Inherited places: a Mesolithic-Neolithic taskscape in the Colne Valley

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Declaration

The work presented in this thesis is of my own independent research except where otherwise stated. All sources are referenced.

Abstract

This thesis uses behavioural foundations, with a task-based methodology, to examine the nature of places in a prehistoric river valley, using assemblage size, type and distribution of artefacts. The aim is to analyse concepts of settlement sites, and to question the categorisations, scale and direction of interpretations and archaeological narratives. For example, at a recent meeting to discuss the relationship between human behaviour and Mesolithic sites, it was pointed out that the concept of 'off-site' archaeology was a complete oxymoron (Wickham-Jones; 2021*a*). How could there have been activity 'off' the site when the site is purely our own construct? Although this contradiction is often acknowledged, in practice it has been more difficult to integrate the scale of site-based investigation with the archaeological record of a wider contemporary landscape. This means that specific site-based narratives persist and often give a generalised perspective on prehistoric chronologies. A focus on sites with 'absolute' dates, for example, makes it hard to see scales in practice, or relationships between sites (and spaces in between), or between separate groups of people, including Mesolithic and Neolithic 'cultures'. Despite these tensions, however, dominant and homogenous accounts of chronologies have been, and can be challenged (*e.g. see* Conneller and Overton*;* 2018, *for Early Mesolithic,* Griffiths; 2014, *for Late Mesolithic-Early Neolithic*), as have conflated narratives of subsistence (e.g. Milner; 2006), and gender-situated tasks (e.g. Finlay; 1997, 2000, 2003, 2006). The results of this thesis suggest further challenges may come from integration of diverse data sources.

Contents

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Chapter 1: Introduction and background to project

This chapter starts with a story which sets the context of my research against personal experience of place, heritage, and its changing meanings. It begins in Uxbridge, Middlesex (*figure 1.1*) in the late 1980's, a place and time where not much happened (according to the 16-year-old author). A group of teenage girls are hanging around looking for something to do on a Saturday, with no idea that just around the corner one of the most important Early Mesolithic sites in the south-east is being excavated by what would later become Museum of London Archaeology (MOLA). It was to my surprise then, many years later, to find a collection of artefacts from Three Ways Wharf, Uxbridge, on display at the Museum of London (MOL). I couldn't understand how this had escaped my attention. I had visited what I thought were all the important Prehistoric (read Neolithic) sites in Britain and Ireland; Stonehenge, Newgrange, Skara Brae etc., and yet here on my doorstep was a prehistoric place of monumental significance. Three Ways Wharf (Lewis and Rackham; 2011), however, does not generally feature on the radar of local communities; there were, and are no school field trips, local heritage trails don't reference it, and google maps have had it randomly situated in the middle of a roundabout. It is a Mesolithic site, it has no visible architecture, and it does not figure in the general public perception of prehistory. This was the inspiration for my doctoral thesis; a personal sense of concealed local heritage, and the starting point for an interest in Mesolithic and Neolithic histories and the ways in which they are narrated and made visible.

The histories presented in my thesis were taken from records of Mesolithic and Neolithic artefacts in the Colne Valley. Local Historic Environment Records (LHERs) were used as a primary resource to gather together records of excavation, field-walking, artefact collections, chance finds and palaeoenvironmental survey (Table 1). LHERs are managed by local authorities and replaced Sites and Monuments Records (SMRs) as a repository for all records relating to the wider historic environment (*see* https://historicengland.org.uk/advice/hpg/heritage-assets/). They mainly conform to a similar template, and for the purposes of this study enabled comparable records to be collated. The records are predominantly a product of commercial gravel extraction and developer-led archaeology, but also include random finds from gardens, allotments, fields and unploughed moorland, collections of artefacts from groups and societies, antiquarians, collectors and archaeologists. They reference the work of many people over the last one and a half centuries, and reflect the tasks of multiple people in prehistory; a context of diverse authorship as archaeological practice generates more material in the study area[1].

Table 1: Historic Environment Records consulted, and number of records examined

Historic Environment Records consulted	**No. of monument records examined**
Greater London (Hillingdon and Hounslow)	160
Hertfordshire (Watford and Three Rivers)	127
Buckinghamshire	57
Berkshire (Windsor and Maidenhead)	20
Surrey (Spelthorne)	102
Total monument records consulted	**466**

1.1 Aims

Archaeological frameworks are guided by Historic England's Research Strategy (2016) and Agenda (2017). They incorporate a body of assessments, agendas and strategies for the protection, enhancement and dissemination of the Historic Environment (*appendix i*). They are organised by geographical area, chronological period, and by themes (e.g. urban historic environment). The study area, for example, is covered by frameworks which are geographically specific (MOL; 2002 and 2015, ALGAO[2] East of England; 2011),

[1] E.g. High Speed 2
[2] Association of Local Government Archaeological Officers

chronologically specific (Blinkhorn and Milner; 2013), or both[3] (Oxford Archaeology; 2010). A very detailed Mesolithic framework covers the Surrey area (SERFRARA[4]), but there is no Neolithic equivalent (Pope *et al*; 2011[5], 2019).

My aims take into account research priorities addressed by these documents. I also want to consider how those frameworks are integrated into heritage management and commercial practice. In terms of commercial practice, they are, or should be, used to inform critical priorities and methodologies throughout all stages of project planning, delivery and post-excavation. Something to consider is, for example, which particular frameworks have shaped High Speed 2's (Hs2) strategy for all archaeological work carried out across the route (Historic Environment Research and Delivery Strategy or HERDS; 2017). HERDS does incorporate regional priorities from most frameworks, e.g. the significance of lithic scatter records for interpretation of activity across a wider landscape (*see* 5.3.23: 35). But how has this been operationalised in terms of methodology and Location-Specific (L-S) WSI's, how have those priorities been translated by tier 1 contractors (e.g. Fusionjv[6], CSjv[7]), and again by the archaeological service providers (e.g. Network Archaeology, Archaeology Wales Ltd.)?

The first aim of my research project is based around themes of chronology and transition. The Historic England Thematic Research Strategy for Prehistory (TRSP) recognised there is a lack of Mesolithic input into studies of Mesolithic-Neolithic transition and suggested '*integrated approaches to prehistoric landscapes*', to include '*understanding biases*' and '*setting prehistoric sites in context*' (Historic England or HE; 2010: PR4). Priorities from The Mesolithic Research and Conservation Framework (MRCF) include '*identifying change through the Mesolithic at national and regional scales*', and '*understanding the transition from the Later Mesolithic to the Early Neolithic*' (*see* Blinkhorn and Milner; 2013). I want to address chronologies and

[3] Mesolithic and Neolithic frameworks are covered separately for both Berkshire and Buckinghamshire
[4] South East Research Framework Resource Assessment and Research Agenda for the Upper Palaeolithic and Mesolithic periods
[5] With 2014 & 2018 updates to the 2011 consultation draft
[6] Fusion joint venture
[7] Costain-Skanska joint venture

transition using the concept of inherited tasks and places. It should be possible to unpick temporal rhythms in broad Mesolithic and Neolithic chronologies, as well as to approach 'transition' as a two-way process.

My second aim is based on the quantification and categorisation of archaeological material. I want to reconsider divisions based on ideas of sites and settlement, 'domestic' and 'specialist' tasks etc., and to integrate material at different levels of practice, including 'off-site' (Foley; 1981) spot finds and scattered material. It is often hard to recognise ephemeral signatures as part of site formation (*see* Elliott and Griffiths; 2018 *re: scale of interpretation*), or to identify settlement through dispersed material. While the domestic arena has been acknowledged as the main context for use and discard of material culture (e.g. Pollard; 2002), '*microscale in the domestic context is seen as less relevant and more difficult to retrieve because the bases of interpretation are frequently lithic scatters*' (Cooney; 2001: 172). TRSP (HE; 2010), for example, highlight the importance of understanding '*sites without structures*', and better methods for characterizing ephemeral sites, especially lithic scatters. The MRCF (Blinkhorn and Milner; 2013) identifies primary research themes including, 'Mesolithic lifeways' (e.g. settlement and mobility), a focus on site and landscape use, identification of 'territoriality', variation in deposition of artefacts, and understanding context for changing practices. The South East Research Framework Resource Assessment and Research Agenda for the Upper Palaeolithic and Mesolithic periods (SERFRARA), suggest re-assessment of pit features in the Mesolithic as signatures of settlement (4.1.10), which can also be applied to Neolithic material. Cross-period research priorities include widening the resource base for environmental contexts (5.1.1) and moving towards a social archaeology (5.1.3) (Pope *et al*; 2019).

As well as looking at distinctions between domestic or special and specialised tasks, I want to confront assumptions regarding the performers of those tasks. Specialised tasks, for example, have a history of being gender-defined and separated from domestic activity (e.g. Childe's male-dominated 'workshops'; 1930). My final aim is something which cuts across chronologies, categories and scales of material; I want to bring out multi-authorship (*see* Strathern; 1988, Finlay; 2003), and its cross-craft nature (*see* Brysbaert; 2014, 2017), highlighting the multiple-taskscape nature of most sites (e.g. Ingold; 1993, Conneller; 2004, 2006, 2009, McFadyen; 2007, 2008, 2010). This is not only in terms of transitional Mesolithic-Neolithic tasks, but in the day-to-day social operations of making-doing-being. How places became familiar and meaningful through planned and expedient tasks (multi-rhythmic), and how these are differently represented in the archaeological dataset.

1.2 Outline of thesis

Chapter two introduces the main concepts of the thesis and provides a historiography of themes and approaches in Mesolithic and Neolithic studies. I go on to address these archaeological legacies with useful theoretical approaches. Chapter three brings in histories of archive construction in the context of these narratives. It considers the pertinence of a task-based methodology, and goes on to outline how the study dataset was tackled using this approach. Chapter four gives the study area an environmental, chronological and geographical context. Chapters five and six are divided into presentation of Mesolithic material by sub-chronology, followed by discussion, and chapters seven and eight do the same for the Neolithic dataset. Chapter nine considers the results of the analysis in light of the research aims and suggestions for future practice.

Chapter 2: Foundations and research themes: lived-in places

> 'It can be expected that the archaeologist will have even greater difficulty than the anthropologist in attempting to understand the lived experience of another cultural tradition…for archaeology, only the world of references is left. (Layton and Ucko, 1999: 12)

Although utilised for studies of human evolution in Palaeolithic archaeology (e.g. *see* Overmann and Coolidge; 2019), behavioural sciences other than anthropology are not often referred to in later prehistoric research, specifically Mesolithic and Neolithic archaeology. However, coming from a background in this field suggests to me that given the subjective and contextual diversities of meaning in human agency generally, understanding what Layton and Ucko describe as 'lived experience' (1999: 12), is often no more accessible to the anthropologist, sociologist, psychologist etc. than it is to the archaeologist. After all, does talking to someone guarantee understanding of their world; 'is this medium any less complicated than the medium of activity that archaeological evidence is part of?' (McFadyen; 2010: 47). The material world is what archaeologists have at their disposal for understanding the past, and is the central element around which human practice can be understood across time and space, leading not to surrogacy as proposed by Layton and Ucko (1999: 12), but rather to a history of wide-ranging and considered debate within archaeological discourse.

Drawing on theoretical approaches within phenomenology, craft theory and behavioral psychology, for example, I will be using artefacts and assemblages to interpret how tasks made places through their multi-authorship, and through their different scales and temporal rhythms. Concepts of socially produced spaces (e.g. Lefebvre; 1991, 2004), and theories of attachment (e.g. Bowlby; 1969, Ainsworth; 1968, Ugwuanyi and Schofield; 2018, Bell and Spikins; 2018) will be particularly relevant.

Lefebvre (1991, 2004) for example, combines the concept of space and time as always relational rather than fixed (*see* Goonewardena *et al*; 2008: 28), and space as a product (a thing) as well as a determinant (a process) of social relations and actions. Space is perceived, conceived and lived, a trialectical interplay between material, conceptual and experienced worlds. Social space is never neutral or fixed, and rhythms of energy, both cyclical and repetitive as well as linear, intersect with time to produce these spaces. These ideas were influenced by phenomenological approaches in the social sciences (e.g. Heidegger; 1978, Husserl; 1983). Phenomenology posits social reality as a product of human activity within a world of materiality and object-relatedness. Human beings create, maintain or transform knowledge and give meaning to the world through engagement with materiality, people are not independent of an environment in which they are '*experientially and practically engaged*' (Overgaard and Zahavi; 2009: 95).

Phenomenology places emphasis on the experiential components of human interaction within the material world, how interactions are perceived and translated into conscious realities (e.g. Tilley; 1994, 2006, Thomas; 2002, 2006, Cummings; 2002), and were brought in to address what Bourdieu saw as the subjectivism of phenomenologists (1977, 1990, 1993). Habitus and practice were seen as key elements of this process; habitus as the product of socialised norms, and practice as the material manifestation of them. Material is created through habituated norms in performance and space becomes a place through habituated practice. Although social and material worlds are here given meaning and transformation by the actions and diversity of human agency, the agency of things has also been argued for (e.g. Robb; 2004, Olsen; 2010, Witmore; 2014).

Taking these processes of habituated practice, and adding layers of temporality to them, Ingold suggested that actions possess rhythms which become embodied in objects and places, creating taskscapes of cumulative movements, sounds and actions (1993). Practice and actions as tasks are interwoven, maintained and transformed; taskscapes accumulate the rhythms of many people over time and *'every path or track shows up as the accumulated imprint of countless journeys that people have made…it is the taskscape made visible' (*Ingold; 1993: 167*).* The concept of taskscape has been widely adopted in archaeological and anthropological literature (e.g. Edmonds; 1999, Hind; 2004, Thomas; 2017), with similar processes of temporal rhythms (e.g. 'flows' and ‘stoppages’; Gosden; 2006: 430) picked up in biographies of material culture (e.g. Gosden; 1994, 2006, Gosden and Marshall; 1999).

Task-based approaches (e.g. craft theory) are one way of connecting these rhythms across space and time, as are the psycho-social processes of object and place attachment (e.g. Low and Altman; 1992, Giuliani and Feldman; 1993). Rhythms might be identified through a choreography of tasks and how they created places through the physicality of movement (e.g. Mills; 2006). Movements while performing particular tasks led to embodied practices and associated knowledge, and repeated micro-movements from tasks such as quern grinding or sweeping produced specific signatures in material culture (Leary; 2014). Another approach, which has the potential to cross boundaries between Mesolithic and Neolithic research has been through the application of craft theory to archaeological material (*see* Elliott; 2019). This is ‘*a growing interdisciplinary body of literature relating to the practices of making*’, recently taken up and utilised in archaeological debate (Elliott; 2019: 1). Principally adopted using the concept of Cross Craft Interaction, in late prehistoric research particularly (e.g. Brysbaert; 2014, 2017), these ideas challenge traditional assumptions regarding ‘specialisms’ and the social arenas of production. For example, by interrogating an absence of metalworking ‘production material’ in late prehistoric Scotland, Sahlen suggests the context of Bronze Age ‘workshops’ (e.g. Childe; 1930) need further reconsideration in terms of scale, distribution and extended authorship (2017).

As previously noted, archaeology rarely acknowledges the significance of psycho-social processes. This is despite the fact that processes of attachment reference the same trialectical components of material-conceptual-experiential interaction used to explain place through phenomenological archaeology. Attachment theory explains how familiarity with a person, object, animal or place creates an affective connection which enables the confidence to explore and gain knowledge in the wider world (Bowlby; 1969, Ainsworth; 1968). While places are affectively made through dynamic interactions involved in the tasks of daily life, they can also be transformed and unmade.

Although the heritage sector has utilised theories of place attachment in relation to public archaeology and wellbeing (*see* Graham, Mason and Newman; 2009), these ideas have generally been overlooked in prehistoric research. However, there are exceptions including Mills' research into prehistoric communities of the Ouse, Nene and Welland Valleys (2005, 2006), as well as Bell and Spikin's work on attachment security and material culture, particularly for discussion of the Hohle Fels 'venus' (2018). Ugwuanyi and Schofield's work on Igbo village arenas also show how '*concepts of place attachment, time and rhythm provide helpful frameworks*' within which the '*permanent physical place*' can be understood as transient through dynamic practice (2018: 10).

Processes of attachment are often alluded to in archaeological research, but rarely made explicit. For example, Davies, Robb and Ladbrook (2005) discuss woodland clearance in the Mesolithic as a way of making safe spaces, while attachment is the foundation of 'persistent places' (e.g. Barton *et al*; 1995, Davies *et al*; 2005), identity (attachment) networks (Sauvet; 2019), 'emotional geographies' (Harris; 2010) and affective traces of '*repeated engagements with the physical remnants of previous actions*' (Harris; 2009: 117). Lucas references attachment in assemblage theory, where concepts of 'enchainment' and 'coding' are part of the same process (2012). These terms describe how schemas relating to ideas of a place are created and maintained through repeated actions (coding), and how associations and attachments become embedded through practice and memories of those practices (enchainment).

These psycho-social processes are important for life events which inform knowledge and experience of the world. Knowledge becomes embodied through ongoing negotiation between a person's immediate experience and their mental representations of the world or schemas. Ways of paying attention and 'e*xperiences of the world are always interwoven and mediated by expectations, memories, conversations, hopes and fears…practices are…contested, complex and cut through by competing demands on individuals*' (Warren; 2000: 99). Sets of schemas develop, but they differ and evolve through life events and everyday practice. Warren talks about events which fall on scales of emotional significance, and how places take on associated meaning from these events, ranging from the '*death of a mother, the birth of a daughter and the possible changes in routines associated with such watersheds in people's lives, to more mundane events such as the movement from one home to another*' (2000: 98).

As some person-centred approaches have been criticized for giving primacy to subjective experience and embodied actions (e.g. Fowler; 2001, Thomas; 2002 and 2004), it may be that there is an unwillingness to explore psycho-social processes further in archaeology. However, I believe there is a place for interrogating affective aspects of task performance and place attachment, including the composite relations of non-human and human in placemaking. Like Elliott's take on craft theory (2019), task-based approaches are not so much a framework or a specific methodology as an open consortium of resources.

2.1 Divides in Mesolithic and Neolithic archaeology

Historically, Mesolithic and Neolithic material culture has been investigated and interpreted using different approaches. Mesolithic archaeology (particularly earlier) is largely made up of surface scatters, while Neolithic sub-surface deposition and more durable features from construction produce different narratives. Neolithic lifeways were often linked with intentional production and discard; house and monument building, formal burial and patterned, symbolic arrangements of artefactual material, at times associated with cognitive ascendency and '*development of imagination*' (e.g. Cauvin; 2000, 2002). Mesolithic lives, on the other hand, were traditionally defined by the daily grind of subsistence-related practices (*see* Conneller and Warren; 2006, Gaffney, Fitch and Smith; 2009, Billington; 2016). When and where people congregated was seasonal, short-term, ephemeral, and based on what the environment provided at that spot.

On the other hand, Neolithic narratives have had a longer tradition of cultural richness, a history of interpretation driven by social and anthropological research. While Mesolithic archaeology has become more landscape focused, 'site' based Neolithic narratives still predominate. Exceptions are usually focused on environs of monuments such as Stonehenge[8], and perpetuate monumentcentricity and the centrality of a few regions at the expense of more diverse Neolithic narratives (*see* Barclay; 2009). There is consequently a dissonance between Mesolithic and Neolithic archaeology, and the transition from Mesolithic to Neolithic lifeways has historically been represented as a one-way process of 'Neolithisation' (e.g. Case 1969, Sheridan; 2013). This process was perceived as the subsummation of indigenous lifeways by groups from the near east, who arrived in Britain with new material culture and technology, and brought in a 'Neolithic Revolution' (Childe; 1936). This transition was put down to an assimilation of novel practices by local populations at varying speeds of update, with '*native Mesolithic peoples taking on new ideas, and changing the way in which they lived as a response to increasing population and the need to better manage the resources they could exploit*' (Butler; 2005: 116).

Although it is now generally acknowledged that a Mesolithic to Neolithic transition was not a process of indigenous acculturation brought about by farmers from the continent, dominant interpretations are still often Neolithic-centric (*but see* Thomas; 2003, *for* 'Mesolithicisation'). These include narratives coming from aDNA research, where evidence suggests population turnover between the Mesolithic and Neolithic and a Neolithic replacement of small Indigenous communities (e.g. Booth; 2019). Even paradigms which challenge these ideas tend to shape transition as one-directional. For instance, studies of overlapping in the use of Mesolithic and Neolithic material culture suggest that particular areas of the country were more likely to adopt Neolithic lifeways due to the nature of the landscape (lowlands for farming) or the nature of the people (who were presumably more open to change) (Griffiths; 2014).

[8] For example, 'The Stonehenge Environs Project' (Richards; 1990), 'The Stonehenge Riverside Project' (Parker Pearson et al; 2007, 2008), 'Neolithic Landscapes of the Dead' (ORCA; 2020)

2.2 Material culture: objects, assemblages and the multi-authorship of making

In terms of historical background, it has been some time since criticism that *'traditional archaeological narrative structures…often stress the material remains of the past rather than the past human activities that incorporated these materialities'* (Warren; 2000: 97). Task-based approaches have firmly placed Prehistoric people in the making, using and discard of artefacts, often with gender-specific identification (e.g. Clarke; 1972), but also acknowledging the fluidity of personhood (e.g. Strathern; 1988, Fowler; 2001, 2004), and gender non-specific practice, and the multi-authorship of material culture (e.g. Strathern; 1988, Finlay; 2003). Materialist approaches also consider reciprocal relationships between people and things as a counterbalance to anthropocentricity, bringing in relations and interactions between human and non-human in the construction of social-material worlds (e.g. Overton and Taylor; 2018).

The late 19th and early 20th century culture-historical and social evolutionary perspectives informed what Gosden has termed a 'progressive view of human history' (2006); the idea of humanity moving forwards with an ever-increasing level of sophisticated technologies and socio-economic structures. Culture-historical paradigms emphasised that specific cultural groups, as well as developments within those groups and across time, could be detected from interpretation of their artefactual, material signatures (e.g. Childe; 1931, 1936, Clark; 1933). This paradigm has shaped perceptions of a one-way cultural transmission from Neolithic practices onto Mesolithic people's lifeways.

From the 1960's onwards, the rise of structuralist, 'processual' and 'new' archaeology introduced other ideas for understanding objects. In processual archaeology, systems-based approaches (e.g. Binford; 1962, Schiffer; 1974, Salmon; 1978) and structural Marxism (e.g. Friedman; 1974, Friedman and Rowlands; 1978) replaced culture-historical interpretations of material culture. Objects provided a text which could be read for meaningful representation of social and political structures, forces and modes of production (e.g. Binford; 1962, Barthes; 1967). Social relations were understood to shape things (objects) in a single direction, i.e. there was no reciprocation and social worlds were not influenced by objects. Processual approaches continued to separate Mesolithic and Neolithic practice and shape a social transition through forces of production. Technologies which could result in surplus, storage and settlement (sickles, for example, used in the cultivation of cereal, and querns used for processing grains) were framed as a 'Neolithic package' against hunter-gatherer material (e.g. microliths). New social relationships and hierarchies were produced; through both the division of labour required for Neolithic living, and by how goods were distributed. Social complexity was only attributed to Neolithic people; the production of new things meant the production of complex social systems. This did little to transform the idea of Mesolithic people as socially impoverished and driven by simple systems based on subsistence requirements.

The 1980's and 1990's introduced structuralist and post-structuralist, post-processual interpretative archaeologies (e.g. Hodder; 1982, 1991, Tilley; 1994). Material culture was still culturally specific and could still be 'read' for ideologies, social structures etc. but the emphasis was on interconnected processes. Hodder (1982, 1991, 2012), for example, explained transition through the development of increasingly complex chains of relationship, the 'entanglements' created by processes attached to the sourcing, making, using and discard of material culture. Whittle identified associations between Neolithic material culture and intermittent tethering to places, with increased duration and anchoring (1997). These ideas framed a Mesolithic-Neolithic transition through sedentism, and concentrated social tensions in the domestic sphere. A focus on symbolism and ritual still equated social complexity with Neolithic practices.

A cross-discipline backlash against anthropocentricity also led to 'post-humanist', 'new materialist' and 'relationist' approaches towards material culture (e.g. Gell; 1998, Robb; 2004, Gosden; 2006, Olsen; 2010, Witmore; 2014). This positions objects as interactive in the construction of human social life, rather than being 'neutral', 'plastic', or 'receptive' vehicles of human agency (Olsen; 2010: 3). Social practice and material culture are equal agents; while '*humans attempt an agency of why; material things provide the agency of how*' (Robb; 2004: 133). Personhood is also conceptualized as dividual, with 'things' as partible aspects of personhood (see Strathern; 1988, Fowler; 2004, Fowler and Scarre; 2015). For example, Ertebølle burials at Skateholm I and II, and Vedbaek[9], included disarticulated bone from people and animals, beads made from teeth, and other artefacts including flint tools and snail shells (Fowler; 2004). These objects were then positioned as a complete burial, and seemingly indicated the dissolution of human form into component parts (Fowler; 2004: figure 6.2). Burials were seen to represent aspects of mutability and the relational nature of human, animal and object worlds (see Fowler; 2004, 2013).

'New materialist' or 'relationist' approaches have often focused on artefact agency and biography; how an object changes in context, meaning and use as it is passed between people and across time (e.g. Gosden and Marshall; 1999). Dynamics between components of an assemblage have also been interrogated, across both assemblages and across sites (e.g. Robb; 2004, Lucas; 2010, 2012).

For example, Robb used archaeological material as 'extended artefacts' to explain how objects, and human feelings about them, are embedded in continuous historical processes of belief and practice (habitus). This becomes an interaction between human and non-human, physical and conceptual (2004). Extended artefacts, including animals, from small Neolithic inhabitations in southern Italy, were shown to influence practice and produce dynamic social connections across locations. In one instance, cattle acted as agents through circulation of their meat between households and during communal feasts around large rock-filled hearths (Robb, 2004). Only a small amount of the faunal assemblage consisted of cattle bones[10], i.e. it was not the main part of people's diet. However, the faunal remains tell us more than people were engaged in celebratory events where beef was eaten, or that people were dairy farmers. The consumption of the meat brought people from clusters of dwellings together, and the physical remains of these animals can be considered an extended artefact of all the beliefs, practices and contexts associated with them. Similarly, the impact of non-human agency was

[9] Southern Scandinavia
[10] Between 10% and 30%

identified in red deer frontlets at Star Carr, where humans take on animal qualities through their material (Conneller; 2004).

Although Robb's (2004) case study used Neolithic material, it is a good example of how one-dimensionality in Mesolithic subsistence might be reconsidered. Taylor, for example, highlighted the way in which wild plants acted as agents on Mesolithic behaviour as a parallel to the impact of cultivated crops on later populations (2019). Overton and Taylor also showed how interactions between human tasks and the local environment around Lake Flixton were reciprocal and of multiple agency (2018). Tasks involving the collection of wild plants or cutting back aspen from the lake edge created clearings, while patches of younger shrub and openings were due to the impact of beavers. Aurochsen also grazed on wetland reeds and impeded the expansion of woodland down to the lake edge. All acted in structuring the taskscape of Lake Flixton in a composite and dynamic mosaic of relationships (Overton and Taylor; 2018).

Lucas also shows objects as part of extended meaning at different scales and rhythms, and which connect to other assemblages and sites (2012: 170). He suggested that while accumulations of durable material or built structures showed intended practice, they were also connected to less visible and unintended actions and their material remains. Lucas pointed out that archaeologists distinguish between deliberate deposition (structured deposits, earthworks, burials etc.) and accidental traces like lost buttons, when in fact deliberate and accidental events are often linked (2010: 345). A focus on unintentional or 'marginal' data has been used much more in historical research, rather than archaeological (e.g. Ginzburg; 1980). Ginzburg, for example, has suggested that following trails of 'unintentional' actions has been historically human but is now obscured by dominant paradigms in science which work on generalisations and abstractions (Lucas, 2010: 346).

2.3 Deposition and discard

Rhythms created by the dynamics of material culture have been picked up across landscapes ranging from Cranborne Chase (e.g. Barrett *et al*; 1991) to the Vale of Pickering (e.g. Conneller; 2000), Denmark (Bradley; 2004), and North Wiltshire (McFadyen; 2007). They span the diversity of practice in human burial contexts, the curation and storage of valued items, as well as lost objects and the rubbish of daily life. These depositional practices range from the formal to ad-hoc, including those items found as scatters and spot finds, '*a range of practices varying in intentionality and context, from the largely unconsidered disposal of domestic refuse…to set-piece acts of overtly symbolic deposition as part of ritual*' (Pollard; 2002: 22-23).

Whether these artefacts were lost, buried with purpose or thrown out with other things, has determined their significance for archaeological narratives (*see* Lucas; 2010). However, the circumstances which have produced a collection of objects are often hard to integrate into a wider narrative, while isolated finds are usually neglected or studied as a 'type' (e.g. jadeite axes, *see* https://www.nms.ac.uk/explore-our-collections/stories/scottish-history-and-archaeology/stone-age-jade-from-the-alps/). This is also an important consideration for developer-led archaeology, where little value is attributed to single finds. Assemblages and the concept of formal intentional, deposition in Neolithic contexts have been a particular focus of enquiry, while domestic or mundane discard (generally from scatters and middens) have traditionally been given less focus.

From the 1980's onwards, in Neolithic archaeology particularly, themes of structured or special deposition emerged in archaeological discourse. These ideas developed from a post-processual focus on the symbolic nature of ethnoarchaeological material, and an increased interest in Neolithic ideologies and how these might be represented in the archaeological record. Post-WWII, a search in Britain for Neolithic settlement, and Linearbandkeramic (LBK) type architecture were unsuccessful, becoming an acknowledgement of the ephemerality of the material culture record (*see* Holgate;

1988). This had the effect of juxtaposing a lack of domestic architecture, and the potential symbolic value of 'extraordinary' deposition or objects. Phenomenology also began to emphasize choreographies in non-domestic architecture; the idea of formalised, constructed movement to, from and around monuments. Discussion became focused on relationships between monuments and patterns of artefactual deposition, and the idea that people made special deposits in sacred or ceremonial contexts started to separate ideas of ritual and domestic practice. The emerging concept of 'structured deposition' is credited to Richards and Thomas (1984), and broadly positioned formalised social practices as the reason certain objects or collections of objects (e.g. pottery and human bone) were found within specific contexts (e.g. ditch terminals of causewayed enclosures). For example, at Durrington Walls they found artefact types, and distributions of material culture, were spatially distinct across the henge enclosure and ditch (Richards and Thomas; 1984). Deposits in the northern circle contained simple or plain pottery and cattle bone, while the platform area included more highly decorated pottery, pig bone and flint tools (*ibid.*). The ditch terminus contained only fauna, and the southern circle had a large concentration of antler picks (*ibid.*). Objects were either placed meaningfully in symbolic association with other material, or they were placed in a context which itself was symbolic or noteworthy of events (e.g. alongside burials of significance at Hambledon Hill causewayed enclosure, *see* Harris; 2010).

By the mid 2000's a renewed interest in non-monumental sites came from pit features that were being interpreted as evidence of 'settlement archaeology' (e.g. Pollard; 1999, 2001, Garrow; 2006, Smith; 2012). Concepts of ritualised deposition also started to include 'everyday' events which might lead to formal practice. For example, Lamdin-Whymark examined artefactual deposits in the Middle Thames Valley (e.g. Eton Rowing Lake), using a concept of 'ritualisation' (2008). He described this process as embedded in domestic or 'mundane' tasks as well as special or sacred activities, where everyday actions, including disposal of rubbish, became ritualised through repetition. Mesolithic tools from the river Thames, for example, were attributed to an increased formality in discard (2008: 45). Neolithic material, however, was categorised according to a 3-tier system of deposition from (a) unstratified contexts[11] including rivers, spreads and middens, (b) stratified domestic contexts[12]; e.g. tree throws and pits, and (c) stratified monumental contexts. Monumental contexts were further divided into places of the living and places for the dead. Places for the living defined boundaries and routes, e.g. bank barrows and cursus features, while places for the dead served ceremonial and memorial functions (e.g. causewayed enclosures, u-shaped ditches).

While some of these ideas have also been adopted for Mesolithic research, and ritual/functional dualism, in both Neolithic and Mesolithic research, have been contested, the MRCF identified that 'the character of deposition in the Mesolithic has been given limited attention' (Blinkhorn and Little; 2018: 407). This leads to further separation in the ways that Mesolithic and Neolithic archaeology are conceptualized, interpreted and translated to wider audiences. Mesolithic deposition has primarily been focused on burial contexts for mortuary practice (e.g. Fowler; 2004, Conneller; 2006 and 2009), or has been centred on the Vale of Pickering and Star Carr; '*a well-established place of ritual arguments*' (Blinkhorn and Little; 2018: 404).

