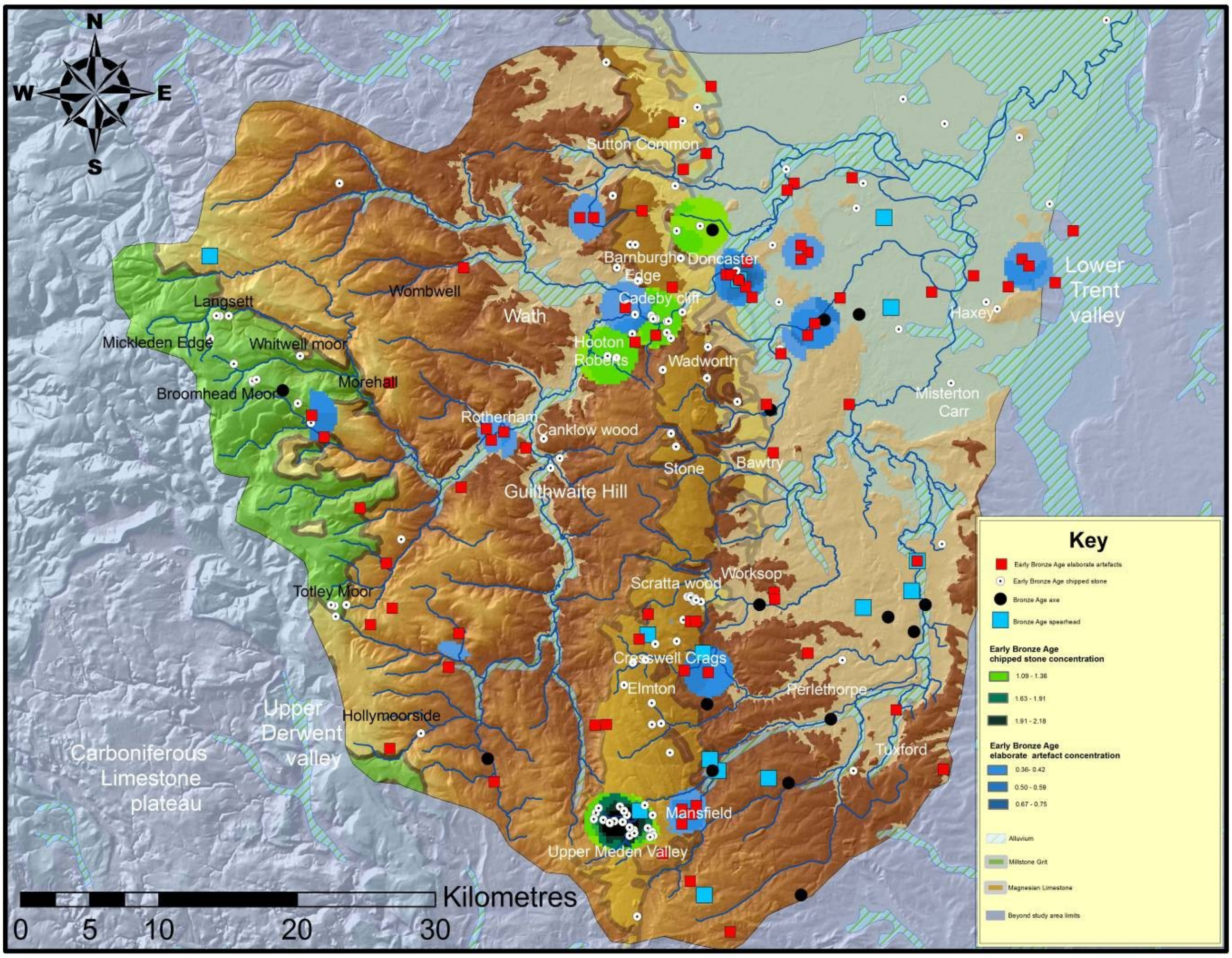


Figure 9.21: Distribution of elaborate artefacts and chipped stone concentrations in the Early Bronze Age. Areas at or below the 50m mark OD are shaded khaki-brown, with areas at or below the 10m mark OD shaded grey-blue. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Figure 9.22: The fens and carr woodland of Potteric Carr, South Yorkshire. This reconstituted contemporary wetland is indicative of the likely character of much of the Humberhead Levels by the Bronze Age, before most of the carrs and fens had been replaced by the raised mires for which the levels are more widely known. Source: author

The presence of the hengiform monument at Wombwell implies the existence of a community in the Dearne valley that was the rival in scale of those on the Magnesian Limestone, and argues against the idea that the heavier soils of the Coal Measures Sandstones were unable to support more than the most isolated and smaller scale communities. This is supported by the existence of the former barrow cemeteries at Guilthwaite Hill, and especially by the probable barrows of Wath Wood, in the Dearne Valley itself. Nevertheless, the Wombwell monument, because of its similarity in scale and form to the others (excepting Whitwell Moor) is indicative of common assumptions and practices prevailing across the study area about the right way to build such monuments. That these should be the case with monuments as far dispersed as Wombwell in the middle of the Dearne valley in South Yorkshire and Perlethorpe, near the upper reaches of the Idle valley in North Nottinghamshire is indicative of patterning at the regional scale. This is supported by their landscape settings, very close to 50m OD (along with the remaining hengiform monuments east of the Gritstone), and both in very close proximity to alluvial flood plains (along with Worksop, Figure 9.23).

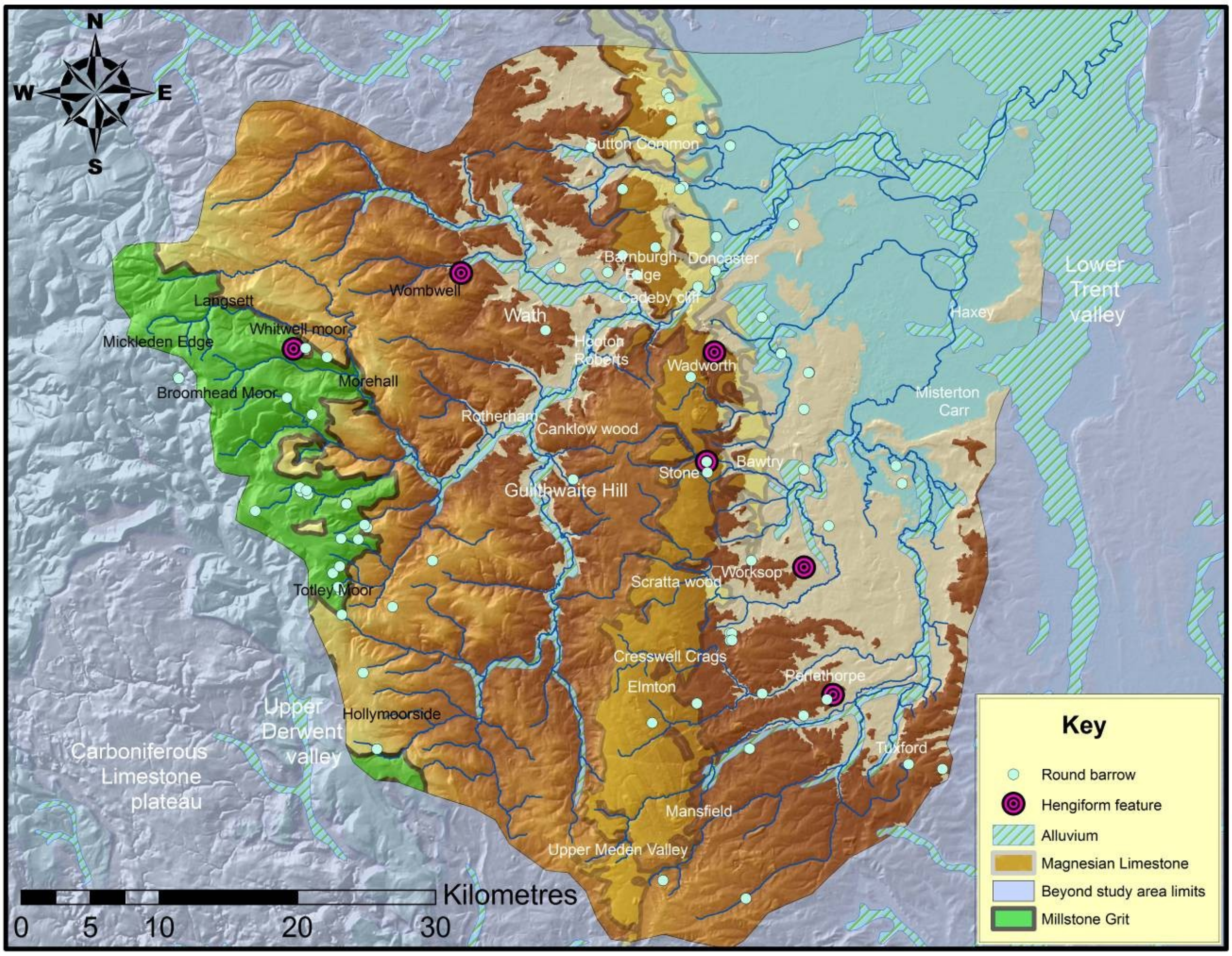


Figure 9.23: The spatial relationships of hengiform monuments to round barrows, and topographic relationships to the interface between land above and below 50m OD (shaded khaki-brown). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The Middle Bronze Age

The Middle Bronze Age is the sub-period when more pronounced cultural changes are discernible in the archaeological record than between the Late Neolithic and Early Bronze Age. The tradition of henge monument building became more modest in scale in the Early Bronze Age, and the latest date range available puts the bank of the henge monument at North Mains in Scotland at c. 2200-1910 cal BC, based on the radio carbon dating of cremated bones deposited under it (Needham 2012: 18-19). Beaker and Food Vessel burials had ceased in England by c. 1700 BC, as had burials containing Maceheads (Needham 1996: 130). A notable new feature in the archaeological record is the advent of palstaves (Needham 1996: 132).

In terms of the database in the present study area, other dramatic changes included the virtual cessation of the use of chipped stone tools (table 1), or at least ones that are typologically identifiable. This occurred in tandem with an increase in the use of copper alloy artefacts, and especially the aforementioned palstaves, and spearheads (table 4). The virtual disappearance of identifiable chipped stone tools and contemporaneous expansion in the use of metal tools mirrors developments across Britain (Ford *et al* 1984; Edmonds 1995: 216-17; Young and Humphrey 1999).

Despite the decline of the tradition of round barrow building and use of henge monuments, it does not follow that structures and monuments ceased to be constructed and used. On the contrary, there is a rich and unusually well preserved source of data for those kinds of activities. Unfortunately, the distribution of that data is very narrow due to the formation processes that were alluded to earlier in the chapter, which means that interpretation at the regional scale of analysis is problematic. Partly for this reason discussion of that data will be preceded by that of the portable data, which is differently affected by sample bias and will help to frame discussion of the monuments.

Most of the few examples of Middle Bronze Age chipped stone shown in figure 9.24 come from excavated funerary contexts such as the Middle Bronze Age insertions into earlier round barrows from Lodge Moor, Sheffield (Bartlett 1957; Henderson 1957), the burials from the embanked stone circle at Totley moor, North Derbyshire (Radley 1966; Barnatt 1990: 52), and cremation burial at Barnside Common, South Yorkshire (Kenworthy 1928: 28-27). These are too few to have statistical significance. The distribution of undifferentiated chipped stone is broadly consistent with the distribution of undifferentiated Bronze Age scatters shown in Figure 9.19, and the few concentrations broadly consistent with the concentrations of Early Bronze Age data, though not in the vicinity of the Don Gorge. The implication of the distributions is that little change occurred during the Bronze Age in the siting of the most important areas of settlement, although due to the paucity of adequately dated artefacts this is not certain and no firm conclusions can be drawn about routine activities in the Middle Bronze Age on this basis alone.

Due to the aforementioned problems we are more reliant on other forms of material culture, and in particular the copper alloy artefacts. This consists almost entirely of 27 spearheads and 37 palstaves (table 9.4). The distributions of spearheads and palstaves show that activity connected with them was located principally on the southern and western margins of the Humberhead levels (Figure 9.25). Daggers and swords, for the entire Bronze Age, are noteworthy in the study area by their rarity (Table 9.4). It must, however, be borne in mind that daggers are "one of the most iconic artefacts associated with Early Bronze Age barrows" (Jones and Quinnell 2013: 1). Very few suspected barrows have been excavated within the study area.

As explained in chapter five, environmental analysis from various locations on the levels (as well as the Gritstone uplands) provides evidence for the spread of grasses on some of the drier areas, such as Wroot in North Lincolnshire, which has been interpreted as indicating the presence of grazing land and even the small scale production of cereal crops (Buckland 1979; Heath 2003: 35). The Humberhead Levels, the margins of which are where the aforementioned distributions relate were relatively warm and increasingly wet by the Middle Bronze Age, with expanding pools, lakes and fens rendering much of the tree cover moribund where it still existed. This was not due to greater precipitation, but rather to a risen water table, impeded drainage, and infilling of river channels exacerbated by increased run off from the upland areas where clearance was taking place. It is this wetland environment which provides the environmental context for the deposition of the metalwork noted above.