There has more recently been a move to look at ritualised practices in other Mesolithic contexts (e.g. Conneller; 2006 and 2011, Chatterton; 2006, Blinkhorn and Little; 2018), and also more broadly to incorporate concepts of domestic deposition (e.g. *see* Blinkhorn and Little; 2018). However, interpretations are still linked into sacred and centralised narratives, where objects and places have been given significance by conveying them with 'deadness' (Little *et al*; 2017), or 'mundane' events have been given special significance through their composition and spatial placement in the Vale of Pickering (e.g. Conneller and Schadla-Hall; 2003). For example, material culture patterns or 'thoughtful discard' were identified as formalised practice from deposits in tree throws, pit middens and lakeside hollows around Lake Flixton (Conneller and Schadla-Hall; 2003: 100). Material which included refuse was organised into particular

[11] Classified as unaltered landscape (Lamdin-Whymark; 2008)
[12] Classified as below ground (Lamdin-Whymark; 2008)

places, and certain areas were spatially defined by the dominant tasks that were carried out there (e.g. hideworking or flint knapping). A temporally discrete deposit of carefully placed parts of more than one aurochs was found in a peat filled hollow at Flixton School House Farm[13] (Overton and Taylor; 2018). They had been set down into a shallow reed and sedge-fringed area of lakeside, and may originally have been contained in a bag (Conneller and Overton, 2018: 282-284). Adjacent to this deposit were pits, post-holes and constructed hollows, and a couple of flint nodule caches at Flixton School Field[14] (Overton and Taylor; 2018, Milner *et al*; 2018).

In a similar 3-tier system to Lamdin-Whymark's (2008), Blinkhorn *et al* separated Mesolithic contexts of deposition into 'natural', 'architectural' and 'depositional', all of which were based on a similar foundation of ritualised domestic practice (2018). While Chatterton (2006) formalised elements of daily activity which was not necessarily considered 'structured', Blinkhorn *et al* extended this to include '*mundane - and less mundane - acts of ritual discernible from the archaeological record of Britain and Ireland*' (2018: 404).

Lamdin-Whymark (2008), Conneller and Schadla-Hall (2003), and Blinkhorn *et al* (2018) credit organised acts of deposition to domestic as well as special practice. However, this does mean that other events, the ad-hoc or variable, unintentional and random acts of everyday deposition, can go undetected in this formalised process with very few arbitrary events picked up in depositional signatures (*see* Garrow; 2012). Wetland deposits represent mortuary practices, for example (Lamdin-Whymark; 2008), or spatially and ritually distinct placement of animal bones (Conneller and Schadla-Hall; 2003). Middens become liminal spaces which represent dirt, pollution and fertility boundaries, containing structured domestic deposits in terms of what is absent from them (e.g. no human remains and no complete artefacts) (Lamdin-Whymark; 2008). Or they are given a 'monumentalising' context, where long barrows and cairns built over

[13] Pollen-dated to before 8300-7780 cal BC (8295-7789 cal BC; Overton & Taylor; 2018)
[14] See chapter 3

them 'legitimate' new burial practices, and their significance is '*in the perceptions of those monumentalising the sites, not in their original function*' (*ibid., p.58*).

Thinking about discard as a formalised 'tidying up' has brought daily life and subsistence-related activity into a less economically driven approach in Mesolithic archaeology, and has helped to bridge the Mesolithic-Neolithic chronology divide. However, in effect this approach works to Neolithicise Mesolithic practice through ritualisation, monumentalisation etc. (*see* Warren; 2007). Pulling out examples of special deposition to validate them in this way has the effect of making other tasks the poor cousin of special and 'legitimizing' practices. It suggests that practice has to be identified as special before it can be considered meaningful study.

A legacy of this discourse is that those events which are seen to represent conscious acts of deposition are still considered to be more meaningful than less intentional discard (e.g. scatters or 'background noise'). Deposition is generally not considered in terms of more mundane, random or ad-hoc events (*see* Lucas; 2010, 2012, Garrow; 2012), and there are still distinctions between special practices and what is considered routine or domestic. The domestic sphere is further segregated into concepts of specialised or mundane tasks, and although not quite Childe's (1930) presentation of the 'specialised' full-time (male) craftworker with backdrop of domestic support team, there is a perpetuation of those connotations of gender-assigned tasks and chronological divides.

Alternatives have, however, come to the attention of archaeological research, particularly through investigation of pit groups in the East Anglian area. Garrow, Beadsmore and Knight, for instance, were able to discern different lengths of occupation from pit clusters at Kilverstone, Norfolk, in the Early Neolithic (2005). Some were what Garrow *et al* described as 'developed' clusters, which consisted of larger numbers of pits, some of which (in area E) were very regular in layout (2005: 144). These were part of extended domestic occupations, while at the same time many short-term visits were represented by isolated features and smaller clusters. Here, the presence or absence of material, and the 'dynamics of deposition' in these pit clusters allowed scales of practice across the site to be determined (2005: 140), also suggesting a spectrum of random to structured discard of material (Garrow; 2012). For example, deposits lacking pot sherds may reflect less broken pottery, rather than a deliberate, formal absence of particular artefact types (*ibid.*). The fact that there were fewer broken vessels in one pit than another can also be meaningful, i.e. were there times or places when pottery was used more or less? If some of these deposits represented short-term occupation, what possessions did people travel with? Some pots could have been used more frequently and broken more readily on a dwelling site, while others were associated with transportable tasks. It does not necessarily mean that the occurrence of pottery in one context signifies a place of more value, or the absence of sherds was structured and intentional.

Pit digging and deposition are often seen as practices that emerged in the Early Neolithic (e.g. Lamdin-Wymark; 2008, Sibbesson; 2014). Although Smith had pointed out the significance of pits for containing sealed assemblages in 1910, one of the earliest and largest Neolithic 'pit sites' to be investigated was Hurst Fen in Cambridgeshire, with *c*200 pits (Clark *et al*; 1960, Pollard; 1999). Kilverstone is probably the largest in Britain[15] and the East Anglian region has other groups of pits at Spong Hill[16], Broome Heath[17] and Barleycroft Paddock[18] (Garrow, Lucy and Gibson, 2006: 83). However, pits for discard and deposition were used much more widely across Britain and Ireland. Pit groups have been found in many regions including Northumberland (*see* Edwards; 2012) and Yorkshire (*see* Carver; 2012), and Neolithic pits are found in combinations of clusters and as isolated features, in places with causewayed enclosures, long barrows, henges, house gullies and post-holes, middens etc.

Mesolithic pits are also found across Britain and Ireland. Although generally noted for being exceptional; cremation pits at Hermitage, for example (Collins; 2009), or the

[15] N=236 pits, n=1 tree throw in areas A, C, E (n=226 pits are clustered in main areas A & E)
[16] N=89 pits
[17] N=67 pits
[18] N=26 pits

Warren Field pit complex, (Murray, Murray and Fraser; 2009), they are, in fact '*a common and widespread feature of archaeological sites*' (Blinkhorn *et al*; 2017: 12). A recent review of literature from university or commercial excavation identified at least n=29 sites in Ireland with Mesolithic pits, and n=66 from commercial practice in England (*see* Blinkhorn *et al*; 2017). The majority are Late Mesolithic, but at least four sites in Ireland had pits dating to Early Mesolithic activity. Sites included single pits and pit clusters (e.g. Falmer Stadium, *see* Garland; 2012), as well as alignments.

Material found buried in these pits includes both *in situ* and redeposited flint knapping waste, broken and non-broken tools (used or otherwise), pottery sherds of many sizes and states of abrasion, and human bone. Burnt and unburnt food waste generally consists of hazelnuts, sloes and crab apples, barley and wheat, and pieces of animal bone. Although pits were originally interpreted as storage facilities (e.g. Clark *et al*; 1960, Leary; 2015: 87), they have also been linked to soil, stone and chalk extraction (Case; 1982), heating or roasting food (Loveday; 2012), as well as having more flexible uses (Anderson-Whymark; 2012).

2.4 Settlement and seasonal mobility

Surface scatters, on the other hand, have generally always been associated with domestic, ephemeral and non-ritualised activity, and have not usually been subjected to the same level of investigation as sub-surface archaeology. How deposition and discard is perceived, informs and transforms interpretations of settlement and seasonal mobility in archaeological discourse. While stratified sub-surface deposition is taken as evidence of mainly Neolithic, longer-term settlement, surface scatters are usually linked to seasonal occupations and groups of people who travelled frequently (mainly Mesolithic).

Artefactual scatters are often found in surface deposits of river floodplains and are, however, associated with mobile groups of both Mesolithic and Neolithic people. The material record from these groups is necessarily ephemeral. Camps would be made with lightweight materials that could be transported easily or be found locally in the landscape, while even some more potentially tethered activities, such as burial of kin, were mobile. For example, cave burials suggest people transported their dead from one location (domestic) to another (cemetery). While cave sites such as Aveline's Hole, were used as cemeteries, they appear to be distinct from other 'domestic' activities, at least in a contemporary context where lithic signatures represent a separate temporal event (Conneller; 2006, 2009). '*The archaeological record of mobile people's should not be viewed as a system of structured sites, but as a pattern of continuous artifact distribution and density*' (Foley; 1981: 163).

Mesolithic narratives were, and still are to some extent, dominated by functional and ecological approaches (e.g. *see* Tune; 2020). Where multi-faceted tasks were identified, such as management of woodland, they were generally associated with food procurement (e.g. Smith; 1970). For a long time it was assumed that Mesolithic people cleared woodland, managed plants, trees and their environment more generally, in ecologically driven attempts to enhance their food supply: '*for the period as a whole, humans are regarded mostly as doing nothing more than pursuing a kind of optimal foraging strategy*' (Davies *et al*; 2005). Mesolithic practice and placemaking had a hard time being regarded as socially or affectively motivated, in the same way that Neolithic practice was. Finlay, for instance, pointed out there was little written on the Mesolithic experience of landscape, with ecological frameworks lacking in subjective or emotive dimensions and social construction or meaning (2000: 75).

Davies *et al* (2005) addressed this issue in a paper, pointing out that it was not only the lack of data for Mesolithic archaeology, but also the terminology that made it problematic to conceive of socially meaningful places or 'home'. The terminology and conception of 'hunter-gatherer' base camps and associated lifeways are problematic because they do not allow for the idea that people would find some places alien, intimidating and wild (the terminology and conception is also problematic in other ways, *see chapter 2*). If people are conceived as subsistence-driven in their movements, the whole landscape becomes their territory. Nothing about it will be alien, and there is no sense of tethering; '*land outside of one's immediate knowledge or familiarity – did not exist*' (Davies *et al*; 2005). Davies *et al* argue that it is this optimal hunter-forager identity which has reduced the landscape of the Mesolithic to a background environment with no conception of '*social engagement with non-human things*', no '*children playing amongst the trees, adults singing and dancing beyond the light of the fire, the child or grandmother left dying of infection in a cave, or the hunter being lost in the woodland*' (2005: 282). They suggest that woodland clearance, for example, may actually have been related to the unfamiliarity and wildness of new surroundings, and the fear of getting lost (*see* Mills on 'topophobia'; 2006). If there is a fear of being lost, there must also be a sense of anchoring or dwelling, '*a geographical referent conceptualized as home as distinct from all other places*' (Oelschaeger; 1991: 24).

Despite different approaches in the development of Mesolithic and Neolithic chronologies, traditional views of a 'progression' from mobile hunter-gatherers to sedentary farmers have been challenged for some time. Mesolithic lifestyles are generally no longer envisaged as an annual round of lowland winter hunting camps and inland or upland summer bases (*sensu* Clark; 1972, Jacobi; 1978, Binford; 1980), although some recent reinterpretations are based on Clark's transhumance models (e.g. Donahue and Lovis; 2003, 2006, Lovis and Donahue; 2015). Processual modelling introduced different levels of mobility based on optimal subsistence strategies; seasonal travel from one camp to another as a way to maximise resources, and smaller task-based activities in the 'logistical' environment of the camp (e.g. Binford; 1980). However, as well as being subsistence focused, this approach also generalized broader patterns, sometimes at the expense of small-scale events and regional diversity. While some post-processual approaches have now been criticized for being 'data-light' and ignoring models of settlement and mobility, (*see* Preston and Kador; 2018: 2), they were effective in redressing this imbalance (e.g. Wickham-Jones; 2005, McFadyen; 2006).

Mesolithic ephemerality has also been contested by examples of 'dwelling' architecture or 'site furniture', and 'more sedentary lifeways' in Mesolithic Britain (Preston and Kador; 2018: 6). For some years, researchers in other parts of northern Europe have identified Mesolithic material culture representing elements of sedentary economies. Hoes of elk antler and milling stones in parts of Norway were dated to Late Mesolithic occupations, alongside evidence for coastal gathering and hunting (Mikkelsen; 1982, Mikkelsen and Johansen; 1985). A 'hunter-gatherer' lifestyle at those sites included cereal cultivation, or at least similar methods of managing wild plant food. In Britain there is possible evidence for cereal in the Late Mesolithic at Bouldnor Cliff, where sediments containing wheat DNA were dated to 6000-5855 cal BC (Smith *et al*; 2015*a*). Although this has been contested (Weiß *et al*; 2015, Bennett; 2015), the evidence has been robustly defended (Smith *et al*; 2015*b*). What are generally considered to represent more permanent signs of occupation (e.g. post-holes from house structures) are most famously noted at sites including Mount Sandel and Howick (*see* Woodman; 1985, *and* Waddington; 2007).

However, occupation and settlement is also understood to be a lot more nuanced, and reconsideration of artefactual material has the potential to challenge concepts of settled lifeways equating fixed dwelling. Post holes, for example, may be evidence from all kinds of structures as well as housing; they may be the imprint of drying or smoking racks for meat or fish, for instance (*figure 2.1*). Naturally occurring mounds at Moynach Lough were modified and built up using stone and mud to provide dry platforms in the lake, and were described as being opportunely constructed, i.e. they may represent a more transient occupation (Bradley; 1991). Regional differences in domestic life may also be represented by scatters of lithic material, and do not need to be within or in the immediate vicinity of a house structure to represent settlement (e.g. Cooney; 2000, 2001). However, Mesolithic sites are not generally distinguished by temporal spans, or variation in occupation and are usually conflated into a broad narrative (*see* Milner; 2006, Elliott; 2019).

Neolithic populations were not specifically settled either. Some people moved with their animals (see Chan *et al*; 2016) or returned to places for seasonal cultivation, for instance. Similarly to levels of formal and random deposition, there were no mobile and settled dichotomies of practice, specific to foragers or farmers. The spectrum of mobility-sedentism was varied and settlement meant different things to people. People became tethered to places through their practice, at different scales and for varying lengths of time (*see* Whittle; 1997), and settlement ranged from short overnight stays to seasonal or more long-term inhabitation (e.g. clustered pits at Kilverstone, *see* Garrow *et al*; 2005). Although topsoil palimpsests have often been neglected for containing too much 'background noise' (e.g. Gallant; 1986), these lithic scatters might be approached as lighter and wider footprints of dwelling activities which range in scale, frequency and type of 'off-site' action: '*the ebb and flow of human mobility*' (Last; 2016: 165)

For mobile people, concepts of dwelling, home, or place were not fixed schema defining specific sites or locations, it could also mean '*the familiar space you take with you*' (*see* Davies *et al* 2005; 285, *also see* McFadyen; 2007). This could incorporate familiar landscapes, objects (McFadyen; 2007), people; and the associations or attachments were transportable and dynamic (carrying bones of dead relatives is a good example of this). In relation to Igbo place attachment, Ugwuanyi and Schofield, have highlighted how '*the multi-functionality of the village arena also renders the permanent physical place a transient place regarding the values and belief systems associated with it at different times of the day, week, month and year*' (2018: 9). The concept of a meaningful place, at any scale and for any duration, could act as a focal point, and the knowledge of this allowed other tasks and actions to be carried out. Some of these actions are represented by small scatters, spot finds and other 'off-site' signatures, and indicate discrete or single events. For instance, a person might use an axe in the area of several focal points and then discard it on the periphery, in a place where and when it was no longer needed (*see* Binford; 1973). Focal points did not necessarily have to be seasonal base camps or large-scale settlement, '*place can be seen as a pulsing node or confluence in a meshwork of different mobilities*' (Leary; 2014: 4).

Mills used similar ideas to explain changes in mobility throughout early prehistory in East Anglia and Northants[19] (2006). Places were made meaningful once they were engaged with physically or conceptually, but they also varied in focus and intensity over time; and '*what was once an important place in the past may become out-of-focus in the present*' (2006: 28). Mills suggested that topophilia (a strong sense of place) and topophobia (a fear of certain places or taboo areas) were conceptual guides for physical movement; cognitive and affective explanations for an in-out focus on particular locations over time. Her model predicted movement during drier or wetter periods in the Nene valley, to show ways in which stretches of the floodplain might vary as foci for people at particular times. For example, she plotted flintwork and features to show how particular places (e.g. Irthlingborough Island, Ringstead and the north side of Cotton Brook) were 'in-focus' during the Late Mesolithic, avoided by Early Neolithic movements (negative associations), and then appeared to resume or increase in focus during the Middle and Late Neolithic (2006: 177). She also used an example from Nukak hunter-gatherers in the Colombian Amazon (Politis, 1996), to show how rarely visited zones of territory were given focus. For the Nukak, everyday tasks are concentrated around a residential camp and pathways connect areas of activity within this zone. There are also zones which enable people to visit other groups, or to acquire particular resources, and there are even conceptual spaces of mythological or ideological significance. These spaces were not necessarily given the immediacy of those used for everyday life, but they were in focus on a different scale. This in-and-out focus on places may be a good way to think about spaces between scatters, and how landscape in between sites was conceptualized and used in prehistory (Wickham-Jones; 2021*a&b*).

From the scale of landscape to the scale of specific movements, the way in which people's actions and movements shaped their environment has also been talked about in relation to modes of movement between sites of occupation. Mesolithic paths and routeways, for example (e.g. Tilley; 1994, Edmonds; 1999, Bell; 2020, Bell *et al*; 2003, 2007), and how these became established through continuity of use (Davies *et al*; 2005).

[19] Ouse, Nene and Welland valleys

Or Neolithic routes between and around monuments, and how these acted as markers along ceremonial pathways (e.g. Noble; 2007). Davies *et al* suggested that places along pathways became task-concentrated as they developed into established, familiar and visible locations by opening up patches of woodland (2005). This was in contrast to areas away from the path which were not cleared, and have little in the way of a material record. Through clearance places became ‘persistent’ (Barton *et al*; 1995), they developed histories and became familiar and safe. Tasks which included making pathways and keeping them cleared, or making and enhancing dry living areas in lake or river settings, were more than subsistence related modifications, they served to link places of familiarity and connection (Davies *et al*; 2005).

In terms of travel, the where and for how long people stayed in a place can also be understood in terms of potential motives and constraints (*see* Leary *et al*; 2016). For example, travel could be terrain and weather dependent, and sporadic across seasons as well as from one year to the next, with the need for different routes after inclement conditions. Movement would be slower uphill or through thick vegetation than on open flat land. For making places to settle, the movements of people in relation to the terrain would texture and shape not only the routeway (Leary *et al*; 2016, Evans *et al*; 2006), but also how places were experienced and resulting affective associations. It would be differently understood and managed if travel was by sea or by river, through mountain or through forest for example. Although prehistoric boats in Britain are rare, there is evidence for travel by water from at least the Late Mesolithic. For example, timbers dating to 6370-6060 cal BC at Bouldnor Cliff, have been interpreted as the remains of a log boat (Smith *et al*; 2015*a*), and some researchers have been able to use other artefactual material to show movement between islands.

For example, Wickham-Jones and Hardy (2004), were able to identify the presence of bloodstone on Inner Hebridean islands, making seafaring practices distinguishable in Late Mesolithic Scotland (Warren; 2000). Bloodstone was only available as raw material on the island of Rhum but was also found on islands up to 50km away, which meant people had to be travelling by boat between islands. Warren uses these movements across water to translate Mesolithic movement into a social arena. People were not only travelling for reasons of subsistence, they moved around in order to have contact with one another. Relationships could be forged and strengthened, and personal interactions included exchange of gifts or material including bloodstone, but also conversations and gossip, reassurance in times of uncertainty, and the passing on of information and knowledge. Places or points in the landscape became anchored through occupation at different scales and duration. People's connections with one another and with their environment involves an interplay between social needs and subsistence (e.g. fishing between islands) (Warren; 2000).

Similar social networks have been interpreted in Ireland, where particular points along river channels potentially acted as nodes for raw material exchange, procurement and the interchange of news and gossip (Kador; 2007, 2009). As routeways between tethered places, rivers might also break up or redirect movement. Points where crossings were seasonally narrow and shallow might become focused places, while new crossings would be navigated at other times of the year, or after extreme weather conditions. Haughey's ethnographic comparisons show how people experienced rivers, and therefore knew them, as sections rather than as something with a source and an end-point (2016). Columbia River Indians did not conceptualise rivers in their totality prior to cartography, and the river itself was not the focus (2016: 111). Places were named along the course of the river, rather than naming the river itself, and these acted as foci or markers for navigation and exploration of unfamiliar areas. Similar in-between markers might be picked up in archaeological material as smaller artefactual signatures.

Some people may have moved as an extended group, others with their families, alone or with livestock (Leary *et al*; 2016). Cattle and pig rearing, for instance, was a relatively non-settled farming practice which could involve regular travel and transience. For example, the Late Neolithic faunal assemblage from Durrington Walls consisted of predominantly pig bone[20] and cattle (Chan *et al*; 2016). Lack of neonatal pig bones

[20] More than 20,000 'recorded specimens' (presumably fragments) from LN contexts (Chan et al; 2016: 36)

suggested these animals were not reared at Durrington Walls, and were more likely to have been brought to the site from other places (*ibid*.). Age at death analysis also identified seasonal consumption during autumn/winter occupations (*ibid*.). Strontium and oxygen isotope analysis were carried out on a sample of the cattle teeth[21], and this again suggested variable and non-local geological grazing conditions (*ibid*.). Results suggested people drove livestock across the Stonehenge landscape and beyond (*ibid.*).

Settlement and movement varied according to how routes and places were made and known, as well as the modes, means and motivations. Reasons could be related to seasonal tasks, social gatherings or meetings, funerals, travel for business (e.g. the trade or exchange of polished or jadeite axes) as well as for social life and gossip (*see* Warren; 2000, Kador; 2007). However, differences in age, gender, levels of mobility etc. meant that where, when and for how long people stayed in one place could be motivated by choice, inducement or force (Leary *et al*; 2016). How landscapes were perceived and shaped (mobile to settled) was dependent on the relationships between tasks and who was performing them (Leary *et al*; 2016). Places could be closed off to some people or groups, while open to others;

'*people are affected by mobility, either intentionally or unintentionally, in different ways – one group's mobility can reduce the mobility of another, whilst some mobilities are dependent on others. Mobility is often unevenly distributed, and people are differently mobile…some people have more mobility than others, and different people can gain access to different spaces*' (Leary, 2014: 13)

Rhythms in settlement and mobility have been a focus of study for archaeologists over the last twenty years or so (e.g. Barrett *et al*; 1991, Conneller; 2003, Mills; 2006, McFadyen; 2007). For example, Cranborne Chase in Dorset was the focus of an extensive programme of archaeological survey and excavation over a period of around ten years (Barrett *et al*; 1991). The archaeological landscape includes several Early Neolithic monuments such as the Dorset cursus, a causewayed enclosure on Whitesheet Hill and many long barrows (*figure 2.2*). Trajectories of leaf arrowheads, however,

[21] 47 x cattle teeth (strontium isotope analysis), 53 x cattle teeth (oxygen isotope analysis)

extended away from these features and included denser concentrations towards the coastline (*figure 2.3*). These artefactual distributions suggested regular activities connecting monuments with wider landscapes and practices, pinpointing concentrated areas for tasks such as hunting, in contrast to other activities performed elsewhere (Barret *et al*; 1991). This was not used as a way of identifying and demarcating specific areas for domestic or specialist activities, however. Instead, pace and temporality were identified in routine tasks, where some places showed rapid change in molluscan, pollen or faunal evidence (reflecting speed in woodland clearance), while others had a much slower pace of change. Barrett *et al* (1991), described the Cranborne Chase landscape as a surface that people moved over and congregated in, given meaning through routine occupancy, as people went about their daily lives, performing actions which occurred at different tempos and locales, '*scattered forests, ploughed fields, earthworks and hedges all contributed towards structuring the movement and communication of people*' (1991: 8).

This means that a relationship between material culture and landscape was embedded within temporal pulses of occupational tasks. McFadyen also used surface scatters and an 'off-site' approach, to identify rhythms in daily life, connecting places and episodes of Mesolithic time (2006, 2010). For example, scales of 'subtle woodland management' and 'localised' tree clearance were identified through distribution and density of axes and axe sharpening material across north Wiltshire (2006; 133). Axe-making and re-sharpening was particularly intensive at Golden Ball Hill, SW Cherhill and Cow Down, while small-scale knapping tasks were identified at Sandy Lane and Whitefield Hill (*ibid*). These rhythms reflect multi-authored task-placemaking actions at different scales, where Mesolithic people did not just move around a landscape constructing convenient places for short-term dwelling. The meaning of their worlds was mobile and always changing, through interactions between practices carried out, connections with others, spaces inhabited, negotiated and used;

'*tools were taken elsewhere to carry out other tasks, tasks were shared and other people became involved, animals and plants were caught up in these activities, and other* *objects were deposited so that they created the possibility of return and reuse. It was in this way that space was mobilized*' (McFadyen; 2007: 125).

Bradley also used material culture, including faunal remains, to illustrate seasonality and changing patterns of sedentism in Scandinavia during Mesolithic and Neolithic occupations (2004). His research focused on the two adjacent sites of Norsminde and Bjornsholm, in Denmark. Shell middens and densities of faunal, lithic and ceramic material, provided detail on the character of seasonal occupation over time. Bradley recognised seasonal patterns of occupation based on the quantities of oysters, and types of fish found in Mesolithic contexts in the middens. These assemblages reflected Autumn and Winter stays at both sites.

Neolithic occupation at Norsminde was still seasonal but there was no evidence of fishing and may have been shorter-term than some of the Mesolithic settlements. There was also an oyster to cockle shift, but as demonstrated by Larsen *et al*, this was not a phenomenon restricted to the Mesolithic-Neolithic transition, and was possibly linked to changes in the shoreline (2018). The site was used for short-term occupation when cockles were available. Bjornsholm, on the other hand was also used for short, frequent, seasonal inhabitations, but this included agriculture, building and the making and use of ceramics. People continued to fish and to hunt, but they also kept cattle, pigs and sheep and grew crops including cereal.

Individual settlements were not in use for long periods of time during Neolithic inhabitation of the sites, but they were frequently reused (Bradley; 2004). The making and use of pottery, and the construction of barrows and cairns did not necessarily mean that people were rooted for longer stays. Seasonal use of the site at Norsminde accompanied an increase in ceramic variation, as it did at Bjornsholm, and by the time of later occupations, people were arriving from long distances with polished and perforated axes, used for carpentry (post-holes etc.) and construction. At Bjornsholm, for example, a long barrow was built over an earlier occupation and later a round cairn built next to it (*ibid.*). Bradley distinguishes temporality in tasks, and shows that domestication and sedentism did not operate on a single spectrum. There was little evidence for a chronological distinction between seasonal Mesolithic mobility and Neolithic settlement.

2.5 Landscape and temporality

Although landscape-scale analysis has been on the agenda since the 1930's (e.g. Crawford; 1912, 1925, 1953) in culture-historical paradigms (e.g. Clark; 1960), as well as processual archaeology (e.g. Binford; 1962, 1980, 1982), archaeological 'sites' are still generally related to the boundaries of excavations, or density of lithic scatters. Mesolithic research has looked at how activities are dispersed across landscapes with varied intensity (e.g. Schadla-Hall; 1989, Zvelebil *et al*; 1992, Finlayson, Hardy and Wickham-Jones; 1999, Reynolds and Kaner; 2000, Waddington; 2000, McFadyen; 2010), but smaller signatures and temporal rhythms in 'off-site' archaeology are often missed.

Foley pointed out that while '*human activity is preferentially concentrated at spatial foci…not all debris-producing activity conforms to this spatially centralised pattern'* (1981: 158). Binford showed how the assumed relationship between artefact use and artefact discard also needs to be contested; Nunamiut people might travel widely using particular items, but those items were often discarded somewhere in the landscape where they were no longer useful (1973). A recent discussion in Mesolithic research focused on the need to consider total populations of artefacts within a space, rather than focus on discrete clusters or sites within it (Wickham-Jones; 2021*a*). However, the usual outcome is that site-based distinctions, and type, scale or context of assemblage, means we move between broad long-term events on a nationwide or European scale (e.g. Neolithic monuments), and microhistories of individual artefacts (*see* Elliott; 2019).

Linking temporal rhythms in objects and assemblages across sites, spaces and contexts, as well as connecting them regionally adds another dimension to this *'tension between long-term, gradual accumulation of (mixed) archaeological material and separate instantaneous events'* (Sorensen, *on* Lucas; 2013). Temporal markers in archaeology are generally interpreted in terms of broad typo-chronology (e.g. Early Mesolithic), centuries in which events occurred (through radiocarbon dating, for example), seasonal actions (e.g. through faunal or environmental material), or by what processes it took to make, use and discard particular artefacts (*chaîne opératoire*). Although these layers and levels of temporality can be brought together to discern dynamic, multiple rhythms within blocks of time, interpretations of the past have often been constrained by a focus on chronological linearity and dates of origin (*see* Barrett; 1999). Stratigraphic recording, absolute dating, sequential typologies and the *chaîne opératoire* etc. have all been used to prioritise dates of production, construction and seriality in human activity over time, another factor leading to the primacy of buried material over scatters (Barrett; 1999). This plays down the significance of residual or reused material and constrains the artefact (including architecture) within dates of production and discard, construction and decommission (Barrett; 1999).

These multiple scales of time are another division in terms of how Mesolithic and Neolithic archaeology are conceptualised. For example, even in the latest Mesolithic research and conservation framework, this period is seen as chronologically blurry compared to the Bayesian modelling available for the Early Neolithic (Blinkhorn and Milner, 2013: 6). Tighter dates are starting to emerge but they generally relate to the last few centuries of the Mesolithic, in the context of a Neolithic transition (*see* Griffiths; 2014). As Milner has pointed out, for subsistence particularly, this tends to conflate the totality of Mesolithic data into a broad narrative, which sometimes lacks 'regional scales and variation' (2006: 69). Elliott and Griffiths (2018) have also challenged this idea of 'Mesolithic time' as undifferentiated or conflated into a few significant moments and sites which then become a generalised representation. However, Bayesian dating of Later Mesolithic sites in England and Wales gives changes in Mesolithic to Neolithic material culture over the lifespan of two to six generations; i.e. it was not a rapid transition and not experienced in the lifetime of any one person (*see* Griffiths; 2014).

Griffith's has focused on Later Mesolithic material, and urges that '*without precise chronologies…we risk…producing a binary view of transition as an instantaneous flip* *from Mesolithic to Neolithic lifeways which occurred everywhere at the same time…we risk collapsing or telescoping time, and the attendant diversity and uncertainty*', and that we '*explore the chronology of late Mesolithic material culture or our narratives of change will always be defined by ''the view from the Neolithic*'' (2014: 238). However, this still leaves a large part of 'the Mesolithic' without definition and nuance (*see* Elliott and Griffiths; 2018).

Tighter dating is not necessarily unproblematic if those dates are based on a few significant type-sites or events which then become 'the Neolithic', or even a slightly more chronologically refined 'Early, Middle and Late Neolithic'. Despite benefitting from tighter chronologies, Neolithic lifeways have not been exempted from stereotyping, and ritualised landscapes are still given primacy as a result of the continued focus on monumental sites. Bayesian modelling has been widely adopted for refining chronologies at many sites across Britain, including the study landscape, where occupations at Stockley Park, Dawley, lasted for two or three Iron Age generations, while an MBA cemetery was used for interments every 7.5 years at Hayes Western International Market (Bayliss *et al;* 2017). However, although there is acknowledgement that successive chronology is only the starting point for eliciting temporal nuance (Whittle et al; 2011), in practice this methodology continues to focus on construction as sequential (see Barrett, 1999, *above*).

For example, the Orkney islands have been given a refined and specific chronology through the use of Bayesian statistics. Although Bayliss *et al* (2017) were able to show that both timber and stone houses were in use concurrently on the Orkney islands, and '*present a more complex picture of extensive and overlapping activities, concurrences and discontinuities occurring at different sites through Orkney during the fourth and third millennia cal BC*', this doesn't really come across with much nuance of temporal events. Rather, the overlapping nature of events across Neolithic Orkney focus on when people started to use certain materials and when they stopped, when they built certain structures and when they stopped. The emphasis is still on dates of production and construction on a large scale. Neither are the inhabited spaces fluid or dynamic;

'nucleated settlement', 'monumental structures' and 'feasting areas' (2017), for example, are the equivalent of Mesolithic 'butchery sites'. By this I mean that Mesolithic and Neolithic practices are given labels within bounded spaces; Neolithic people are 'settled' or 'feast' within a nucleated area, and Mesolithic people perform butchery at specific sites.

While Early Neolithic causewayed enclosures particularly, have been the focus of a major dating project (Gathering Time), Greaney *et al* have produced a chronological development of the Mount Pleasant Henge in Dorset over periods of 25 years in the Late Neolithic (2020: *see* figure 19). Radiocarbon dates were taken from the henge ditch and bank, the inner ditch (site IV), the Conquer Barrow mound, which was built on top of the henge bank, and the palisaded enclosure. Results suggested an 80% probability the henge ditch and bank were the earliest constructions[22]. The palisaded enclosure[23] and barrow[24] were contemporary builds 35-125 years later (68% probability), while the ditch encircling the timber and stone circle (site IV) was constructed at a similar time[25], possibly a generation earlier. This dating project has tightened the span of construction in the henge ditches to a period of 25-125 years or 2-3 generations. It has also shown how differences in style between Grooved Ware in the henge ditch, and Grooved Ware in the site IV ditch, may reflect styles of pottery across generations rather than structured deposition (*see* Thomas; 1996: 202) (Greaney *et al*; 2020: 25). However, the focus on fine-dating the sequence and episodes of construction does not provide much information on what people might actually be doing, or the different scales at which life would operate. There is talk of the 'use' of the henge, and how the Conquer Barrow might have been built as a viewing platform (for elite groups), or as a landmark to emphasise Mount Pleasant (2020: 30), but it is hard to see any human tempo or what 'construction', 'use' etc. actually looked like. Temporality is mainly focused on dates of

[22] 2610-2495 cal BC (95%) Probable 2580-2530 cal BC (68%)
[23] 2560-2440 cal BC (95%) Probable 2530-2465 cal BC (68%)
[24] 2580-2460 cal BC (95%) Probable 2525-2475 cal BC (68%)
[25] 2555-2400 cal BC (95%) Probable 2515-2440 cal BC (68%)

phased construction and the idea that monuments centred human activities (with little detail on what they might be), as well as created social hierarchies.

The way in which social choreographies were structured by monuments have been recurrent themes in archaeological literature (e.g. Renfrew; 1973, Trigger; 1990, Thomas; 1993, Pollard; 1995, Edmonds; 1999, Richards; 2004). Lamdin-Whymark describes the Sonning cursus in Berkshire as a feature which formalises and structures a 'transition' between the lowland 'everyday' landscape and an '*elevated, monumental and ancestral landscape on the chalk*' (2008: 157). Chan *et al* also used the idea of choreography to interpret rhythms of movement in phased construction at Durrington Walls (2016). Loveday used artefact deposits (mainly axes and Peterborough ware) to suggest cursus monuments were explicit examples of social hierarchy (2016). He suggested that elite power groups were able to control regional movement and connection of places, through the construction of these earthworks and their placement in the landscape.

Temporality in Neolithic landscapes has also been explored through examination of burial in monumental contexts. At Hambledon Hill causewayed enclosure, for example, Harris used the concept of 'emotional geography' to explain how human practices marked out places for remembrance (2010). Performances related to memorial were distinguished from other daily tasks, through emotions triggered by laying out the bones of dead kin in a specific location, in a particular way. People experienced emotions about the people whose bones they were handling, and the place of deposition accumulated significance through actions performed within this context. It gave the place and actions continued affective meaning over time, rather than a formal construction (Harris; 2010). For example, the physical appearance (a premature skull fusion) of two adjacent child burials from the main enclosure ditch[26] created an affective consequence to associated funerary practice. The earlier burial[27] was markedly different from other human remains at Hambledon Hill; the child was buried intact with

[26] Segment 17 & 18
[27] Segment 18: 3660-3540 cal BC

a necklace of beads and covered with a flint cairn. The later burial[28] was also fully articulated (these are the only burials on the site that had not been exposed and disarticulated). Harris suggested the 'emotional geography' attached to the first child's burial marked it out for a similar practice years later, it signified the appropriateness of doing 'certain things in certain places' (2010: 368).

Emotional geographies in burial practice were not specific to Neolithic lifeways however, Mesolithic people also marked their dead kin through reference to particular places, e.g. Aveline's Hole and Gough's Cave in the Mendips, (Conneller; 2009) or Killuragh; County Limerick (Meiklejohn and Woodman; 2012). However, caves were not the only persistent places for burial. For example, a post-pipe was used to mark a cremation pit at Hermitage in Ireland (Collins; 2009), alongside another two pits containing different material assemblages (Blinkhorn and Little; 2018). The site has evidence of repeated visits to the graveside, and pit deposition (not only related to human burial) occurred over more than a thousand years (*ibid.*). Affect, however, did not only choreograph and give meaning to place through tasks which defined burial as separate from other tasks. Other contexts for human burial created ties and attachment through domestic performance, such as the inclusion of human bone in shell middens at Cnog Coig[29] (Conneller; 2009).

The construction and use of monumental and funerary landscapes is one way of understanding and presenting time, and has become particularly associated with Neolithic chronologies (e.g. Whittle, Healy and Bayliss; 2011). Buried and scattered assemblages also show multi-temporal movements in both Neolithic and Mesolithic landscapes across Britain (e.g. Barton *et al*; 1995, Conneller; 2000, 2003, Garrow *et al*; 2005, McFadyen; 2007, 2008). Pits and pit deposits for example, at Rowden pit in Dorset, and Kilverstone have been interpreted as multi-temporal occupations, events and tasks (*also see chapter 2*). At Rowden the pit fills contained large amounts of flintworking debitage, wood and cereal charcoal, carinated bowl pottery and animal

[28] Segment 17: 3380-3320 cal BC
[29] Oronsay

bone (burnt and unburnt). Pigs of different ages and sizes were the main component of the faunal assemblage, and are not usually found in large quantities as part of an Early Neolithic diet (Harris; 2009). The fill itself appeared to be a mixed midden which was dumped in a single event (Woodward; 1991: 43, Pollard; 2001: 323). The fill was interpreted as a series of special occasions which took part in the same place (through affective association with the material); people added to the midden each time, and the accumulated waste was later deposited in the pit (Harris; 2009).

Barton *et al* also looked at Early and Late Mesolithic scatters in association with palynological data and radiocarbon dating, and were able to define chronological frameworks, while also incorporating rhythms of movement (1995). 'Persistent places' indicated continuity and a fixed point in the landscape, for hunter-gatherers to cache material and return to, but the tasks that made them and marked them out were varied in intensity and pace. For example, at Waun Fignen Felen, in the Black Mountains, the authors showed how a quick piece of knapping in response to immediate necessity could have taken just a few minutes, and would have been carried out by one or two people only;

> '*both the Early and later Mesolithic occurrences can be explained in terms of hunting or hunting-related activities. In the case of the individual Early Mesolithic scatters it may not be too fanciful to imagine one or two hunters crouched in concealed positions at the lake edge, mending or preparing archery equipment, either anticipating the arrival of game or engaged in post-hunting butchery and skinning activities. In either event, the actual time spent at these locations need not have amounted to more than a few minutes*' (Barton *et al*; 1995: 109)

Refitting the lithic assemblage identified all major stages of core reduction as an indication of *in situ* knapping. This was compared to small-scale short-term Mesolithic occupations in northern Germany, where flintwork at Duvensee represented tool preparation areas on a scale involving just one or two people (Bokelmann; 1980, 1985). This flintwork, in association with other materials such as birch bark mats and uncharred hazelnut shells, indicated that while those people made tools, they were also taking breaks to eat nuts or sleep on their mats (Barton *et al*; 1995: 112). These activities created their own rhythm and existed simultaneously with larger scale events and activities. For instance, at Waun Fignen Felen there were also tasks which involved planning and sourcing flints from the coastline, and the transportation of material back to the area using boats, dogs, more people etc. (1995: 110).

Quick and slow rhythms in a *chaîne opératoire* of tool procurement, manufacture, use and discard were also identified in the Vale of Pickering (Conneller; 2000, Conneller *et al*; 2003, 2009). Conneller *et al* reconsidered historical excavations at Star Carr (e.g. Clark; 1954), along with data from recent investigations in the Lake Flixton area (2003, 2009). This included radiocarbon dating of macroscopic charcoal and animal bone, palaeoenvironmental survey, lithic refit and microwear analysis. At least two main phases of occupation[30], over more than three centuries were identified, consisting of repeated task-specific events as well as episodes of small-scale ad hoc knapping in response to immediate necessity.

Barry's Island, for example, was used almost exclusively for decortication of flint nodules, a primary reduction task related to the preparation and testing of raw flint material (Conneller; 2000, Conneller and Schadla-Hall; 2003: figure 2). Scatters at Seamer Carr site C, on the other hand, indicated toolmaking tasks. A couple of areas[31], particularly, focused on the production of scrapers, with lithic material from complete reduction sequences, and n=137 tools characterising the scatters. However, at Seamer Carr site K overlapping temporal rhythms could also be identified in the *chaîne opératoire*. For example, scatter 2 represented primary knapping waste which had been brought in from elsewhere and dumped[32]. Another scatter[33] was predominantly defined by microlithic toolmaking (microburin and microliths), while alongside these larger task-specific activities, smaller ad-hoc events were represented. For example,

[30] At least three were later radiocarbon dated from a wood scatter, lakeside platforms and several structures
[31] Scatters H and K
[32] Mostly raw material units, unmodified nodules, exhausted or flawed cores
[33] Scatter 30

scatter 21a consisted of a partially reduced core from which a few scrapers, a burin and a couple of microliths were worked out (Conneller *et al*; 2003: 94).

Areas of knapping were identified, although not necessarily defined through a division of specialist and domestic performers. So, although particular places might be notable for certain special or specialised tasks and activities (e.g. axe workshops, carving of antler frontlets, crafting of bead necklaces; see Little *et al*; 2019), numerous multi-temporal events contributed to this visibility in the archaeological record. Refitting and microwear analysis of flintwork (including reworked material) illustrated overlapping processes and bursts or flows of activity, including co-existing pulses of connection. In this way the sequential nature of the *chaîne opératoire* brought a sense of rhythmical time rather than just the linearity identified by Barrett (1999).

If material is only equated with stages of production (e.g. 'core shaping area', 'knapping area' or 'butchery site') these places become the same as functional 'hunting camps', 'base camps' or a 'ritual sites', all of which '*emphasises particular actions that generated the site at the expense of others*' (Conneller *et al*; 2003: 103). The above examples from Barton *et al* (1995) and Conneller *et al* (2003) show how the *chaîne opératoire* can be used differently. So, while Elliott and Griffiths have recently addressed difficulties in bringing together multiple scales of time (2018), multiple rhythms in the Black Mountain and Lake Flixton assemblages contrasted with the discrete sequential nature of the stadial *chaîne opératoire*, and enabled material from multiple events, of different duration and scale to be incorporated into a network of relationships.

Chapter 3: Background to methodology

3.1 Why use a task-based method?

The challenge then, is how to use and interpret archaeological material without relying on functional interpretations, generalisations from 'flagship sites' (McFadyen; 2010), or the implicit framing of 'specialists' or 'special practices' in the foreground. These narratives have the effect of separating tasks into domestic and other, meaning practice becomes framed and dominated by specific types of archaeology (e.g. 'ritual landscapes', *see* Robb; 2007, or 'hunting camps', Whittle; 1990). Transition from Mesolithic to Neolithic lifeways also needs to be considered as a multi-faceted process for indigenous groups and migrating communities, rather than a one-way 'acculturation' (*see* Thomas; 2007). A task-based methodology can do this by using archaeological artefacts to translate practices into social arenas and multi-rhythmic places. A task can act as a unit of analysis between quantifiable and measurable aspects of the artefacts (i.e. type, density, distribution), and human activity or behaviour (*figure 3.1*). However, while this is a somewhat reductionist approach, by using this concept within a theoretical framework as discussed in chapter 1, the multi-dimensionality of tasks can be incorporated, including non-human and human relationships (*see* Conneller; 2004, Overton and Taylor; 2018), and place attachment through material culture (*see* Brown; 2010).

While tasks do not have predetermined performers in terms of gender, age, skill-level etc., interpretation of archaeological material has often had gender-based association with particular tasks (*see* Finlay; 2006). The assumption that certain artefacts were universally single-purpose (e.g. microliths), coupled with a limited visibility of other archaeological material (e.g. plant fibres), has resulted in a primarily male-dominated or gender-divided taskscape. For instance, microliths were traditionally associated with hunting, which was seen as a 'boys with arrows' male dominated activity (*ibid.*). Hunting was seen to be male, foraging female, flintworking was a male domain, while the hearth and cooking related activities were assigned to women and children (Finlay; 2006).

However, as noted by Finlay, these distinctions have placed exclusivity on actions which could not have been performed by a single person and were actually multi-authored (*ibid.*). An illustration of this comes from Murphy's interpretation of gender-allocated task division at Mount Sandel (1996). A concentration of microliths in the north east corner of the hut was assigned to the task of hunting and given male authorship (Murphy; 1996: figure 2, table 2). Carpentry was similarly assigned in the hearth area (*ibid.*). On the other hand, fish bones, hazelnut shells and plant remains in the hearth area were assigned to female authored tasks including cooking, weaving, cleaning and clearing out (*ibid*.). Finlay pointed out that this gendered framing of domestic activity fails to account for the presence of 'male' microliths in the 'female' hearth area (2006). Even if we assume that hunting was a male-dominated task and microliths were used exclusively for hunting, other actions were still needed in the performance of this task. For example, flint nodules needed to be collected and tested, and component parts of the tool needed to be made (including flintknapping, woodworking, hafting etc.).

3.2 'Special'isms and multi-authorship in task-based interpretation

Task-based interpretation has been used in prehistoric research for some time, although it has not always been made explicit as an approach. For example, Clarke (1976) is usually acknowledged for moving Mesolithic narratives away from microliths, and identifying them as tools for tasks other than hunting[34] (e.g. Clark; 1954) (*and see* Finlay; 1997, 2000, 2003). Clark had in fact, identified a large number of edible plant foods in his work at Star Carr (1954, 1972) (*see chapter 4*), which Clarke then used to show how tasks were at least equally dominated by plant-gathering and processing activities (1976). Pitts, also, re-examined Clark's excavation (1954) and reframed the community as 'gatherer-hunters', since primary tasks included aspects which were not directly related to hunting. This was illustrated through the tasks that were carried out around the edge of Lake Flixton. Although areas were used for tanning hide and antler

[34] The microlith has been traditionally interpreted as an arrow tip or point inserted onto the end of a wooden shaft and used as a spear or projectile for hunting

processing[35], (Pitts; 1979), plant-related activities were also part of this arena (*ibid.*). Soaking antler and animal hide can make them easier to work with by softening the material[36] (Pitts; 1979). The addition of decaying or fermenting plant material, including mosses and birch bark, creates an enzyme reaction which, in the case of tanning, softens follicles and makes it easier to remove the hair (*ibid.*). Plants identified from site sediment samples at Lake Flixton included dry land tree pollen, particularly birch, and were interpreted as plants that were gathered elsewhere, brought to the lake edge as ingredients for this fermentation process (Pitts; 1979).

Excavations at Thatcham also suggested a predomination of plant processing tasks rather than hunting (Healy, Heaton and Lobb; 1992). In 1989, excavations by Wessex Archaeology were carried out 250m north-west of sites I-V[37] (Peake and Crawford; 1922, Wymer; 1962), with macro and microwear[38] analysis (Grace; 1989) performed on lithic material from several contexts[39] (*see* Healy *et al*; 1992). Tasks were divided into n=25 categories and included piercing (general, soft, medium and hard materials), boring and scraping antler or wood, cutting wood and scraping bone (Table 2). However, in the northern contexts[40] most of the tools were used for cutting soft material, including fish[41] (27%). Analysis primarily reflected '*a concentration on the exploitation of vegetable resources*' (*ibid*. *p58*), and although no plant materials were found, trace-wear signatures suggested many tools were used for processing roots and tubers (*ibid.*). Taylor (2019), and Overton and Taylor (2018) have also discussed relational processes between plants, animals, the environment and various tasks (*see chapter 1*).

[35] Scrapers, burin (bone-working), awls and barbed points made from antler
[36] Antler can be softened and carved more easily, and skins can be softened and 'fermented' in water (see Pitts, 1979).
[37] Thatcham and other Kennet sites (e.g. Greenham Dairy) are also referred to as Newbury group, Newbury sewage works or farm (Healy et al; 1992, Conneller *et al*; 2016)
[38] At 50-200x
[39] Layer 3, contexts 245, 251, 325 & 228
[40] 251, 325 & 228
[41] Context 251 (and 245 in the southern area)

Table 2: Wear analysis on lithics at Star Carr (Conneller and Little; 2018: table 35.15) and in the Kennet Valley (Healy et al; 1992: table 11)

Material	**Task**	**Number of tools**	
		Kennet Valley	**Star Carr**
Soft	Cutting/scraping/piercing	18	1
Medium (including plant)	Cutting/scraping/piercing/grooving/boring	7	1
Hard	Cutting/scraping/boring	1	2
Fish	Cutting/scraping	2	1
Meat	Cutting	2	0
Hide	Cutting/scraping	8	0
Wood	Cutting/scraping/whittling/boring/grooving	26	5
Antler/Bone	Cutting/scraping/boring/grooving	8	2
Mineral	Cutting/scraping	2	0

A focus on activities other than hunting, and a craft-centred approach (e.g. Clarke; 1976, Pitts; 1979, Andresen *et al*; 1981) was an important move away from the traditional hunter-gatherer narrative, but still tended to frame actions within a bounded performance area, with 'specialist' performers. There was a tendency to frame this process as a straightforward equation; where a cluster of scrapers and awls in a defined area equated with a hideworking 'activity area', making it difficult to separate task-specific assemblages from deterministic or functional interpretations. However, fluid and fine-scale applications of task-focused methodologies have evolved, partly as a result of increased applications of microwear analysis, an extension of traceological or usewear analysis (Rowland; 2021). Usewear analysis typically uses low magnification microscopic technology (up to 50x), to identify traces of edge damage and polish on flintwork, or organic residue on pottery, for instance. The results can then be used to interpret the type of tasks a particular tool might have been used for, as certain actions would produce particular signatures along the edge or surface of the flint. For example, traceological analysis on a flint knife from Millbarrow long barrow produced traces which suggested the tool had been kept in a sheath (Whittle; 1994). Organic residue also provides detail on food preparation and consumption.

Microwear analysis uses high magnification (more than 50x), and has been effective alongside experimental or ethnographic modelling, particularly in challenging certain typological assumptions regarding tool use (Rowland; 2021). Results have suggested, for example, multiple uses for microliths, as well as other tools, in Britain and Ireland (e.g. Dumont; 1988, Finlayson; 1990, Finlayson and Mithen; 1997, Grace; 1992). For instance, at Star Carr none of the microliths analysed[42] showed any sign of impact damage (Dumont; 1988). Additionally, impact fractures, often assumed to be evidence for hunting, have also been produced through backing work in experimental archaeology (Finlay; 2003). Similarly, at the Scottish sites of Starr 1 and Starr 2 all microliths showing use-wear[43] reflected tasks other than hunting; they were used for sawing, cutting, grooving and shaving, with two having been used as piercers (Finlayson; 1990). At Thatcham, also, the majority of microliths examined were used to pierce or bore soft material and wood (Grace; 1992). Although there are limited examples in Britain, microliths could also be fitted as barbs into grooves along a wooden shaft and used as harpoons (*figure 3.2*). While these are less common in Britain, harpoons have been found in the Thames (Haughey; 2000), and the North Sea (Burkitt; 1932), and may

[42] n=31
[43] 15 out of 39 microliths

be compared with harpoon head fragments from Denmark, (*e.g. see* Pedersen and Fischer; 1997).

Microliths could be used for fishing, or as threshing and reaping tools, for foraging and plant processing e.g. Sands of Forvie (Hardy; in press), drill bits for grating boards (Clarke; 1976), cutting tools (Healy *et al*; 1992), including '*the teeth of a rather large (two handed) saw*' (Buckley; 1924: 47). However, the concept that microliths were used as plant processing tools, or anything else apart from hunting, has had little in the way of sustained uptake. This may be linked to sustained feminised associations with foraging (*see* Finlay; 2000: 71).

Microwear and usewear analysis have also shown that traditional interpretations of other tools (e.g. scrapers for hideworking) are, like microliths, actually rather limited. At Thatcham, for example, two areas were identified which contained a range of tools used for scraping and cutting tasks. While tools in the northern group had been used to scrape softer materials, which could include animal skin, in the southern area scrapers had been used for carving and working bone and antler (Healy *et al*; 1992). At Star Carr burins were used as scrapers on a broad range of material not limited to woodworking, and included their use as tools for descaling fish, and for cutting or scraping plants and minerals (Table 2).

Experimental archaeology can also be used to understand processes of Mesolithic and Neolithic practice, beyond the scope of hunting or farming. Experimental archaeology replicates the *chaîne opératoire* of particular tasks (e.g. flintknapping, firing a clay pot, constructing a dwelling etc.), using appropriate raw material in combination with the archaeological record. An illustration of this methodology comes from a recent study into crafting during the Early Iron Age (Jeffra *et al*; 2020). The study focused on a ceramic house-shaped funerary urn from Central Italy, using macroscopic trace analysis to look for detail of the potters' working methods (*ibid.*). Tracewear suggested the vessel was a coil-based construction, and experimental replication was carried out to assess to what extent the material and crafting process influenced the architectural features of the object (*ibid.*). Two urns were produced using slightly different clay fabrics, which on the whole performed similarly, although Urn B was morphologically more similar to the archaeological object. However, the process of building these urns actually drew attention to the ways in which the action of the potter was almost moulded by the clay; how certain actions were necessary to support the weight of the clay while it dried out, and how these actions contributed to the curvature of the house walls, for instance (*ibid.*). In this example, agency was given to the material; the final form of the vessel, and the resulting social practices, were influenced by the object itself (e.g. Olsen; 2010).

A difficulty for any experimental process, however, is in replicating the social dynamics of group participation in these tasks, and is something often interpreted through reference to anthropological data. For example, Finlay (2003) used comparisons with the Waiwai of Guiana and Brazil to identify multi-authorship in the production of Clarke's (1976) microlithic grater board. Waiwai communities use grater boards for processing manioc and cassava tubers, which require extensive grating to remove toxins (Finlay; 2003). Manufacture of these items involves interpersonal actions between a husband and wife as they weave together the composite parts of the board in a process of joint making (Finlay, 2003: 171). For instance, raw materials (wood, stone, resin and pigments) are collected by the husband, who also carves out a wooden board (*ibid.*). The wife then outlines the board in red pigment, knaps out and inserts flint chips into it, and seals the surface with more red pigment. Her husband decorates the board, while she uses it for food preparation (*ibid.*). This anthropological example demonstrates not only the existence of female flintworking, but also positions the crafting of artefacts as non-specifically gendered or specialised. Although not the first to acknowledge the centrality and disproportional focus given to microliths (e.g. Clarke; 1976, Pitts; 1979), Finlay shows how microlithic production (as well as tasks more generally) are performances which require group participation (2003).

3.3 Building a dataset

The nature of this study means that the data was not of a standardised format. It included letters, field notes, reports, catalogues, museum collections, maps and monographs, which were recorded and categorised according to historically and contextually diverse sources and methods. Radiocarbon dates were limited to sites with organic preservation and where budget was available (on larger commercial projects, for instance). However, my approach and methodology recognises artefactual material as inconsistent, and is intended to be inclusive of disparity.

A study area was roughly defined by the course of the river Colne and the Colne Valley Regional Park, comprising an area *c*35km north to south (from the Chilterns to the Thames) and *c*13km east to west (*figure 3.3 and 3.4*). The headwater around St. Albans was not included as the project focus was on a restricted environment and geology within the park boundary. The northern limit of the study was extended to include Watford, as excavations at The Grove provided a large unpublished set of palaeoenvironmental records (Le Quesne *et al*; 2001). Local Historic Environment Records (LHER's) were used as my primary resource[44] for all Mesolithic and Neolithic archaeology within this geographical boundary. Contact details for the local offices were available from Heritage Gateway, and most LHER's supplied a list of records in the form of shapefiles and a pdf (or html document in the case of Hertfordshire)[45], and these mainly functioned as a gazetteer[46]. Archaeological finds are presented as 'monument types' in the LHER (for single finds, assemblages and features), and each entry is given a reference number, site name, description including type and date, National Grid Reference (NGR), any associated finds and documentary sources (*figure 3.5*). Data was initially sorted and categorised by chronology, then by type and finally by scale.

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[44] While recognising that LHER's are not primary sources, as these records are derived from what I term my secondary material (e.g. monographs, grey literature etc.)

[45] I was provided with Mesolithic records, Neolithic records and Prehistoric records. I did not include Prehistoric records in my database. Some LHER's provided all records (e.g. Hillingdon) and others requested me to send shapefiles for the area under study (e.g. Berkshire)

[46] Although for a few entries there were no further sources

An initial main database was created in Microsoft Excel with a total of n=139 Mesolithic records from across all districts and boroughs, and a total of n=200 Neolithic records (*figure 3.6*). These individual records consisted of anything from single entries (e.g. a Neolithic polished axe), to a large multi-period site with thousands of pieces of flintwork, pottery and animal bone. Where individual records were large, further data sources were referred to, and the material was sub-divided and allocated separate database entries. All entries were sorted into chronology (Mesolithic or Neolithic) and sub-chronology, where that information was available in the LHER or other source material. Consistent attributes were recorded in the database (e.g. LHER ID, name of site or findspot, NGR), plus any associated radiocarbon dates, palaeoenvironmental survey data and features. Palaeoenvironmental data were derived from waterlogged sediments (e.g. The Grove, London Road) and borehole data (e.g. PA4). This provided a lithology for sites, and a stratigraphy recognising a variety of environmental contexts including ancient river channels (at Staines and Stanwell Moor, for example), freshwater springs and valley slopes at The Grove (Le Quesne *et al*; 2001). Sediment samples contained pollen, macroscopic flora and fauna including molluscs, ostracods and vertebrates. Artefact types were distinguished as a specific category for five sub-chronological periods[47].

Secondary resources [48] included, for example, digital databases [49], published monographs, grey literature reports, personal communications [50], local society journals,[51] museum and archive collections of documentary and artefactual material. The nature of these documents depends on factors including historical context (when it was recorded), whether was a report written for commercial purpose, or an article for an archaeological society. Some resources were documentary and digitally available (e.g. Archaeological Data Service), while other hard copy documents were only available

[47] Early or Late Mesolithic, Early, Middle or Late Neolithic
[48] See previous note about primary resources
[49] E.g. Archaeology Data Service (ADS), PaMELA etc.
[50] Jon Cotton, Martin Bates, Mike Farley, John Lewis, Craig Halsey etc. need to go into acknowledgements
[51] Provide full list: Franks House, Uxbridge, Watford, Spelthorne, Reading museum, Hertfordshire archives etc.

by visiting the archive (e.g. Hertfordshire Archives and Local Studies). In terms of access to unpublished material, some grey literature is available digitally, while the majority can only be accessed through archaeological units. Response to requests for grey literature was varied.

Artefactual collections were distributed across various holdings, including the Museum of London Archaeological Archive, Franks House (British Museum) and local repositories (e.g. Hillingdon Local Studies, Archives and Museum Service). This means they were somewhat varied in terms of access, range of data, clarity and specificity, and covid-19 restrictions have meant limited or no access since March 2020. Material in the collections may not be quantified, description may be very general (e.g. flint implement), dating can be chronologically broad and includes the whole span of Neolithic archaeology, for instance, and site names have often changed over time. For example, the playing fields and environs of the former Sanderson's Fabric Factory were interchangeably referred to as Bowyer's Pit, 100 Acres (e.g. Lacaille; 1963), and Willowbank (Bowen; 1977), while recent excavations were at the Sanderson's site (MoLAS; 2006). County distinctions also segregate records and make it difficult to understand places as a whole. For instance, Sanderson's and Three Ways Wharf (3WW) are within a few hundred metres of one another, on the east bank of the Colne. However, one site falls within Greater London and the other within South Buckinghamshire.

3.4 Building chronologies

There can be various problems accessing data, and resources provide different levels of detail and clarity. However, difficulties in producing a coherent narrative are also linked to the ways in which material is dated and categorised. This often produces distinct as well as overlapping chronologies at different scales (*see chapter 1*). For instance, typological categorisations have generally given broad chronology and 'cultures'. For Mesolithic material, typological distinctions were mainly based on microliths, and were to a large degree responsible for the gendered narratives of 'hunter-gatherers' and 'boys with arrows' (*see 3.1*). Typochronology has a foundation in 19th century lithic analysis (e.g. Lubbock; 1865, Evans; 1872), where distinctions were made between the signatures of the glacial period (Palaeolithic) and those of post-glacial Mesolithic to Bronze Age (BA) lithics. By the first part of the 20th century, culture-historical approaches extended these typological distinctions to include type-sites and 'cultures' (e.g. Childe; 1927, Clarke; 1933). For example, 'Maglemosean' and 'Forest' cultures (e.g. Childe; 1931, and *see* Lacaille; 1961), were associated with an Earlier Mesolithic, and Preboreal and Boreal climates, while Final Mesolithic (Late Atlantic climatic phase), were often referred to as 'Lower Halstow' after a type site in Kent, dominated by a particular form of microlith (Burchell; 1925, 1928, Pope *et al*; 2019). Climatic periods were also roughly associated with particular chronological distinctions, but these are only approximate and there are often overlaps. For example, Late Mesolithic and Early Neolithic groups with different material culture, were occupying the same Late Atlantic climatic phase.

Microlithic typologies were mainly based on Clark's lithic categorisation system (*see figure 3.7*). For example, obliquely backed or blunted points (non-geometric) were classified as a 'type A' and used to distinguish Early Mesolithic material and sites (*figure 3.7: 1-4*). These typologies were later modified by others (e.g. Jacobi), with some obliquely blunted points later assigned to the Late Mesolithic. Metric and statistical methods of analysis (length to width ratios etc.), were developed during the 1960's, and were used to compare and distinguish datable differences in the size of lithic artefacts (e.g. Clark *et al*; 1960 Smith; 1965). As a result of this, reassessments in microlithic typology were based on length, where longer points (*c*40mm at the start of the Mesolithic) reduced in size over time (to *c*20mm in the LM; *see* Pitts and Jacobi; 1979, Butler; 2005). Lithic based Early Mesolithic typologies are now built on a 'Star Carr' microlithic type *c*9700 BP (7750 BC[52]), 'Deepcar' after *c*9400 BP (7450 BC), 'Horsham'

[52] For comparative purposes, generalised BP dates have been also given a date BC (BP minus 1950)

from c9000 BP (7050 BC) and 'Honey Hill' *c*8100 cal BC (see Reynier; 2005, Conneller *et al*; 2016).

The Star Carr typology is equated with an '*earliest pioneering*' Mesolithic, who travelled across the Doggerbank into northern England (Conneller and Overton; 2018). Deepcar assemblages are thought to represent later generations who had acquired more regional knowledge and spread further into Britain, (including Wales, Scotland and southern England) (*see* Conneller and Overton; 2018: 277). 'Transitional' (Early to Late Mesolithic) microlithic typologies are normally based on geometric forms, including isosceles and scalene triangles (e.g. Clark; 1933), while rod shaped tools are associated with the Latest or Final Mesolithic (e.g. Clark; 1933, Jacobi; 1978). However, as with Early Mesolithic types, descriptions and chronologies of geometric microliths (*figure 3.7: 11-20*) and rod-type microliths (*figure 3.8*) are varied and overlapping, and the use of rod microliths extends into the first centuries of the 4th millennium cal BC (*see* Griffiths; 2014). This challenges formal chronologies based on Neolithic material culture (e.g. Whittle *et al*; 2011).