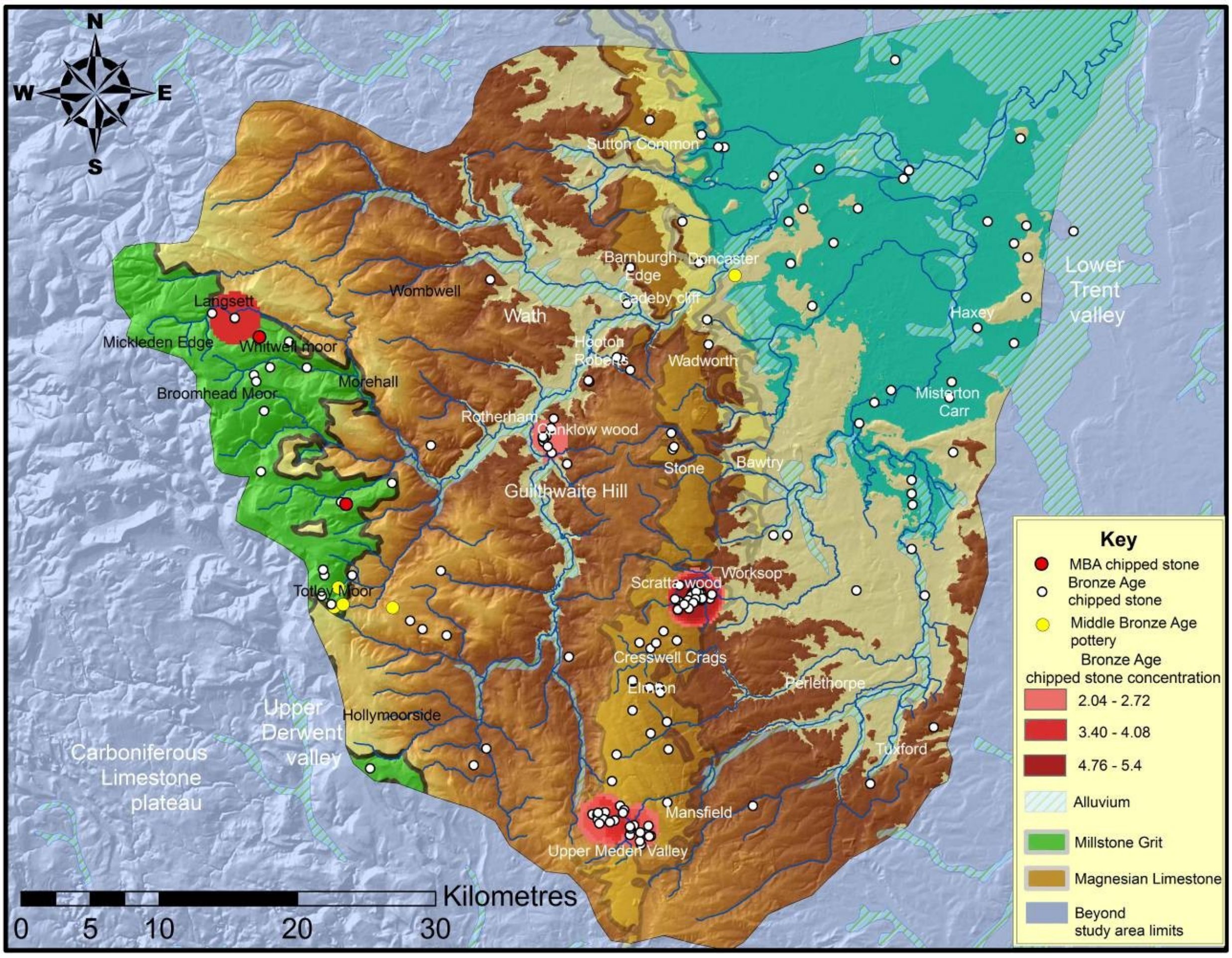


Figure 9.24: Distribution of undifferentiated Bronze Age chipped stone, Middle Bronze Age chipped stone, and Middle Bronze Age pottery. Shaded red roundels denote concentrations of chipped stone, with the darker roundels indicating higher density. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The phenomenon of depositing Bronze Age metalwork in watery places has long been recognised in scholarship (Bradley 2000; Fontijn 2002; Mullin 2012), and particularly in rivers such as the Thames and the Trent (Mullin 2012: 47). However, David Mullin (following Frontijn 2002) has drawn attention to the difference between objects deposited in wet places such as fens and bogs, and objects deposited in rivers. Rivers flow from one place to another and can be indicative of ways through landscapes, or present possible divisions or boundaries between them. These can be well defined in some regions. Other wetland contexts such as fens or bogs can be much more permeable and less well defined (Mullin 2012: 53). Deposition in these different settings, therefore, might have had different meanings. According to Frontijn (quoted by Mullin 2012: 53), landscapes might have been zoned, with deposition of artefacts in some places that were qualitatively different and imbued with different meaning and significance to other places. Mullin claimed that differences in deposition were clearest in the east of England where waterways flow towards the rising sun. He suggested that the rivers might form social boundaries between places and that the deposition of artefacts in them was connected with this. In his own study area on the border between Wales and England a pattern showed much lower deposition in the River Severn itself. Mullin suggested that this indicated not division between regions in the west, but a way through regions not divided by the river. Metalwork tended to be deposited in wetland contexts that were not rivers, which he argued was indicative of social cohesion rather than division. He supported the suggestion by showing that traditions of pottery production on either side of the Severn were identical, using similar pastes, with common practices of crafting indicative of a common community (Mullin 2012: 54).

In the present study area, 17 palstaves (45%) and 9 MBA spearheads (32%) have been deposited within 500m of the major waterways. As in the Early Bronze Age, the figures do not seem particularly high given the aforementioned well attested phenomenon and the very wide margin for error of ± 500m. If a margin of error of ± 50m is applied, bringing the calculation much closer to Mullin's direct riverine deposition, the figures are 6 palstaves (16%) and 3 spearheads (11%) respectively. The figures do not indicate that specific riverine deposition was much practised in the study area during the Middle Bronze Age.

Elevation might prove to be a better proxy for watery places at the regional scale of analysis, given the obvious situation of fens, carrs and other watery contexts in generally low lying places. This is not to say that such environments could not exist at higher elevations. The existence of bogs on the small dished plateaux of the Millstone Grit uplands (including Whitwell moor, which features in the present study) discussed in chapter five attests to that. Even on the Magnesian Limestone there are watery contexts in the vicinity of the headwaters of streams that might well have been the locations of very small patches of wetland (Cockrell *et al* 2015a). However, at the regional scale of analysis these are not likely to be significant in terms of broad patterns. The much more extensive low lying wetlands on the middle reaches of the Don and the Idle, the lower reaches of the Dearne and the Rother and on the Humberhead Levels are of greater significance when compared with broad patterns of distribution. To that end, an analysis of the distribution of artefacts by elevation shows that 14 palstaves (37%) and 12 spearheads (43%) were recovered from at or below 10m OD. Another palstave was recovered from an upland bog at Whitwell Moor, South Yorkshire (Kenworthy 1928: 32-33), indicating that almost 40% of palstaves were recovered from wetlands or probable wetlands. These figure are much higher than those relating specifically to rivers. If the approach taken by Mullin (and Frontijn) is applied, therefore, socially cohesive practices are implied rather than those indicating boundaries between places that were socially divided.

However, other differences in environmental and geographical context exist: In practice, almost all of the above mentioned wetland places fall on the Humberhead levels. Moreover, another eight palstaves (42%) and five spearheads (18%) are located on slightly higher ground overlooking the margins of the levels (Figure 24; 26). Frontijn (quoted by Mullin 2012: 53) suggested that the different notional zones in which artefacts were deposited could relate to differences in understanding regarding particular zones. Some places, so the argument goes, formed part of the everyday world of domestic activity. Others, more remote, meant something else. These differences in deposition between zones are visible in the present study area.

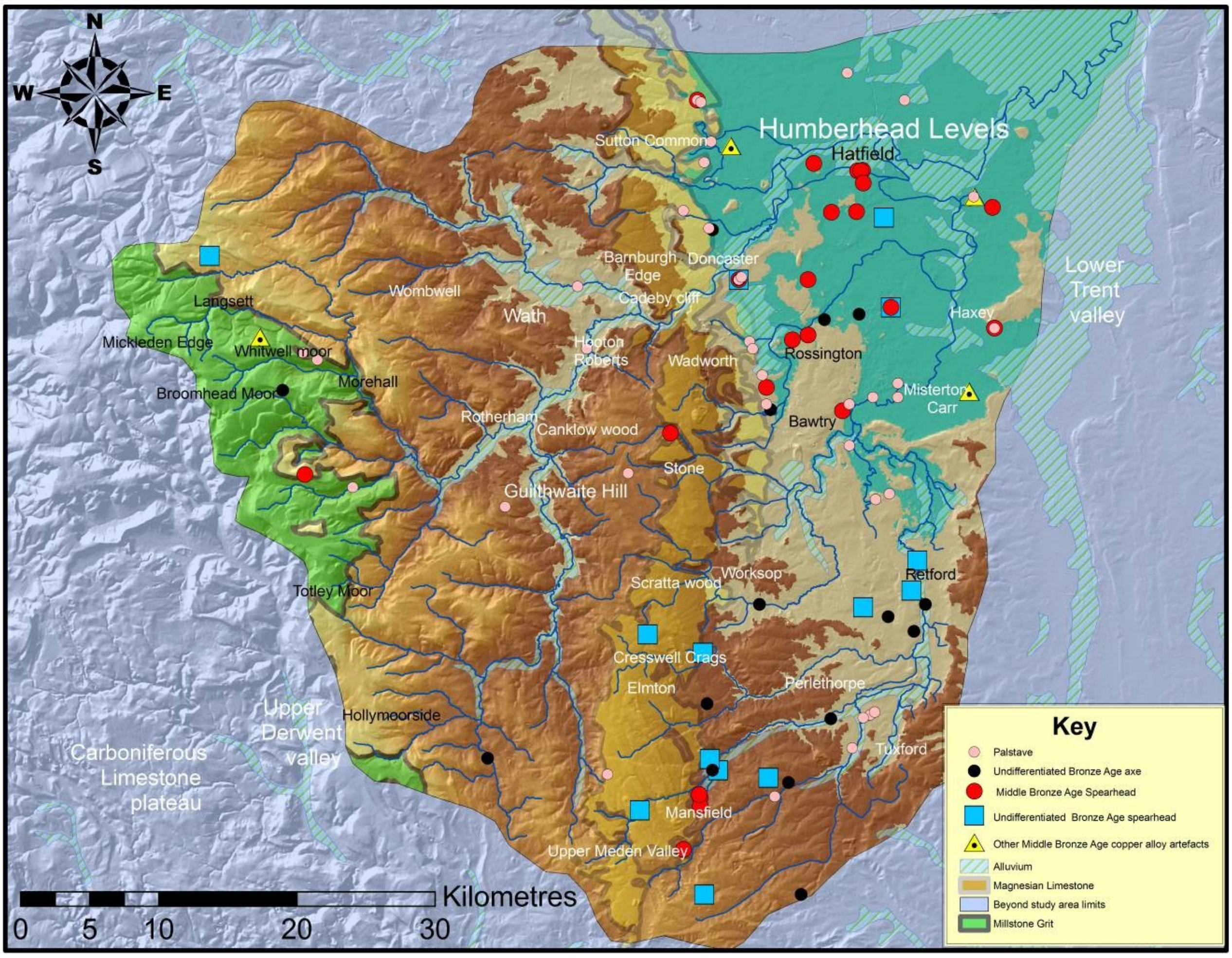


Figure 9.25: Distribution of Middle Bronze Age and undifferentiated Bronze Age copper alloy artefacts. Areas at or below the 50m mark OD are shaded khaki-brown, with areas at or below the 10m mark OD shaded turquoise. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The most distinct difference between the distributions of spearheads and palstaves is that more spearheads are located within the lowest lying parts of the landscape in the midst of the levels. Spearheads, it is frequently claimed, are associated with a form of male identity which is explicitly connected with warfare, an activity for which they were probably developed (Pearce 1984: 26-28; Keeley 1996: 50; Harding 2000; Ó Flaherty 2007: 88; Molloy 2007: 100; 110; Vandkilde 2015: 609). It is claimed by some scholars that in this role, spears in the Middle Bronze Age succeeded the place in male identity once held by bows in earlier periods (Harding 2000: 281). Palstaves and other axes, while they might perform a similar function (Fontijn 2002: 248; Guilaine and Zammit 2005), cannot be proved to have been developed for this specific purpose. They most probably served a variety of functions, values and meanings (Fontijn 2002: 248). Both the palstaves and spearheads are located in the general location of the study area where aerial photography has recorded a large and complex range of cropmark features, the majority of which are thought to define field systems.

In southern England many of the square or rectangular field systems that are located in lowland contexts appear to date to the Bronze Age (Yates 1999; Harding 2000: 153; Bradley 2007: 187). These would normally be associated with later periods in the present study area. In Dartmoor and on the southern edges of "Wessex" they are thought to have been established towards the end of the Earlier Bronze Age (Bradley 2007: 188). In the present study area, the greatest concentration of such field systems that have been mapped are located approximately on the part of the landscape covered by Figure 9.26 (Chadwick 2008; Roberts *et al* 2010). These are attributed to the Roman period for the most part, with the suggestion that many might date to the preceding Iron Age (Chadwick 2008). Some of the enclosures, such as the large sub-oval enclosure on Marr Thick, or the smaller sub-oval shaped enclosure at Bilham (on the Magnesian Limestone to the north west of Doncaster) are highly irregular in form when compared with most of the field systems. In research excavations undertaken by The University of Sheffield (C. Merrony, pers.comm.), a pit much like that excavated at Mexborough discussed in chapter eight was excavated within the Marr Thick enclosure. It did not have a stratigraphic relationship with the surrounding enclosure but did contain Neolithic flintwork, which is an unusual coincidence within the study area. This provides circumstantial evidence, albeit small, supporting the possibility that the enclosure might be of Neolithic date. It is conceivable on this basis that these enclosures with irregular morphology pre-date even the Bronze Age. As we have seen in chapter eight, settlement in the study area was concentrated on the Magnesian Limestone plateaux at that time, which again offers supporting circumstantial evidence for the prospect that some of the ditched enclosures known from the area date to that period.

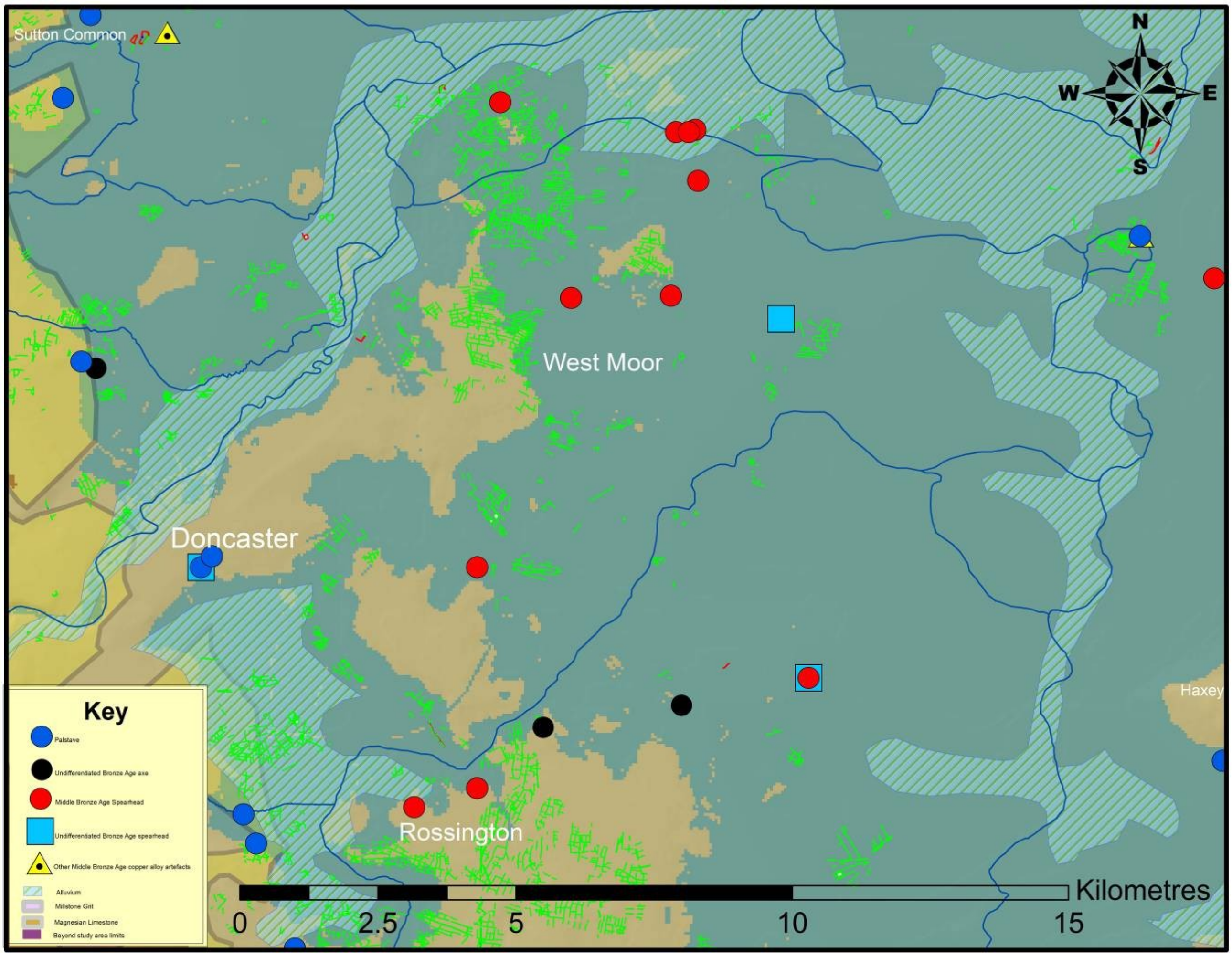


Figure 9.26: Middle Bronze Age copper alloy artefacts in the vicinity of the Humberhead levels in relation to crop mark field systems (green). Khaki- brown shaded areas are at or below 50m OD. Blue-grey areas are at or below 10m OD. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

If one accepts that palstaves served functions that were connected with routine activities (as well as performing a potential symbolic role, possibly connected with their prosaic functionality), then in the context of the above discussion the significance of their distribution on the margins of the levels, and especially at the approximate interface between the levels and the Magnesian Limestone becomes important. Earlier, it was suggested that a way of life based on pastoralism explained the distributions of archaeological data on the Magnesian Limestone, and its concentration between burgeoning wetland environments which are the favoured habitats of cattle. This is supported by some of the environmental data discussed in chapter five. Palstaves are differentiated from the spears that were more commonly deposited deeper into the wetland landscape of the levels because palstaves represented a very different form of identity. That identity was intimately connected with the landscape on the edge of which they were deposited, to either side of the east end of the Don Gorge. The suggestion being made here is that this place, as earlier, was the part of the landscape most identified with home bases and settlement. The deliberate deposition of artefacts associated with related activities on the margin overlooking the place beyond signified the difference between home and what lay beyond. The significance of the deposition of spearheads on the levels themselves is that they related to a common, cohesive, form of identity rooted not in day-to-day routines but in specifically martial identity. They were deposited away from the world of everyday life concerning the whole community on higher and drier areas. Spearheads were deposited in a different environment, that was common to a specific form of identity that was also different. Were depositional events on the levels gendered through the particular emphasis on spears?