Within these predominantly microlithic based typologies, other artefact types are also used to distinguish chronology; tranchet axes and adzes are often categorised as Early Mesolithic, (e.g. the Palaeolithic and Mesolithic Lithic Artefact database[53] or PaMELA). Tranchets are also referred to as Thames picks as many have been found in the river (*see* Haughey; 2000). These artefacts, however, are associated with both EM and LM assemblages, and particularly in the southeast, there appears to be an increase in their use during the Later Mesolithic (Butler; 2005: 99). They are interchangeably referred to as axes and adzes, and without being attached to handles we might assume they were fastened both ways and used in a variety of functions across time (*see* Butler; 2005: 99-104, for discussion on the adze as a more appropriate concept).

[53] This is an online database managed by Wessex Archaeology, which holds Roger Jacobi's digitised card records https://archaeologydataservice.ac.uk/archives/view/pamela_2014/overview.cfm

The problem is that typology is chronologically independent and markers based on them are various; they are regionally or site-specific, for example, and there is much overlap. There are many sub-periods and very little in terms of agreed standardisation. As new data emerges, new chronological periods are being defined. For example, a distinct typology now identified as Middle Mesolithic was picked up by Jacobi (1978), and more recently dated to between 8220-7840 cal BC and 7960-7530 cal BC (Cooper and Jarvis; 2017, *and see* Blinkhorn and Milner; 2013: 3.2.2.3). This chronology is linked with a possible structure at Asfordby in Leicestershire, where knapping debris and burnt material suggest a circular tent was erected (Cooper *et al*; 2017, Conneller and Griffiths; 2020). Even within single sites or collections of material, identifying and cataloguing artefacts makes use of various typological systems to classify different elements of the material. For example, recent work at Star Carr used several different classification systems for the flintwork, including initial identification based on Healy (1988), Jacobi's microlithic typology (1978) and Inizan *et al* (1992) for burin types (Conneller *et al*; 2018).

When it comes to Neolithic archaeology there are yet more typological categorisations and a type site approach was adopted particularly for ceramic chronologies and concepts of culture (e.g. Childe; 1931). While Mesolithic chronology is associated with microlithic 'technology', Neolithic dates tend to be based on ceramics and their context of deposition (e.g. ditch fills) in monumental earthworks. Carinated Bowl (*c*4000 - 3600 BC), and Plain and Decorated Bowl (*c*3600) are generally found at causewayed enclosures, long barrows and pit sites, where organic material (e.g. human and animal bone, or charred food residue) can be radiocarbon dated. For example, Abingdon Ware (Oxford) and Mildenhall Ware (Suffolk), are regional typologies for Decorated Bowl found at these causewayed enclosure sites (Gibson; 2000, *figure 3.9*).

Peterborough or Impressed Ware were also found in the ditch fills of enclosures and pit groups. They include sub-types of Ebbsfleet, Mortlake and Fengate, once thought to be chronologically sequential (Smith; 1956), and are generally dated to the Middle Neolithic (*figure 3.10*). This ceramic style had been thought to date to a later period (e.g. Smith;

1965), but a Mortlake-Fengate pot with carbonised residue in the study dataset[54], was partly responsible for reassessment of radiocarbon dates (Gibson; 2002*a*: 80). Ebbsfleet Ware may have been in use from *c*3500 BC, and Mortlake from *c*3300 BC (Beamish; 2009), although there is often an overlap with Plain Bowl (*see* Framework Archaeology; 2010: 38), and Fengate has also been shown to date from *c*3500 BC (Gibson; 2002*a*: 80). In Southern England two traditions of Grooved Ware (Durrington Walls or Clacton-Woodlands) were noted from *c*2800 BC (Wainwright and Longworth; 1971, Garwood; 1999), although Grooved Ware was probably in use at least a century earlier in the Western Isles (Sheridan; 2016, Copper and Armit; 2018, *figure 3.11*). Most pottery have chronological overlaps and new applications of radiocarbon dating may lead to changes in the dating of ceramic chronologies. Lithics have also figured in Neolithic typologies, and metric analyses have been used to differentiate between Early and Late Neolithic assemblages (e.g. Smith; 1965, Bradley; 1970).

Radiocarbon dating brings a more accurate timescale to these broader typochronological methods, but it is also problematic for a cohesive chronology. In regard to the dating of Early Mesolithic material, for example, chronology relies on n=20 measurements from across just ten sites (Reynier; 2005), and many dates were taken from pieces of bone and charcoal combined together for analysis (Conneller *et al*; 2016). In the study dataset there were a total of only ten Mesolithic and Neolithic sites with radiocarbon dates and one with thermoluminescence dates (Table 3). Calibration models are also changed and updated over time, so in recognition of this, and to allow for comparability between sites, dates were calibrated using OxCal 4.4, IntCal 20 calibration curve at 95.4%, unless otherwise referenced.

[54] Ring ditch at Horton (TVA)

Table 3: Sites in the study with available radiocarbon dates (OxCal 4.4, IntCal 20 calibration curve at 95.4% confidence)

Site or spot find	Radiocarbon dated material	C14/Thurmoluminescence dates	Chronology
Three Ways Wharf	Red deer bone	8804 to 8280 cal BC	Early Mesolithic
		8705 to 8295 cal BC	Early Mesolithic
		8616 to 8284 cal BC	Early Mesolithic
Sanderson's	Charred hazelnut	8606 to 8300 cal BC	Early Mesolithic
	Wood fragment	8219 to 7770 cal BC	Early Mesolithic
Preferred Area 4	Boar tusk	8536 to 8257 cal BC	Early Mesolithic
	Waterlogged wood	8795 to 8490 cal BC	Early Mesolithic
		8747 to 8430 cal BC	Early Mesolithic
		8698 to 8336 cal BC	Early Mesolithic
		8695 to 8327 cal BC	Early Mesolithic
		8547 to 8288 cal BC	Early Mesolithic
Tolpit's Lane	Wood charcoal	7578 to 7044 cal BC	Early to Middle Mesolithic
	Wood charcoal and charred hazelnuts	5475 to 5072 cal BC	Late Mesolithic
	Butchered aurochs bone	4495 to 3991 cal BC	Late Mesolithic to Early Neolithic
Bedfont Court	Timber stake	6240 to 5990 cal BC (2 sigma)[55]	Late Mesolithic
T5 *(see table 8)*	Burnt flint	7347 *+/- 840* to 4527 *+/- 530* BC[56]	Early to Late Mesolithic

[55] Lab number: Wk-11773
[56] Thermoluminescence dates

Site or spot find		Radiocarbon dated material	C14/Thurmoluminescence dates	Chronology
Kingsmead Quarry		Hazelnut shell	3967 to 3777 cal BC	Early Neolithic
ICSG G2007	Grave 19006	25-35 year-old female	3345 to 3034 cal BC	Middle to Late Neolithic
	Grave 19123	15-20-year old male	3336 to 2931 cal BC	Middle to Late Neolithic
	Grave 19013	30-45 year-old	3332 to 2925 cal BC	Middle to Late Neolithic
	Grave 19010	5-8 year-old	3090 to 2883 cal BC	Late Neolithic
ICSG Area E		25+ year-old	3329 to 2904 cal BC	Middle to Late Neolithic
ICSG G2008		8-14 year-old	3270 to 2960 cal BC	Middle to Late Neolithic
		13-16 year-old	3100 to 2940 cal BC	Middle to Late Neolithic
Manor Farm, Horton		Birch bark bowl 1 (B1)	3336 to 2893 cal BC	Middle to Late Neolithic
		B2	3349 to 2627 cal BC	Middle to Late Neolithic
		B3	3599 to 3029 cal BC	Early to Middle Neolithic
		Carbonised residue from Fengate bowl	3496 to 2928 cal BC	Middle to Late Neolithic
		Antler	2876 to 2491 cal BC	Late Neolithic

A more precise level of dating has been attempted using Bayesian modelling (e.g. Whittle and Bayliss; 2007, Whittle *et al*; 2011). This methodology has been developed to address '*rather intractable material culture divisions on the one hand and available radiocarbon dates on the other*' (Whittle and Bayliss; 2007: 22). Basically, it is a probability formula for radiocarbon dates, based on Bayes' theorem, which also includes contextual data about the archaeology (*figure 3.12*). The aim is to produce chronologies for generational time, usually taken to mean *c*25 years or so. This formula has been used to model more precise dates for construction of Early Neolithic earthworks particularly; long barrows and long cairns (e.g. Whittle and Bayliss; 2007), and causewayed enclosures in southern Britain and Ireland (Whittle *et al*; 2011). Long barrows have been associated with some of the earliest large-scale landscape modifications (*c*38th century cal BC), features which were often built over earlier burials, at Notgrove, for example (Clifford; 1937, Smith and Brickley; 2006), while causewayed enclosures generally date to slightly later around the *c*37th century cal BC. In relation to the study data, this methodology was used to attempt precise dates of construction and use for the Yeoveney Lodge causewayed enclosure (*see* chapter 5 for details and chapter 6 for discussion of problems).

3.5 Artefact densities and sites

What constitutes a site varies over time and differs according to chronology. For example, Neolithic sites are generally identified through construction (monumental and pit features, *see chapter 1*). On the other hand, Mesolithic sites tend to be recognised through geological location, density of lithics or type of activity. This can miss traces of other settlement activities, however, and tasks of different scales away from the main habitation. Some of these actions will have happened 'off-site', and spot finds or smaller density scatters represent events which have occurred with less frequency (sometimes a one-off action), away from the main occupation; '*few human activities are totally confined to the settlement and equally few occur solely away from the settlement*' (Foley; 1981: 164). The size of an excavation can also impact on site identification, but it is not simply a case of large excavation area equals large assemblage. The size, type and density of artefacts recovered will be dependent on particular methodologies. For example concentrations of microdebitage may not be picked up if environmental sieving and sampling is not carried out.

In order to address preconceptions of settlement, each entry was given a classification of density, to include all Mesolithic and Neolithic artefacts, clustered or single finds. Entries were sorted by single item artefacts, assemblages of less than ten artefacts (<10), less than a hundred artefacts (<100), over a hundred (>100), or over a thousand artefacts (>1,000). Large site entries consisted of mixed assemblages (pottery, flintwork and animal bone), distributed across various feature fills, single horizons and surface scatters.

Density reflects various scales of activity; the size of a group, for instance, the intensity of sustained specific actions, the frequency and/or duration of occupation, or the nature of depositional context. Processual approaches, however, have used artefactual density or clusters to develop models of 'hunter-gatherer' group sizes and resource strategies over seasons (e.g. Binford; 1982, Mikkelsen; 1978). For example, concepts of band society (e.g. Steward; 1936, Williams and Wobst; 1978), defined hunter-gatherers as socially cohesive groups operating with *c*25-100 members (Birdsell; 1968, Mikkelsen; 1978). These bands or 'hordes' were often assumed to be based on patrilocal, exogamous structures, necessitating band level integration (e.g. Radcliffe-Brown; 1931, Steward; 1936, Mikkelsen; 1978). Bands dispersed into 'nuclear family' groups in some seasons, while also being part of a fairly consistent agglomerated band at most times (Binford; 1982). In the ecological framework of the time, this was posited as a maximal subsistence strategy; '*social flexibility allows for maximum exploitation of the preferred effective resources*' (Mikkelsen; 1978: 82). Within these agglomerated or nucleated bands, smaller task groups broke off for particular activities (e.g. hunting camps), which would be represented by task-specific assemblages (*ibid.*). Task groups consisted '*of six to eight males*' (Mikkelsen; 1978), and might exploit around 10k radius in a day on foot, or further with boats, without leaving the base camp where the larger group resided (Lee; 1968 and *see* Mikkelsen; *1978: 92*).

This model has now been adapted to incorporate matrilineal bands, as well as lineal combinations and more flexible social compositions (e.g. Kelly; 2013). However, band size, units of people, or households, with permutations of ‘working groups’ are still being debated, and are difficult to measure. Spikins, for example, has argued that each river basin constituted a specific territory for hunter-gatherers, and that each basin was used seasonally by a group of around 350 Mesolithic people (1996). However, this has now been contested. These groups have been modelled quantifiably, on data which doesn’t account for the extent of terrestrial mobility available to Early Mesolithic populations (Preston and Kador; 2018). Estimations of group size are now acknowledged to be too small for the landscape pre-sea level rise (*ibid.*).

Apart from group size, other aspects of artefact density are related to the intensity and scope of a task. For example, some studies into Mesolithic settlement and mobility have revisited models of transhumance (e.g. Preston; 2013). In this approach, populations of mobile Mesolithic people moved as a group from one base camp to another (‘residential mobility’), while small task groups moved from their base camp to activity camps (‘logistical mobility’) (Preston and Kador; 2018). However, the archaeological record can sometimes be difficult to interpret as multiple-tasks (base camps), or task specific over time, as clusters of material can be made up of numerous and repetitive smaller scale events. For instance, recent analysis at Star Carr equates roughly similar quantities of scrapers, burin and microliths with a ‘balanced’ assemblage, but acknowledges this as a meaningless distinction for a site which was intermittently inhabited for around 800 years (Conneller *et al*; 2018: 496). A ‘balanced’ assemblage could actually represent a palimpsest of activities over short or long temporal spans, and may be representative of specific tasks at particular times rather than a balance of activities (Conneller *et al*; 2018). The nature of tool production and maintenance also means that some events will produce more debitage than others.

3.6 Artefact types and tasks

The next aspect of the analysis was to identify the sorts of tasks particular artefacts might represent. Entries were all given an artefact type or types, which were sorted into flintwork, pottery and animal bone. Mesolithic artefacts consisted primarily of worked flint, with some animal bone and burnt material. Neolithic artefacts also included pottery and worked stone objects. Flintwork was additionally separated into primary knapping material (e.g. cores and flakes), tool making material (blades, microburin etc.) and tools (e.g. scrapers or axes). The rationale for this was that working implements from raw flint have left distinctive waste products, including pieces specific to the making of certain tools, and can be identified as stages of knapping in a *chaîne opératoire*.

In the initial stages of this flintwork reduction process, flint nodules were collected from chalk outcrops, river and beach pebbles or glacial tills, for example, and flakes were removed from the core nodule, usually with a hard hammer (stone). These tasks are often represented in the archaeological record, by concentrations of primary flakes, with the dorsal surface partly or completely covered in cortex (flint nodule 'skin'), where they were initially flaked off the core (Butler; 2005). Each stage of the knapping sequence involved further decortication. Secondary flakes have some cortex, and tertiary flakes have none, as by this stage the core had all cortex removed (*ibid.*). From signatures of debitage, with for example, high concentrations of primary and secondary flakes, it is possible to distinguish locations of flint procurement and primary knapping areas, which can sometimes represent actions of a task-group away from the main occupation (e.g. Conneller *et al*; 2018).

Tool making areas also have large quantities of knapping waste, and some tool making signatures are particularly visible. Microlith production, for example, had a very specific flint signature which is recognisable through microburin and crested pieces in the assemblage (Butler; 2005). After all the cortex was removed from the core, blades and bladelets would be carefully removed, and sometimes removal of the first blade or bladelet was assisted by a technique which also produced crested blades (Butler; 2005: 84). Blades and bladelets would then be further broken down into smaller pieces, eventually producing a microlith and a microlithic waste piece (microburin). This process was often carried out using a soft hammer (e.g. a piece of bone) so as not to damage the blanks. However, microburins were not always produced (Butler, 2005: 89), and experimental work on the production of microliths suggests that around 20% of pieces did not generate microburin (Finlay; 2003: 174, 1997: 26). This means that production of microlithic tools may sometimes be missed from artefactual signatures.

Knapping waste, however, is not necessarily only a reflection of toolmaking; blades and flakes do not always represent debitage. At Star Carr, for example, microwear analysis identified multifunctional items including blades and flakes, that were used for scraping, cutting, piercing, peeling and boring (Conneller *et al*, 2018: 526). Absences as well as concentrations of flintwork also reflect tasks. For example, where people have primarily been engaged in food preparation there is generally an absence of knapping debris, while cutting and scraping implements may be more likely. A higher tool ratio at some sites, without knapping debris, can mean that tools were brought to the site from other places (Mikkelsen; 1978: 95). Where people were using tools rather than making them, there are likely to be edge-damaged and utilised tools in the assemblage, with evidence of use-wear on the flintwork.

As these examples suggest, the relationship between artefact type and tasks are a lot more nuanced than a simple functional interpretation. Burins, for example, were generally considered to be engraving tools (also referred to as gravers), used like a chisel, for wood and bone working[57]. However, at Star Carr, microwear analysis showed that although they were used for grooving and whittling wood, bone and antler, they were not only used as chisels (Conneller *et al*; 2018). For example, traces of other material including fish, plants, unnamed minerals and soft material, were also identified through microwear analysis (*ibid. p.517, and figure 35.15*). And, while scrapers have

[57] See https://youtu.be/NkXIKcni2Ww

often been associated with the process of tanning, they were also used for bone and antler work (Grace; 1992). Another example is from Star Carr, where microwear analysis identified a scraper which was used on bone and hide, but also on plant fibres (Conneller *et al*; 2018). Awls and piercers (pointed tools) are often found alongside scrapers, and could be used for making holes in animal skins (which could then be stitched together for shelter or clothing). Along with borers, however, they could be used to separate plant fibres for ropemaking, or hafted and as used as drill bits.

What artefacts were used for depends on many factors, one of which involves the nature of the landscape at any particular time. For example, the Mesolithic reedmarsh environment at Marsh Benham is also associated with large quantities of microdenticulates which may have been used on plant fibers, probably including reeds and rushes (Conneller *et al*; 2018). Reeds could be processed for fiber to be used as cord or rope for hafting tools, or they could be dried and woven into basketwork, matting etc. Denticulates were similar saw-type tools, but were usually made out of larger blades or flakes, with one lateral edge worked to produce sharp barbs or denticulations (Butler; 2005). These could be used for cutting and processing reeds and other plants, as well as for wood or hideworking. Denticulates were particularly common in Southwest Welsh coastal locations in the Late Mesolithic (Butler, 2005: 110), and may be associated with fishing as well.

Aspects of the artefact itself might influence the tasks a person engaged in (*see chapter 1*). For example, we have seen how the clay fabric and processes in pottery making structured the development of a particular style of funerary vessel in Iron Age Italy (Jeffra *et al*; 2020). Relationships across crafting may also have meant that one task (e.g. basket weaving) led to another (hafting), or that one regularly performed task (chopping timber) excluded another (detailed flintwork). Heavy manual tasks could result in hard callouses, and someone performing these tasks may not be the same person who made delicate microliths or small, finely knapped items of flintwork. Recent years have also seen an increased focus on the role of children, particularly in Mesolithic flintknapping and procurement (e.g. Sorensen and Sternke; 2009, Finlay; 2015). At Lough Boora, in

Ireland, for example, flintknapping signatures around hearth material suggested a mixture of ages and skill levels (Finlay; 2015). At Lake Flixton there is a suggestion that unusable flint nodules may have come from beach pebbles some 10-20km distant, or from glacial till, and were collected by children or those less experienced in procurement (Conneller *et al*, 2018: 497). Early Neolithic flint assemblages reflect similar phenomena; at Kilverstone, for example, hinge fractures on a high proportion of core nodules suggested the work of novice flintknappers (Garrow *et al*; 2006, Inizan *et al*; 1999).

Burnt flint also represents a spectrum of tasks which could involve all genders, ages and skill levels. For example, it may have been heated to make it easier to make tools to work with, or it may have been left in the hearth overnight and used to heat liquid the next morning, similar to 'potboilers' or hot stones. It was used as a filler when firing pottery vessels, as calcined flint is more easily crushed and makes the pot less likely to explode on the heat (*see* Gibson, 2002: 38). Tasks associated with pottery, like flintwork, also involved a spectrum of skills and multiple authors. The raw material stage of the *chaîne opératoire*, for example, required people who knew where and how to source clay; or which materials made it more plastic and pliable. If the fabric was too coarse, i.e. it contained too many pebbles, they could be removed, and if it was too fine they could be added as a temper[58] to open the clay and make it better suited for firing. Collecting river or beach pebbles (or shells[59]) for clay temper might well be performed by Neolithic contemporaries of the Lake Flixton Mesolithic children (*see above*).

There were people who shaped the clay, and maybe others who decorated it. The size or form of a vessel[60], or the type of temper used, can also indicate the sort of task a vessel might have been used for (e.g. as a cooking pot, or for dry storage or liquids). Early pottery vessels[61] could be pressed out from a single piece of clay or built up from

[58] Flint inclusions that occur naturally in clay tend to be more rounded, adding more angular pieces as temper has the effect of getting better plasticity

[59] Temper used in Grooved Ware predominantly consisted of crushed shells or pottery (grog), or a combination of the two (Woodward & Hill, 2002: 107)

[60] For example, a rim Estimated Vessel Equivalent (EVE) estimates how much vessel is present as a percentage of the known diameter of the vessel.

[61] Plain and Decorated Bowl

coils or straps, some were carinated, others globular, and were all shaped into round bases to sit in the hearth. Peterborough Ware vessels included bowls, jars, cups and dishes (Barclay; 2002: 90), and were generally thick rimmed, round based bowls[62] (*but see Gibson* re: flattening of Mortlake bases; 2010: 238). Decorations could be pressed out in the 'leather hard' stage before firing, and there are examples of where this was done by children (e.g. fingerprint in Thames Mortlake vessel, *see chapter 8*). Grooved Ware vessels were generally large and richly decorated using whipped and twisted cord to produce incised patterns, vertical plain cordons, external incisions or grooving. These pots had thick stable bases, so they could be placed flat, and used to store food.

Like flintworking, the making of pottery (also use and discard), is comparable to the multi-authorship of Waiwai grater boards in Guiana and Brazil (*see 3.2*). Tasks went back and forth between people; raw materials were collected and processed, wood, flint, clay, leathers, fabrics and plants were worked into objects, and objects were decorated, enhanced or connected as composite pieces. Firing pottery would require someone to stay in one place for a time; a task which could be performed by most people, including those with restricted mobility for instance, or older adults.

Acts of discard and burial were also multi-authored tasks (e.g. sweeping a floor, digging a pit, collecting broken or burnt items and discarding them), and broken items were reused (e.g. grog as temper for pottery). At Kilverstone, for example, potsherds and flint flakes were found at different angles in some pits, along with tiny chips of worked flint in the assemblage (Garrow *et al*; 2005, Garrow *et al*; 2006, Garrow; 2006). Other pits contained accumulated spoil from digging. People curated their rubbish; pottery and flintwork were provisionally kept in a pile somewhere around their living space (possibly used as a pit lining for storing food etc.) before being tipped into pits which had been dug out specifically for the purpose of taking their refuse (Pollard; 2002: 24, Garrow *et al*; 2005, 2006). This is comparable with the Mesolithic burial at Hermitage in Ireland. Pit A contained burnt human bone and stones (as well as an axe and a wooden post),

[62] Fengate bases were flat, but they were also narrow and unstable

with no evidence of burning around the edges of the pit itself (Collins; 2009, Little *et al*; 2017). A collection of cremated, burnt and non-burnt material had been curated and later deposited together in a pit dug out for the purpose (*ibid*).

3.7 Distribution of tasks

Spatial distribution of artefacts was plotted using GIS software (ArcGIS). Ordnance Survey NGR (National Grid Reference) coordinates are supplied for each LHER entry, while other data sources (e.g. grey literature reports) give a centred NGR for phases of work across sites. Archaeology Data Service (ADS online) provided access to point data for individual finds, features and 'entities' across the Terminal 5 excavations (Framework Archaeology; 2010). Entities included groups of features, or artefact scatters, for example. NGR's were converted to Eastings and Northings using an online resource (https://gridreferencefinder.com/), although it is also possible to do this conversion manually. At this stage of analysis all entries in the Excel database were given a column for chronology, artefact type, artefact density and geographical coordinates. The database was saved as a csv file (comma delimited) and imported as a feature class shapefile in ArcMap (version 10.7.1), the primary mapping software of ArcGIS (ESRI; https://www.esri.com/en-us/arcgis/about-arcgis/overview). ArcMap was used to visualise the data, and Ordnance Survey Open Basemaps were added for tracking and orientation (https://www.esriuk.com/en-gb/map-gallery/open-basemaps). Digital elevation was added using Shuttle Radar Topography Mission (SRTM) 1 Arc-Second Global (United States Geological Survey; https://doi.org/10.5066/F7PR7TFT). Watersheds, superficial and bedrock geology were also added for integration of geomorphological data and landscape features with the archaeological record (British Geological Survey). Basic analysis was performed in ArcMap; layers were switched on and off, records were filtered and sorted by chronological period, density etc. Distribution was plotted for single artefacts, while both distribution and density were plotted for assemblages.

Although distribution included horizontal location (spatial) and vertical contexts of deposition (units of time), the temporal element was not plotted through GIS. Where detail of stratigraphy, fills or layers were given in data sources, it was possible to discuss temporal distribution. How thick was the artefactual layer, for example, or across how many fills? A single event with a short durational span might be concentrated in a single fill, or be represented as a surface spot find. For example, a concentration of fresh flintwork composed of flakes and blades might be characteristic of a single *in-situ* knapping event, while fresh, unabraded sherds may be from vessels which were placed in the ground prior to breakage (*see chapter 1*). Heavily abraded sherds, on the other hand, from a large assemblage of different vessels, are more likely to reflect several events of longer duration, especially if combined with other artefacts. A cluster of fragmented, weathered or burnt pottery, along with abraded flintwork, burnt flint or charcoal, for instance, can still be concentrated in a single fill, but be representative of secondary deposition from accumulated midden material, built up over time, where broken vessels were collected and later swept into pits.

Spatial and temporal elements, however, can be connected through a *chaîne opératoire*, which links processes and places through tasks which are carried out in the day-to-day (*see* Conneller *et al*; 2018: 159, Conneller; 2000, 2003, McFadyen; 2007, 2008, 2010). At Star Carr, for example, refitting identified non-durational expedient tasks where flint nodules were flaked and discarded in the same place, the work of one or more people at a single time (Conneller *et al*; 2018). Scrapers and awls were generally made, used and discarded in the same place, although some scrapers have longer durational signatures, and were taken to a structure to be stored, resharpened and repaired (*ibid. p.533*). Axe-related material also represent extended temporal and spatial relationships. 'Axe workshops', for example, were spatially distinct; identified through clusters of material associated with off-site manufacture (roughouts or preforms, for instance) (Conneller *et al*; 2018: 510-511). These workshops were located away from Star Carr, but axes and adzes were used on the site (particularly in association with structures). Repair work and resharpening material were concentrated at Star Carr, where axes were probably used in the construction of wooden platforms and other structures (Conneller *et al*; 2018: 494). Aspects of planned rather than ad-hoc sharpening of axes were also noted through microwear analysis, which suggested some tools were immediately resharpened after use (*see* Conneller *et al*; 2018: 534).

Items of longer circulation and extended geographies also include Neolithic polished axes, for example (*figure 3.13 and 3.14*). Petrography has traced the raw material of these artefacts, to quarries in Cumbria, Wales, Cornwall, and Jadeite axes to the Italian Alps (Williams, Kenney and Edmonds; 2011, Sheridan; 2011, *although see* Briggs; 2011). While axes were manufactured from these quarry locations, they have been used and discarded all over Britain, including the study area.

3.8 Linking categories through tasks

The artefacts of this study, made from stone, bone and pottery, are the remains of both Mesolithic and Neolithic communities, the bare bones of people's lives, which can be fleshed out through speculation grounded in artefactual detail. What were the rhythms, interactions and agencies involved in crafting a microlith or a leaf arrowhead (*figure 3.15*), for example, or in the composition of dwellings; gathering timber, carpentry, skinning, weaving, thatching etc.. How might this translate into the archaeological material if you were a Neolithic woman, for example, and where might we see that work, or the work of children or older adults?

I have hoped to show some of the difficulties in defining standardised categories for Mesolithic and Neolithic archaeology in Britain. This study recognises that standardisation severely restricts which material is suitable for analysis, and has limited applicability for the inconsistent nature of archaeological records. A task-based methodology, with foundations in craft and behavioural theory (*see chapter 1*), works with the diversity of material, fluidity of chronology, and can be used to bridge divides between Mesolithic and Neolithic, specialised and domestic, or gender assigned tasks.

Elliott and Griffiths have recently pointed out the difficulty in integrating data from methodologically and data diverse sources, reflecting the focus in research frameworks for inclusion of all evidence sources '*including antiquarian collections in museums, and chance and casual finds*' (2018: 347). Environmental data usually comes with further methods of analysis and modelling. For example, Bates and Whittaker discussed the problems of applying Devoy stratigraphic modelling to interpret sequences from developer-led sites in the Lower Thames floodplain (2004). The patterning from sediments suggested a range of environments throughout the Mesolithic and Neolithic, but reconstruction of the environment at landscape scale was hard to integrate with the scale of artefactual material based on site data only; '*the scale and focus of palaeoenvironmental reconstruction may require refinement for archaeological purposes*' (Bates and Whittaker; 2004: 59).

However, a problem with some methodologies is that they only apply to specific sites. The majority of archaeology will not fit into the criteria that is required for standardising material; radiocarbon dates, for example, a beginning and an end point to the phenomena, or secure stratigraphic information etc. (*see 3.1*). Interpretations end up being based on a few sites, rather than bringing disparate records together, seemingly in contradiction to the aims of most research strategies, and even of specific methodologies (e.g. Bayesian modelling) to '*unite monuments and special constructions with settlements, occupations and the flow of daily life*' (Whittle and Bayliss; 2007: 24).

As noted by Elliott, the advantage of task-based approaches, Cross-Craft Interaction (CCI) for example (*see* Brysbaert; 2014, 2017), comes from inclusivity; being able to include diverse material culture and social contexts which span Mesolithic and Neolithic archaeology (2019). For example, scatter sites around Lake Flixton indicated places with 'specialised' working areas (e.g. scraper or microlith production), and hearths and primary knapping areas were identified through flintwork, faunal and burnt material. Structures and living spaces were also identified at Star Carr, and maintenance of these 'domestic' spaces was inferred through middening and dwellings being kept free of material. However, at Star Carr an area of 'craft focused' tasks (bone and antler work, and possible bead production), was also identified through flintwork which was clustered in and around the western structure. So trying to categorise this as a specifically 'domestic' or 'craft focused' area is difficult. Plant processing was also carried out, and so was butchery, both inside the structure and surrounding it (*figure 3.17*). The boundaries of these areas merged and included 'domestic' and 'specialised' contexts over time, necessitating a need to reframe and cross categorisations. Recognising the relationality of daily tasks is also important for addressing the assumption that 'acculturation' was uni-directional. For example, rod microliths were being used into the 38th century cal BC, and were found to overlap with use of Neolithic material culture in some areas across Britain (Griffiths; 2014). As pointed out by Griffiths, '*in Yorkshire and Humberside, populations exploited Mesolithic and Neolithic practices and material culture at the same time – in the same year, on the same day*' (2014: 236).

I would suggest that a task-based methodology has equal applicability whether it is used to interpret site-specific data from detailed excavations, or for bringing together single item spot finds and collections across a landscape, and can draw together across all kinds of evidence from the material remains of dispersed actions. For example, artefact densities which focus on clusters of material; axe-sharpening flakes, roughouts and debitage from 'axe workshops' at Star Carr, for example (Conneller *et al*; 2018), were connected to 'off-site' events, including wood collection. Categories of site are also linked; butchery sites, tanneries, home bases, and monuments etc. are connected through tasks which merge and thread through the landscape and through lived histories. This is significant for interpreting practices related in time and space rather than for categorising tasks into almost binary units of 'domestic' activity or 'specialised industry'. Pitts (1979), for example, while identifying non-hunting tasks at Star Carr, made the case for a specialised hideworking industry on the side of Lake Flixton with 'domestic settlement' nearby[63]. Domestic life is often associated with middens, and settlement was inferred from the apparent dumping of waste products, including animal

[63] 'Domestic rubbish'

bone, into the lake. Other, task-specific types of flintworking are often categorised as separate and specialist. While challenging the idea of a hunting camp at Thatcham, Healy *et al* (1992) separates the site into 'specialist' and 'complex' areas of bone and antler work (southern contexts), and the less challenging tasks of scraping and cutting soft materials (implicitly gender-separated tasks). This distinction between working and domestic life continues to be problematic, particularly in terms of gender separation and stereotypical ideas of women and children engaged in home-based tasks rather than 'specialised' labour.

Chapter 4: Regional environment and archaeology

4.1 The river valley geology and topography

The River Colne emerges from a spring in the North Mymms/St. Albans area of Hertfordshire, where the main channel flows south, draining into the Thames at Staines in Surrey (*see figures 3.3, 3.4 and 4.1*). At the start of the Holocene (*see* Walker *et al*; 2019)[64], the Thames was a non-tidal river, but with more or less its present course (Haughey; 2000). The first suggestion of a tidal head was around Westminster in the first century AD (Milne, Bates and Webber; 1997, Haughey; 2000, Milne; 2015). Several Mesolithic artefacts, including a large adze-like tool (Lacaille; 1961), were found in the Thames at Bermondsey, Battersea, Barn Elms and Brentford, and were coated in a calcareous substance also known as 'Thames race' (*see* Field; 1989). This coating of probable tufa (Bates; pers comm.), is indicative of a non-tidal, shallow, broad and slow moving river at the time these items were lost or discarded (Haughey; 2000: 225).

Early Holocene geological events meant the bed of the North Sea was raised and sea-level was lower than it is today (*see* Bates and Whittaker, 2004). Britain was part of continental Europe and the area now known as Doggerland was a terrestrial landscape of river valleys, including the Thames, which drained into the North Sea after joining the Rhine in the Doggerland area (Gaffney *et al*; 2009, Haughey; 2000) (*figure 4.2*).

The river Colne crosses a much earlier Thames river valley, pushed south from the Vale of St. Albans around 450,000 years ago (Jones and Keen; 1993). The valley cuts through cretaceous and tertiary deposits; in the Hampermill area, for example, the bedrock is Cretaceous Upper Chalk, while at Rickmansworth, the river starts to head south, cutting Woolwich and Reading beds in the middle and lower valley (now known as the Lambeth Group). This lower Colne region is where the river meets the geology of the London Basin, including superficial deposits of London Clay, which dip south-easterly towards a

[64] Earliest Mesolithic occupation of Britain occurs 2 or 3 centuries after the start of the Holocene epoch (*c*9700 cal BC) (Conneller *et al*; 2016)

lowest point underneath the river Thames (*figure 4.3*). South of Uxbridge the valley reaches a sequence of Pleistocene river terraces, formed during cold periods between 400,000 and 15,000 years ago (Gibbard; 1985). In the study area these Thames terraces consist of the Kempton Park, Taplow, Lynch Hill, Boyn Hill and Black Park Gravels (*figure 4.4*).

While the middle to lower valley reflects a gradually flattening topography (*c*40m OD just north of Uxbridge, reaching *c*15m OD at Staines), in the upper valley the river carves a channel through the Chilterns foothills, with some of the highest places of the study dataset (e.g. *c*73m OD at Sandy Lodge Golf Course). Two main tributaries (the Gade and the Chess), cut a path through the chalk hills from the north-west, while further south the rivers Misbourne and Alderbourne also feed in from the Chilterns. In the early Holocene, freshwater springs and small streams emerged from the chalk bedrock in this area. For example, early Holocene sediments from the valley side trench at the Grove contained cemented tufa and silts[65] (*figure 4.5: palaeoenvironmental trench 3*). Three sets of pool and barrage systems were identified in a declining elevation down the trench indicating a possible spring source (*appendix ii*). All three environmental trenches exhibited similar sedimentary stratigraphy for the early Holocene, suggesting this sequence was fairly widespread (Bates, 2001; unpublished). Both the Chess and Misbourne rivers are also fed by springs arising in dip slope valleys (Hunn; 2001). The upper valley is deep enough in places to expose the bedrock, particularly along some of the older tributaries (dry valleys by the start of the Mesolithic), and the Chess emerges at the junction of several of these (Hunn; 2001).

The river valley landscape of this study was also impacted by a final Pleistocene event, which deposited gravels below the modern floodplain. In the lower to middle valley these consisted of mainly sand and flint, while in the upper to middle valley they comprised chalk gravels. By the start of the Holocene, however, gravel deposition was replaced by finer sediments from overbank flooding (Bates; pers comm, Fairbairn;

[65] Appendix ii: sediments 3.2 and 3.3

2001). These consisted of belts of alluvium, which were narrower in the chalk valleys[66], and formed the most recent river floodplain (Hunn; 2001).

These fluvial overbank environments included older river channels which became cut off, forming oxbow lakes and marshes (Fairbairn; 2001). The word 'moor' derives from the Indo-European 'mori', which also refers to marsh and mere, and was once a term used to describe such bodies of water (Hoad; 1993). Places where lakes, meres and marshes formed were reflected in site names across the dataset, as the word 'moor' was associated with multiple Mesolithic assemblages[67]. Early Holocene streams were multi-branching and rarely single channel systems (Brown *et al*; 2018), and organic peat deposits and fluvial sediments represent former courses at some sites across the dataset. For example, palaeochannels included Uxbridge Business Park[68] (Cotswold Archaeology; 2015) and Packet Boat Lane (Heathcote; 1990) in the middle Colne, and at Mayfield Farm[69] (Framework Archaeology; 1998), Staines Moor (Keith-Lucas; 2000), Cambridge Kennels (Oxford Archaeological Unit; 1994), and Bedfont Court (Framework Archaeology; 2003) in the lower valley. These sites reflect:

'*areas of wetland developing around cut-off channels of the braided river, surrounded by fen vegetation with drier areas colonised by pine, birch, willow and aspen*' (Lewis and Rackham; 2011). Most of the Colne Valley was a wetland environment by the middle Holocene, with islands of gravel emerging from marsh, mere or fen (Lacaille; 1963). However, by the end of the Mesolithic, smaller channels of the Colne were starting to silt over, and by the Late Neolithic (*c*3,000 cal BC), river floodplains across Britain were relatively dry with only a single channel (Barclay *et al*; 2003).

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[66] This was known as the Gade complex (Avery; 1964), now the Frome Association (Hodge, Burton, Corbett, Evans and Seale; 1984

[67] Moor Park, Harefield Moor (Dewe's Farm and Pit), Stanwell Moor etc.

[68] Former Sanderson's Fabric Factory

[69] Pre-Holocene channel

4.2 Climate and landcover

A Pre-Boreal climate characterised the early Holocene[70] epoch across north-western Europe (*see* Walker *et al*; 2019 *for formal classifications of Holocene geological series*), the point at which the first Mesolithic groups or communities left visible traces of their lives in the study area. From *c*11500- *c*10500/10,200 cal BP (9550-8550/8250 cal BC) warm summers and cold winters corresponded with the development of woodland dominated by pine (*Pinus*) and birch (*betula*), with willow (*salix*) and sedge (*cyperaceae*) in areas of floodplain and wetland (Gibbard and Hall; 1982, Simmonds *et al*; 2021).

The Boreal is considered to have been a time of deciduous woodland expansion and by *c*8900 cal BP (6950 cal BC) landcover had become more varied and included oak (*quercus*), hazel (*corylus*) and elm (*ulmus*), with more areas of wetland and more extensive floodplain. By the Late Boreal hazel dominates pollen sequences and wetter places such as river floodplains had started to develop *alnus* (alder). Early Atlantic climatic changes were responsible for the formation of peat and expansion of wetland, particularly noticeable across areas of the middle Colne valley, where its development sealed many Early Mesolithic artefactual scatters (e.g. 3WW, Sanderson's).

At the beginning of the middle Holocene (Early to Late Atlantic climatic phase; *c*7000 – *c*4300 cal BC), landscapes became unstable. Sea level rise into the Thames estuary caused river channels to back up, and floodplain surfaces saw widespread flooding and rapid minerogenic sedimentation (Bates; pers comm). Although the effects of sea level changes were intermittent, with periods of marine regression and lower sea levels, by around 7,000 years ago these events had brought about the submergence of the Doggerland basin and Britain was no longer part of mainland Europe. Rising sea levels meant that tributaries of the Thames (including the Colne) started to flow more slowly, redeveloping some of their older channels, and temporary land surfaces would come and go (Bates and Whittaker; 2004). Sediments from the Runnymede area, for example, show that during the 7th millennium BC the Colne changed course and no longer

[70] Also referred to as Postglacial (from Forbes; 1846)

emptied into the Staines area which had formerly been a marshy basin (Needham; 1992, 2000, Scaife; 2000, Keith-Lucas; 2000). The draining of this basin was probably responsible for the cessation of peats along the Colne Valley, including the Gade area and the upper valley (The Grove), where peat deposition had also stopped by *c*6,000BC (Le Quesne *et al*; 2001, Bates; 2001). Dry landcover by the end of the Atlantic period was predominantly elm and lime (*tilia*), with some oak and hazel, and little in the way of deforestation, while the floodplain was typified by extensive alder carr (Branch and Green; 2004, Scaife; 2000).

The pace of landscape change would have been variable; for example between *c*4700 – *c*4000 (Final Mesolithic), 75% of the former Lower Thames floodplain became wetlands on the north side of the river in the area around Barking Creek (Bates and Whittaker, 2004: 60). At the long-term scale of change the environment changed considerably throughout the Atlantic climatic stage, but on seasonal scales, even now the study area witnesses changes in the shorter-term; the source of the Colne river being periodically dry and varying by as much as 24 kilometres depending on climatic conditions (Tomkins; 1966). In terms of how this affected occupation, human responses to environmental factors such as flooding tend to focus on transhumance and seasonality (*see* Bates and Whittaker; 2004: 60). However, there are many ethnographic and historical examples of living in watery places, as well as archaeological material from Neolithic and Bronze Age pile dwellings across Britain and Europe (e.g. Knight *et al*; 2019, Billamboz; 2014, Hafner; 2008). Climatically, the Earliest Neolithic shared the same climatic optimum as the Final Mesolithic, seasonal variability continued while longer-term environmental changes happened gradually over the course of the Neolithic[71].

[71] Subboreal climatic period

4.3 Early to Late Mesolithic[72] seasonality and settlement: placing specialised tasks in the home

Groups of the earliest Mesolithic people have been described as pioneers (e.g. Binford; 1978, Jacobi; 1978), who travelled into northern Britain along tributaries of the Rhine/Thames in the Doggerland area (e.g. Conneller *et al*; 2016, 2018). On the other hand, groups who moved into southern areas of Britain (including the study area) probably used the Channel river (La Manche) to travel from the continent (Conneller *et al*; 2018). Although radiocarbon dated material suggests these occupations were temporally and regionally distinct, the south of England has limited radiometric dating with microlithic associations (Conneller *et al*; 2016). So although the first post-glacial groups made seasonal settlements into pockets of northern England, it is difficult to determine whether contemporary, or even earlier occupations were also occurring in the south (*ibid.*). In northern Britain settlement was particularly concentrated around the Vale of Pickering, including the shore and islands of Lake Flixton, while in southern England early groups were mainly concentrated on the Thames and its tributaries; the Colne, Kennet and Lea (*ibid.*). The Kennet Valley includes mainly Early Mesolithic sites at Thatcham, Wawcott/Marsh Benham, Faraday Road, for example, while both Early and Late Mesolithic scatters are found in the Middle Thames at Eton Rowing Lake (Allen *et al*; 2013). In the upper Lea Valley, four Early Mesolithic sites were identified at Broxbourne (Warren *et al*; 1934, Switsur and Jacobi; 1979), and more recently Early to Late Mesolithic scatters in the lower valley at Tottenham Hale (Pre-Construct Archaeology; 2020).

Early Mesolithic material in southern England varies in typology. For instance, the earliest occupations in the Colne Valley are considered to date from a 'transitional' Star Carr/Deepcar material culture based on lithic typology (Lewis and Rackham; 2011). Thatcham site IIIB includes a Star Carr type assemblage and probably represents at least one occupation (Reynier; 2000). Other Thatcham sites, however, have Star

[72] Later Atlantic climatic period (7th and 6th millennia uncal)

Carr/Deepcar or Deepcar assemblages, and some of these occupations may date slightly later. Deepcar typologies are thought to reflect later groups with a slightly more extensive knowledge of the landscape and environment (Conneller *et al*; 2018).

The Kennet Valley sites had a similar environment to that of the study area; birch and pine dominated woodland, with willow, aspen and alder on the terrace edge and floodplain (Healy *et al*; 1992), and seasonal occupations were reflected in their faunal assemblages. For example, red deer and wild boar were the dominant species over all five Thatcham sites, but the ratio varied, reflecting several seasonal settlements. Faraday Road[73], however, had a faunal assemblage consisting predominantly of wild boar (87%) from a minimum of n=12 individuals (see Conneller *et al*; 2018; table 27.1). At Marsh Benham (Wawcott III site), on the other hand, aurochs were the dominant species (n=15 elements), with elk (n=8 elements), red deer (n=7 elements), and wild boar (n=6 elements). Settlement was probably short-term and seasonal at Faraday Road[74], during late summer and autumn, and may reflect a single occupation. On the other hand, there were multiple dwellings at Thatcham, some of which extended into the late winter[75]. If deer antler were collected after the males had shed, this would also reflect spring occupations (Clarke; 1976, Pitts; 1979).

Distinct signatures of occupation can also be discerned from flintwork at the Kennet Valley sites. For example, the assemblages from Thatcham sites I-V (Wymer; 1962), consisted of five flintwork scatters along the edge of the floodplain on the northern bank of the river (*see chapter 2*). Scatter III was an *in situ* assemblage from a shallow depression located between sites I and II, comprising n=13,080 pieces (Reynier; 2000: table 4.1). Flintwork was categorised according to patination (oxidation), spatial distribution and stratigraphy, and radiometric dates were produced for five contexts across the site (Reynier; 2000: figure 4.3 and 4.5, table 4.2). The patinated group appeared to form a distinct eastern cluster, which had mainly been deposited in the

[73] Also Greenham Dairy Farm
[74] Wild boar can be hunted in the late summer to early autumn
[75] Red deer in the assemblage suggests winter hunting, juveniles in January-February

earliest sedimentary layer (5, 4/5) (Reynier; 2000). The unpatinated group, on the other hand, were predominantly associated with layer 4 (*ibid*.). Results suggested that Thatcham site III was inhabited by at least two groups over temporally staggered occupations, probably with years, rather than months or days in between. The small patinated scatter included short obliquely backed microliths (average length of 23mm), consistent with Star Carr typology (*see* Reynier; 2000: 34, table 4.1 and figure 5.1). The larger unpatinated scatter, on the other hand, included similar microliths of a longer mean length (33mm), characteristic of Deepcar type (Reynier; 2000). Red deer bone with a possible perforation at site V[76] may also represent a contemporary, or in-between (winter) occupation (9258-8846 cal BC). This animal bone was deposited into a small pond at site V (Conneller and Overton; 2018: 296), suggesting the same kind of structured deposition found in the Vale of Pickering at School House Farm (*see* chapter 1, *also see* Finlay, 2000*a*: 73).

Seasonal settlement has also been identified in the Middle Thames Valley through flintwork task-signatures. At Eton Rowing Lake, for instance, Deepcar typology scatters on the floodplain gravel indicated areas of specific activity around the edge of the water (Conneller *et al*; 2018). Flintwork reflected seasonal tasks such as hideworking, a process which generally relies on warmer temperatures to produce plant enzyme reactions required for fermentation, and was therefore probably a summer activity (Pitts; 1979). Radiocarbon dates suggest these were the same groups, or contemporary with, those in the Kennet valley. At Eton Rowing Lake, for instance, charred stems of bulrush (9180-8750 cal BC) and aurochs bone (9120-8655 cal BC) were radiocarbon dated to contemporary timescales with Deepcar assemblages at Faraday Road. Eton Rowing Lake also witnessed temporally discrete events over the span of the Mesolithic, with scatters dating from Early Mesolithic occupations (Allen and Welsh; 1996), as well as Late Mesolithic (Allen *et al*; 2004, Lamdin-Whymark; 2008).

[76] Lowest context (layer 5)

Similarly, scatters at Broxbourne reflect more than a single event and provide evidence for repeated occupation over an extended timespan, in the Early Mesolithic. For example, bulked animal bone dated to 9659-8353 cal BC was associated with Star Carr typology in a scatter at site 104 (Rikof's pit) (Conneller *et al*; 2016, Conneller and Overton; 2018). The animal bone included aurochs and deer, and probably represented an extended seasonal occupation through late summer into early winter. At the same site most of the lithic assemblage demarcates the area of a possible (overwinter) structure (Conneller and Overton; 2018). Site 106, however, provided radiocarbon dates from waterlogged hazelnuts (in the same peat as a scatter containing obliquely blunted microliths) dated to several centuries later (9144-8291 cal BC), but may be contemporary with Eton Rowing Lake and Faraday Road. Later still were dates taken from waterlogged pine in association with a possible hearth at site 105 (8261-7486 cal BC) (Shotton and Williams; 1973, Conneller *et al*; 2016).

As discussed in chapter 1, settlement is often associated with structural features, but Mesolithic houses similar to Howick and Mount Sandel, for example, are rare in Britain, particularly in the SE region. However, Broxbourne site 104 suggests that evidence of shelters with lighter footprints are possible to discern through distribution of flintwork. For example, at the Seamer C site on Lake Flixton, a distinctly bounded scatter (H) may represent a potential structure (Conneller *et al*: 2018). This footprint left no postholes, and was only visible as a hard scatter edge, but the shelter may have been a light tent or equivalent (*ibid*.) (*see figure 4.6*). Other types of shelter include a possible structure identified at Wawcott I in the Kennet Valley (Froom; 1972). This consisted of a large pit with four postholes around it plus spoil including flint nodules around the edge (*ibid.*). Comparable hollows and pits at Wawcott III and IV may have been used similarly (Froom; 1965, 1976). Depending on the season and the length of stay different kinds of housing may have been used by Mesolithic groups (Mikkelsen; 1978). For example a few branches may have been used as a windbreak during summer months or for shorter occupations (*ibid.*).

These artefactual signatures reflect domestic-specialist[77] tasks at the scale of seasonal settlement for Early Mesolithic groups over several centuries. Raw material caches, on the other hand, are often isolated from other artefacts, and suggest repeated temporal events of a smaller scale, where caches were stored and returned to, possibly over the course of a single occupation. At Flixton School Field[78] (trench OI), for example, a cache of five cores and tested nodules may have been part of a larger collection[79], which also included lithic implements and animal bone, and had been returned to and used (Conneller & Overton; 2018). A separate and isolated cache of twelve large and poor quality till and beach flint were also stored (test pit PB), and further caches were located at Seamer D and AC8 at Star Carr (Conneller and Overton; 2018: 284).

By *c*8000 cal BC Mesolithic signatures become more widely distributed across Britain, particularly human burial (in caves across south-west England and Wales), e.g. Badger Hole, Greylake, Gough's Cave and Aveline's Hole in Somerset, Worm's Head and Mewslade Bay in Gower (Schulting; 2009, Cobb and Jones; 2018, Schulting *et al*; 2019). However, it is rarer to find human bone away from these limestone regions, and burial often gets separated from its domestic context (both spatially and conceptually, *see chapter 1*). Although some fragmented human bone came from a Mesolithic context at Thatcham site III, it was likely to have been waterborne and redeposited (Wymer; 1962). Later in the Mesolithic (from *c*7530 cal BC), burial included cremation as well as inhumation (e.g. Langford in Essex, *see* Gilmour and Loe; 2015), but again, there is little material in the proximity of the study dataset. On the whole there tends to be a less distinctly Late Mesolithic artefactual signature in the region. There are a couple of Late Mesolithic sites near Maidenhead at Cannon Hill and Green Lane (*ibid.*), while the Lower Lea Valley has a large concentration of potentially Late Mesolithic material (*see* Corcoran *et al*; 2011, Grant and Norcott; 2012). Like Eton Rowing Lake, West Heath in Hampstead

[77] Specialist tasks and knowledge are situated in, and non-divisible from a domestic context (see chapter 1)
[78] This site is adjacent to Flixton School House Farm (250m east of the site) where aurochs bones were deposited in a hollow (see chapter 1)
[79] The assemblage continued into the eastern section (Conneller & Overton; 2018)

also reflects predominantly Early Mesolithic activity, but signatures of later typology suggest multi-temporal use of the site (*see* Collins and Lorimer; 1989).

Later Mesolithic activity may be partly obscured by the appearance of Neolithic material in the artefactual record, as there are several assemblages typologically distinctive of both chronologies. Eton Rowing Lake is a good example of this. In the area adjacent to a palaeochannel, n=26 *in situ* scatters included mainly indistinguishable Late Mesolithic/Early Neolithic flintwork and large middens (area 6). Seven similar scatters were located in area 5 and area 3 of the site, with further concentrations of flintwork, and an antler mattock from tree-throw holes on the gravel terrace close to the floodplain (Allen; 1995, Lamdin-Whymark and Allen; 2004). Diagnostically Late Mesolithic material included n=23 geometric microliths, one of which was a scalene micro-triangle[80], and at least seven of the tree-throw holes were dated to the Late Mesolithic, as well as a further two nearby at Taplow Court (Lamdin-Whymark and Allen; 2004). The condition of most of the flint was fresh and non-abraded with no post-depositional disturbance, and suggests the possibility of contemporary Late Mesolithic and Early Neolithic material culture (*ibid.*, *see chapter 1*).

Elsewhere in Britain Late Mesolithic signatures may be more visible. For example, faunal material from five shell middens on the island of Oronsay, western Scotland, suggest seasonal occupations, with task-rhythms that also overlap Early Neolithic activity (Wicks, Pirie and Mithen; 2014). These signatures are comparable with examples from Scandinavia, where for instance, the faunal assemblage at Viste Cave in Norway offered options for all-seasons dwelling. Food included seal, puffin, otter, various seabirds, cod and ling, all of which could be found on this coastal environment at various times throughout the year (Mikkelsen; 1978: table 1). However, the faunal assemblage also included a large quantity of wild meat (e.g. wild boar, elk, deer, bear and marten), seasonally varied inhabitants of inland forest environments (*ibid.*). Shells and snails were also part of a kitchen midden, and bird eggs were eaten too (Mikkelsen; 1978).

[80] From scatter 3152

The site was placed for what Mikkelsen referred to as 'exploitation' of more than one set of ecological resources, i.e. coastal and woodland (*ibid.*). It had the potential and the artefactual signature of semi-permanent, longer occupations, where marine resources were made use of during the spring and summer (and a less intensive use of forest resources), with inland forests acting as the main taskscape of autumn and winter dwelling, when fish and shellfish were eaten less (*ibid.*). The material reflects seasonality and task-specificity, as well as domestic-specialist knowledge of resources such as when certain foods were available, where to find them and how to prepare and cook them etc.

4.4 Early to Late Neolithic domestic life: the temporality of occupation and construction

Similar lifeways persisted into the Early Neolithic, and pit sites, such as Kilverstone, suggest that dwelling continued to take the form of relatively impermanent, seasonal occupation (Garrow *et al*; 2006). Pit groups are not uncommon in Britain, with seasonal settlement fairly widespread, certain locations 'exploited' for extended periods, and some places revisited. Flintwork and pottery sherds illustrate this at Kilverstone, where multi-temporal events were identified through refit analysis and the context of deposition (*also see chapter 1 and 2*). For example, Early Neolithic pottery (Mildenhall) was mainly distributed across pit clusters in areas A and E (n=10 in area C). Some deposits contained sherds of single vessels which were weathered, abraded and burnt, while other pieces of the same artefact were freshly fractured (Knight; 2006). A sherd might have a significantly different post-breakage history and life-duration compared with another from the same pot (*figure 4.7*). This indicated that some of the material had been around for longer, refuse items had collected in a midden area, becoming roughened and worn before being disposed of. Conversely, other items were immediately discarded after breakage. Temporally distinct events were also identified in clusters of 'developed' pits, where some vessels could be refitted between, but not across, pit groups or isolated features (*ibid.*). The implication is of a place used regularly (across different parts of the site), possibly for a few weeks at a time, while on other occasions people settled for a few months or longer (Garrow *et al*; 2006, Hey and Robinson; 2011).

Flintworking at Kilverstone was also differently represented through short or long occupations (Beadsmore; 2006). A large assemblage of securely dated[81] EN worked flint (n=12,354 pieces), was distributed across 204 pits, in areas A, C and E, in association with EN (Mildenhall) pottery (*ibid.*). The flint assemblage predominantly consisted of flintworking waste, burnt unworked flint, and tools which were used, worn or broken (*ibid.*). Many cores were exceptionally worn, often to the point of exhaustion, although there were also significant quantities of expediently, minimally worked nodules, with only a few flakes removed (*ibid.*). Inconsistency in the use of these resources lends support to an interpretation of temporally staggered events, suggested by the pottery assemblage. For example, well worked cores may suggest longer occupations and a more calculated use of resources, while nodules with just a few flakes removed may indicate short-term ad-hoc site use (Beadsmore; 2006). Refits also suggested that well-worked cores were the product of more than one episode, as knapping waste could also be refitted across pits in cluster B (*figure 4.8*). Seasonality could also be inferred from charred hazelnuts in approximately half the pits, suggesting Kilverstone was often lived in over the Autumn and Winter (although nuts could be stored for some time).

Temporal events during Neolithic occupation are also represented regionally in the Thames Valley and Chilterns (*see figure 4.1*). For example, multiple pit clusters were found at Horcott Pit near Fairford (Hey and Robinson; 2011). Over twenty pits were identified, some of which contained Plain Bowl, two of which had signatures of quick *in situ* knapping events (Lamdin-Wymark; 2003, Hey *et al*; 2011). At least n=13 pits were associated with Peterborough Ware, each pit containing between one and six vessels and small quantities of animal bone (Hey *et al*; 2011). Some of these pits were deliberately lined with broken pottery sherds, placed with their decorated edges facing outwards, apparently reproducing the shape of a vessel (*ibid.*). Similarly, large sherds

[81] Through radiocarbon dating and pottery (see Garrow et al; 2006: 53)

from at least five Grooved Ware vessels were stacked in circular shape inside a tree-throw at the same site (*ibid.*). Short periods of domestic dwelling by small household units have been interpreted from the Peterborough assemblage (Hey *et al*; 2011). However, deliberate placement of pottery vessels were situated within domestic contexts (rather than 'monumental'), and reflect the inseparable nature of special-domestic tasks.

Similar practices occurred in Late Neolithic dwelling, at Ashville Trading Estate in Abingdon, where large sherds of Grooved Ware were used to line a pit, and at Pit 6, Puddlehill, which contained fragments of predominantly large and highly decorated vessels (Pollard; 2002, Hey *et al*; 2011). At Ashville a layer of sherds were placed in between upper and lower fills, demarcating separate episodes of deposition, and similarly at Puddlehill, bone and pot sherds acted as a layer between deposits of burnt hearth material[82] (Pollard; 2002). While these signatures have been interpreted as part of the '*greater complexity and formality surrounding pit deposits associated with Grooved Ware*' (*ibid.*: p.26), they are actually part of the same spectrum of practice identified during Early and Middle Neolithic occupation. Rather than suggesting that people became more likely to 'structure' their deposition, the Ashville and Puddlehill assemblages represent discrete occupational events similar to those at Kilverstone and Horcott, for example.

Eton Rowing Lake also has an occupational signature including middens, spreads, tree-throw holes and pits which predated construction of the inner circuit[83] of the nearby causewayed enclosure at Eton Wick (Whittle *et al*; 2011). At least three midden areas were within a few kilometres of each other, and deposits included charred cereal and hazelnut shells, animal bone and pottery with carbonised residue, which were dated to 38th century cal BC[84] (Allen *et al*; 2004). The artefactual signatures of these middens suggest that material was also deposited episodically. For example, in one of the four

[82] A charcoal rich loam
[83] 3885-3425 cal BC
[84] 3885-3695 cal BC

middens[85] half a Carinated Bowl was crushed *in situ*, while the majority of pottery sherds in this deposit, as well as in other middens, were very weathered or abraded (Lamdin-Whymark; 2008). Some vessels were distributed as sherds across more than one midden[86], while another midden deposit was potentially a single event[87] (*ibid.*).

Middens and pits containing Plain and Decorated Bowl were also found close to domestic structures and in association with hearths at Runnymede Bridge (Needham; 1991, Pollard; 2002). Signatures of occupation at Runnymede Bridge included timber structures, pits and midden spreads, which predated and were also contemporary with, construction of nearby causewayed enclosures at Staines, Eton Wick and Dorney Reach (99% probability, Whittle *et al*; 2011). There is also a suggestion of some small-scale clearance, grazing and cultivation in the area at this time. Pollen data from Thames Valley Park, for instance, suggested cultivated cereal and plants (Hey *et al*; 2011). Cereal pollens were also taken from middens in area 6 on the floodplain at Eton Rowing Lake (Allen *et al*; 2004, Hey *et al*; 2011, Lamdin-Whymark; 2008). The insect assemblage[88] at Runnymede also suggested grazing animals and woodland interference dated to 4044-3794 cal BC (Robinson; 2000, Scaife; 2000). Pollen sequencing, with (dung) beetle and macroscopic plant samples, showed a river margin dominated by thick alder, with large herbivores (deer), which were grazing on mixed woodland higher up the valley side. Tree cover also became more open over time, and later insect samples suggested open areas of landcover with buttercups, clover and patchy vegetation (Hey *et al*; 2011).

Yarnton-Cassington in Oxfordshire is a similar site of multi-temporal occupation along the floodplain (*figure 4.9*). Most of the material was Peterborough Ware associated, but the site also witnessed Early Neolithic (and Later) activity, and a house feature which is dated through to the 38th/39th century BC (Whittle *et al*; 2011). This house belongs to a group of buildings which Sheridan distinguishes as large[89], belonging to the earliest

[85] 11421
[86] Between 11421 and 11422, and between 11421 and 11426
[87] 11423
[88] Taken from layer of peat
[89] *c*16/18 to 24 metres in length

Neolithic traditions, and taken as evidence for 'pioneer' farmers from northern France (2013). According to Sheridan, for example, these early groups set up community living spaces before branching off into smaller household units and building more 'normal' sized houses once they had established themselves and their lifestyles, and set about 'acculturating' indigenous islanders (2013: 292-293). In contrast to structures of similar size in Scotland, however, (e.g. Crathes, Claish, Doon Hill), no Carinated or Plain Bowl were associated with the house.

Pit groups associated with middle and later Neolithic pottery are a feature of the Middle and Upper Thames, although there is some suggestion that '*extensive pit group sites associated with Mortlake and Fengate styles'* are rare, and vessels are more frequently found in monumental contexts (Barclay; no date: 1). However, pits at Runnymede, Horcott, and Yarnton-Cassington, for example, contained Ebbsfleet or other Peterborough vessels (*ibid.*). Tree-throw holes at the Drayton cursus were also filled with burnt 'household' material and large pieces of an Ebbsfleet vessel (Barclay *et al*; 2003, Hey *et al*; 2011). The Yarnton pit groups also represented short-term domestic occupation, and included deliberate deposition (Hey *et al*; 2011). Similarly to Horcott, large sherds of a Fengate vessel were used to line a pit in alternating patterns of face up and face down placement (*ibid.*). And while Grooved Ware vessels are sometimes found in the upper fills of cursus features (e.g. Lechlade in the Middle Thames, Botfield; 2012), they are more frequently found in pits, ditches or other adjacent features (e.g. Drayton North and South cursus in Abingdon, Botfield; 2012), or across pit sites (e.g. pits at Ashville Trading Estate in Abingdon, or Pit 6, Puddlehill in Bedfordshire, Pollard; 2002).

Material from pits at Horcott, Yarnton, Ashville etc. all illustrate a spectrum of informal to more thought-out placement of refuse, as well as settlement over both the short and long-term. However, artefactual signatures are usually distinguished as 'domestic' deposits in house-type structures and pit sites, or surface middens (e.g. one of very few alluvium sealed assemblages at Runnymede). On the other hand, where they are associated with '*a very varied range of constructions dubbed 'monuments*' (Whittle *et* *al*, 2011: 5), they tend to be interpreted as, or associated with, formal placement (structured deposition), burial and 'non-domestic' activity (*see chapter 1*).