Returning to the locations for the deposition of palstaves, on the landscape later to be characterised by the many ditched enclosures, the possibility should not be discounted that the origin of the enclosures lies earlier than previously thought. The possibility cannot be discounted on the grounds that data is occasionally recovered in excavations demonstrating that some were backfilled at the end of the Roman period. A *terminus post quem* does not prove that. Anecdotally, it is more common to excavate ditched features that furnish no material culture at all (personal observation), and in West Yorkshire similar observations have resulted in the conclusion that these kinds of features are often best characterised as furnishing no evidence of date of inception whatsoever (Vyner 2008: 20). In a limited number of cases evidence has been recovered relating to the end of the Bronze Age. At Manor farm, Garforth, a segmented ditch produced a radio carbon date range of 763-263 cal BC, and a four post structure at Sharp Lane, Middleton included carbonised remains of 8th to 5th century BC date (Vyner 2008: 20).

Painstakingly detailed investigation by some fieldworkers of the ditched enclosures has demonstrated that some at least were recut, and probably repeatedly (Chadwick 1999: 152; 2008), supporting the suggestion that many were probably originally cut during the Late Iron Age, despite their occasional Late Roman rich backfill deposits (Chadwick 1999: 160-61; 2008). The distribution of palstaves (in comparison with spearheads) shown here and how they relate to the distribution of cropmark field systems proves nothing about the nature of the cropmark field systems themselves, but supports the idea that the landscape that was later to be characterised by ditched enclosures was of particular importance at least as early as the Middle Bronze Age. The prospect must also be considered that the practice of creating ditched enclosures, if not the extant remains of enclosures as constituted in their latest phase, was as much a part of agrarian life in the study area during the Bronze Age as it was in southern England.

The exceptionally well preserved upstanding dataset that resides in the uplands on the western edge of the study area, along the western edge of the city of Sheffield (Figure 9.27), must also be taken into consideration in discussing settlement and the evidence for subsistence practices within the study area. Table 6 shows that many small features of probable Late Neolithic to Late Bronze date exist within the study area, almost all of which are located on the uplands shown in Figure 9.28. The diminutive nature of these features (Figures 9.10, 9.11 and 9.14) is indicative of how relatively free of disturbance the uplands are. For most of the time they are virtually invisible in the undergrowth, and many have only been recorded in the aftermath of the burning of moorland which has exposed many of the features (Radley 1966; Sidebottom 2014; Figure 9.27). Very little of the uplands within the study area have been surveyed in detail with such small scale prehistoric features in consideration, meaning that those shown in figure 9.28 should be regarded as a sample of what exists rather than a comprehensive record. Nevertheless, the distribution does cover a variety of locations across the uplands which show that places in the vicinity of the headwaters of springs and confluences were important, just as they were on the Magnesian Limestone.

Figure 9.27: A probable barrow cemetary overlooking the upper reaches of the River Rivelin at Hallam Moors, South Yorkshire. The features are visible in the late afternoon sun on north facing slopes denuded of vegetation by burning. Scale: 0.5 Metres. Source: author.

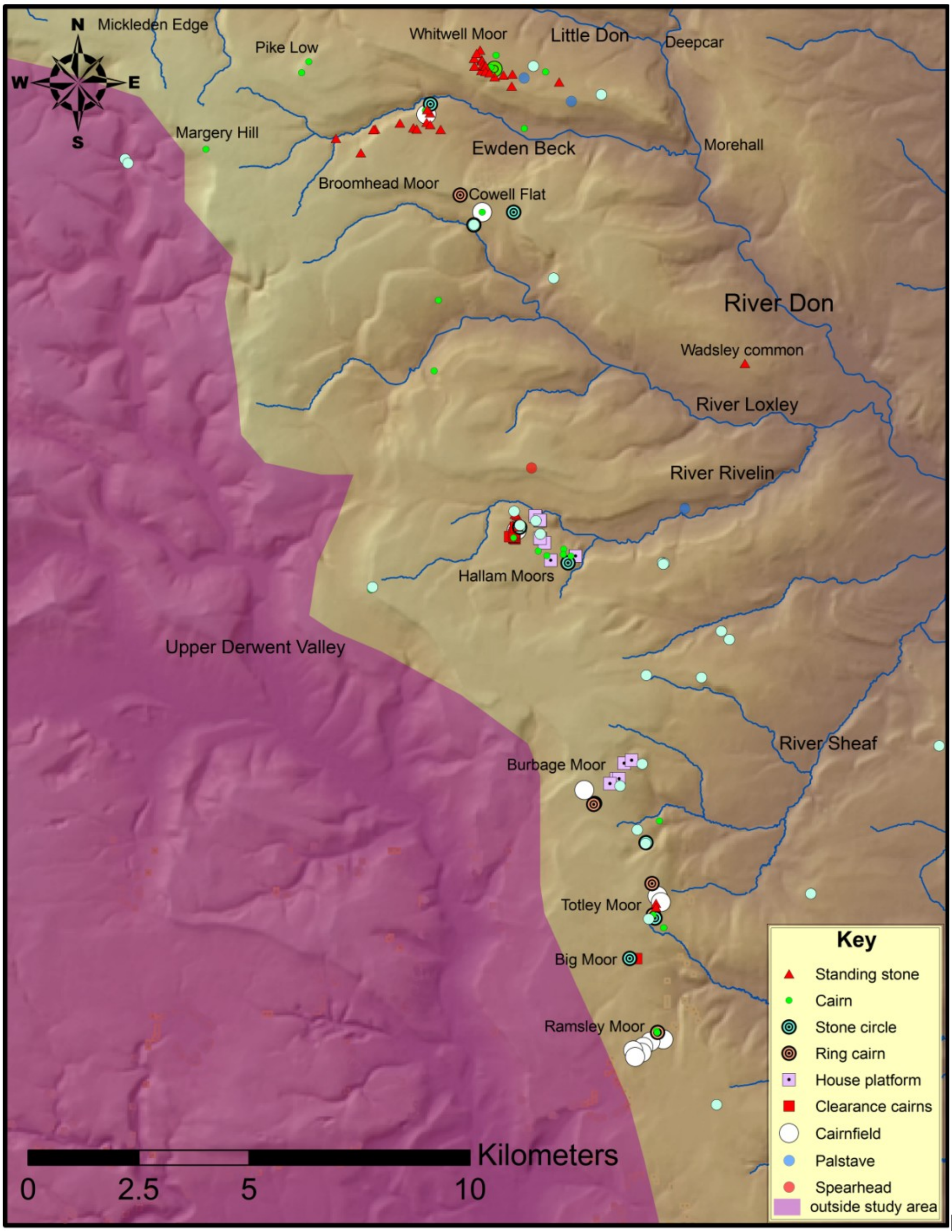


Figure 9.28: Clusters of Bronze Age monuments across the uplands of South Yorkshire and North Derbyshire, at or very close to the watershed of the Don drainage basin by the headwaters of rivers. Round barrows have been included in the distribution, indicative of activity dating from the Early Bronze Age onwards (pale blue roundels). © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

Figures 9.30, 9.31 and 9.32 show that the clusters of monuments take various forms that are frequently found in close proximity. It has been noted before that these often consist of cairnfields and individual cairns that are located near to ring cairns and embanked stone circles, giving rise to the suggestion that the clusters probably relate to distinct small communities (Barnatt and Smith 1991: 28-29; Barnatt 2000). The cairns frequently relate to clearance for small scale agriculture or horticulture, often near "house" platforms and local ceremonial monuments represented by the ring cairns and stone circles (Sidebottom 2014; Figure 9.29).

The suggestion has been made that "clearance" cairnfields in such upland locations were more than mere dumps for the creation of fields. This is indicated by the presence of burials amongst them (Barnatt and Smith 1991: 27; Johnston 2001: 104; Hoaen and Loney 2013: 135; Figure 9.8) and material culture recovered from amongst them and between them (Radley 1966). The strong implication is that their function was more complex in meaning and significance to communities than being merely economic, and incorporated a probably wide range of social and ceremonial activities as well as serving the practical purpose of clearing areas for agriculture. The above pattern of deposition in such contexts has been recorded on similar upland locations across Britain (Johnston 2001; Hoaen and Loney 2013: 126).

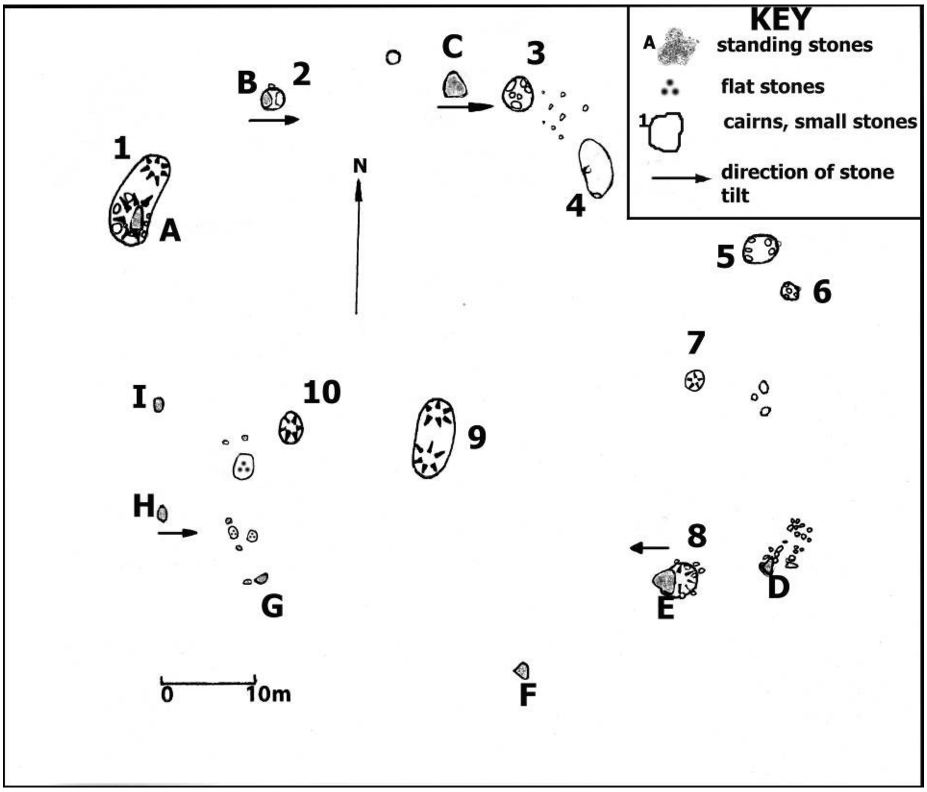


Figure 9.29: The remains of an embanked stone circle at Hallam Moors, South Yorkshire. Stones A, B and E are set in cairns 1, 2 and 8. Cairns 3, 4, 5, 6 form the remaining fragments of the former bank, while stones C, D, F, G, H and I complete the sub-circular arrangement. Source: Cockrell 2007.

As explained earlier, within the present study area the approximate dating of most of the aforementioned features to the Middle or perhaps Later Bronze Age is largely circumstantial. Few of the embanked stone circles or ring cairns are known to have been excavated to modern standards, although those that have, such as the embanked stone circle at Brown Edge (Radley 1966; Barnatt 1991: 52; Figure 9.30) and Barbrook II (Big Moor. Barnatt 1991: 54-57), have produced data that is of Middle Bronze Age date. Radio carbon determinations from Brown Edge give date ranges of 1050 BC ±150, 1250 BC ±150, and 1530 BC ±150. A determination from Barbrook II gave a date range of 1500 BC ±150. Material culture recovered from the vicinity of the monument clusters at Ewden Beck and Whitwell Moor are broadly compatible with the foregoing dates (Kenworthy 1928; Figure 9.32), and the range and morphology of the monuments at Hallam Moors almost identical, indicating broad contemporaneity (Figure 9.8; Figure 9.11; Figure 9.27; Figure 9.29; Figure 9.31).

The only settlement site in the vicinity to be excavated, at Swine Sty in North Derbyshire, furnished a radio carbon determination of 1600 BC ±80, but analysis of the associated artefactual assemblage suggested to researchers that the site was in occupation for most of the second millennium BC (Barnatt and Smith 1991: 24). Dates recovered from cairns at the nearby Eaglestone Flat, in Derbyshire, (that also incorporated burials) furnished radio carbon date ranges of 1680-1328 cal BC and 1620-1260 cal BC (Barnatt 1994: 296).

It will be noted that at some locations in the present study area these small monuments are in close proximity to many of the round barrows discussed earlier. This supports the likelihood that they were probably areas of settlement in the Early Bronze Age as well. The presence of cup marked stones and possible pollisoirs that might relate to the Late Neolithic period at locations such as Totley Moor (Figure 9.14) and Whitwell Moor (chapter eight), supports the notion that settlement in the uplands might have begun to take place as early as the Late Neolithic. Pollen analysis from the uplands, though limited, also supports the suggestion that settlement was a feature of the area lasting from the Late Neolithic until the Iron Age (Barnatt *et al* 2002: 54; Heath 2003: 35; 38).