For example, causewayed enclosures have been a focus of research into 'special' practices in the Early Neolithic (e.g. Whittle *et al*; 2011), while henges tend to be the equivalent for Late Neolithic research (e.g. Parker Pearson *et al*; 2008, 2017). This monument-centricity has been criticised for being at the expense of research into 'domestic' pit sites (e.g. Garrow; 2006: 8, *and see chapter 1*). Regionally, however, causewayed enclosures seem to be a feature of Southern Britain and Ireland, and many are located within the Thames basin (Oswald, Dyer and Barber; 2001: 149-57) (*figures 4.10 and 4.11*). Eton Wick, for example was 9km upriver from Yeoveney Lodge at Staines (within the study dataset), and Dorney Reach was 13km. Although the dating of both Eton Wick and Yeoveney Lodge has been statistically modelled with Bayesian methods, the earliest samples from the inner ditch[90] at Eton Wick are not statistically consistent (Whittle *et al*; 2011). To overcome this inconsistency an outlier date was excluded[91] and construction was estimated at 3625-3425 cal BC[92] (*ibid.*). Yeoveney Lodge inner ditch was constructed after 3525-3380 cal BC[93], and the outer ditch after 3465-3375 cal BC[94] (*ibid.*). Based on these dates, the earliest construction at both sites were interpreted as occurring within a few hundred years of one another (*ibid.*). It was also suggested that construction of the causewayed enclosures were contemporary with an enclosure at Staines Road Farm, Shepperton, and Runnymede (Whittle *et al*; 2011). However, it is also possible that the Shepperton enclosure was built several hundred years earlier as Carinated Bowl from the enclosure ditch may belong to a typological phase dating to *c*3800-3650 cal BC (Barclay; no date, Barclay *et al*; 2018). Later activity is also represented where Ebbsfleet and Mortlake were later placed into recut ditch segments of the enclosure, contemporary with Middle Neolithic burials (Barclay; no date, Hey *et al*; 2011). These two individual burials (one in the base and one in the primary fill of ring

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[90] Context 18
[91] GrA-31370
[92] 94% probability
[93] 89% probability
[94] 55% probability

ditch G) were radiocarbon dated to 3885-3380 cal BC and 3600-3340 cal BC (Jones; 1990, 2008, Hey *et al*; 2011).

Large enclosures, like Yeoveney Lodge, Eton Wick, Dorney Reach and the Shepperton 'henge', are usually associated with permanence and 'special' or ceremonial activities (e.g. *see* Loveday; 2016). Large assemblages of Grooved Ware are also particularly dominant at Henges and their placement in pits, alongside items interpreted as '*ritual paraphernalia*[95]' (Pollard; 2002: 26), have contributed towards a narrative of structured and special 'non-domestic' activity at Late Neolithic sites.

Domestic permanence, on the other hand, tends to be related to post-built structures and suggestions of farming or pastoral activities, including cereal cultivation and keeping livestock (*see* Sheridan; 2013). However, evidence of these practices do not necessarily go hand-in-hand with enduring domestic structures. For example, at both Yarnton-Cassington and Eton Rowing Lake, absorbed lipid residue analyses were carried out on a sample of '*early Neolithic pots*' (Hey and Robinson; 2011: 246). These vessels were taken from midden and pit contexts at Eton Rowing Lake and Yarnton floodplain (Copley *et al*; 2005). The pottery from Eton Rowing Lake consisted of Carinated bowl, Plain bowl, bowl and cup, and also included a Fengate vessel (Copley *et al*; 2005: figure 4 and appendix 1). Analysis of the Yarnton-Cassington floodplain assemblage, consisted of predominantly MN typologies[96], including Peterborough Ware from the base of a hearth in the house structure (Copley *et al*; 2005, Hey *et al*; 2011). Construction of the house and use of the pottery were therefore not contemporary. Two charred fragments of barley bread were also found at Yarnton, in a pit along with grains of emmer, barley and spelt and dated to 3637-3196 cal BC (*see* Robinson; 2011: table 9.1). The results from these lipid residues suggested that Eton Rowing Lake vessels had preserved the '*highest proportion of extracts indicative of dairy fats of all assemblages studied*[97]' (Sibbeson; 2014: 156). Dairy products, and therefore dairy farming, were a feature of domestic life

[95] Including animal and human bone, stone axes and 'elaborate' flint tools (Pollard; 2002: 26)
[96] Peterborough ware, Grooved ware and Beaker
[97] Other sites included Abingdon and Hambledon Hill

at Eton Rowing Lake in the Early Neolithic, and at Yarnton several centuries after the earliest house-building. The suggestion is that agricultural practice was part of life for transient dwelling as much as for 'permanent' inhabitation.

The concept of permanence is subjective, however, and while Sheridan is explicit that at Yarnton this meant people living there throughout the year and across many years (2013), it is also possible to understand permanency in other ways (*see chapter 1*). Although informal dwellings may have left a lighter footprint than their more visible counterparts, artefactual assemblages are not confined to monuments or house features, and are typologically similar at or near to enclosure sites (e.g. Staines Road Farm and Eton Rowing Lake), or sites with structures (e.g. Runnymede). Signatures of multi-temporal events were represented in the material culture of occupation, prior to, during and after construction of causewayed enclosures at Eton Wick and Yeoveney, for example, and Peterborough Ware deposition (Ebbsfleet and Mortlake) suggests later reuse of these sites.

The building and use of large earthworks, like pits, middens and houses, reflect multi-temporal events with dynamic meaning and duration. For instance some of the earliest monuments were places which evolved into burial mounds or cairns; at Hazleton North traces of a sub-circular midden with charcoal rich deposits preceded the construction of a burial mound (Saville *et al*; 1990). To the SE of the midden were a number of post-holes from a rectangular structure, and a hearth (Saville *et al*; 1990: 14). Three separate groups of skull fragments and two teeth were located at or near the surface of the pre-cairn soil, alongside at least n=25 vessels including Carinated Bowl, flintwork, animal bone, worked stone and bone, and daub (Saville *et al*; 1990). The structure had time to be used and dismantled, the midden material had time to accumulate and to be ploughed over, and the land had time to be lived in and cultivated before the cairn was constructed (Sibbesson; 2014). Similar traces were found at other long barrows in this area, including Ascott-Under-Wychwood where midden deposits under the long barrow (again including Carinated Bowl vessels) were dated to *c*3900 BC, while construction of the barrow is around a hundred years later (Hey and Hayden; 2011: 171, Benson and

Whittle; 2007). At Notgrove, however, a circular rotunda grave and stone cist preceded construction of the long barrow, but probably by only a few years (Smith and Brickley; 2006, Thomas; 2012). These clusters of long barrow burial cairns are mainly located in the Cotswold-Severn area, or the Upper Thames.

Cursus bank monuments, on the other hand, generally have little in the way of associated material culture, and construction is often put between *c*37th-36th century BC (e.g. Loveday; 2016). However, temporal events are sometimes distinguished on a large scale, through stages of development over centuries, and relationships with earlier or later features. It has been suggested that cursus features may derive from, or be related to, bank barrows and long barrows (Loveday; 2006, Lewis; 2008). Although cursus features are rare in the Middle and Lower Thames basin (Haughey; 2016), in the upper Thames they are particularly clustered in the area around Drayton and Dorchester (*see* Barclay *et al*; 2003: 216). The cursus complex at Dorchester on Thames comprises earlier Neolithic construction, and a large ring henge and other circular monuments which were later added on to this feature (Bradley and Chambers; 1988, Gibson; 1992). The Stanwell cursus (dated at *c*3600 – *c*3300 cal BC), falls within the study landscape and, like the Yarnton-Cassington house, has been categorised as a larger construction, a major cursus at 4km in length (*see* Loveday; 2016: 71, figure 5.4, for distinction and distribution of major and minor cursus features in southern England). At Sonning in Berkshire a smaller cursus (200m x 35m) has been identified through ariel photography and geophysical survey, alongside other rectangular and linear Neolithic features (Dawson; 2012).

Other monumental features of the Late to Middle Neolithic mainly consist of circular enclosures, variously referred to as ring ditches, horseshoe, u-shaped or penannular monuments. While Henges are almost absent from most areas of the SE (Barclay; no date), penannular and circular features may have been prototypes or 'formative henges' (Burrow; 2010). Henges are usually circular or penannular earthworks with an internal ditch and external bank, and, like the Shepperton enclosure[98], are often associated with avenues leading towards or away from a river, e.g. Durrington Walls (Haughey; 2016: 115).

These features are generally dated to the later part of the Neolithic (2900-2300 cal BC, although most date to the centuries around 2500 cal BC) (Greaney *et al*; 2020: 26). However, the construction of henge-type features were often an addition to earlier cursus monuments, and often post-dated the building and use of timber and stone circles (*see* Gibson; 2010: 244). For example, at Durrington Walls the timber circle was no longer standing when the henge was constructed, and at Dryffryn Lane in the Upper Severn, the stone circle predates construction of the henge by *c*300 years (Gibson; 2010)[99]. A similar temporal sequence (i.e. timber or stone circle construction, later henge construction) is also a feature at Broomend of Crichie, where the stone circle was in use before the henge was constructed (Gibson; 2010: 244, *R. Bradley communication*). Although rare in the Colne Valley region, a timber circle was identified during excavations for Hs2 at Wellwick Farm near Wendover, Buckinghamshire (Collard and Bonner; 2020).

These examples illustrate that monuments in themselves were not representative of permanence, or special and distinct practices. The building, using, not-using, restructuring and add-ons at the sites are reflective of nearby settlements, which, as can be seen from pit assemblages, were multiple events, from multiple authors, across a spectrum of special-domestic tasks and practice.

4.5 History of excavations in the Colne Valley

Although this study focuses on the taskscapes of Mesolithic and Neolithic communities, it is also a taskscape of archaeological practice from the early 20th century to the present day. Some of the first archaeological sites in the area came to light through

[98] Shepperton 'henge' has an avenue of pits or posts going towards the river Ash (Burnham, 2005)
[99] Stone circle construction terminus ante quem of 2900 – 2500 cal BC99, collapse of stone circle terminus ante quem of 2487 – 2268 cal BC99, henge bank construction terminus post quem of 2574-2401 cal BC99

commercial quarrying and gravel extraction in the earlier part of the 20th century and onwards. For example, a Mesolithic assemblage at Sandstone was brought to the to the attention of '*that discerning and indefatigable observer the late J. D. Marsden of Acton*' (Lacaille; 1963: 148), through commercial workings for gravel and brickearth. He noticed that the Holocene sequences between Rickmansworth (Upper Colne) and West Drayton-Yiewsley (Lower Colne) were the same as those that had been identified as Maglemosean in the Lea Valley at Broxbourne (Warren *et al*; 1934). Marsden also noticed typological similarities between the Broxbourne assemblage and a collection of flint from excavations in the area of Sanderson's Fabric Factory in 1903 (Howe and Skeats; 1903). The earliest mention of the Sanderson's site details a visit to gravel excavations by Kennard, Hinton and Haward in 1903, where Kennard is noted as returning to retrieve *c*1,500 flint flakes from the interface of alluvium and terrace gravels (Howe and Skeats, 1903: 189). Marsden investigated Sandstone until his death in 1938, and in 1955, after a gap of several years, his own family and A.D. Lacaille resumed work on the site (Lacaille; 1963).

Lacaille was a doctor who had written extensively on the Scottish Mesolithic. He was also a Field Collector who worked at the Wellcome Institute for the History of Medicine, and on collections at the Pitt Rivers Museum from 1941 (part of the British Museum at that time). His work was based on collections of artefacts from gravel extraction rather than excavation, and his legacy includes the donation of large collections of prehistoric artefacts to several museums and universities (including the Pitt Rivers, British Museum and St. Andrews). As a consequence of Lacaille's work on Mesolithic sites in the Colne Valley (Sanderson's, Dewe's Pit and Farm[100], Sandstone), several of the artefact collections were recorded and are currently stored at Frank's House, British Museum. The Sanderson's artefactual archive is at Buckinghamshire County Museum.

Another large resource for Colne Valley archaeology has been through the work of local amateur and professional archaeologists. Although Roger Jacobi became a professional

[100] The collection is catalogued as 100 Acres (also Harefield Moor in Lacaille, 1961)

archaeologist and academic, his interest in archaeology was nurtured while he was a student at Merchant Taylor's School in Rickmansworth between 1960 and 1966 (Mullan; 2010). Merchant Taylor's had a school museum as well as an archaeological society, and before reaching university age Jacobi had already worked on significant sites with Mesolithic and Neolithic archaeology at Sandy Lodge Golf Course (1963), Moor Park (1965) and Tolpit's Lane (from 1965). Jacobi continued to amass collections from the Colne Valley and many of his field notes, photographs, correspondence and other documents are stored at the Jacobi archive at Frank's House. Artefacts from these sites are also stored at Frank's House, Watford and Three Rivers Museum.

Another committed archaeological society within the study area were members of the West London Archaeological Field Group (WLAF), who were active through into the 1980's. The group was run by local volunteers and professional archaeologists, including Jon Cotton, DGLA West (which later became the Museum of London Archaeology Service, and now MoLA). The WLAFG were responsible for logging many of the Colne Valley spot find records with the LHER, as well as participating in fieldwork and post-excavation.

During the 1990's mineral or gravel extraction and several large-scale development projects, including work at Terminal 5 (Framework Archaeology), Eton Rowing Lake, and Yarnton-Cassington (Hey *et al*; 2011, Oxford Archaeological Unit; 1994, Allen *et al*; 1997), focused on the low-lying first terrace gravels of the Upper to Middle Thames. A consequence of PPG16 meant that archaeological mitigation provided opportunities for major projects to locate buried sites of particularly Neolithic and Bronze Age chronology along the Thames floodplain (*see* Allen *et al*; 1997).

Changes that came about in planning policy post-PPG16, also resulted in an increase of fieldwork methodologies designed for identifying Late Pleistocene and Early Holocene archaeology along the alluviated valley floor (i.e. Palaeolithic and Mesolithic). At Eton Rowing Lake, for example, Mesolithic horizons were identified beneath the alluvial deposits of dried out palaeochannel floodplains (Allen *et al*; 1997). More recently key methodologies for large scale infrastructure projects such as Hs2, have acknowledged the potential for sites buried beneath alluvium and colluvium (HERDS; 2017: 5.4.24 & 11.1.34). Tier 1 contractors for Hs2 in the Colne Valley area (Fusionjv and CSjv) have to greater or lesser degrees incorporated these priorities into their own project methodology and specific objectives for knowledge creation (e.g. see Fusion; 2019: 11.1.1 KC5 & KC14).

Chapter 5: Mesolithic data

Sites are presented in the Upper, Middle and Lower Colne Valley, and follow the river downstream. They are further divided into assemblages with more than 1,000 artefacts, more than 100 artefacts, more than 10 artefacts, and unspecified quantities of artefacts. Small scatters (those which are less than 10 artefacts or single item spot finds) are presented as part of larger groups where they may be related to site activity.

5.1 Early Mesolithic

Commercial excavation, and the work of Prehistorians such as Wymer (1962), Lacaille (1961, 1963), and Jacobi (1965*a* & *b*), for example, have shown how the Thames tributaries, particularly the Colne, were utilised by Mesolithic populations in the Early to 'Horsham' period (*see chapter 2*). Concentrations of material are found much more frequently along these systems than along the Thames, but only a few assemblages have been radiocarbon dated (Table 3 *and figure 5.1*). This section will discuss sites and finds which have been dated to the Early Mesolithic using radiocarbon dates, typological distinctions and stratigraphic sequencing (*figure 5.2 and 5.3*).

5.1.1 Upper Colne sites with assemblages of less than 10 and single artefact spot finds

The Upper Colne area has no record of diagnostically Early Mesolithic sites, although there are several small assemblages and spot finds, particularly around the Moor Park area (*figure 5.4 and 5.5*). At Sandy Lodge Golf Course, for instance, the majority of Mesolithic material is assigned to a Lower Halstow typology (Jacobi; 1965*a* & *b*), but there are also earlier smaller signatures. For example, a 'Horsham' type point[101] (*e.g. see figure 3.7*) was found near to excavations at sandpit A (Rawlins; 1980: 20), and at least a further n=4 obliquely pointed microliths were also recorded, including one which was burnt (Jacobi; 1965*a*).

[101] PaMELA item 18527, HER: 842

Another site with earlier material is Bathend Clump, where flakes and cores were recorded as Early Mesolithic, and one of the microliths may be an obliquely blunted form (Collins; 1959). Excavations were carried out on the Moor Park Golf Course (Bathend Clump site) from 1958 until 1962 by Merchant Taylors Archaeological Society, and the Moor Park Excavation Committee from 1960. The site is on the summit of a hill, situated on a promontory *c*46m above the valley of a southern Colne tributary (Collins; 1959, Philipson and Collins; 1961, Phillipson; 1962, 1963). A podsol deposit containing Mesolithic and Neolithic flints was located underneath an 18th century dumped layer (Phillipson and Collins; 1961, Phillipson; 1962), although the Mesolithic flintwork was a small component, and the majority were dated to the Neolithic (*see chapters 6 and 7*). The quantity and chronology were not specified but included n=6 microliths (although only n=3[102] are given any detail in the records), a tranchet and a burin (Jacobi; 1965*b*). Unfortunately, no further information on the excavations were available from Jacobi's documentary archive[103]. However, flakes and cores from the 1958 excavations were recorded as Early Mesolithic and '*typical of a Mesolithic industry such as that at Broxbourne*'[104], i.e. Maglemosean (Collins; 1959: 14). The raw material was derived from chalk, the nearest source being 500m west of Hampermill (Derricourt and Jacobi; 1970).

Two of these Mesolithic artefacts (the tranchet axe and microlith C) were described as *in situ*; they were taken from low in the podsol layer in the centre of the site, beneath the Neolithic enclosure (Phillipson; 1962). Microlith B was found in a surface layer, and D was residual in the 18th century dump. No typological descriptions of the microliths were given in the report or in PaMELA[105], although the tranchet was assigned to the EM[106]. It is difficult to be specific from the illustrations (*figure 5.6*), but it is possible that B is a rod form, with retouched straight parallel edges[107] and of Late Mesolithic manufacture. Microlith D may be obliquely blunted but could be earlier or later

[102] Microliths B-D
[103] Frank's House, British Museum
[104] The Broxbourne assemblage, however, reflects more than a single temporal event over the EM (see chapter 3)
[105] PaMELA artefact ID: 18430
[106] PaMELA: 18429
[107] Group B (both Clark & Jacobi)

chronology depending on length (*see* Clark; 1933, Jacobi; 1978). Another two axes were found in the area, along with an unspecified number of cores, blades and flakes, a fabricator and a microburin[108].

5.1.2 Middle Colne sites with assemblages of 1,000 plus artefacts

5.1.2.1 South of Oakend Cottage Site 1 (Oakend)

Details of this site were limited to a report in the Records of Bucks (Barfield; 1977). Between 1966 and 1967 Barfield investigated a series of sites along what is now the A413 (*figure 5.7 and 5.8*), and the Mesolithic material was written up for the county Archaeological Society publication. An archaeological assessment was also carried out for the Chilterns Chalk Stream Project, which delivered an historical profile of the archaeological potential of the area, in a section by section format, along the courses of the rivers Chess and Misbourne (Hunn; 2001). Segment 12 of the survey covered the A413 to M25 section of Misbourne river, and Oakend Site 1 was located in the southern part of this section. However, no further investigations or information was added to the original Oakend material, which was described as '*evidence for Mesolithic occupation*' and '*varying quantities of flint*' (Hunn; 2001). The Barfield report (1977) is currently the only available known source for the site (Farley; pers comm).

A large assemblage of flintwork was identified as Early Mesolithic based on broad blade typology with oblique retouch, and were compared with the broad blade assemblage at Thatcham (Barfield; 1977: 314, Wymer; 1962). However, the Thatcham sites (I-V) witnessed temporally distinct occupations (sometimes at the same site, e.g. site IIIB), and included both Star Carr and Deepcar assemblages (*see chapter 3*).

The sedimentary context of artefactual horizons were described and illustrated (*figures 5.9 to 5.11)*. River gravels, with gravel ridges, were overlain by fluviatile silts and clays[109] (Holocene alluvium). Mesolithic flints were located towards the surface (layer 6), and a grey calcareous loam with tufa granules (layer 5) overlay the flintwork, with large concentrations of waste flakes in the basal levels of the tufa. In some places the

[108] PaMELA artefact_ID: 18431-18435
[109] Layers 7 and 8

overlying horizon (layer 4) also contained flint nodules and flakes[110]. Flints were mixed throughout layers 4, 5 and 6, and in some places tufa granules were present through to the surface of the subsoil and were not considered to be *in situ* (*see* Evans; 1977: 319). However, large flint nodules with similar cortex to the worked assemblage, were found in the river gravel subsoil, suggesting that extraction was probably localised in this area (Barfield; 1977).

A total of n=27 mainly flake cores were recorded at the site, with only one showing evidence of blade removal, and the majority described as '*irregular and rough in character*' (Barfield, 1977: 312). Flakes were generally produced in great quantities during primary reduction, they were knapped off core nodules with a hard hammer during the initial removal of cortex and the creation of a striking platform (*also see chapter 2*). These struck flakes were distributed across the site with the highest concentrations[111] in B, C, E, G, W and Y (*figures 5.9 and 5.11*). Cores were single platform (n=7), bipolar or opposing platform (n=12), and cores with three platforms (n=5). Single platforms were commonly used at the start of the knapping process, but as more flakes were removed, and the initial platform became unworkable, it would often be turned to accommodate further flaking (Butler; 2005). At Oakend *c*1,800 flakes, blades or blade-like flakes were recorded and around 58% of the flakes have the original cortex, suggesting primary flaking. A further *c*1,200 smashed or shattered pieces of flint were also recorded, and were attributed to human action while trying to get at the interior of frost-damaged flint nodules (Barfield; 1977). Shatter was again distributed across all areas but concentrated in G, W and Y (90+ pieces), although substantial amounts were also found in B, C and E (*figures 5.9 and 5.11).* Raw flint nodules, and the debris from smashing or shattering them, probably accounts for the majority of the assemblage (Barfield; 1977).

However, carefully made tools were also noted in the assemblage; '*fine blades with parallel sides*' (Barfield; 1977: 312), a retouched blade, a possible endscraper, a couple of obliquely retouched microlithic points, and a third microlith worked out from a

[110] Square S, T, U, V, W, X and Y
[111] 90+ pieces

roughly truncated blade. Some of these items may have been brought as tools to the site, as no microburin were included in the assemblage. Other tools, however, may have been knapped on site; scrapers were predominantly worked out from flakes (n=18), and several exhibited marginal retouch (n=12). A burin and burin spall also suggest ad-hoc and small-scale tool production. Burins may have been used for woodworking and could be related to a couple of broken adze or axes, two possible axe roughouts and axe sharpening flakes (n=4). Flakes were from the cutting edge of a core axe or adze; two from primary sharpening, and two from secondary sharpening and one of the axes[112] had been reused as a blade core. Axes were made, used and repeatedly resharpened for tasks at the site, then left behind when they were broken. Several blade-like flakes had also been utilised (n=13), and the assemblage included a few awls of varying sizes (n=4).

Burnt flint flakes (n=288) also indicated that a hearth was built on at least one occasion (the assemblage may represent more than one event).

5.1.2.2 Sanderson's Fabric Factory (Sanderson's)

Archaeological works, in the grounds of what was Sanderson's Fabric Factory and playing fields, have been carried out from the early 20th to the early 21st centuries. The earliest site description was of 'Willowbank' (e.g. Howe and Skeats; 1903, Bowen; 1977), while it was later referred to as '100 Acres' or 'Boyer's Pit' (Lacaille; 1963). Quarrying work produced one of the largest collections of Mesolithic flints in the area, some of which were collected by Kennard (Howe and Skeats; 1903), and some of which were later documented by Lacaille (1963). However, in an assessment of the area prior to the construction of the M25, it was noted that the only record of the archaeology came from conversations between Lacaille and the site investigators, with illustrations from field observations (Bowen; 1977).

Lacaille's report covered flint tool typologies, but without systematic excavation there were no section drawings, no record of stratigraphy, and no pollen analysis, for example (1963). However, a description of the sedimentary profile gives a topsoil depth of 0.3m

[112] F30

– 0.5m, an underlying compressed Boreal peat deposit up to a meter thick, and a floodplain gravel horizon which undulated between water-level and slightly above. Mesolithic flints lay on the surface of gravels in the basal peat, and in a deposit of shell-marl and chara mud along a gravel ridge or island. This was the location of a high density concentration of worked flint artefacts, similar to flintwork identified at Harefield Moor (Dewe's Farm and Pit, Lacaille; 1963). Gravel ridges were formed during the late Pleistocene, and clay filled the hollows during drier periods of the early Holocene, when local channels dried out, providing temporary landsurface (*see chapter 3*). Later this occupational horizon was sealed by black sedge fen clay, which has been radiocarbon dated to 5612-5478 cal BC (Grant *et al*; 2014).

MoLAS also carried out more recent evaluation (including auger survey), and mitigation, between 2002 and 2004, in preparation for work on a flood relief channel (2006). During evaluation in the northern part of the site, a deep sequence of organic peats and fluvial sediments, representative of Late Glacial to Early Holocene river channels, were located in plot 1 and 2 (*figure 5.12*). The upper parts of these peats were well established soil horizons, heavily vegetated with mature woodland but with no artefactual horizon (MoLAS; 2006: 83-84). This part of the site falls towards the floodplain where the surface of the Colney (Street) Gravels are lower (between 29 m and 31.7 m OD) (MoLAS; 2006). However, in the southern part of the site, initial test pit excavation focused on area 1, and a general ground level of 32.5m OD was centred to the west of this (*figure 5.13*). This was where most of the archaeological material was concentrated, in the southern part of the site, overlying Pleistocene gravels at the interface of gravel and clay (a sandy clay unit similar to 3WW), between 31m OD and 31.68m OD (*ibid.*).

An assemblage of 15,229 pieces of flintwork were recorded across the site (*figure 5.12*), including material from bulk sediment samples, and although the raw material was predominantly local river gravel, some was also fresh flint derived directly from the Chalk. Lacaille's collection also consisted of over a thousand pieces, including a variety of flint tools and utilised debitage. This flint assemblage was described as brown-stained from the peat layer and deriving from a chalk source 3km away (*see* Howe and Skeats; 1903). Like Oakend, the assemblage was given an EM date based on typology (Lacaille;

1963), while radiocarbon dates, however, are available for the MoLAS assemblage (2006).

From the MoLAS investigations, a dense concentration of over 3,000 *in situ* flint artefacts across an area of 15m x 10m were recorded in 3D (*figure 5.13, shaded area*). This was composed of four or five discrete scatters associated with animal bone, burnt flint and burnt hazelnut fragments (*figure 5.14*). The scatters followed the edge of a gravel ridge, itself relatively absent of flintwork, except for a large concentration of burnt flint (hearth area), which could be discerned in the north of area 6 (*see figure 5.13 and 5.14*). The full assemblage (not only the 3D area) included *c*3,850 flakes, n=1,587 blades, cores or worked lumps (n=315), core preparation flakes (n=86) and hammerstones (n=3). There were also unworked pebble fragments (n=102), spalls (n=2,271) and three unassigned artefacts (MoLAS; 2006: 52). A cluster of cores in the north of the northernmost cluster has been interpreted as a cache or midden (MoLAS; 2006, Conneller and Overton; 2018: 294). A large proportion of this material represents primary knapping, including cores, flakes and blades from the playing fields (Lacaille; 1963).

Lacaille also described utilised debitage (knapping waste used as tools), as well as fine flakes and blades mainly between 5 and 7cm in length. Many of these pieces showed marginal denticulations and short scars as evidence for use wear as knives, saws or scrapers (Lacaille; 1963). There were also microliths, microburin, scrapers, a graver (similar to burin, but often distinguished as a separate tool) and a knife (Lacaille; 1963). Microliths were also found during the MoLAS excavation (n=44), although no further microburin were recorded. Other tools included burins (n=15), but no spall, awls (n=2), serrated flakes or notches (n=13), scrapers (n=12), retouched flakes (n=12), and as with Lacaille's assemblage, flakes or blades which had also been utilised (n=32). An adze or axe fragment plus sharpening flakes (n=3) suggests comparatively small-scale use and repair of these tools on site.

A hearth area was determined from dense concentrations of burnt flint, although further burnt scatters were distributed across the site and fairly concentrated in the south of area 6, north of area 7, and in areas 2 and 4 (*see figure 5.13*). More than six thousand pieces of burnt flint were recorded across the site, weighing 23,018.7g. Environmental sampling also produced fragments of wood charcoal, small to moderate quantities of charred hazelnut shells, charred seeds (possibly grass) and waterlogged seeds from horned pond weed, stonewort and sedge (MoLAS; 2006).

Faunal materials were generally in a poor state of preservation but consisted of 1,263 fragments[113] (*appendix iii*). Animal bone was mainly associated with two southern scatters in areas 4 and 6, and the northern concentration in area 7 (*figures 5.13 and 5.15*). This predominantly consisted of long bones from medium to large mammals which were identified as red deer[114], wild pig[115] and some which are described as 'sheep sized' or 'ox sized' (MoLAS; 2006). The red deer bone included a spatially defined concentration of limb elements, and a skull complete with mandible and antler (Overton; 2014, Conneller & Overton; 2018). Beaver[116] teeth were found in three contexts, field vole and/or mouse tooth in one context, possibly otter, but no fish or bird bone (*ibid.*). Red deer long bones were of comparable sizes to those in the 3WW assemblage, but there were no signs of butchery, possibly due to the poor preservation, and all fauna is described as mature with no juveniles (*ibid.*). Although bone counts were higher for red deer than other fauna, minimum individual frequencies account for only one animal, whereas there were at least four individual pigs in the assemblage (Conneller and Overton; 2018: 294). Radiocarbon dating from charred hazelnut in association with one of the flint scatters is 8606 – 8300 cal BC[117]. A wood fragment taken from the sandy clay layer beneath a flint horizon is dated slightly later at 8219 – 7770 cal BC[118].

5.1.2.3 Three Ways Wharf (3WW) and Jewson's Yard

The site of 3WW is located at *c*31.4m OD, *c*300m southwest of Sanderson's, on valley edge floodplain east of the Colne River. Excavations were carried out between 1986 and

[113] 1.479kg
[114] Cerva Elephas
[115] Sus Scrofa
[116] Castor Fiber
[117] Sample {117} context [133]
[118] Sample {139} context [156]

1998 by DGLA West (*figure 5.16*). Several phases of Lateglacial occupation were identified in the main area (UX88), but scatter C (particularly scatter C west) was dated predominantly to the Early Holocene (*figure 5.17*). As at Sanderson's, the artefacts (flint and faunal assemblage) were found *in situ*, within a buried soil horizon beneath the ancient landsurface (Lewis and Rackham; 2011). The majority of lithics were located within the grey upper alluvium, immediately above the Colney Street basal gravels, and underneath the black peat horizon. Scatters were anthropogenically dispersed and had been relatively undisturbed since deposition (*ibid.*). Raw material was mainly from river gravel pebbles, and nodules in Scatter C West were generally smaller than those found in the Lateglacial assemblage (predominantly Scatter A) (*ibid.*).

In 1993 Oxford Archaeology also excavated the Former Jewson's Yard which is *c*300m east of 3WW, but on higher ground at 42-44m OD (*figure 5.18*). This site produced Mesolithic, Neolithic and Late Bronze Age (LBA) flints as a small scatter across the site; within the ploughsoil as well as in sub-surface stratified contexts (Barclay *et al*; 1995). However, pieces attributed to Mesolithic form were concentrated in Trench 6 (*figures 5.19 and 5.20*). The material is typologically dated to the same period as Sanderson's and 3WW, and may be contemporary with at least one occupation at 3WW (Barclay *et al*; 1995: 18).

In C West at 3WW *c*1,065 flakes were mainly the product of secondary (n=388) or tertiary (n=640) reduction, and n=37 were from primary flaking (Lewis and Rackham; 2011). More than 40% of primary flakes were hard hammer struck (<20% soft hammer), and mainly soft hammers were used on tertiary flakes (≥40% compared to <30% hard hammer, *see* Lewis and Rackham; 2011: 56, figure 53). At least n=717 blades or bladelets were part of the same scatter (*ibid.*). A few (n=83) were made using a flint hammerstone (there is one in this assemblage), but the majority (n=468) were worked with bone. Cores were mainly blade (n=49), flake cores (n=2) and a broken axe was used as a core. Core preparation pieces were not chronologically distinguished from the Late Glacial scatter, but have been categorised as crested pieces (n=189), core tablets (n=131), *flancs de nucleus* (n=10), and a further n=32 miscellaneous other types. Crested pieces mainly refer to blades, although there were a few crested flakes. Some crested pieces (n=55) were also noted as significantly shorter in C West, and distinguished them as chronologically separate from longer blade technologies in C East (Table 4). Unworked and partially worked nodules were also recorded, a broken hammerstone and an anvil stone, and unclassified debitage.