With the above in consideration, the general lack of material culture across the Gritstone uplands in comparison with the amount of data already noted for the areas to the east requires explanation. One possible explanation is that the data has not been recovered due to the impossibility of undertaking fieldwalking on the moorlands, and because of the limited numbers of excavations undertaken. However, given the wealth of information that has been recovered indicative of Mesolithic activity across the same moorlands noted in chapter seven, this explanation lacks plausibility; if eroding flint scatters dating to the Mesolithic are in such evidence, where are the Neolithic and Bronze Ages? In fact at certain locations, that later material has indeed been in evidence in reduced quantities, such as Langsett reservoir near Stocksbridge in South Yorkshire (J. Radley, unpublished archive at

MuseumsSheffield), or Totley Moor in North Derbyshire (Radley 1966). Given the recording of these assemblages of more modest size and frequency, the most likely alternative conclusion to draw is that the general lack of later material simply reflects a lower level of activity, exacerbated by a smaller range of diagnostic artefacts making potential assemblages difficult to identify. The caveat to that is that the Mesolithic represents a much longer period of time, employing core reduction strategies resulting in greater quantities of smaller artefacts (as discussed in chapter eight). Nevertheless, a relatively lower level of activity in comparison with contemporary sites to the east is still indicated.

The implication of the above is that the numerous well preserved small archaeological features of the Gritstone uplands actually represents a relatively low level of settlement and related activities, and perhaps a different range of activities that are not related directly to settlement. This low level activity is remarkably well preserved due to minimal intrusive activity post dating the Bronze Age (Bevan 2006: 5). This implies that the Magnesian Limestone, with its relatively much higher record of material culture, was once at least as rich in a similar range of upstanding features. These have since been completely destroyed by subsequent generations of agrarian life. Those features, however, might not have comprised exactly the same range of structures and monuments.

Barnatt and Smith (1991) have observed that no signs of former ring cairns and embanked stone circles are in evidence on the Carboniferous Limestone plateau of Derbyshire. Although this landscape has been subjected to later agricultural activity, it is of a sufficiently limited nature (compared with the lowlands) to arouse suspicion of the prospect that the monuments were simply destroyed without trace. Barnatt and Smith point out that in an area known for its antiquarian activity, it might be expected that records of former monuments should exist in at least a few cases, had such monuments existed in the past. This is in a landscape where the two henge monuments of Arbor Low and Bull Ring are situated and survive. Barnatt and Smith suggest that these monumental differences reflect differences in social organisation between the Carboniferous Limestone plateau and the Gritstone uplands, with the Limestone area having larger scale and (it is argued) longer established communal links in comparison with the Gritstone moors. Similar arguments could be made for the difference between the Gritstone uplands and the areas to the east in the present study area, and it is worth recalling at this point that the present study area also has a number of larger scale embanked circular enclosures in the form of the hengiform monuments discussed earlier, and to be discussed again below.

The ideas above have been challenged by Kitchen (2000; 2001) who has suggested that the cluster of monuments on the Magnesian Limestone plateaux form by implication, along with those of the Carboniferous Limestone, part of a single supra-regional grouping that includes most of the English midlands and north (2001: 117-118). In Kitchen's model the monument clusters were created by the same people, moving between different landscapes in a much more nomadic form of pastoral life (Kitchen 2000: 304; 2001: 118). The valleys of the Don and its tributaries in Kitchen's model formed corridors of movement, along which people paused at particular locales. Riverine connections were crucial in the establishment and maintenance of social networks that might have dated to as early as the Mesolithic (Kitchen 2000: 302). The significance of the Gritstone uplands and the vicinity of the headwaters of the Don was in connecting the east and west (Kitchen 2000: 299).

It is not clear why, if the Gritstone uplands were a mere node along networks used by the same people, they should be so distinctive in terms of the groups of features noted above. Kitchen himself suggests that 'the east moors, if not the whole of the Peak District, lay at the meeting place of many different worlds' (2000: 25). This seems more consistent with the model being developed in the present thesis, with the Magnesian Limestone serving, by the Neolithic, as the focus of one regional grouping while the Carboniferous Limestone served as the focus of another, each pursuing pastoral ways of life at rather more modest scales than that envisaged by Kitchen. The importance of the river valleys in terms of communication has been argued for here too, much along the lines proposed by Kitchen, but as ways of connecting different locales and regions rather than the much larger single zone of inhabitation that he envisages.

Whether or not either of the foregoing is correct in terms of social organisation, Barnatt and Smith have shown that there are grounds for thinking that the discrete distribution of some monument types such as ring cairns and embanked stone circles are indicative of regional cultural distinctiveness. This is in a landscape where burials were embedded within areas of clearance associated with ties to the land in horticultural or agricultural activity, and at specific locations at the headwaters of streams that are also associated with earlier monuments such as the round barrows in the vicinity of Totley Moor, Hallam Moors, Ewden Beck and Whitwell Moor. Other indications of earlier activity are known from some of these locations, especially the aforementioned sequence at Totley Moor, revisited and used since the Mesolithic (chapter seven; chapter eight). Small finds such as the polished stone axe and earlier flintwork, along with the cup marked recumbent stone at Whitwell Moor also support a similar interpretation. These sequences at the same locations are indicative of commitments to places that were repeated over time. Much more detailed field research of the sort applied to Eaglestone Flat (Barnatt 1994), and Gardom's Edge (Barnatt *et al* 2002), combining archaeological sequencing with radio carbon determinations using Bayesian statistical methods could achieve much more in investigating this approach.

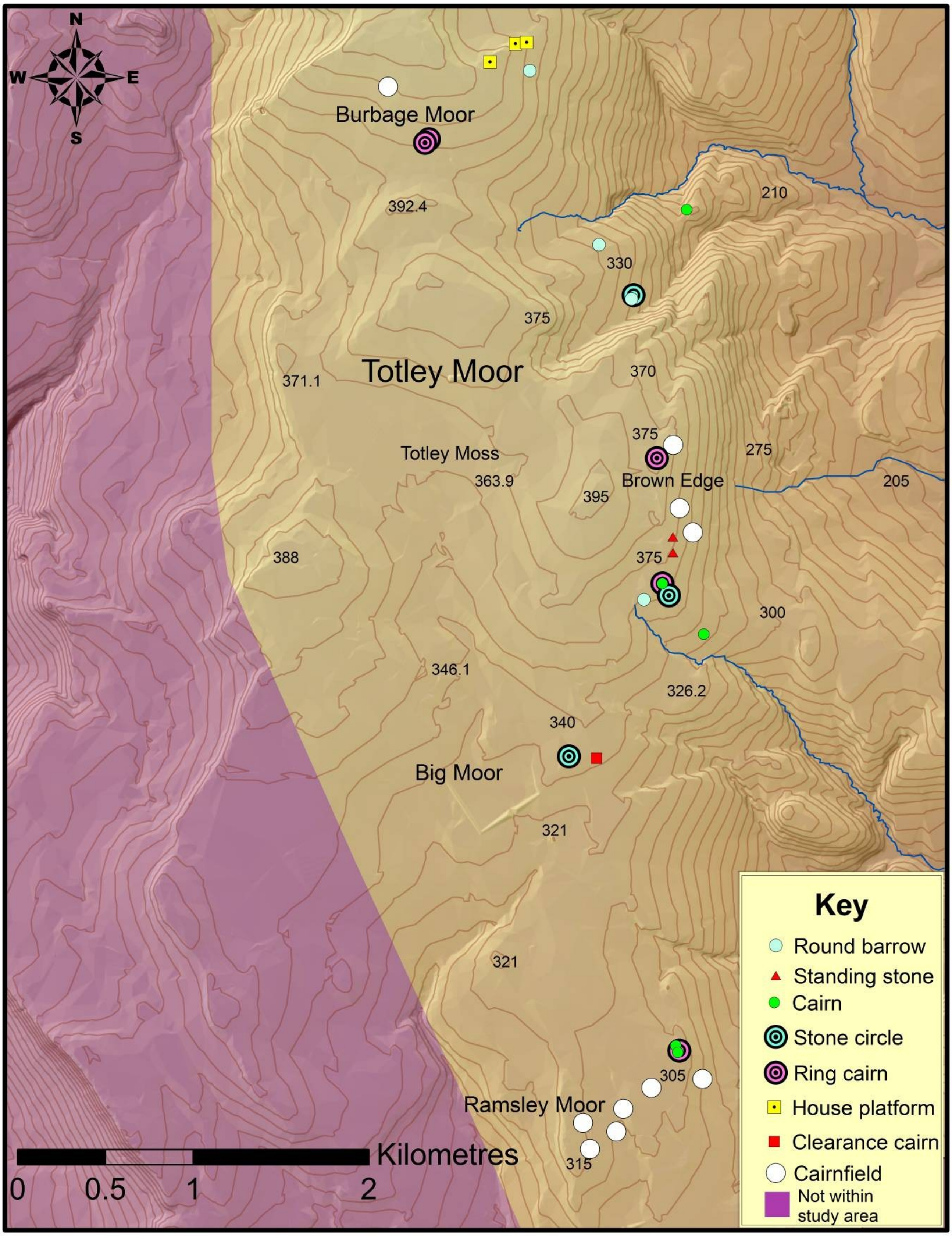
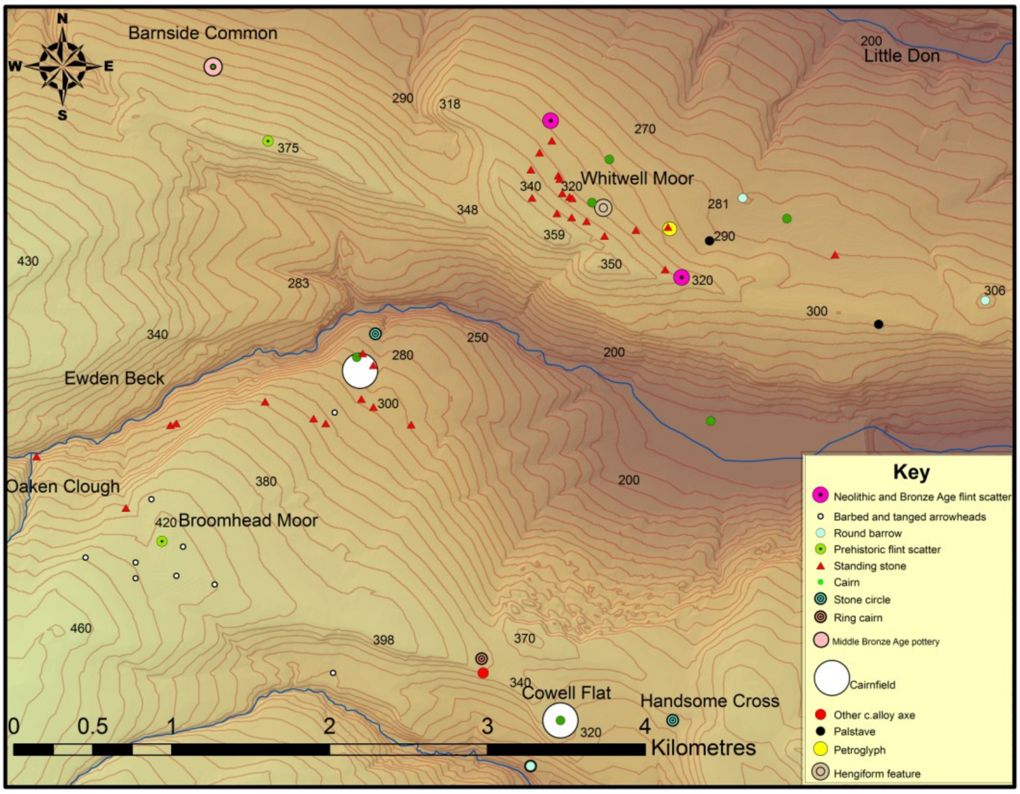


Figure 9.30: Monuments in the vicinity of Totley Moor, North Derbyshire. Figures represent height in metres OD. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.



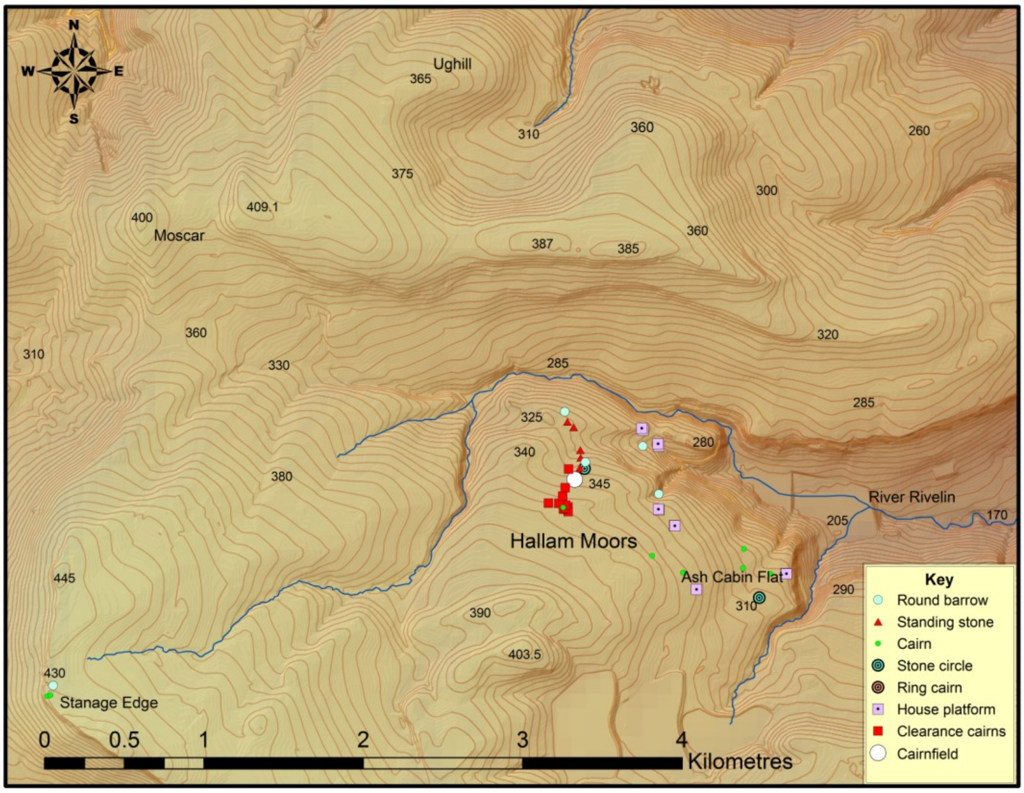


Figure 9.31: The monuments of Whitwell Moor and Ewden Beck (top) and Hallam Moors (bottom). Figures indicate height in metres OD. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

The Gritstone uplands straddle the watershed between the present study area based upon the drainage of the river Don and the drainage of the Derwent in Derbyshire. The monuments discussed above not only fall within the present study area, but continue at various locations beyond the watershed (Barnatt 1990; Barnatt and Smith 1991; Barnatt *et al* 2002). It follows that any form of micro-regional identity expressed in the style and distribution of ring cairns and embanked stone circles during the Bronze Age must encompass both sides of the watershed.