Table 4: Length of crested pieces in 3WW scatter C West (n=55) compared to C East (n=36) (adapted from Lewis & Rackham, 2011: 59: table 25)

Length of crested pieces	C West	C East
Length range (mm)	103-20	142-14
Average length (mm)	54.0	73.4
Standard deviation (mm)	17.0	26.9

The tool assemblage in Scatter C West included scrapers (n=100), some of which were broken (n=39) and some of which were burnt (n=6). These consisted of end scrapers on blades (n=18) and on flakes (n=68), double scrapers (n=4), side scrapers (n=5), another unclassified scraper and fragments of scraper (n=4). Truncated and retouched blades and flakes (n=3) were also used as tools, and the assemblage included a 'true awl' and a piercer.

Most microliths were concentrated in the west of Scatter C (n=48), with the majority (n=40) classified as Clark's obliquely blunted/truncated 'A' type (1934). There was also a 'C' type (bi-truncated), a 'D' type (transitional Early to Late Mesolithic typology), and n=5 unclassified. However, as can be seen from the distribution patterns (*figures 5.21 and 5.22*), they were not spatially confined to the western area and may have spread out into Scatter C East. In the eastern distribution there were a further n=31, of which n=15 were also type A, n=3 type C, a type D, several more that were unclassifiable (n=5) and n=7 fragments which had been backed at the distal end and may be broken 'C' types. Similarly microburin (n=20) were predominantly concentrated around the western scatter, with a few outliers (*figure 5.22*). The Jewson's Yard assemblage also included three 'A' type retouched obliquely blunted points, two of which were from the old ploughsoil, the other from a pit[119] (Barclay *et al*; 1995).

Potential woodworking tasks were also well-represented in the C West assemblage. Axes and adzes were made (axe roughouts n=2), used (adze/axes n=3), and repaired (axe debitage consisting of flakes from sharpening, thinning etc. n=89) on site. Burin were also used (n=9) and made (burin spall n=10), and were distributed across both the east and west of the scatter (*figures 5.23 and 5.24*). Microwear suggested at least n=22 flints were utilised as tools[120] in C West, but across the whole scatter n=18 were used for cutting wood, whittling wood (n=2), boring wood (n=2) and scraping wood (n=1). Other tasks included cutting fish (n=7), cutting hide (n=4), cutting meat (n=4), scraping antler (n=1), whittling antler (n=1) and butchery (n=5). Single items were used for multiple functions, to scrape, pierce and bore, while they were also used as projectiles (Lewis and Rackham; 2011).

Flintworking at Jewson's Yard was on a smaller-scale but included elements of primary reduction, tool making and use (Barclay *et al*; 1995). The pit contained flakes, blades and bladelets (<50), while core debitage consisted of rejuvenation flakes (n=5), a core tablet and a couple of opposed platform blade cores. Some of the flakes were soft-hammer struck; however, a crested blade[121] suggests microlith making, and several flakes and blade-like flakes were utilised (n=7). Other tools included a piercer on a blade, a truncated blade, an unfinished microlith or piercer, one or two scrapers and two backed blades (one from the pit and one from a ditch). A small quantity of burnt flint (n=10 max), were part of the pit assemblage, as well as burnt knapping material and tools (*ibid.*).

C West material included at least one particularly dense scatter of faunal material, with occasional burnt bone and an extensive spread of lithic material including burnt flint.

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[119] 660 in trench 6

[120] Use-wear was carried out on 507 pieces, of which 38 had insufficient data (but were probably used), and 186 of the flints were used. Retouched pieces are not distinguished between scatter C east and west, but 22 x utilised pieces are noted for C West

[121] [304]

The burnt flint and red deer bone were distributed in densities which suggested a hearth area and midden, near to a possible structure (*figures 5.25 and 5.26*). Some bones were charred or had burnt ends, and were more fragmented or smashed than others (Lewis and Rackham; 2011). They were also located in a spatially contained area, nearby to burnt pieces of flint (*ibid.*).

The main concentration of animal bone was identified as red deer (80% of the assemblage) and roe deer (18%) which provided radiocarbon dates of 8803-8252 cal BC, 8752-8287 cal BC and 8701-8272 cal BC (Table 3). Tooth data and epiphyseal fusion suggested that some of the red deer were juveniles (up to four were less than 3 years of age). At least three females and four males were identified from the pelvic bone, and the assemblage was made up of predominantly hollow long bones[122] (limb elements), with extensive fragmentation as well as cut marks, suggestive of butchery and intense marrow extraction. A small quantity of swan bone and a duck bone came from the western side of the scatter, a swallow from the eastern side, and other bird bones were distributed fairly widely (*figure 5.27*). Beaver and pine marten were probably from the Mesolithic spread (Lewis and Rackham; 2011: 128/9), as well as wolf or large dog and fox, and wildcat has been mentioned by Conneller and Overton (2018: 293) although there is no record of this in the monograph.

5.1.2.4 Preferred Area 4 (PA4)

This site is located at the confluence of the Colne and Alderbourne, and another, now diverted, brook (the Rusholt) would once have also run through the area (Wessex Archaeology; 2009a). A programme of archaeological fieldwork was carried out here between 2002 and 2007 by Wessex Archaeology (WA), and included deposit modelling, test-pitting and trenching (WA; 2009a). The site is geologically and topographically similar to Sanderson's and 3WW; it is situated on floodplain alluvium overlying terrace, and generally flat between 31-32m OD. A series of palaeochannels and two gravel islands were identified, with flintwork scatters (1-4) at the edge of the gravel banks (WA; 2003, 2005).

[122] humerus, radius, femur, and tibia

Around six Late Glacial to Early Holocene scatters were located across this site between 2002 and 2009 (*figures 5.28 and 5.29*). A long blade assemblage in scatter 1 may be contemporary with others in the Colne Valley (e.g. 3WW, Church Lammas) but is outside the remit for this thesis. This was one of two mainly *in situ* flint scatters (1 and 2), which were identified between 2002 and 2007, while a further two scatters (3 and 4), were heavily disturbed with little or no *in situ* material. Scatters 2 (a and b) were made up of smaller spreads of material, with some disturbance (WA; 2009a). A boar's tusk was found within the main concentration of flintwork in scatter 2, and was radiocarbon dated to 8536-8257 cal BC (*ibid.*). Waterlogged wood fragments of pine and birch (100 +) were also found adjacent to these scatters in a shallow peat deposit[123]. The peat was lying directly under the modern topsoil at a depth of 0.35m - 0.50m (the same as Lacaille's measurements of peat depth at Sanderson's), and samples were taken at 0.35m and 0.45m[124] (during phase 1b). Radiocarbon dates from the five samples of wood (Table 3) correspond with dates from a previous test pit peat sample[125] (8617-8331 cal BC), and were roughly contemporary with the wild boar tusk (*ibid.*). Again, similarly to Sanderson's, the pollen sequence from preserved peats in borehole 4 (*see figure 5.29 for location of borehole 4*) had a high presence of pine and birch (*ibid.*).

During mitigation (phase 1a) in 2008 and 2009 a further two scatters (5 and 6) were located, and a total of *c*1,042 pieces of Mesolithic flint (across all scatters) were attributed to Mesolithic activity (*ibid.*). Scatter 5 was given a typochronology of Early Mesolithic (*ibid.*), and although the material was not three dimensionally *in situ*, there had been little lateral movement, and flintwork was concentrated in an area 7m x 6m[126] (WA; 2009a: 15). Scatter 6, on the other hand, may have contained Late Mesolithic material as well. It was also concentrated within a smaller spread (2.5m x 3m[127]), but included a low density distribution outside the main area[128] (25m x 15m). Scatter 6 was

[123] Test pit 665, context 66502 (phase 1B)
[124] Test pit 665, context 66502
[125] Test pit 272, context 2722
[126] NGR 504283 184748
[127] NGR 504313 184610
[128] N=250 of the worked flint recovered

predominantly limited to the upper 0.10m of a dark brown silty clay deposit[129] (the modern topsoil), which overlay the Late Pleistocene/Early Holocene alluvium (WA; 2009a: 18, table 5). The flint was all in good condition with sharp edges and minimal abrasion, although some were rolled or damaged and possibly moved by stream action (WA; 2009a). The majority of the flint assemblage was unretouched debitage, from raw material with an unspecified probable river source '*dark brown, although some pieces have distinctive yellow-brown mottling and cherty inclusions*' (WA; 2009a: 7.1.4).

Most of the flintwork were recovered from scatters 5 and 6 (Table 5). A total of n=31 cores, core preparation/rejuvenation pieces (n=9), flakes (n=722), chips (n=41), and other waste pieces (n=46). Blades and bladelets (n=115) were fairly evenly distributed across the two main scatters, although more bladelets made up scatter 6, and may correspond with the production of smaller geometric microliths (*ibid.*). For example, microliths were distributed across scatter 5 (n=6) and scatter 6 (n=9), plus a microlith from the topsoil in scatter 2. While these were mainly of an obliquely truncated EM typology, some of scatter 6 were geometric, smaller, and may be LM. Both scatters contained some toolmaking debitage; n=3 microburin in scatter 5, n=5 in scatter 6 (another n=2 from other locations). Other (unspecified) tools (n=33) were mainly attributed to scatters 5 and 6, with a few pieces from other areas of the site (n=5).

Table 5: Flintwork from scatters 5 and 6 at PA4 (Wessex Archaeology, 2009: table 2)

Area	Irreg. waste	Cores	Core prep/rejuv	Chips	Flakes	Blade/lets	Micro burins	Tools	Microliths	Total
Scatter 5	5	9	1	22	234	50	3	14	5	343
Scatter 6	41	21	8	19	480	65	5	19	9	667
Other	-	1	-	-	8	-	2	5	-	16
Total	46	31	9	41	722	115	10	38	14	1026

5.1.3 Middle Colne sites with assemblages of 100 plus artefacts

5.1.3.1 Sandstone and Cowley Mill Road

The Sandstone site was investigated by J. D. Marsden, his family and Lacaille, and more detail is given in chapter 4. Like most Middle Colne sites ground surface is at c30.5-31.5m OD, with similar sediment sequences (peat overlying floodplain gravel), and like

[129] Context 100081

PA4, it is on the Colne and Alderbourne confluence. The basal floodplain gravels were flush with the water table in some places, and occurred at depths of between 0.91m and 1.82m, while the gravels did not reach water at the same depth elsewhere (Lacaille; 1963). This is an indication of the undulating ridges, banks and islands common to the area (Lacaille; 1961 and 1963).

Artefacts were situated in the sandy top part of the basal gravels and in the lower peat (Lacaille; 1963, *and see figures 5.30 and 5.31*), while overlying the peat was a shelly calcareous mud with tufa[130], also containing gastropods and lamellibranchs (Lacaille; 1963). This later horizon was interpreted as '*an open-water deposit, probably formed in a pond or lake, formed by continual rise of the water-table*' (Mitchell; 1956), and '*a backwater liable to drying up and choked at times*' (Davis; 1963; 153). Friable peaty clay soil above this contained artefacts which were typologically identical to material from the lower horizons, and may have been redeposited during flooding (Lacaille; 1963).

The assemblage was typologically assigned to the same '*Maglemosean culture*' as the Broxbourne flintwork (Lacaille; 1963: 155), and worked from chalk flint. Most of the assemblage is recorded as having been derived from the 'south pit' and 'south site', while a red deer bone (*figures 5.32 and 5.33*) and a piece of hazel tree (*figure 5.34*) were identified with site 9 (Franks House, British Museum).

There is a smaller, potentially 'off-site' scatter at Cowley Mill Road, a couple of kilometers south of Sanderson's along the river Colne. This site was investigated by The Department of Greater London Archaeology (DGLA) in 1989. Two flint scatters were collected from the same sedimentary context as the Sandstone assemblage, at the interface of terrace gravels and an overlying layer of organic silty peat. Flintwork was assigned to the EM by stratigraphic context (*see* HER[131]) with no typology or radiocarbon dates. However, at the adjacent site of Riverside Way, basal peats (earliest peat formation) were radiocarbon dated to 8340-8040 cal BC, giving a *terminus ante quem*

[130] Layers 6-9
[131] MLO23945

for the flintwork, while pollen and stratigraphic sequences were contemporary with 3WW, Sanderson's and PA4 (WA; 2006: 8.5.12).

At least 250 blades and flakes were part of the Sandstone assemblage (n=16 boxes of predominantly blades, flakes and cores are stored at Franks House, BM). Flakes and blades range from 2cm to 8.5cm (most between 5cm and 7.5cm), and were comparable to the Sanderson's assemblage from the playing fields[132] (Lacaille; 1963) (*figures 5.35 and 5.36*). At least (n=3) blade cores were attributed to the south site, plus trimmings from another two, although Lacaille described cores as '*well represented numerically in the collection*' (1963: 164). One hammerstone made on a quartz pebble[133] also came from the south pit (*figure 5.37: 4*).

Blades and flakes were not only found as debitage, some were utilised as scrapers and knives, and some were obliquely retouched, meaning they had been further worked and probably used as tools. Scrapers were also made on core trimmings (n=3) (*figure 5.37: 1-3*), and were probably fashioned from other pieces of debitage or old tools, as the assemblage included '*a remarkable array of scrapers beside those executed at the end of blades*' (Lacaille; 1963: 158). Scrapers included thumb nail and side scrapers (n=6) (*figure 5.38: 1-6*).

Woodworking tasks were represented by gravers (n=2, Lacaille; 1963) (*figure 5.38: 7-8*) and a tranchet axe, although a lack of axe sharpening flakes suggest short-term use. Jacobi also worked on this collection and reclassified at least one of these gravers as pseudo burin, as well as identifying at least n=9 burin[134] (*figure 5.39*). Four of these were identified as dihedral (*figure 5.40*) and one as notched (*figure 5.41*). Small-scale toolmaking is also suggested by at least one microburin and burin spall from the south pit. Microliths (n=15) were all 2-3cm (normally associated with later Mesolithic typologies, *see chapter 2*) and broad blade, some were blunted obliquely and one which was crescent shaped (*figure 5.42*).

[132] From gravel work pre-MoLAS
[133] This is item 791 in box 15 at Franks House
[134] Items 571, 575, 577, 588, 558, 560, 568, 567 & 793

5.1.4 Middle Colne sites with assemblages of 10 plus artefacts

5.1.4.1 Long Lane

In addition to large-scale activities represented by the above assemblages, there were also several small scatters in the Middle Colne dataset, with at least one dated to a contemporary EM chronology. A small assemblage of n=19 pieces of worked and burnt flint were found through excavation of Ickenham playing fields, south-east of the Colne, along the river Pinn (MoLAS; 1995).

Most of the assemblage came from a secondary, residual context which consisted of one deposit (2054). This deposit was a topsoil and brickearth mix which covered Roman features[135] on the site (*figures 5.43 and 5.44*). All the pieces were of locally derived river gravels and many reflected movement through post-depositional edge damage and abrasion (58% were broken) (*ibid.*). However, the majority of flintwork consisted of flakes (n=14), mainly from context 2054 (n=8) and were predominantly from secondary flaking (n=7) with one piece showing tertiary reduction. A few were also distributed across a further four contexts (n=1 secondary flake from context 2090, n=1 secondary flake from context 2096, n=1 tertiary flake from context 2082, n=1 tertiary flake from context 2063).

The assemblage also included a couple of single platform cores, a couple of blades[136] and a microlith. Both cores were made on small pebbles, one with a single bladelet scar. The microlith[137] was an obliquely blunted point with the proximal end snapped off, typologically dated to the EM and soft hammer worked (*ibid.*).

5.1.5 Middle Colne assemblages of unspecified quantity

5.1.5.1 Dewe's Pit and Dewe's Farm

Dewe's Pit and Farm, like Sanderson's and Sandstone, were originally dredged for gravel, and have been described as two Mesolithic sites on Harefield Moor (Lacaille; 1961). Recent work for Hs2 has concentrated on another area of the Dewe's Farm site, which

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[135] Phase 3, Group 9
[136] Context 2054
[137] Context 2054

largely consisted of Late Mesolithic and Early Neolithic archaeology (*see chapters 6-7*) and '*a small assemblage of Early Mesolithic blades, flakes, scrapers and cores*' (Scott; 2018: 5.2.3).

Surface level uniformity was taken at 36.6m OD but the topography varies between 38.7m and 50m OD across both sites. The sedimentary stratigraphy is the same, however; Holocene alluvium overlies a low floodplain gravel, and is sealed by a hard, compressed black peat (Lacaille; 1961). The undulating nature of the floodplain sediments mean that in some places across the site, as across the Colne Valley generally, gravel islands or ridges emerged creating temporary landsurface (*ibid.*). The peat overburden at Dewe's is also thicker than Sandstone, for example, and being near a lake or body of water, the site may have experienced more frequent or longer episodes of flooding (*see* Lacaille; 1961). Some flints were located in the gravels, while some areas contained spreads of a looser peaty soil which also contained flint artefacts (*ibid.*). The raw material is described as brown stained, green mottled, fine dark chalk flint[138], and artefacts were described as having '*pristine sharpness*', i.e. they are not rolled or abraded and have not travelled from a place of deposition (*ibid.*p.118). The assemblage was typologically similar to Sandstone (Lacaille; 1961).

'*Abundant cores*' (at least 3 were specifically identified) and an '*active knapping floor*' were noted from the assemblage at Dewe's Pit (*ibid.*p.119) (*figure 5.45: 6, 7 & 8*). Wymer also referred to a couple of cores from '*crumbling peaty soil*' at Dewe's Pit, and n=16 unretouched blades and flakes (1977) (*see also* Rankine; 1956).

Tools included fine parallel sided blades which were utilised as knives or saws (at least n=4), scrapers made on a flakes (at least n=4) and n=2-3 scrapers made from trimming flakes (*figure 5.45: 10, 11 and possibly 9*) (Wymer; 1977). Although there were no microliths in the assemblage, some cores showed evidence of blade removal and one of the fine blades (5) had microlithic retouch. A tranchet axe was also found somewhere between Dewe's Pit and Farm (Lacaille; 1961, Wymer; 1977).

[138] Possibly a mix of Bullhead bed flint and fluvial gravel flint (Bates; pers comm)

There are also references to '*some flint artefacts*' at West Hyde in Rickmansworth which are '*stained deep brown*' and were taken from the pebbly lower part of the peat (Lacaille; 1961: 103, Bowen; 1977). These artefacts were identical to the Sandstone and Sanderson's flintwork, and of the Broxbourne Maglemosean typology (Lacaille; 1961), but there is little further detail on them other than that they were flint implements and flakes[139] (Castle; 1971).

5.1.6 Lower Colne sites with assemblages of 100 plus artefacts

5.1.6.1 10-16 London Road

Prior to redevelopment in the area, Surrey County Archaeological Unit (SCAU) undertook a programme of evaluation (including trial trenching), and excavation at two sites between numbers 10 and 32[140] London Road, Staines (Hayman; 1999, Hayman and Ayres; 2001). The earlier work[141] at 18-32 produced little in the way of Mesolithic material (Hayman; 1999). However, the assemblage excavated at the site of the Old Police Station (numbers 10-16), consisted of *c*296 flint artefacts from n=30 contexts across the site (*figure 5.46*) (Hayman and Ayres; 2001). The flintwork were given a 'Horsham' typology based on obliquely blunted points, while the length of these microlithic points pointed towards a later (LM) manufacture (*ibid.*).

The majority of struck or worked flint (n=224) were from 3 features[142] which are described as hollows and were of probable tree-throw activity along the margins of the former terrace (Kempton Park) and floodplain (*see figure 4.4*). The undisturbed geology of the site comprised river terrace deposits of brickearth which were exposed in some of the deeper features (Hayman; 1999, Hayman and Ayres; 2001). Of the flintwork 31.7% of the material was burnt (Table 6). Roughly 50% of this assemblage were from hollow 149 (n=154 pieces of worked flint), while a further n=54 pieces were from hollow 148, and n=16 pieces were from hollow 185. A further three features[143] were attributed

[139] Three Rivers District, Hertfordshire HER 870
[140] This included the former Greyhound public house and the Old Police Station
[141] In 1994 and in 1998
[142] Features 148, 149 & 185
[143] Features 164, 172, 182

to the same chronology as the fills were very similar, although only one hollow contained a single struck flint[144], and one contained a couple of pieces of burnt flint[145] (Hayman and Ayres; 2001).

Table 6: Distribution of worked, burnt flint & calcined flint at London Road (adapted from Poulton et al, 2001: table 8 & table 14)

Context	Unburnt flint (n)	Unburnt flint (%)	Burnt flint (n)	Burnt flint (%)	Calcined flint (n)	Calcined flint (%)
148, 149, 185 (hollows)	153	68.3	71	31.7	15	13.5
163/176 (layer)	18	72	7	28	78 (layer 163)	70.3
Other	43	91.5	4	8.5	18	16.2
Total (n) and overall %	214	72.3	82	27.7	111	100

144 172
145 182

These features were all between 0.06m and 0.3m in depth, and some of the shallower hollows and deeper pits were probably tree throws (e.g. feature 148, 149, and probably 172) (*ibid.* p.9). The material was fresh and unrolled, which suggests it was not waterborne and there is no evidence in the stratigraphy of any flooding event (Hayman and Ayres; 2001). The site was however, nearer to water at the time of activity; archaeological work at Staines Central Trading Estate *c*400m west of the site (WA; 1996*a*) found two gravel islands and a broad channel which formed between two periods of alluviation. Evidence of palaeochannels are common in this area, where an ancient channel runs NW-SE across Staines Moor adjacent to the river Colne (Jones, O'Connell and Poulton*;* 1990, Keith-Lucas; 2000), and at Hithermoor Pit on Stanwell Moor a silty deposit contained later prehistoric pottery overlying a buried river channel[146] (Hayman; 1996).

A further n=25 artefacts came from subsoil samples[147] at London Road, in sedimentary layers 163/176 (including some burnt material), but most of these have been interpreted as Neolithic/Bronze Age (Hayman and Ayres; 2001). Another n=47 were also found residually in later contexts. Raw materials were derived from river gravel pebbles and locally acquired (*ibid.*).

Flakes (n=100), and blades (n=49) were distributed across the three main tree throw hollows with a further n=20 flakes in samples, and n=20 flakes and a blade in residual contexts (*ibid*). The majority of blades were consistent with the size of bladelet manufacture, although one is longer (56x14mm). A few cores (n=3 in hollows[148], n=1 in sample, n=3 residual) included a 'pyramidal', possibly LM, type from a tree-throw hollow, and at least two that show blade removal. Chips (n=45) were distributed across hollows, one piece was found residually, and smashed pieces (n=4 in hollows) included a core rejuvenating flake (n=6 were also found residually and in the subsoil samples) (*ibid.*).

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[146] SAS (1999) SAC 86
[147] Contexts 163 & 176
[148] 148 & 149

Used tools were also represented in the assemblage. Retouched and utilised blades and flakes (n=13) were primarily deposited in tree-throws, although a further utilised blade came from layer 163/176, and a couple more of diagnostically Mesolithic typology were found residually in contexts (100) and (136) (*ibid.*).

A few microliths (n=5), were made and used, including two which were obliquely blunted, and one which was triangular and of probable LM geometric form (residual in layer 163). Another obliquely blunted microlith was found residually during work at 18-32 London Road (Hayman; 1999). Microburin (n=3) were concentrated in a single hollow (149) and were associated with burnt material. They were smaller than the microliths (mean length x breadth: 14 x 7mm). Woodworking tasks were evidenced (n=1 possible burin or core graver), and some repair work on axes (a possible axe sharpening flake from tree throw 149). A couple of awls, including a fragment, came from the same hollow as the microliths, burin and axe sharpening flake, while a further n=18 unspecified tools were found residually (Hayman and Ayres; 2001).

Unlike the majority of unburnt flintwork, only a very small quantity of calcined flint (13.5% or n=15 pieces) were deposited in tree throw hollows (148 and 149), and burnt material included two obliquely blunted microliths. Most of the burnt material came from layer 163[149] (70%) was given a later chronology (*ibid.*).

5.1.6.2 Majestic House

This site lies at 15.6m OD within a few hundred meters of the London Road assemblage (*figure 5.47*), on a series of terrace deposits including Taplow Gravel and more recent Holocene alluvium (Ellis; 2016). The lithic assemblage consisted of n=640 pieces, predominantly residual in later alluvial deposits, although approximately a third (n=254) were deposited in pit features with stratified deposits (906, 1166, 1285) (Table 7*, and see figure 5.48 for location of pits*). Pit 1166 contained the majority of Mesolithic worked flint (n=187) and burnt flint (n=17). The full assemblage was comprised of mainly debitage, and a large proportion was derived from primary reduction, with 6% of the flintwork from secondary technology (Table 8). The flintwork was typologically

[149] The lowest sedimentary horizon sampled on the site

attributed to Early Mesolithic[150] microlithic type A2 and B (Clark; 1933), with diagnostic material distributed in tree throw hollows (Ellis; 2016). All of the pieces from the upper fill of pit 1285[151], for example, were in fresh unrolled condition and diagnostically Mesolithic-Early Neolithic, including soft hammer worked blades (n=3) and bladelets (n=3).

Table 7: Majestic House stratified Mesolithic flintwork (adapted from Sommerville, in Ellis, 2016: table 11)

Pit **Context**	**906** **907**	**1166** **1167**	**1285** **1289**
Chips	4	73	0
Cores	0	1	0
Core rejuvenation flakes	3	0	0
Crested blades	1	1	0
Blades	4	17	3
Bladelets	11	27	3
Flakes	25	50	7
Knives	1	0	0
Microburins	1	0	0
Microliths	3	3	0
Notched pieces	0	1	0
Retouched flakes	0	1	0
Shatter	0	13	1
Totals	**53**	**187**	**14**

[150] The site also has Neolithic material
[151] Context 1298

Table 8: Majestic House flintwork (adapted from Sommerville, in Ellis, 2016: table 9)

Primary technology	
Blade	56
Bladelet	62
Chip (flake, blade <10mm long), shatter	191
Core	27
Core fragment	3
Core rejuvenation flake	4
Crested blade	5
Flake	260
Microburin	1
Tested nodule	1
Secondary technology	
Arrowhead	1
Fabricator	1
Knife	1
Microlith	1
Miscellaneous	2
Notched piece	1
Pick	1
Retouched pieces	6
Scraper	8
Serrated blade	1
Truncated flake	1
Total	**640**

The debitage was primarily made up of chips from flakes, blades or shatter (n=158), and just under half was concentrated in a single pit[152] (n=73). The same pit fill also produced a probable pick axe. Core rejuvenation flakes may have been from Mesolithic and/or Neolithic activity, the majority from pit 906 (n=3) and one from a later ring ditch feature[153]. Just under half the blade assemblage (n=56, 43%) were from pit fills[154], again with the largest concentration in pit 1166 (n=17).

Microliths were made, used and discarded on site. Bladelets (n=62) were distributed across stratified deposits in three main pits, with the largest concentration from feature 1166[155] (n=27). A few more (n=3) came from the ring ditch feature[156] and the remainder were from tree throws or residual. Two or three type A2 and B microliths (Clark; 1934) were in the fill of a post pipe[157], along with a microburin. The B type was edge blunted, burnt and with broken ends, the A type was obliquely blunted. A further two or three microliths were from another main pit[158]. Crested blades (n=7) came from the same pits or post pipes (906 and 1166) and may represent (crested) pieces from microlithic toolmaking, while the fill of post-pit 906 (907) also contained burnt worked flint (n=5), including burnt microliths and a microburin (Ellis; 2016). Another tree throw fill[159] produced a fabricator which were generally used as strike-a-lights to make fire (Rowland; 2021).

Other retouched tools consisted of some undiagnostic pieces, but also included a truncated flake in a possible tree throw fill[160]. This piece was made on a distal flake fragment, typically Mesolithic (Ellis; 2016) and associated with blades (n=4), core rejuvenation flakes (n=3), and a crested blade. All pieces showed soft hammer working (tool making).

[152] 1166 in fill 1167
[153] Context 1054
[154] A few were also distributed across the ring ditch (n=4).
[155] Context 1167
[156] Contexts 921, 1052, 1088
[157] 907
[158] 1166
[159] 957
[160] 1081

5.1.7 Lower Colne sites with assemblages of unspecified quantity

5.1.7.1 Church Lammas, Vicarage Road, Hengrove Farm and Ashford Prison

In 1994, in advance of subsequent gravel extraction, the SCAU conducted archaeological evaluation and monitoring across a low lying seasonally flooded meadow within the confluence of the Colne and the Thames (Jones, Lewis and Rackham; 2013). As a consequence of the work, at least two Lateglacial scatters were identified, possibly contemporary with Scatter A and C East at 3WW (Jones *et al*; 2013). However, similarly to 3WW, these scatters were not due to isolated temporal events, and further material was located in several hollows across the site (*figure 5.49*). Hollow 1 particularly, contained an animal bone assemblage which was more likely to date from the Early Mesolithic, and activities were focused on the area around this assemblage, including aurochs bone in scatter 1, located 15m SE of the hollow (Jones *et al*; 2013) (*figures 5.49 and 5.50*).

In hollow 1, fragments of bone also included aurochs, along with red deer, elk, wild pig and aurochs (n=51) from several contexts[161]. A couple of worked flakes and a snapped blade came from the base of context 516 (which also included animal bone). No butchery marks were visible on the animal bone, however (similar to the Sanderson's assemblage), and the material was not interpreted as a midden dump akin to 3WW scatter C West (*ibid.*).

The hollow 2 sedimentary and pollen sequence also post-dates Late Glacial scatter 1 and reflects a local sequence contemporaneous with Early Holocene Mesolithic activity *c*9,500 – c7,000 BP (*c*7550 – *c*5050 BC) (*ibid.*). Significant amounts of charred wood were present in all pollen zones, especially CL4 (Jones; 1997, 2013), and may be associated with deliberate burning of woodland, clearance and land management in the Mesolithic (*see* Overton and Taylor; 2018).

A few 'A' type obliquely truncated microliths (n=2) were also found residually across the site, and locally in the Lower Colne area another small assemblage of Mesolithic flints were located at The Close, Vicarage Road[162] (AOC; 1997, 1998). Small-scale activity was also represented at Hengrove Farm by a single obliquely blunted 'Deepcar' type

[161] Contexts 475, 476, 486, 489, 491, 515-517, 521
[162] SAS (1999) SAC 86

microlith (Hayman and Poulton; 2017). At Ashford Prison a residual EM blade was found near to the palaeochannel[163] (Howe *et al*; 2002), whilst a possible microburin is also recorded (Carew *et al*; 2006).

5.2 Late Mesolithic

The Late Boreal to Early Atlantic climatic period of the Late Mesolithic (*see chapter 3*), meant changes in landcover and woodland became more varied with oak, elm and lime higher on the valley side, and alder-willow carr and reedmarsh along the floodplain (Scaife; 2000, Keith-Lucas; 2000). Places which had been inhabited during the Early Mesolithic period (e.g. 3WW) became a largely wetland habitat of alder and willow carr. This section discusses sites and find spots representative of these later landscape inhabitations, dated to the Later Mesolithic (*figures 5.51 and 5.52*). This chronological categorisation was again produced using radiocarbon dates, typological distinctions and stratigraphic sequencing.

5.2.1 Upper Colne sites with assemblages of 1,000 plus artefacts

5.2.1.1 Moor Park and the Moor Park site

Sandy Lodge Golf Course, Moor Park Golf Course/Club, Bathend Clump, Merchant Taylor's School, Tolpit's Lane and Hampermill are all sites across the Moor Park area which have yielded Mesolithic and Neolithic artefacts (*see figures 5.4 and 5.5*). This area is defined by a valley side geomorphology and topography which reflects a location in the Chiltern foothills; heights of *c*73m OD in the eastern area and *c*109m OD at Batchworth Heath on the western edge. In February 1965 an area of Moor Park Golf Course was surveyed by Rickmansworth Gravel co. and recorded by Jacobi as the 'Moor Park site' (1965*c*). Apart from this letter to Professor Dimbleby at the Institute of Archaeology, the only other reference to the site is in a bulletin for Watford and SW Herts Archaeological Society (1965*b*). However, at least a couple of temporally distinct episodes of Mesolithic dwelling were identified and recorded (Jacobi; 1965*b* and *c*).