This model for regional identity, ebbing and flowing over time within and beyond the edges of the study area, was allowed for and expected in the theoretical chapter at the outset of this study. The prospect for the existence of multiple scales of regional identity was also allowed for, and there is some evidence to support that in this case.

It is well established that pottery making traditions across the British Isles during the Bronze Age were localised, and that sources of clay in particular were locally sourced for the most part, proving that pottery crafting was undertaken on a localised or regional basis (Parker Pearson 1999: 82-84; Champion 1999: 105; Gibson 2002: 25-6; 36; 38; 49). Kevin Cootes, in his doctoral research (2012), has shown that pottery crafting within the Derbyshire Peak District during the Bronze Age demonstrates particularly distinct regional characteristics, centred approximately on the Carboniferous Limestone plateau. Cootes established this by analysing the paste components of pottery and showing that the recipes included materials that were sourced specifically in the region. The distribution of pottery utilising the recipe extended to the Gritstone uplands overlapping the Peak District and the present study area, indicating that in those uplands people belonged to the same cultural tradition of pottery crafting as on the Carboniferous Limestone. Thus, there is evidence from the uplands not only for the manifestation of micro-regional identity through its distinctive array of monument groups, but also of affinities with the very different monumental traditions of the Carboniferous Limestone area. Cootes' research therefore offers *prima facie* support for the idea that areas with different traditions of marking the landscape with structures could belong to a greater world view. This could be of the sort envisaged by Kitchen, although to accept that would be to extrapolate too much from a thesis that supports traditions very much at the smaller regional scale, albeit one including both the Gritstone uplands as well as the Carboniferous Limestone of the Peak District. Cootes' study does not look further to the east or to other areas beyond the Peak District. It would be interesting to see if similar analyses of pottery from the Magnesian Limestone plateaux and beyond would yield more supporting evidence for connections between these landscapes, or something different.

However, another source of information could add something to the above debate; namely the embanked sub-circular hengiform feature at Whitwell Moor in South Yorkshire. As promised in chapter eight and earlier in this chapter, we must now return to the contentious issue of the hengiform features discussed then, but this time in the context of the Late Bronze Age.

The Late Bronze Age

Across Britain the Late Bronze Age is generally thought to mark another cultural watershed ushering in changed times. Just as the Early Bronze Age had much in common with the preceding Late Neolithic, and the Early Neolithic had much in common with the Late Mesolithic, the Late Bronze Age is often viewed as having more in common with the Early Iron Age than with the Earlier Bronze Age: It is in the Late Bronze Age that the first large scale evidence for land division and enclosure can be detected in Britain. This has been claimed to be distributed largely in England to the south and east of a line described by the southern midlands, from approximately the Bristol channel to the Wash (Bradley 2007: 187-89). Other similarities include a paucity of pottery and metal artefacts in the study area (Chadwick 2012: 285, 288).

Apart from the cropmark field systems, that the dataset relating to the Late Bronze Age within the present study area so closely resembles that described for the Iron Age above is noteworthy. It reinforces the point made about the cultural watershed not being marked by the advent of the age of iron itself, but that the adoption of ferrous metals happened in a society that had already changed. Pottery, rare before the Late Bronze Age, is represented by a single assemblage of 135 sherds representing two vessels (table 9.2; Figure 9.31). These were recovered from a ditched enclosure at Tibshelf in North East Derbyshire (Cotts 1995). Tibshelf is located at the extreme south west of the study area at the watershed of the rivers Doe Lea and Meden with the Trent drainage basin. Due to the absence of chipped stone, this leaves researchers of the Late Bronze Age of the study area with little more than the copper alloy assemblage.

That assemblage itself is much reduced from the Middle Bronze Age. From an assemblage of 37 palstaves there is a reduction to 29 looped and socketed axeheads, and from 26 spearheads to eight in the Late Bronze Age. For this reason the change that is apparent from figure 9.33 must be treated cautiously. *Prima facie,* the concentration of axes along the east facing slopes of the Magnesian Limestone during the Middle Bronze Age is no longer in evidence, and the presence of spearheads on the levels much less clear. Ten axes are concentrated in the vicinity of Haxey and Westmoorside, in North Lincolnshire on the Isle of Axholme. Another five are located in the vicinity of the Isle of Axholme on the Humberhead Levels (Figure 9.33). These figures are reflected in point density analysis, showing that the vicinity of Haxey and Westmoorside is a particular concentration in the area where the majority of axes are located (Figure 9.32).

The concentration of axes at Haxey is remarkable in the context of the generally poor quantities of data relating to the Late Bronze Age. It draws attention to a place overlooking the lower reaches of the Idle and the Humberhead levels which appears to have been the location of activity throughout the Bronze Age. Moreover, though not one of the most important places of concentrated activity, Haxey was the scene of repeated revisitation and use from the Mesolithic and throughout the Neolithic (see chapters seven and eight; Loughlin and Miller 1979: 155).

Elaborate artefacts were being deposited across the Isle of Axholme throughout the Neolithic and Bronze Ages. Given that this locale would almost have been an island, amidst a landscape that was becoming increasingly wet throughout this period, we should not be surprised by this. However, that the majority of concentrations of various classes of artefact, including chipped stone, are repeatedly located in the vicinity of Haxey itself is worthy of note. Haxey (with neighbouring Westmoorside) forms a small promontory overlooking the Humberhead Levels, lying between Axholme and the Magnesian Limestone plateaux. Its aspect is significant, given the locations of palstaves earlier on the east facing slopes of the Magnesian Limestone overlooking the levels opposite from the Isle of Axholme. The implication of the above is that the area of the levels where the rivers Torne, Idle and Don drew together was one of particular value and importance to local communities during the Bronze Age, and probably before. If it had not been, and had only had general significance as a wetland area on the edges of which communities were settled, one would expect to see a less well defined and more random distribution of findspots in relation to it. In particular, specific places were the locations of repeated activity. This includes the vicinity of Doncaster, where a low ridge extends into the levels, the Tickhill/Bawtry area and the aforementioned concentration at Haxey.

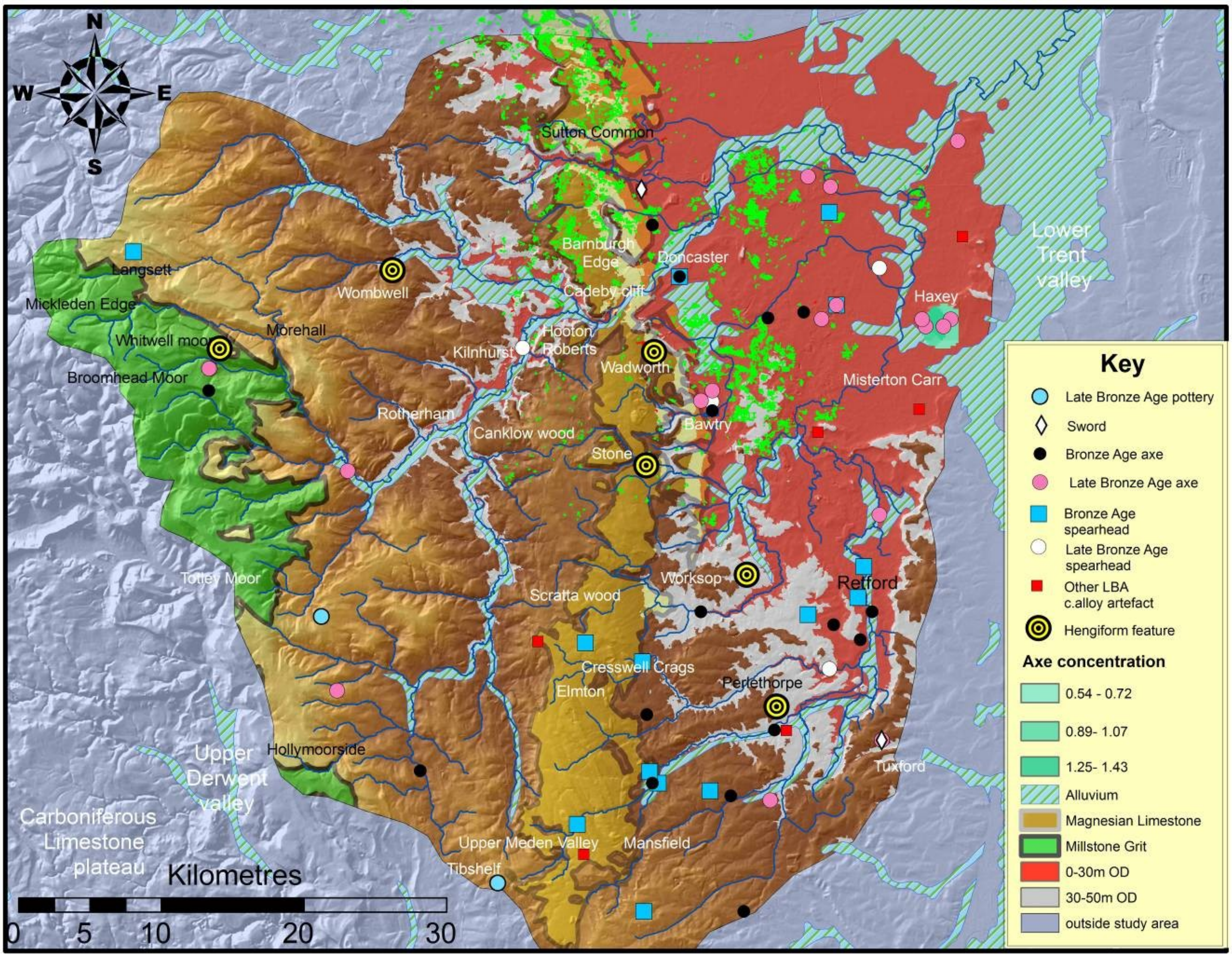


Figure 9.32: The relationships between hengiform features and low lying wetlands and rivers across the study area, how they relate to concentrations of Late Bronze Age metalwork, and cropmark field systems. The Axe concentration at Haxey is shown in shades of blue. Cropmark features are shown in bright green. © Crown Copyright/database right 2014, an Ordnance Survey/EDINA supplied service.

There is little more that can be drawn from the limited portable data relating to the Late Bronze Age, or at least that which is clearly datable to that period, although there is one important class of data already discussed to which we must now return due to its indeterminate nature and considerable potential: the hengiform features discussed in chapter eight.

The hengiform features (Chapter eight, Figure 8.8), it was argued, might well form a discrete group of "henge" monuments that have regional characteristics, similar to groups known elsewhere from the British Isles such as the Derbyshire Peak District and the Thornborough henges in North Yorkshire. However, there is another class of monument to which they might belong about which little research has been undertaken to date. These are Late Bronze Age ringworks.

Ringworks have only recently been identified as a discrete class of monument, and hitherto have often been assumed to be henge monuments on the grounds of their close superficial resemblance when viewed in plan (Bradley 2007: 207). Like henge monuments, they are circular enclosures defined by ditches. Henge monuments typically have between one to four entrances and ringworks can sometimes have interrupted ditches that resemble henges with multiple entrances. Ringworks frequently have arrangements of post holes within them forming circular features, or more narrow circular ditches. These are sometimes interpreted as defining timber buildings (Bradley 2007: 208).

Contextually, the ringworks that have been excavated beyond the study area are claimed often to be associated with metal weaponry, and evidence for the manufacturing of weapons (Bradley 2007: 206; 209). They have also been argued to relate to areas with concentrations of co-axial field systems (Yates 1999) and large deposits of metalwork (Bradley 2007: 210). Since deposits of metalwork are so frequently located in low lying wet places and rivers, ringworks by implication must generally be located near to wetlands or rivers. The ringwork overlooking the headwaters of the River Wandle in the Thames valley, for example, has dominating views of the locations of co-axial field systems in the floodplain below (Yates 1999: 69).

It is obvious that just as the hengiform enclosures bear comparison with henge monuments on various grounds, so too do they resemble ringworks. The feature at Stone is perhaps the most compelling example; the outer ditch is interrupted by what might be entrances to a henge, but could equally convincingly be interpreted as causeways across a ringwork ditch. The circular feature at its centre has been interpreted as a probable round barrow, largely on circumstantial and comparative grounds in chapter eight, but if so is of considerable size at approximately 30 metres in diameter. It could just as easily be a circular building at the centre of a ringwork. This level of detail in plan is not available for the other monuments.

When the hengiform features of the present study area are viewed together at the regional scale of analysis (Chapter eight, Figure 8.8) other pertinent factors are apparent. One is that most of them overlook those parts of the study area, namely the lower Idle Valley and the Humberhead Levels, where the greatest quantities of Late Bronze Age and undifferentiated Bronze Age metalwork are distributed. Moreover, all lie in immediate proximity to wetlands or river floodplains such as the ringworks in the Thames valley. No metalwork or related material has been recorded in the vicinity of the features themselves (with the exception of Whitwell Moor in South Yorkshire), but it must be noted here that none of these features have been subjected to detailed field research, including excavation. If the hengiform features are in fact Late Bronze Age ringworks they probably relate to the period 1100-800

BC, and possibly 1000-800 BC on the strength of information recovered from examples that have been excavated beyond the study area (Bradley 2007: 208).

It is notable that despite the wealth of small features considered earlier in the Gritstone uplands, many of which arguably relate to the Late Bronze Age, four out of six of the possible ringworks are located either on the Magnesian Limestone plateaux or on the slopes leading eastwards into the Idle valley or the Humberhead Levels. This is precisely in the locale where are situated the concentrations of co-axial field systems in the study area generally thought to relate exclusively either to the Roman period or the late pre-Roman Iron Age which were discussed earlier in relation to the distribution of palstaves.

To return to those field systems briefly again, at South Elmsall in West Yorkshire on the northern edge of the present study area, direct evidence has come to light recently for earlier (than the Iron Age) activity on the Magnesian Limestone. A field system including interrupted ditches, recalling the feature at Stone, was recorded in developer funded work (Chadwick 2012: 290). The field system was recorded in association with round houses dated to the mid-late Bronze Age. A row of four-post structures (usually interpreted as grain storage facilities) nearby furnished radio carbon determinations relating to 918-799 BC. The four-post structures were separated from the round houses by a boundary ditch, upon which a later palisade or fence was constructed that has been dated to approximately 757-214 BC (Chadwick 2012: 290).

Taken together with the distribution of Late Bronze Age looped and socketed axe heads and spearheads, this indicates that the importance given to the Magnesian Limestone and adjacent wetlands shown earlier continued into the Late Bronze Age. The proximity of both Late Bronze Age metalwork and possible ringworks to the field systems offers further circumstantial evidence supporting the interpretation that the origin of the cropmark field systems, if not necessarily the majority of extant features themselves, possibly lies during the Late Bronze Age. Since, during the Middle to Late Bronze Age, there are still none of the features, relevant structures or other data that might offer support for a sedentary mixed farming lifestyle in evidence, we must assume that the pastoral model practised by communities with a more mobile lifestyle persisted. If some of the hengiform features discussed above really are Late Bronze Age ringworks, that would strongly support the idea that the broad valleys of the middle and lower reaches of the Don, Dearne and Idle, and the Humberhead Levels were the focus for this activity as earlier.

It was precisely during this time, the Late Bronze Age, that environmental changes on the levels that had begun earlier now took their final form. As explained in chapter five, on the higher and drier parts of the levels and around the margins, use of the landscape could have carried on as before, but the expansion of the raised mires across much of the levels would have curtailed pastoral or horticultural activities. Nutrient poor acid bog and water is unlikely to have been favourable grazing, and the soft, peat based soils dangerous for large animals to walk on (van Vuure 2005: 252). Moreover, the absence of trees in such an environment would have meant an absence of local wood pasture, essential for early domestic cattle and wild cattle alike in the winter. It is worth recalling at this point that those mires would have extended over most of the levels in practice, being of far greater extent than the historically recorded mires of Hatfield and Thorne Moors.

The above has implications for the extent to which the lowlands could have supported easily the scale of pastoral activity that probably existed during the Later Neolithic and Early Bronze Age suggested earlier. Perhaps social and economic pressures arising from this forced some people to find pastures anew, resulting in the dense foci of different structures recorded on the Gritstone uplands. One of these, the small hengiform feature at Whitwell Moor in South Yorkshire resembles more closely in form the other, larger, hengiform features of the lowlands to the east than the ring cairns and embanked stone circles found more frequently on the uplands, and also lies directly adjacent to the sources of local springs on one of the small upland bogs. It is possible that the feature served a community with close connections to those served by the similar monuments recorded on the eastern lowlands, and perhaps drew members originally from those areas to the east.

As a post script to the above and way of drawing together the world of the Late Bronze Age in the study area with the succeeding Iron Age, it is fitting that the site of Scratta Wood in North Nottinghamshire should now be returned to. Scratta Wood, it will be recalled, was a location of considerable significance to the research questions during the Mesolithic, and Early Neolithic. Earlier in this thesis the importance and potential of woodlands in the study area was indicated, in preserving features that were once probably common across the Magnesian Limestone but have been destroyed in the recent past. Scratta Wood provides us with a moment in time showing this process, which took place from 1959. The "wood" these days largely consists of arable but in the late 1950s was woodland and scrub that was being "improved" for agriculture. This revealed features that the land owner allowed to be investigated at the time by Worksop Archaeological Society. With the help of members of the Hunter Archaeological Society the site was excavated, and the stone foundations of an enclosure and round houses recorded that were in use during the pre-Roman Iron Age (White n.d.; Dolby 2008; Chadwick 2008: 1203-04).

Few details about the rather chaotic excavation are known, due to the site never being published in full, but it was claimed that the earliest phase of the site furnished some data that indicated that it related to the Late Bronze Age (Dolby 2008: 46).

Summary

At the end of chapter eight, lifestyles in the Late Neolithic that were still to be seen as largely mobile were in evidence. However, communities whose main focus was on the Magnesian Limestone plateaux gravitated around the headwaters of streams rising from them and to either side of gorges between them. The prominence of the Don Gorge was shown to be of particular importance.

Nevertheless, hengiform features displaying regionally distinct morphology and settings were also in evidence, assuming that they really are of Late Neolithic date. Their distribution indicates the extent to which communities were dispersed, and yet connected by similar understandings of what it was to gather in particular environmental settings, at monuments of similar form and scale. Shared meaning and significance are implied between separate communities across a wide area bisected by differently characterised landscapes, and yet still focussed on the Magnesian Limestone plateaux.

Unsurprisingly, little immediate difference is detectable in the Early Bronze Age, and the regional distinctiveness of much of the study area confirmed by the stark differences in the sources of raw material utilised for chipped stone tools used between it and the neighbouring Peak District. Ninety Eight percent of chipped stone within the study area is of flint rather than chert. This is reinforced by the proportions of axe hammers and battle axes recorded in the study area, which are the opposite of those in nearby North Yorkshire.

Distributions of material culture of all classes confirm that despite concentrations of upstanding round barrows on the Gritstone uplands, the main focus of activity continued to be concentrated on the Magnesian Limestone, as earlier. This might also be supported by the locations of the hengiform features of possible Late Neolithic date, given that their use is known generally to have continued into the Early Bronze Age.

A difference between the distributions of chipped stone and more elaborate artefacts indicates that the latter were more closely associated with the margins of the wetlands. However, their concentrations at particular locales is indicative of specific places in the lowland landscape being of importance to local communities, rather than wet locations in general.

The main source of portable data for the undertaking of day-to-day activities of a routine nature is effectively absent from the beginning of the Middle Bronze Age. Chipped stone hitherto formed that. Relying on insights from metal artefacts, the distribution of palstaves and spearheads foregrounds the importance to people of the southern and western margins of the Humberhead Levels. These distributions imply that artefacts (palstaves) that were more likely to be connected with mundane activity are deliberately located at the interface between the Levels and the slightly higher and drier areas. It is at these places where the many co-axial field systems that are believed to relate exclusively to the pre Roman Iron Age and Roman period are located.

Circumstantial evidence indicates that a few of the irregular ditched enclosures amidst the co-axial features might well date to the Neolithic, and it is in their vicinity that palstaves are deposited, indicating a continuity of importance to the area during the Bronze Age. Just as the spearheads that are deposited deeper within the Levels are indicative of an expression of male identity that is martial in character, palstaves by implication are not. Their location on the areas earlier associated with settlement activity are more likely to invoke hearth, home and mundane activities. It might be a coincidence that this is in the very environment that was to be the location of so much Iron Age and Roman period activity, but the possibility must be considered that the origins of those field systems lies in the Middle to Late Bronze Age.

Field systems that date from as early as the Early Bronze Age have been recorded on the Gritstone uplands area of the study area, characterised by a suite of monument types that are distinct from those either to the east, or to the west on the neighbouring Carboniferous Limestone plateau. This is indicative of a micro-regional sense of identity. However, common traditions of pottery crafting indicate that at a different scale or in other guise, the Gritstone upland areas also had close ties with the Carboniferous Limestone Plateau.

What little evidence is available from the Late Bronze Age does not diverge greatly from the foregoing: metalwork in the form of looped and socketed axe heads and the few remaining spearheads continued to be distributed broadly in the same areas as in the Middle Bronze Age. If the hengiform features are in fact ringworks of this period, their distribution and setting reinforces the relationship between them, the metalwork and the Magnesian Limestone and neighbouring low lying wetlands in the vicinity of the Idle valley and Humberhead Levels. Nevertheless, environmental data indicates that the pastoral life based upon the grazing of animals on the margins of wetlands was under pressure as those environments gradually developed into acid bog. This might go some way to explaining why, in the Middle to Late Bronze Age, the Gritstone upland areas to the west became once more the scene of renewed intensive settlement activity until the onset of the Iron Age.

The sense of commitment to the landscapes around the axis of the Magnesian Limestone and the Don Gorge, and the margins of the low lying wetlands has been palpable throughout. The importance of the wetlands appears to have increased over time, in tandem with the development and expansion of the wetlands themselves. Particular places that figure within these locales, and the approaches to such locales along river valleys has been demonstrable. The lifestyles routinely undertaken by people utilising wet pasture were focussed for the most part on those higher and drier areas of the Magnesian Limestone from which such pastures could most easily be accessed. It is likely that the way of life practiced and its distinctive setting informed people's sense of regional community on the basis above, and that this might have extended to some of those people who ventured into the Gritstone uplands to the west. The differences between the data from the Gritstone uplands and that of the Magnesian Limestone plateaux indicate that different senses of belonging were being manifested, which in the case of the uplands might relate to multiple levels of regional identity. As Willy Kitchen (2000: 25) put it "the meeting place of many different worlds" might well have experienced affinities with more than one region of the wider world, and perhaps this itself would have been enough to have given them a distinct sense of unique identity.

Chapter 10:

Confluence of Narratives: The Don Valley in Prehistory

Introductory note

What follows is a summary and drawing together of the information, discussion and conclusions already presented in earlier chapters, as a narrative sequence. For that reason, and to aid the flow of the narrative, although much that is said draws upon wider scholarship, referencing has been deliberately kept to a minimum. For more detailed discussion and referencing the reader should consult the earlier chapters.

Prehistory in the study region?

Before addressing the main research question, it is worth dwelling for a moment on a wider issue of no less importance. That is the question of whether the study area has a prehistory of any kind, and the methods to recover that prehistory. By "prehistory" I mean specifically that period of time between the end of the Palaeolithic and the beginning of the Iron Age. My assumptions are that everywhere has a prehistory, and that it must be recoverable at one scale of analysis or another. Anecdotally, this has been challenged by a number of experienced professionals. Significantly, the assertion is unconsciously supported by archaeological literature which pays little attention to South Yorkshire and the north midlands, or subsumes parts of it within neighbouring areas. Edmonds and Seaborne, for example, in discussing the prehistory of the Peak District cite examples from Ault Hucknall and Whitwell (2001: 28; 59-61), both of which not only lie outside of the geographical area of the Peak District, but in a landscape on the Magnesian Limestone plateaux that is quite different in character to that of the Carboniferous Limestone. Archaeologies of, or including specific reference to "Yorkshire" in particular make little attempt to draw together existing information south of the Humber, giving the impression of a region that is virtually unknowable (Manby *et al* 2003; Harding 2003: 87).

The database, that formed the basis for answering the research question consists of over 12,300 individual records. Each record includes a findspot, consisting of either one or more items of material culture or faunal remains or a structure or monument. Very briefly, these can be summarised as including more than 73,000 individual artefacts of chipped stone, approximately 200 additional scatters of chipped stone of indeterminate composition and quantity, 257 polished stone axes and axe fragments, 16 stone maceheads, 16 stone adzes, 34 ceramic vessels plus several hundred sherds, 7 stone battle axes, 20 axe hammers, 40 bronze spearheads, 80 bronze axes plus a small number of daggers, swords and other metal objects, 16 long barrows, 71 round barrows, 6 hengiform features, 8 petroglyphs, approximately 150 individual cairns, 20 cairnfields, 15 ring cairns and embanked stone circles, 2 wooden trackways, and 37 individual standing stones. The foregoing list is not comprehensive. Much more material languishing in museum collections and features in the landscape await recording and discussion. Nevertheless, the list might seem modest by comparison with other parts of the British Isles, but these things are relative, and those other areas themselves might be deemed unremarkable in other parts of the world. Modest or not, the database as it stands is more than sufficient to enable recovery of the study area's prehistory.

The Don drainage basin in Prehistory

The landscapes of the Early Mesolithic (c.9,500BC-7,500BC) were very different to what they later were to become. Sea levels were approximately 20m below what they are today, meaning that the water table was also much lower. The rivers of the study area were much more sharply defined than later, in channels which on the Humberhead Levels were deeply incised, edged by natural embankments of wind-blown sand, and flanked by a relatively dry grassland plain. Trees were beginning to colonise the landscape, but by no means covered it. They consisted initially of pioneering species like birch and pine, expanding in a landscape that was inhabited by grazing and browsing deer, wild cattle and early on probably still including mega-fauna such as moose and giant deer. Species such as these probably helped to restrict the rate at which trees spread, allowing Early Mesolithic people to range across the whole landscape fairly unimpeded (Figure 10.1).

Figure 10.1: Red deer grazing in the Upper Dearne Valley, South Yorkshire. Source: author.

Large assemblages of chipped stone recovered from places as far across the study area as Misterton Carr, Deepcar and Unstone attest to the extent to which people ranged throughout the study area in the Early Mesolithic. Early chipped stone is limited in numbers (apart from at those particular sites) and in its distribution when compared with the Later Mesolithic. This is no doubt in part due to the simple fact that the Later Mesolithic was of much longer duration, but there are other factors to consider. When undifferentiated material is added of broadly Mesolithic date the distribution of findspots increases considerably, and some of these presumably relate to the Early Mesolithic. Moreover, at this time the area we now call the North Sea was in fact a low lying plain consisting of meandering braided river channels, fens and carrs, marshes, coastal creeks and salt marshes (Figure 10.2). This extensive area of rich wetland resources is more likely to have been the main focus for settlement when compared with much of what is now eastern Britain. This is speculative, though is supported by the size and importance of the settlement at Star Carr in the Vale of Pickering, which lies at the edge of this now vanished landscape. Star Carr has evidence not only for high levels of settlement activity, but also for the kinds of substantial structures that are normally associated with sedentary populations in later prehistory. It is arguable that more of this scale of settlement once existed on the north European plain with its rich natural resources. Precedents for hunting and gathering societies of this sort and scale are known from Jomon period Japan, where hunters and gatherers are known to have lived in large permanent coastal settlements during what in Britain would be called the Mesolithic period (Habu 2008).

Figure 10.2: Salt marshes and creeks on the coastal flats of North Norfolk. This conveys what must have been the character of much of the landscape of the north European plain as it was becoming inundated during the Mesolithic period. Source: author.

The Later Mesolithic (c.7,500BC-3,800BC) was a period of drastic changes in the environment, with sea levels rising to within a couple of metres of present levels. The great north European plain was almost entirely inundated during these centuries. The climate became wetter and warmer, facilitating the spread of deciduous forests across the landscape. It also resulted in the water table rising and the infilling of the river channels with sedimentary deposits eventually causing rivers to become wider, shallower and much more braided. In some parts of the Humberhead Levels fens and carrs began to develop. This process was probably exacerbated by the activities of hunters and gatherers on the South Pennines, where the results of environmental analysis suggests that patches of forest were regularly burnt off to facilitate the movement and health of ungulates. This probably resulted in greater colluvial run off from hillsides no longer held together by tree root systems, and increased riverine sedimentation and infilling. Woodland management of this kind might have been part of a strategy designed to preserve a way of life that had been less problematic before the rise of deciduous forests. Despite the expansion of new deciduous trees, the aforementioned activities as well as the presence of sedge and grass eating wild cattle, feeding on leaf fodder and tree bark in the winter, in the river valleys and levels almost certainly resulted in a landscape that was in many places relatively open and park-like. The presence of beavers, who also feed voraciously on tree bark and build dams that cause small areas to be flooded and denuded of trees, would have added to this, creating localised environments that were harsh for deciduous trees to flourish in.

It is not surprising, given the above, that Later Mesolithic chipped stone is to be found very widely distributed across the landscapes of the study area, contradicting the implied suggestion in some quarters (van Vuure 2005: 276-80) that tree cover would have been so dense that wide ranging movement and use would have been impossible. With the inundation of the great plains, more people would have been forced to use the study area, and the park-like nature of much of it, especially the valley sides and lowlands, would have facilitated movement by hunting and gathering groups. Home ranges could arguably have been the result of such mobility, by groups engaged in seasonal use of different resources and environments. Jochim (2006) has demonstrated how comparing the distributions of tool stone from different sources across landscapes can help identify discrete groups engaging with such home ranges. This phenomenon can be detected in the present study area by plotting the distribution of flint and chert separately, including residual stray finds that are often deemed by archaeologists to be of little value. "Residual" material of this sort tends to be scattered everywhere to a greater or lesser degree. That might seem obvious, but archaeologists have been guilty in the past of seeing the landscape only in terms of "sites" where things happened and blank spaces in between where little of importance went on. However, insights of the sort suggested by Foley (1981) are to be gained about prehistoric life that can be inferred from analysing unstratified "off site" material at the appropriate scale. Its widespread presence in the landscape alone is valuable in demonstrating the aforementioned widespread activity.

Something important becomes very clear when comparing the distribution of Mesolithic chert to the distribution of Mesolithic flint across the entire Don drainage basin, including the many stray finds. Flint is distributed across the whole study area, but chert is almost entirely confined to the south and west. Within the study area as defined by the catchment of the river Don, there are no sources of raw material anywhere, which means that all of it had to be imported. The main sources of flint for the Mesolithic were the Wolds of Lincolnshire and East Yorkshire, supplemented by till flints probably derived either from the boulder clays of the east coast of Yorkshire or the pebbles of the river Trent. Chert was almost entirely sourced from south-west Derbyshire in the vicinity of Monsal Dale. The distribution of chert within the study area forms a crude arc that lies on the outer edge of its distribution, at the furthest point from its most important source. It supports the interpretation that home ranges of different communities of mobile people hunting and gathering overlapped in this area (where flint is also recorded in abundance). The Wolds of Lincolnshire and East Yorkshire might well have been similarly significant as sources of raw material during the Mesolithic at the regional scale.

The scenario above can be further nuanced in an analysis of the distribution of debitage and tools. Higher densities of flint debitage, and especially cores, are located to the north and east side of the study area, and greater densities of chert debitage, and especially cores, are located along the south western edge. These differences can be used to argue that groups were engaged in the crafting of fewer tools when at the furthest remove from raw material sources. At the least, it can be argued that different groups with distinct home ranges utilising different sources of material located to the north-east and south-west converged on the study area approximately on its south-west side.

The Gritstone uplands and southern Magnesian Limestone plateaux were on the interface between different ranges of seasonal movement by different regionally grouped communities. Locales at the watershed of the Don drainage basin on the Gritstone uplands such as Totley moor were prominent landmarks in the cultural landscape at the head of streams leading down to rivers such as the Sheaf and Rother that themselves inscribed routeways between upland and lowland (Figure 10.3). The headwaters of rivers such as the Rivelin, Ewden Beck, Little Don and the Don, where significant assemblages at numerous findspots have been recorded, seem to have served similar roles. Such river valleys connect the Don drainage basin with valleys to the west leading ultimately to the Lancashire plain, and to the Carboniferous Limestone plateau of the Peak District to the south-west. Locales on the southern Magnesian Limestone at the headwaters of rivers tributary to the Idle are analogous to those on the Gritstone, poised between the Idle valley eastwards and at the edge of the escarpment overlooking the Doe Lea valley westwards.

Such places, with assemblages spanning the entire Mesolithic, were located between drainage basins at or close to their watersheds, in the zone of interaction described above. Poised on the outer edges of different home ranges, their locations would have facilitated meetings and the exchanging of goods, news, stories and perhaps marriage partners by different groups. Defining the approximate limits of different home ranges where such encounters took place, these locales might have contributed to nascent senses of regional identity, where communities relating to those different home ranges met and interacted.

Figure 10.3: Totley Moor (background), overlooking the upper reaches of the Sheaf, facing north-west from Graves Park, Sheffield. One amongst many high points in the landscape, its distinctiveness lies in its setting at the head not only of Sheaf valley, but Millthorpe valley, and its immediate proximity to the upper Derwent valley in the Trent drainage basin to the west. Knowledgeable inhabitants would have understood such intimate detail. More distant travellers would have drawn close to the location while passing through the valleys leading to and from it. Source: author.

The Early Neolithic is now believed to have begun in the study area, and northern England in general, at around 3800 BC (Griffiths 2014), and it is around this time or shortly after to which the brief period of long barrow building relates. This is only the most visible and dramatic change that took place at that time and it is notable that the kinds of interaction described above on the interface of the home ranges of hunting and gathering communities changed, and probably drew to a close.

Evidence during the Early Neolithic on the Gritstone uplands of the southern Pennines is much reduced. There are no known monuments from this period on the uplands. To the west they were built on the Carboniferous Limestone plateau of Derbyshire (Figure 10.6), and on the Magnesian Limestone plateaux to the east (Figure 10.5). The new forms of material culture that were beginning to be used, such as pottery, and from the Middle Neolithic (c. 3400-3000BC) polished stone axes made with material from distant sources, are also little in evidence on the uplands when compared with the Magnesian Limestone and neighbouring levels and valleys. The scattering of such material that does exist on the uplands implies movement through the area, while certain key places such as Totley moor, between river systems, continued to be visited.

Environmental data from the Humberhead Levels indicates the presence of flora in the wetlands that are often associated with pastoral activity, and it is worth recalling at this point that the preferred environment of wild cattle, by now a declining population, was floodplains and lakeside wet pasture. It has been plausibly suggested (Van Vuure 2005: 375) that the decline and extinction of aurochs was largely due to their competition for these environments with domesticated species, and recent studies have shown that at the onset of the Neolithic, dietary habits amongst human populations rapidly became dominated by dairy products, to judge from the residue analysis of ceramics (Cramp *et al* 2014). On this basis it can be argued that the concentration of monuments and material culture on and near the Magnesian Limestone reflects the narrowing of settlement activities to those dry areas nearest to the wetlands that were important for early pastoral lifeways (Figure 10.4).

Figure 10.4: sheep grazing on the edge of marshland at Potteric Carr, South Yorkshire, with the east facing slopes of the Magnesian Limestone in the vicinity of Wadworth in the background. Source: author.

While it is true that the history of formation processes on the Coal Measures Sandstones could well account for why Early Neolithic monuments are little in evidence there, they do not explain their apparent total absence from the Gritstone uplands. Their presence to the east on the Sherwood Sandstone of the Idle river system and the margins of the Humberhead Levels supports the interpretation here, because they are less in evidence than on the Magnesian Limestone. On the Magnesian Limestone such monuments appear to cluster around the Don Gorge in particular, between the wetlands of the middle reaches of the River Don and Humberhead Levels. These places on the Magnesian Limestone had been the scenes of repeated occupation since the Mesolithic. They were now modified and permanently marked by the erection of monuments. Within some of them were embedded the physical remains of members of local communities. Such monuments are believed to have been where ceremonies connected with ancestral cults took place, whether or not actual human remains were involved in them. Notwithstanding such possibilities, the evidence for interments and ceremonial deposition of pottery and chipped stone artefacts at places such as the prominently located long cairn at Whitwell in Derbyshire attests to the extent which people imparted importance to such locales, and probably emotional attachment and a sense of belonging (Figure 10.5).

Figure 10.5: The west facing escarpment of the Magnesian Limestone, overlooking the lower reaches of the river Dearne close to its confluence with the Don (right, off picture) at the entrance to the Don Gorge. The photo was taken from the east facing slope of Mexborough, facing Barnburgh Edge (background, centre) and the site of Melton Warren long barrow (background, right). The location of

the former long cairn at Hangman Stones Lane is off picture at the south end of Barnburgh Edge. Source: author.

Although the uplands were not settled in the Neolithic, the continued importance of some places on the uplands, such as Totley moor and the Little Don valley, is indicated by the presence of modest assemblages of material culture. Pastoral activities might have been undertaken there by people living in nearby valleys. Locations that were important earlier probably continued in importance for navigating through landscapes. By the Late Neolithic (c.3000BC-2200BC) this seems to be confirmed by the presence of material culture such as elaborate arrowheads recovered from such locales. Cup marked stones are also in evidence. Richard Bradley (1997) has suggested that, amongst other things, petroglyphs might mark ways through the landscape that were in regular use as routeways. That is consistent with what has been noted above. Totley moor, for example, overlooks the head of Sheaf valley (Figure 10.3) and other petroglyphs have been recorded along the Sheaf valley at Ecclesall wood. Maceheads have also been recorded along the Sheaf and Don in a region that has few such artefacts in general. Since concentrations of maceheads exist in Derbyshire on the Carboniferous Limestone Plateau and in East Yorkshire, the examples found along the Sheaf and Don also support the interpretation that these valleys served as important conduits of movement and exchange regionally, and that Totley moor was crucially important in that. Interestingly, the fact that only a modest number have been recovered from the study area as a whole, when compared with the Peak District and East Yorkshire, adds weight to its distinctiveness.

The Gritstone uplands once more became a focus of settlement as the Bronze Age progressed. Round barrows and embanked stone circles and ring cairns amongst other monuments are relatively abundant. Some that have been excavated contain burials and material culture dated to the Middle Bronze Age (c.1800-1000BC). Intriguingly, the burials almost certainly were not the chief function of stone circles, which probably existed primarily to facilitate formal gatherings. Thirty three clearance cairns were surveyed in the vicinity of the embanked stone circle at Totley Moor, which are associated with extensive flint scatters. Cairns of this sort excavated elsewhere, such as at Ewden Beck in South Yorkshire and Eaglestone Flat in Derbyshire, often also have human remains deposited within them, indicating that they served roles that transcend the mere clearance of an area for agriculture. It has been suggested by some archaeologists that, as with those stone circles incorporating human remains such as at Totley Moor, they were physically invested in by people demonstrating an attachment to place, establishing their association with places of personal and communal value (Johnston 2001; 2005:19).

John Barnatt (1990) has noted that there are many settlements on the Gritstone uplands that incorporate the kinds of features and material described above, and that they probably mark the presence of discrete small communities, complete with their ceremonial or social gathering places. Despite the presence of round barrows on the lowlands and Magnesian Limestone, the combinations of other small monuments on the Gritstone do not extend beyond it, suggesting to Barnatt that there was a localised micro-regional identity on the uplands at this time.

This has been questioned by kevin Cootes (2012) in his doctoral research. He showed that pottery recovered from the Gritstone uplands belongs to a distinct tradition of crafting that centres on the Carboniferous Limestone plateau. This supports his suggestion that the Gritstone uplands were part of a wider region defined by that pottery making tradition rather than a separate place with a separate identity.

To the east, apart from round barrows, larger scale hengiform enclosures are also in evidence that probably date from the Late Neolithic or later. These enclosures might be a regional variety of henge monument, or Later Bronze Age ringworks, some other form of enclosure, or possibly a combination of the aforementioned, perhaps relating to different phases during the Later Neolithic and Bronze Age. One thing they have in common is their proximity to the margins of low lying floodplains and wet places, recalling the probable importance of wet pasture to pastoral ways of life. A site with affinities with the hengiform enclosures is located at Whitwell moor on the Gritstone uplands of South Yorkshire. It is small in diameter but is similar in girth to its lowland counterparts: The width and height of its bank is comparable. It is also adjacent to the headwaters of a spring and bog. Its location on a small plateau overlooking an upland tributary of the Don supports the idea that Gritstone upland communities in the Early Bronze Age looked to the east as well as the west. Perhaps, again, the Gritstone uplands were an important interface between regions that identified with both in different ways. It was perhaps as Willy Kitchen (2000) suggested, a place where different worlds met (Figure 10.6).

During the Bronze Age the wetting of the lowlands continued to increase as well as the development of acid bogs on the Humberhead Levels. This was at the time when the aforementioned renewed settlement was taking place on the Gritstone uplands.

The expansion of acid bog on the Humberhead Levels, in the formerly prime location of early pastoral lifestyles, would have presented a major cumulative challenge to that lifestyle as the Bronze Age wore on. It is difficult to view environmental changes in the levels in isolation from the relatively rapid increase in settlement on the Gritstone uplands. The existence of short lived trackways on the Levels at Hatfield moor in the Late Neolithic and Thorne moor in the Middle Bronze Age might also be related to such changes (Figure 10.7). The expansion of acid bog on the Levels might well have impeded the lifestyles of local pastoralists and, just as the inundation of the great plains in the Later Mesolithic probably forced greater use of the uplands then, so might the new environmental realities on the levels have encouraged some people once more to transfer activities to the western uplands. It was at this time that palstaves were deposited on the interface between the expanding mires and the remaining fens and marshes and Magnesian Limestone behind them, and the expanding raised mires were now the location of the deposition of spearheads.

Figure 10.6: The Gritstone Uplands of North Derbyshire bathed in sunshine (background), facing east from the henge monument at Arbor Low, across the Carboniferous Limestone plateau. Source: author.

Figure 10.7: part of the wooden trackway on Hatfield Moor, South Yorkshire. Trowel for scale. Source: P. Buckland.

Perhaps as pressures on tenurial rights in the vicinity of the Humberhead Levels increased people responded differently, with some asserting more strongly their "rights" to have access to pasture in places where they felt those rights were under threat. Others might literally have sought pastures anew, further up the river valleys. Such developments might well explain why the vicinity of the Magnesian Limestone and adjacent areas marginal to the Levels were later to be characterised by the many ditched enclosures that appear to date from the Iron Age. Those features might be the end product of changes to how the landscape was organised that began earlier when the encroachment of the raised mires reached their apogee. If that is the case it does not appear to have changed the underlying nature of lifestyles themselves - just as there is little evidence for the existence of permanently settled communities on the lowlands of the study area in the Bronze Age, there is no more in the succeeding periods. Rhythms, as argued by Adrian Chadwick (2008), appear to have continued to be dominated by the movements of livestock from pasture to pasture by people still engaged in a largely mobile lifestyle.

Conclusions

At the outset of this thesis a question was asked concerning the possibility of detecting regional identity using archaeological methods. It was suggested in the theoretical chapter that this might be possible by the combination of various approaches, since there is no simple or straightforward way in which regional identity is expressed. It is conditional, and can change along with other aspects of identity.

With the above in mind it follows that to detect such a form of communal identity, and how it might change, is both difficult and fraught with challenges due to its complex variability. Other difficulties present themselves with the present study area in mind that are largely to do with the nature of the dataset. As explained in the methodology, quite apart from its disparate character, making direct comparisons between its different parts problematic, it also suffers from lack of detailed information about individual records in many cases. In particular, detailed information is lacking concerning the many archaeological features that have been used in the analyses. This is due often to poor recording and inadequate dissemination of results, but also simply to complete lack of field research in most cases.

The problems above are not, however, insurmountable. On the contrary, they have been turned to the advantage of the study and made to complement each other in terms of both the theoretical approach taken and the methodology used. Appropriate scales of analysis have been key to both the interpretation and level of archaeological detail. Those scales have been broad, with an attempt to show distinctions through broad patterns, combining archaeological data with environmental research and a topographical based methodology. Those distinctions are regional in geographical distribution and reflect differences with neighbouring regions. The analysis of multiple classes and attributes of archaeological data in combination have been crucially important in this, which is only realistically achievable with the broad scale of detail available.

An interpretation that has been theoretically informed by the work of contemporary social geographers has been of particular importance in the present study. This has been reinforced by the complimentary work of anthropologists such as Tim Ingold and Mary Helms studying small scale pre-modern societies, and the work of historians like David Hey addressing the subject of what defines a historical region such as South Yorkshire.

With the above in mind the results of the thesis have exceeded my expectations. I felt early on that there was little prospect of detecting archaeological patterns indicative of regional identity in the Mesolithic for example. The existence of the very concept must be open to question amongst groups whose lifestyles might, *prima facie*, be assumed to consist of the very antithesis of attachment to specific regions due to its non-sedentary nature. In particular, detecting deliberate acts of marking specific locales through ritualised activities or the construction of features and monuments was something I considered an important aspect of demonstrating attachment to place. These, I assumed, would be virtually absent in the Mesolithic, therefore weakening the methodology.

However, the patterns shown in the distributions of chert and flint, and especially in the distributions of debitage and tools and their areas of higher and lower density relative to their probable main sources has been encouraging. They are indicative of the activities of groups that did relate to specific regions which partly encompass the study area and overlap with each other therein. One group, mainly using chert, has a largely inland and upland distribution, while the other, mainly using flint, has a distribution that is largely lowland in its topographical character and possibly coastal (beyond the study area, and probably partly under the north sea). Different sources of raw materials are correlated with different, if overlapping, environmental zones and possible differences in food procurement strategies. These implied differences in lifestyles, were undertaken in common by familiar inhabitants using tools crafted from different raw materials. These activities relate to a predictable and familiar range of topographical and environmental contexts and specific locales that were revisited over time. Nascent senses of regional identity are implied at the very least, albeit in a wide and no doubt loosely defined way.

The significantly reduced chipped stone dataset directly attributable to the Neolithic, along with the considerably diversified nature of the dataset as a whole, is indicative of the scale of change that took place after the Mesolithic. These changes in the nature of the archaeological data accompany changes in the environment, particularly in the floodplains and Levels on the eastern side of the study area. Much sharper focus is given to the distribution of the data in the Neolithic, with a much closer affinity with the Magnesian Limestone plateaux than earlier. It is here that all classes of data either concentrate, or gravitate around. Especially in the vicinity of the Don gorge during the Early and Middle Neolithic, there is a convergence of material culture and monuments that give emphasis to the importance of either end of the gorge.

It could be argued that sample bias accounts for this, on the grounds that more archaeological activities were organised with the association of staff at Doncaster Museum, particularly during the 1970s, than elsewhere, and conversely that industrial and urban activity on the Coal Measures Sandstones substrate to the immediate west effectively mask archaeological visibility. This does not stand up to scrutiny. Firstly, it is hard to imagine how increased research activity by members of the public connected with Doncaster Museum could have resulted in the monument cluster in the vicinity, most of which are upstanding monuments. The presence of a positive and pro-active research environment does not generate upstanding features that are not in evidence to the same extent elsewhere on the Magnesian Limestone. Furthermore, by far the best preserved prehistoric landscape in the study area, the Gritstone uplands, which is also in the catchment of an active local research environment, has not furnished similar levels of data, and in particular has not revealed

Early Neolithic monuments. The archaeological patterning which emphasises the importance of the Magnesian Limestone, and the Don Gorge in particular, is therefore real and demands an archaeological explanation.

The deliberate marking of the aforementioned landscape where repeated re-visitation has been demonstrated occurs on dry land marginal to areas that were becoming increasingly wet throughout the Neolithic. Such an environment has been shown to be that most suitable for the grazing of cattle, at a time when lipid analysis has proved that across Britain a change to dairy based foods was undergoing during the Neolithic (Cramp *et al* 2014). This was at the same time that wild cattle were beginning the decline that would end in their local extinction during the Bronze Age. Historical accounts from elsewhere in Europe suggest that this happened in the context of the expropriation of their habitat, low lying wetlands, by domesticated species (van Vuure 2005). The combination of local archaeological sequence with broader studies therefore supports the interpretation that local lifeways were becoming pastoral, and that communities based their activities on the most suitable and convenient dry land adjacent to the most easily accessible low lying wetland environments. This was particularly pronounced where gorges connecting different parts of the landscape cut the Magnesian Limestone, and especially along the Don gorge. As before, day-to-day activities were being undertaken by communities together. They were undertaken in association with particular environments, and at specific locales. Those locales were imbued with enough meaning by communities for them to be marked by monuments, associated ceremonies, and the deposition of dead members of communities. It does not follow from the forgoing that all people or all activity occurred at the above locales alone, but it does suggest that such locales were the main focus and gave definition to a regionally constituted community. Other parts of the study area, and especially the Gritstone uplands, cannot be demonstrated to perform that kind of role.

The lifestyle and region described above seems to set a pattern that does not appear to have radically altered until well beyond the end of the study period. Details change, but not the central focus around the Magnesian Limestone and surrounding wetlands. Hengiform features for example (whether or not they are actually Late Neolithic henges, or Late Bronze Age ringworks), still occupy sites marginal to the wetlands and gravitate around the axis of the Magnesian Limestone for the most part. Middle and Later Bronze Age metalwork is largely deposited in the same areas marginal to the Levels. Settlement on the Gritstone uplands flourished for some considerable time again, at the moment when traditional patterns of pastoral life on the lowlands became challenged by the advancement of the raised mires. Even then the familiar patterns persisted, perhaps in reduced or changed circumstances in a changing environment. The tenacity of local communities in the face of such change offers some of the most compelling reasons to conclude that an ongoing attachment to the place and way of life that defined them is in evidence. This still formed the core of pastoral life and regional identity when the ditched enclosures of the area took shape during the succeeding Iron Age.

Recommendations

This thesis has shown how senses of regional identity can be traced at the broad scale of analysis. This has been done by combining the mapping of the detritus from the unconscious undertaking of routine activities, such as the making of stone tools, with the marking of specific places in the landscape by deliberate artefact deposition or the making of monuments.

To take the foregoing beyond the modest limits possible in the present thesis, however, requires much more, and more detailed, research. More could be achieved not only by the more detailed characterisation and analysis of the various classes of material culture, but by taking the simple expedient of characterising the hundreds of known "scatters" in any meaningful detail. Where the many archaeological features are concerned, these desperately require detailed study in order to be dated and characterised. At the present time almost nothing can be proven about the vast majority of those recorded in the present study, severely limiting their use for understanding social organisation and identity.

An obvious more detailed line of further enquiry would be in depth analysis of the chipped stone, in order to more accurately determine the sources of stone and differentiate between debitage and tools. The overall result for raw material sources might be more accurately mapped, and additional raw material sources could be identified. Additional sources would undoubtedly include the gravels of the River Trent and the boulder clays of East Yorkshire. They might also include sources to the west. Having that information would help in determining to what extent the sources in Derbyshire and the Wolds were dominant in the Mesolithic, and to what extent and in what ways that changed with time. Such additional detail and its development would be invaluable in modelling home ranges and connectivity.

Even where the sources themselves are impossible to locate, valuable insights might be gained into differing social identities between groups using differently sourced material. If choices between groups varied, it might be possible to map those differences at the regional scale to further nuance the existence of different home ranges. It might even be possible to suggest, based upon the extent and nature of existing terrestrial home ranges, how far out across the great north European plain the Wolds sources were accessed.

One of the specific problems that arose during the course of the thesis lay in determining the exact character and date of the several hengiform enclosures that were identified. Whether or not the features are henge monuments, ringworks or otherwise impacts upon the interpretation presented and in particular the sequence of historical development. The conclusions drawn here concerning the features have by necessity been tentative. This issue is one that needs to be urgently addressed if the social history of the study area during the Neolithic and Bronze Ages is to be more accurately characterised, sequenced and understood. Already, the excavation of part of the feature at Cadeby Cliff in the summer of 2015 has resulted in an understanding that this place, repeatedly re-visited throughout prehistory, is in fact a natural feature. This has important implications for how local communities perceived and thought about naturally prominent features encountered in the landscape, and in turn about the role of artificial monuments that they might resemble.

More detailed investigation of the remaining features could be achieved by a programme of field walking, geophysical survey and excavation, depending on the circumstances at each location. Those circumstances vary, with Wombwell and Wadworth, for example, being located in woodlands that are not suitable for fieldwalking and geophysical survey, but which would benefit from detailed topographical surveying and consequent plans. Stone, Perlethorpe and Worksop, conversely, would benefit from the precise opposite. All would benefit from excavation. On the question of excavation, it is worth pointing out that Wombwell in particular has suffered grievously from erosion in the recent past on at least one section of its ditch, and Stone is a feature that exists at a location that is particularly vulnerable to deep ploughing on the Magnesian Limestone. Preservation *in situ* is an unrealistic prospect in such cases.

Further to the above, there is an issue over the extent to which round barrows may or may not have existed in the study area. In this study, I have suggested that their apparent absence to the east of the gritstone uplands might be due in large part to formation processes. This has some support from the results of excavations of a few of the sub-surface ring ditches to either side of the Don gorge. I have also suggested on the basis of aerial photographic data, and survivals in woodlands, that many more such features might exist across the Magnesian Limestone in particular, and potentially elsewhere in general. This, however, can be no more than a suggestion with the present state of knowledge. Fieldwork must be undertaken to resolve this issue since the apparent dearth of barrows places the study area in stark contrast to neighbouring regions, and especially the Peak District. Their absence, if confirmed, would raise questions about how the bodies of those members of society that elsewhere were interred in them were disposed of. Furthermore, this would have obvious implications for the understanding of social identity.

One feature of the research that requires particularly urgent attention is the potential of and threat to local museums and their collections. A wide variety of sources of information were accessed to create the database, from traditional publications to HER databases and unpublished reports, supplemented by my own fieldwork. The value of HER databases and unpublished reports for archaeological research is well known and has been commented on elsewhere, resulting in important publications (Yates 1999; Phillips and Bradley 2004).

However, probably the single most important source of information utilised in the present study consists of archaeological archives stored in museum collections. Many of these have been inadequately published or not published at all. An example is the important assemblage from the Early Mesolithic site at Unstone in Derbyshire, including some 4000 artefacts of chipped stone, and a substantial paper archive. No other copies of the paper archive exist. This site should be published as a matter of urgency. Many other smaller archives exist for which the only public record consists of an accession number, and an inadequate summary of contents. In some cases, such as the important fieldwalked assemblage from Scratta Wood in North Nottinghamshire, there is not even this basic record to draw upon.

The plight of regional museums around the United Kingdom at the time of writing is one to which the archaeological community has drawn attention to at various times recently. Severe cuts in funding, of up 50% in the case of Swansea museum (South Wales Evening Post, June 1st 2016) or complete closure in many cases (Atkinson 2015) presents not only a threat to the research potential of collections, but an existential threat to our history itself. The meaning and value of notions of local, regional, national and other forms of social identity lie at the very heart of debates in Britain at the time of writing. Such ideas have crucially important impacts not just on cultural life, but on economic life, politics, and even the existence of social cohesion itself in these islands. Our senses of historical identity lie at the very centre of these debates, a fact that politicians have ignored to our collective peril.

The archaeological community is well aware of the threat to the existence of our museums and history, and the (highly inappropriate) contraction in the provision for the storage and curation of archaeological archives that has taken place in recent years. This regional archaeology has shown the potential that the corpus of prehistoric material has for enriching our understanding of a neglected swathe of the British landscape. It would have been impossible to undertake without the study of the aforementioned archives. It is recommended here that as a matter of urgency an assessment be made of the content and potential of the prehistoric archives of the museums within the study area, particularly regarding archives about which no information is available beyond those museums. This thesis has sought to demonstrate the extent to which a region's sense of identity, and by extension its sense of self worth and pride, is inextricably linked with the environment and landscape within which it is situated, and the past that is embedded in it as evidenced by its surviving material heritage. Museums are the custodians of that heritage.

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Appendix:

Database notes

The data collected for analysis was recorded in an Access database, designed to be used in conjunction with Esri ArcGIS. The information was split between two tables. Table one (called "objects") contained the archaeological data to be analysed, with attributes divided between different columns. The headings for these columns (the attributes) are defined and described in chapter six. The "source" column recorded the source of origin for the information. Some of these are self evident. These would include those which consist of a named individual (S. Tivey, J. Broadbent, A. Tissington for example), sometimes followed by a year number to differentiate different archaeological events where relevant (Myers1995 or A. Tissington 15a for example). The numbers in question refer to years. In most cases full years (Myers1995 for example) refer to publications or reports and contracted years (A. Tissington 15a for example) refer to unpublished archaeological events (mostly stray finds) that are not recorded elsewhere. To clarify, those records not recorded elsewhere are ones where information has been obtained directly by myself from members of the public. Those records do not exist on any other database and have not otherwise been reported or recorded. They are therefore unique records. The "source" column directly relates to the second table in the database, called "sources".

The first column in table two repeats the source reference in table one in order to relate records in that table to more detailed information (where it exists) relating to the archaeological events that generated the information. In the case of information derived from reports or publications, this includes a full bibliographic reference. Thus "Symonds_Sydes1987" refers to Sydes, R. and Symonds J. 1987. *Investigations at Sutton Common.* Unpublished Interim Report. South Yorkshire Archaeology Unit. In some cases published finds have been recorded by publication, rather than author. This is often in cases where finds have been reported by anonymous collectors to local journals, the Yorkshire Archaeological Journal annual register being a case in point. Thus YAJ1967 refers to the register for that year.

Historic Environment records normally consist of the prefix "SMR" followed by the relevant number. The first of these to be accessed by the author was South Yorkshire HER, which is simply referred to as "SMR". Subsequent HERs accessed include Derbyshire (MDR), Nottinghamshire (NSMR), North Lincolnshire SMR (NLSMR) and the National Monuments Record (NMR). The remaining national dataset referred to is that held by the Portable

Antiquities Scheme. There are several variations on how these are prefixed: DENO, NLM, SWYOR, YORY.

The largest source of data accessed was that existing in museum collections. Some of these were museum database records, usually with accession numbers attached. In some cases, and especially at Bassetlaw Museum in North Nottinghamshire, artefacts had not been accessioned or otherwise catalogued. The author was forced in these cases to create identifiers for the sake of referencing and listing within the present database, although as often as possible relevant fieldwork projects were made reference to instead or as well as. Regrettably, this was not always possible. As a result, many records in the present database will not easily be traceable since museum service protocols required that numbers created here were not transferred by me to the containers in which artefacts were kept. Museum collection derived records are defined below:

BHP (Bassetlaw Heritage Project), a fieldwalking project archive held by Bassetlaw Museum.

BLM and RETBM (finds at Bassetlaw Museum not accessioned).

BLMwhit (finds recovered in field collection in the vicinity of Whitwell, Derbyshire, held by Bassetlaw Museum, not accessioned).

BLMFirbeck (finds recovered in field collection in the vicinity of Whitwell, Derbyshire, held by Bassetlaw Museum, not accessioned).

BLMScrattaEx and BLMScrattaF (finds recovered in field collection in the vicinity of Scratta Wood, North Nottinghamshire, held by Bassetlaw Museum, not accessioned).

CressCrags, CressLV (Cresswell Crags collection).

DM (prefix for finds from Doncaster Museum).

MASMG (prefix for Mansfield Museum).

MS (prefix for MusseumsSheffield).

NOLMS or SCUNM (prefix for North Lincolnshire Museum, Scunthorpe).

ROTMG (prefix for Clifton Park Museum, Rotherham).

Miscellaneous references:

HM06 (Hallam Moors Survey, 2006 season)

medensurvey (archive of the upper Meden valley survey undertaken by Sherwood Archaeological Society, held by Mansfield Museum).

PAST (Elmton Fieldwalking Survey (Knight *et al* 1998) archive split between Creswell Crags visitor centre and MuseumsSheffield).

SLAP (Sheffield Library of Aerial Photographs, held by the Department of Archaeology at the University of Sheffield).

EHAP (English Heritage Aerial Photograph (digitised versions, Roberts 2010).

TC69 (Thorpe Common Rock Shelter 1969, Creswell Crags visitor centre).

TC87 (Thorpe Common Rock Shelter 1987, Creswell Crags visitor centre).

UFS (prefix for Unstone fieldwalked data, prior to the excavation of Unstone 1).

VDN (Van de Noort, R. and Ellis, S. 1997. Wetland Heritage of the Humberhead Levels).