Sediments were recorded and described as exceptionally well stratified, and containing large quantities of worked flint (*ibid.*). These sediments were labelled from the top

[163] SAC 89 (2002)

down with corresponding pollen diagrams (*figures 5.53 and 5.54*). Jacobi took n=15 samples from the bottom sediments upwards (layers 4 and 5), although unfortunately the pollen data is missing from any reports and correspondence. The stratigraphy is detailed but was probably recorded in slightly different locations as the sequences drawn and described were not quite the same (Bates; pers comm). However, the cold climate fluvial sediments were made up of sand and gravel which had been resorted by flood waters (Jacobi; 1965*b*), and an '*implementiferous*' horizon consisted of dense flint scatters (several thousand pieces) which overlay these gravels (Jacobi; 1965*b*: 10). This artefactual scatter consisted of various '*floors'* or horizons, which stretched across *c*30 meters, and were sealed by two layers of compact clay (0.6m) (*ibid.*). The gravel and clay sediments represented a shallow lagoon which cut off some of the gravel islands and ridges common in the Colne Valley, while swamping others during the Early Atlantic period (*ibid.*). A watching brief by the Hertfordshire Archaeological Trust (HAT) at Moor Park Golf Club also recorded an assemblage of mixed typology in a secondary deposit (Humphrey; 1997).

On the basis of the sediment and pollen records (*figures 5.53 and 5.54*), the flint horizon were ascribed to the top of layer 4/base of layer 5; where the sediments were comprised of a cross bedded sand (a water channel) indicating fluvial deposition (Jacobi; 1965*b*). However, there is no mention as to whether they were water worn or likely to have travelled from another place of deposition (*ibid.*). The sequence of sediments and the context of flintwork within them, however, are similar to other sites in the Colne Valley where organic sediments were overlain by tufa [164], which was most likely misinterpreted as chalk in layer 3 (Bates; pers comm).

A palaeochannel had also silted up with peat at its base, and three clay beds were interspersed with seams of small pebbles. The beds represented a stepped route of the channel into a pond or pool, and artefacts were found in the layers of these steps (Jacobi; 1965*b*). Such features are likely to have been formed by springs emerging from the chalk bedrock which created pools and dams of tufa, similar to those described at The Grove, for example. At the Moor Park site, the top and middle steps contained large

[164] Oakend, 3WW, Sandstone, The Grove, Misbourne Viaduct, Bedfont Court

pieces of struck flint and large flake tools, while the lower steps contained burnt flint and a small tranchet (*ibid.*). The remaining assemblage included an axe or adze sharpening flake, a couple of micro-burins and six microliths. The lower step area also had '*cooking stones*' and a hearth (burnt stone and flint), plus a small tranchet. Elsewhere in the same bed there were more flint tools and another hearth (*ibid.*). A few implements and 'potboilers' (burnt stone) were also found *in situ* in the area of pollen sample 9, while a small pit containing charcoal and flint chippings were assigned to one of two temporally distinct occupations (*ibid.*). Further or extended site dwellings were represented by debris which had accumulated over time and was swept together to form a *c*15cm thick surface with dense concentrations of 'potboilers' (*ibid.*). A scatter of flakes and a further n=3 tranchets (a couple were found in a choked channel filling) mark another period of post-fluvial occupation (*ibid.*).

5.2.1.2 Tolpit's Lane

Tolpit's Lane was another Moor Park site with multiple occupational signatures. The main detail on the archaeology, including sections of the stratigraphy, came from Jacobi's documentary archive at Franks House, British Museum, and from Watford Museum (*figure 5.55*). The site was excavated over several years from 1965 until 1972, and again in the 1980's (*figures 5.56*). Chronology was based on radiocarbon dates and typology, suggestive of at least three episodes of Later Mesolithic activity at site B. The earliest dates were taken during excavation in 1972, from wood charcoal in a large tree-throw feature [165], and radiocarbon dated to 7578-7044 cal BC (*appendix xvi*). Excavations in 1965 had also produced wood charcoal and charred hazelnut shells from a posthole filling [166] and radiocarbon dated to 5475-5072 cal BC (*appendix xvi*). Butchered aurochs bone came from the gravel pit and was radiocarbon dated 4241 - 3951 cal BC (Burleigh *et al*; 1982), later revised to 4495-3991 cal BC (Bowman *et al*; 1990).

Area B101 layer 7 (sediment 2.2), which also produced the later radiocarbon date, contained the greatest concentration of struck and worked flint; at least *c*2,525 pieces

[165] Feature F1, layer 7 (grid A7), sediment 2.2 (Q – 1147)
[166] Trench 1 & 2, layer 7, post-hole 5

of struck flint as well as burnt pieces across the majority of contexts (*figures 5.58 and 5.59*). Most of the material were concentrated in feature F1, which was a large irregular shaped hollow adjacent to a 'gully' (*figure Figure* 5.59). The feature was a probable tree throw hole, while there were also several smaller hollows, pits and post-holes (*Franks House documents; no date*). Debitage associated with the small, shallow pits included n=*c*50 cores and a large quantity of blades and/or flakes (n=*c*1,000) (*ibid.*). Cores (n=6) were recorded on the chalk slope, with further debitage (cores including a blade core, blades and flakes) from gravel below weathered peat, and from a colluvial layer underneath a Neolithic horizon (*ibid.*).

Wood working tools were recorded from the shallow pits (n=3 tranchet axes, gravers), and gravel (gravers), and scrapers were found alongside them (*ibid.*). Microliths (n=*c*20) and manufacturing pieces (microburin) were also deposited in the pits, and a further n=3 microliths were found in the hillwash layer (colluvium) beside the gravel pit (*see* Wymer; 1977). A quantity of red deer bone were also recorded within the hillwash layer, while aurochs horn core and skull (*bos primigenius*), displayed cut marks on the base of the horn (Rawlins; 1977; Parrott; 1972). A diagnostically LM-EN flint blade core[167] was also found as a single artefact on the south side of the river at Tolpit's Lane (Castle; 1985).

5.2.1.3 Sandy Lodge Golf Course (SLGC)

Archaeological work at another of the Moor Park sites, between the 1960's and 1990's, identified at least three areas of Mesolithic activity (sandpits A, B and D), as well as several spot finds across the Golf Course (*figure 5.60*). The *c*20 hectares of Golf Course reaches a maximum height of 73m OD, while the ground slopes downhill towards the east and southwest from the centre of the site (Jacobi; 1966). Chipping areas were identified in the ploughsoil in 1955 (flint chippings and a tranchet axe-head were found) and in 1962 sandpit A was found to contain Mesolithic flintwork including tools (*Figure 5.61, 5.62*). A '*chipping floor*' of *c*1,000 pieces of struck flint, including blades and flakes, potboilers and chalk flint nodules, was distributed between a hearth in the northeast corner, and another feature which was exposed in the south-western corner (Jacobi;

[167] LHER 6582

1965*b*: 9). The hearth was *c*46 cm in diameter, and consisted of burnt flints, '*carstones'*, '*clinker'*, while oak charcoal was found at a depth of 63.5cm just above the subsoil, with unburnt chippings above the burnt layer (Jacobi; 1965*a*). Burnt flint included an obliquely blunted microlith and a core (see Early Mesolithic).

In 1963 an area of *c*37m square was taken down to the subsoil at the entrance of sandpit A (*figure 5.62*), and the area including the sandpit was excavated and recorded as Late Mesolithic (*ibid.*). This included a feature which has been described as a '*swallow pit*' (*ibid.*). This was approximately 1.5m in depth and was described as having '*footholes*' cut into the side at a depth of around 76cm (*ibid.*). Thin scatters of oak, ash and willow charcoal were found at 0.46m and 0.66m depth, with flint flakes and sandstone occurring in all fills (*ibid.*). Both sandstone and quartzite pebbles from this spread of struck flint debitage were used as hammerstones or rubbers (*ibid.*). A total of n=48 cores were also recovered from this assemblage, and all except five were from local black chalk flint. There were also bulbar, middle and distal fragments (n=113) and core flakes (n=33). 'Chippings' included unretouched flakes (n=315), and unretouched blades and bladelets (n=65), including a bladelet of patinated blue-white flint (PaMELA).

Worked flint included tools for carpentry; a '*typical*' axe-sharpening flake, n=2 gravers and a polyhedric burin (*ibid.*). Other tools comprised at least n=8 microliths (mostly obliquely blunted forms and an asymmetrical type), an unfinished triangular point and several microburins (Jacobi; 1965*a* and *b*). Although no axes were recorded from Sandpit A, two were recorded alongside a sharpening flake *c*200m southwest of the pit[168] (*figure 5.60; point C*). Another axe was recorded *c*300m east of the pit (*figure 5.60, point F*), and a further two were located along with horseshoe scrapers and cores near to sandpit B (*figure 5.60, point H*).

Two more axes (a flake and a '*chopper*') were recorded towards the west of Sandy Lodge Farm, where knapping debitage and tools were also recorded (Jacobi; 1966). The axes were both of similar dimensions, one was iron-stained with significant plough damage, described as a flake tool with a right hand side tranchet cut (*ibid*). The second axe was

[168] Items 18528-31 (PaMELA)

a '*beautifully worked core tool*' (1966: 10) made of grey flint with slight iron staining. A flint 'pick' from Watford Museum may be one of these two artefacts (*figure 5.63*). The rest of the assemblage from Sandy Lodge Farm included cores (n=20), blades/flakes (n=400), and narrow straight backed bladelets (n=6)[169], scrapers (n=11), gravers (n=3), microliths (n=3), microburin (n=1) and other worked flint (n=13). Between 1984-1987 an area of 36m square at Sandy Lodge Farm was sampled and further artefacts were located in the brown earth horizon at 0.5-1m depth (*ibid.*).

Artefacts were also recorded from sandpits B and D, although sandpit B contains mainly Neolithic material (see chapter 6 and 7) (PaMELA). However, a number of microliths (n=6)[170] were also found in sandpit B, along with a couple of piercers[171] (PaMELA). Two LM microliths (type 5) were found during excavation of Roman features at SLGC and are now stored at Verulamium museum (PaMELA)[172]. The first of these is described as clear flint and 26.5mm in length. The second is of unpatinated black flint, straight backed and 32mm long. Both are in the smaller category of microlith, associated with LM activity (e.g. Clark; 1933, Jacobi; 1978). The sandpit A assemblage also included retouched blades (n=17) and flakes (n=6), two denticulates (sawing tools), awls (n=6) and scrapers (n=5) plus n=124 pieces of burnt unworked stone.

5.2.2 Upper Colne sites with assemblages of 100 plus artefacts

5.2.2.1 Hampermill

Artefacts from Hampermill have not been radiocarbon dated or assigned a particular typology. However, the majority of artefacts from Moor Park sites have been dated to the Late Mesolithic, possibly Middle Mesolithic (*see chapter 3*), and the sedimentary context of deposition is similar to the Moor Park site, which makes the material suitable for presentation in this section.

[169] Artefact ID 9136-40 and 18504 (PaMELA)

[170] Artefact ID 18516
[171] Artefact ID 18515
[172] Artefact ID 18511-14 (check)

Hampermill Lake is a flooded gravel pit located towards the northern boundary of Moor Park, north of SLGC and east of Tolpit's Lane (*see figure 5.5*). This was another excavation carried out during the 1960's by Merchant Taylor's Archaeological Society (Derricourt and Jacobi; 1970). The southern trenches (J, M, N) comprised an orange gravel subsoil and a stony grey sand layer (up to 15m thick), overlain by a Mesolithic flint horizon (*figure 5.64*). Worked flint and oak charcoal were found in a layer of orange sand between 10-53cm in thickness, while just above this horizon, another layer of brown sand, 15-30cm in thickness, contained similar flintwork, including burnt material. These sedimentary layers were interpreted as a Mesolithic water channel (Derricourt and Jacobi; 1970, Humphrey; 1997), a feature which was also recorded with flintwork at the Moor Park site (5.2.1.1). The artefact bearing horizon was interpreted as a flood loam which had filled hollows in the floodplain gravels below the Roman plough soil (Derricourt and Jacobi; 1970, PaMELA[173]). This is a different sedimentary context to Early Mesolithic clay/peat/tufa sequences, as these sands suggest higher energy flows in the river and deposition in a different part of the river system (Bates; pers comm).

The flint raw material came from exposed chalk surfaces *c*450m to the west. Flintwork were in fresh unabraded condition, with no signs of water or wind glazing, no striations or edge damage from cultivation (Derricourt and Jacobi; 1970). N=216 pieces were examined, of which n=141 were unpatinated, n=50 pieces were mottled, and the rest were dull blue or white from patination. While described as the product of one homogeneous industry, patination was interpreted as a difference in the raw material (*ibid.*). Debitage comprised n=170 blades or flakes (mainly primary flakes, and n=50 probable blades), with n=13 cores, a few (n=3) core rejuvenating flakes, and a blade core recorded as a spot find at Hampermill Lake (Derricourt and Jacobi; 1970, PaMELA).

Some blades were also snapped for use as composite tools (n=10 bulbar blade segments and n=7 tip fragments), while a notched blade may be a micro-intermediate, and n=4 flakes were also notched (*ibid.*). A micro-burin was notched on the right hand side, a burin spall was long struck from the side of an unretouched blade, and a couple of burin struck from flakes suggest activities such as carpentry, wood or bone working. One of

[173] Artefact_ID 18443-18447

the burin was double-angled and made on a thick flake, the other was worked on the distal end of a utilised flake, and both showed evidence of their manufacture (transverse and longitudinal blows). A transverse scraper was described as a tool that was peculiar to local Mesolithic groups (Derricourt and Jacobi; 1970). The assemblage included n=5 flake scrapers, 3 of which were concave ended with signs of wear and one which was made on a blade of clear black flint (*ibid.*). There were also a couple of piercers, n=5 retouched tools, a single microburin, and n=13 burnt flint from the sandy layer of water channel (*ibid.*, PaMELA).

5.2.2.2 The Grove

The Grove was the northernmost site in the dataset, situated on a lower dipslope of the Chilterns *c*50m west of the Gade river, on floodplain lying between 59.5m OD and 58.4m OD. The site includes half river valley (*figure 4.5: areas B, C, D*) and half adjacent valley edge (*figure 4.5: area A*). During a watching brief of geotechnical test-pitting in 1999, a significant amount of Late Mesolithic *in situ* flintwork was found[174] and a further 7 hectares were later hand excavated. Sediments were recorded and sampled from three environmental trenches, which had been located to examine the river floodplain valley floor[175], a palaeochannel[176] and the valley side[177] (*see figure 4.5*). All three environmental trenches produced pollen, molluscs and ostracods, and trenches 1 and 2 also contained plant macrofossils (Le Quesne *et al*; 2001).

Sediments in the valley bottom trenches represented the standard Colne Valley stratigraphy. Basal gravel units, which were present across all three trenches, were dated to the Late Glacial, and the surface of these deposits formed the early Holocene landsurface, above which were organic peat deposits[178] (Bates; 2001). Mesolithic artefacts were taken from contexts between the Late Glacial gravels and the organic silt and tufa (*see appendices ii, for stratigraphy*).

[174] evaluation trench A125
[175] trench 1
[176] trench 2
[177] trench 3
[178] Appendix ii (Tables 3, 4 and 5) sediments 1.3, 2.4 & 3.5

The main excavation (June to December 2000) produced a large assemblage of mainly EN material (n=763), which is discussed in chapter 6 and 7. Material from the evaluation stage, however (Area A: trench A125) was predominantly Mesolithic (n=203 pieces of worked and burnt flint). This material comprised n=180 pieces of worked flint plus n=23 pieces of burnt unworked flint. The assemblage was unabraded and fresh, and considered to be *in situ* (Bradley; 2001). The Area A assemblage consisted of mainly debitage from primary reduction, and included n=162 flakes, blades and bladelike flakes, a couple of chips, and n=8 cores or core fragments, including cores with blade-like scars and one which may have been worked into an axe. Retouched pieces (n=8) included a retouched flake and a bifacially worked piece used as a scraper, a broken edge blunted microlith, a possible microburin and refitting flakes (*ibid.*).

Area C, on the lower slopes of the valley close to the edge of river floodplain, also produced a small amount of Mesolithic material (*see site plan*: *figure 4.5*). There was '*a substantial assemblage of Mesolithic flintwork*'[179] within an isolated alluvial layer, and two further scatters considered to be Mesolithic[180], one of which was located halfway up the slope on a terraced platform[181] (Le Quesne *et al*; 2001: 22). Silt lenses were found across the area in three patches and may be similar to those found at Oakend (Le Quesne *et al*; 2001, Bates; pers comm., *and see* 5.1.2.1). These were suggestive of slow moving water in ponds and pools, separated by gravel islands, and a meandering water course, along which several fire pits[182] (n=5) were recorded (Le Quesne *et al*; 2001). A possible hearth was also located in Area C, represented by burnt flint and stone, in proximity to a couple of scatters containing Mesolithic flintwork[183] (Le Quesne *et al*; 2001).

A series of shallow pits and possible post holes cut into the glacial clays and gravels[184], and were sealed by the same colluvium as that in A125[185]. It may be that this was actually a larger area of occupation since excavations at Cassiobury school *c*1.5km SW of The Grove on the west bank of the Gade river (*figure 7.2*), also recorded a small

[179] Context (3133)
[180] 3186
[181] 3191
[182] 3097, 3192, 3193
[183] Contexts (3186) and (3191)
[184] Context (2358)
[185] Sediment group 3.6

rectangular pit or post hole also dug into the alluvial clay (0.6 x 0.4 x 0.15m depth). This was probably contemporary, and contained a single struck flint blade (Haslam; 2012).

5.2.3 Middle Colne sites with assemblages of 100 plus artefacts

5.2.3.1 Dewe's Farm

Gravel extraction was carried out at this site in the mid 20th century, and mainly focused on a bluff of undulating floodplain gravel, on the edge of what would have been a lake (Lacaille; 1961). The works produced several artefact collections, some of which were given a typology of the Lower Halstow tradition (Lacaille; 1961: 121, *and see section 3.4*). Flints were located underneath a heavy peaty overburden, associated with pollen sequences of a zone VI-VII transition (Lacaille; 1961, Wymer; 1977). Artefacts were associated with the bones and teeth of '*large wild animals*' (Lacaille; 1961: 119). More recent excavations, however, were also carried out in preparation for Hs2 main works (Cotswold Archaeology; 2017, Scott; 2018), although most of this material was typologically Neolithic (*see chapters 7 and 8*). The highest point of the later excavations were at 40.5m OD and the lowest at 36.7m OD (Scott; 2018). Alluvial silts, which were found in the central area of Dewe's Farm, were deposited during one phase of floodplain accumulation (Lacaille; 1961), while chalk outcrops across parts of the site[186] provided a source of raw material (Scott; 2018). The flint assemblage from gravel extraction was '*brown stained and green mottled*' and different from the patinated and grey flints found in local surface collections (Lacaille; 1961: 119), while elements of the Hs2 assemblage were derived from river pebbles west of T084, as well as some from a fresh chalk source (Scott; 2018: 73).

Just south of the New Years Green Bourne (a nearby channel of the Colne), Cotswold Archaeology also found a sequence of alluvial deposits at 1.25-0.95m with Mesolithic and/or Neolithic worked (n=6) and burnt unworked flint (n=1), and a few non-diagnostic pieces in the topsoil at Harvil Road (n=10) (2017). This material was of similar typology to artefacts from the Dewe's Farm assemblage, and n=38 unstratified worked flints were recovered from spoil across several trenches[187] and archaeological features. The

[186] In the south west area
[187] TT082-TT087

material could not, however, be separated into a defined LM or EN typology;(Scott, 2018: 5.3.3).

Lacaille's collection, on the other hand, consisted of '*over 100 Late Mesolithic flints*', and the excavation for Hs2 has contributed a further small assemblage (Scott; 2018: 13). Most of the recently excavated Mesolithic flintwork came from two trenches; TT084 and possibly TT070 (*figures 5.65 and 5.66*), and were mainly concentrated in contexts (084003) and (084002) (ibid). Debitage from Lacaille's records consisted of *'numerous'* cores, including those represented by illustrations (*figure 5.67: 12 and 13)*, n=8 of which were recorded by Wymer, along with n=99 unretouched blades and flakes (1977). Core-trimmings also showed small blades having been detached from the core (*figure 5.67: 14*). Additionally, during the recent excavation, n=21 cores, and core fragments (n=15) came from trench TT084, with just a single core and a core fragment distributed across the rest of the trenches (*appendix iv*). These were single platform (mainly blade) cores, although some were prepared with second striking platforms (Scott; 2018).

The majority of Lacaille's assemblage were described as mostly utilised flakes and blades (*figure 5.67: 1-5*), while Fusionjv's assemblage included soft hammer struck blades and bladelets, bladelet fragments and a microlith from context (084011). One rod type microlith was recovered from context (084003)[188]. There were at least four scrapers in the original assemblage (*figure 5.67: 6-10*), including side scrapers on thin flakes (n=2) (Wymer; 1977). At least one graver (11), a tranchet axe fragment (15) and an axe sharpening flake suggest a *chaîne opératoire* of small-scale carpentry, axe use and repair at the site (Lacaille, 1961: 121, Wymer; 1977).

5.2.4 Lower Colne sites with assemblages of 10 plus artefacts

5.2.4.1 Imperial College Sports Ground (ICSG)/Ready Mixed Concrete (RMC)/Land East of Wall Garden Farm/LEWGF

Archaeological works were managed by Wessex Archaeology between 1996 and 2009, and the combined sites (*figure 5.68*) produced predominantly Neolithic archaeology (*see chapters 7 and 8*). However, small quantities of Mesolithic artefacts were also dispersed

[188] Sample 00049

across the area, and tasks included primary knapping (a few blades and blade-like flakes were recovered, a small, opposed platform blade core was residual in an early medieval ditch[189], and another, probable LM blade core, was found with a few rough flakes) (WA; 1998, Powell *et al*; 2015). Repair and maintenance of tools were carried out (a core rejuvenation flake from a blade core, and a possible axe thinning flake came from another tree throw hole[190], *ibid.*). Microliths were also made (a crested flake[191] from a Saxon feature and a microburin from tree throw hole[192]), used and discarded. At RMC three microliths were found in three separate contexts (one in a tree throw[193], one in an LBA/EIA pit[194] and one in a scatter[195] of mixed chronological typology). Two of these microliths were edge blunted and one was geometric and all were diagnostically LM (Bradley; 2015, Wessex Archaeology; 1998).

5.2.4.2 Terminal 5 (T5) and Bedfont Court

Between 1999 and 2007 excavations across Terminal 5 and Perry Oaks sludge-works were carried out by Framework Archaeology (FA; 2006, 2010) (*figure 5.69*). Prior to this MoLAS had also excavated an area of *c*4 hectares, which was incorporated into the dataset (site code POK96, FA; 2006, 2010). The site, like much of the Lower Colne dataset, was located on Pleistocene terrace gravels with overlying brickearth, and a small quantity of Mesolithic flintwork (n = 41) were dispersed across the whole area (*ibid.*). Most of these pieces were residual and non-diagnostic (FA; 2006, 2010). However, from a cluster of fourteen pits within the Neolithic C1 cursus feature (*figure 5.70*) eight were dated to the LM by thermoluminescence (Table 3, Table 9)[196]. The T5 pit group is within *c*800m of a complex of Late Mesolithic features at Bedfont Court, consisting of a line of three post-holes, five stakeholes and two pits, while a waterlogged piece of timber stake was taken from one of the postholes, and radiocarbon dated to 6240-5990 cal BC.

[189] 3507
[190] (2291)
[191] G2619
[192] (10313)
[193] (3872)
[194] 2266
[195] 1100
[196] 68% confidence with a +/- of between 840 and 530 years

Table 9: Thermoluminescence dates at T5 (FA, 2010: tables 2.4 and 2.5)

<table>
<tr><th rowspan="2">Site and area</th><th rowspan="2">Feature</th><th colspan="8">Thermoluminescence dates</th></tr>
<tr><th colspan="2">Upper date (BC)</th><th colspan="2">Lower date (BC)</th><th colspan="2">Determination</th><th colspan="2">+/- (68% confidence level)</th></tr>
<tr><td rowspan="4">T5 PSH02</td><td>Pit 524220</td><td colspan="2">5057</td><td colspan="2">3997</td><td colspan="2">4527</td><td colspan="2">530</td></tr>
<tr><td>Pit 524224</td><td colspan="2">6747</td><td colspan="2">5367</td><td colspan="2">6057</td><td colspan="2">690</td></tr>
<tr><td>Pit 555536</td><td colspan="2">7917</td><td colspan="2">6397</td><td colspan="2">7157</td><td colspan="2">760</td></tr>
<tr><td>Pit 524218</td><td colspan="2">8187</td><td colspan="2">6507</td><td colspan="2">7347</td><td colspan="2">840</td></tr>
<tr><td rowspan="3">T5 WPR98</td><td>Pit 165005 (x2)</td><td>6840</td><td>7330</td><td>5580</td><td>6170</td><td>6210</td><td>6750</td><td>630</td><td>580</td></tr>
<tr><td>Pit 165007</td><td colspan="2">7160</td><td colspan="2">5760</td><td colspan="2">6460</td><td colspan="2">700</td></tr>
<tr><td>Pit 165009</td><td colspan="2">7810</td><td colspan="2">6550</td><td colspan="2">7180</td><td colspan="2">630</td></tr>
</table>

The group of pits at T5 were located in the western area of the site, *c*10 to *c*20 m east of a palaeochannel marking the boundary between floodplain and terrace (FA; 2006, 2010). The pits were on the terrace side of the channel (east), while the stakehole complex at Bedfont Court were on the floodplain (*figure 5.70*). The pits contained burnt unworked flint and some also contained burnt stone. Five of the pits[197] contained flakes and broken blades and eight thurmoluminescence dates were obtained from burnt flint in n=7 of the pits. None of these dates were immediately contemporary, and suggested staggered temporal events of between a few decades up to a few hundred years. At least two phases of occupation were also suggested by intercutting pits with burnt

[197] 159025, 160021, 165005, 165007, 165009

material (pit 578138 cut by 524224), and a small lithic assemblage which was abraded and broken before being incorporated into the pit fill (i.e. the flintwork had been accumulating for some time before being discarded).

Core preparation as well as flake rejuvenation tablets were part of residual distributions, but although debitage were mainly from later contexts, at least four Mesolithic/Early Neolithic tree throws contained blades, bladelets and flakes (FA; 2006, 2010). A microlith was found in a palaeochannel, and two more microliths were found residually, as well as a couple of microburin (*ibid.*). A couple of burins and burin spall, an axe or adze, and axe thinning flakes were found in features including an Early Neolithic ditch. A couple of bladelets and a flake were retouched and used as tools (*ibid.*).

5.2.4.3 Prospect Park, Harmondsworth

The site is also known as Moor Lane and occupies floodplain at 23m OD, raising to a terrace at 26m OD in the northern area and 29m OD to the east (Farwell, Andrews and Brook; 1999). The Pleistocene sands and gravels are predominantly Taplow Terrace, with Boyn Hill in the north-east area. On the floodplain, an alluvial layer overlies the gravels at depths of 0.4m to 1.4m plus, while on the northern terrace the gravels are directly overlain by topsoil. A '*relatively small…probable LM*' scatter were mainly situated in the north-east area of this site, associated with the terrace sequence (*ibid.*). The raw material were good quality small river pebbles, and flintwork consisted of cores with bladelet scars (n=10), bladelets and other 'diagnostic waste', microliths (n=5), which included two rods, an obliquely blunted point, two backed bladelets an a tranchet axe sharpening flake (Harding; 1999). While flintwork showed very little edge damage or sign of abrasion, these artefacts had been disturbed by later activity (Bronze Age), which may have cut through what was possibly a concentrated group of flintwork (WA; 1996*b*, Farwell *et al*; 1999).

5.2.4.4 Hengrove Farm

While most of the material from this site was Neolithic (*see chapter 7 and 8*), tree throws 6027, 6142, 6123 all contained Mesolithic flintwork including a core (Hayman and Poulton; 2017). At least one hollow (6027) was dated to Late Mesolithic occupation, and contained unburnt (n=13) and burnt flint (n=12), a microburin and two blades. One of the tree throws (6123) was segmented[198]; and one segment (6143) cut into a periglacial feature (ice wedge)[199]. It is possible that the two segments represent separate tree throw hollows (*ibid.*).

5.3 Mixed assemblages: Early to Late Mesolithic

While tranchet axes and adzes are often associated with Early Mesolithic assemblages (*see chapter 2*), in the study dataset the use of these tools were also part of Late Mesolithic signatures. However, apart from tools which were taken back to sites to be repaired, reworked or held onto, tranchets were often lost or discarded as isolated 'off-site' spot finds, which makes them difficult to assign to particular chronologies. In the Upper to Middle Colne single artefact spot finds of axes were recorded at Whitelands Avenue, Capell Hamlet and Mill End (*figure 5.71*), although unlike the Thames, none were found in the river (*see* Haughey; 2000: table 21.1). Small assemblages at Heronsgate, Westbury Road, Marsh Farm and Colney Farm contained tranchet axes, and the material from Colney Farm also included pyramidal cores which are often associated with Late Mesolithic assemblages (*figure 5.72*). A 'Thames pick' was found in the garden at 4 Colnedale Road, in Uxbridge and a prehistoric axe recorded as part of a small scatter 700m north of Oakend Cottage[200]. In the Lower Colne axes were recorded as spot finds at Rigby Lane, The Island in Longford, Cannons Land in Harlington, and at Staines Road in Bedfont (along with a Neolithic axe)[201]. A tranchet was found during fieldwalking at Home Farm (Boucher; 1988), and Wymer recorded n=4 tranchet axes at Dawley near Stockley Park (1977).

5.3.1 Middle Colne sites

5.3.1.1 Mansfield Farm

This area was investigated in advance of work on the M25 (Allen; 1981) and a water pipeline which was being laid between Iver and Arkley (Underwood; 1994). A final draft on this site is in preparation (Farley; pers comm). The site is situated on terrace gravels

[198] 6118 & 6143
[199] 6220
[200] SMR 2983
[201] MLO10582: both items listed as part of Lord Londesborough's 19th century collection

(Broom Warren/Black Park), and an ancient river channel was identified below the peat and gravel deposits (RPS Coulston; 1994). Fieldwalking and topsoil stripping produced over 800 pieces of struck flint[202] from local river pebbles, which were quite severely damaged by ploughing and soil movement (*ibid.*). The majority of the assemblage were typologically assigned to Early and Late Mesolithic, but the topsoil assemblage consisted of predominantly Late Neolithic material (*see chapter 7 and 8*).

Fieldwalking produced flakes (n=584), blades or bladelets (n=106), and cores (n=33, plus 3 from the topsoil strip). Some of the flakes and blades or bladelets showed primary working (n=101), but most were from secondary (n=217) or tertiary (n=372) reduction. Thirteen of the cores were used in the production of blades or bladelets, nine in the production of flakes, while three were multi-platform flake and blade cores, and the remaining pieces did not have recognisably distinguishing scars (Underwood; 1994). N=11 cores were cylindrical or pyramidal single or opposed platform cores. Cores from topsoil clearance were larger than the fieldwalking assemblage and consisted of one fragment and two single platform pyramidal bladelet cores, provisionally identified as EM (*ibid.*). Other diagnostically Mesolithic pieces from fieldwalking (n=17) included the medial part of core axe/adze/pick. A small Mesolithic assemblage consisting of retouched blades and flakes, a core, a scraper, a tranchet axe sharpening flake were also found during the M25 investigations[203] (*ibid.*).

5.3.1.2 Misbourne Viaduct

There is little detail for this site, with the only information coming from the HER[204]. However, the 'Misbourne' site (M25 area) has significant Mesolithic archaeology with radiocarbon dates from animal bone, and a monograph in preparation (Farley; pers comm). A Mesolithic assemblage including cores, microliths and knapping debitage were located in the lower parts of a 'substantial' tufa deposit and the underlying gravels.

[202] 733 x struck flint recovered during fieldwalking, 77 x struck flint recovered during topsoil clearance
[203] MBC13111
[204] MBC1357-8

5.3.1.3 Manor Farm and Pinn Meadow

From the 1920's onwards several small scatters of worked flint were found and recorded in the Ruislip area (*see* Derricourt; 1969: 10). Flint flakes were found in a 1955 excavation at Pinn Meadow (LHER MLO2658), while tools and flakes (n=13) were collected from the river Pinn by D. W. Phillipson between 1957-58 (Derricourt; 1969). A Mesolithic core came from the topsoil at Parker's Field (*ibid.*), and worked flint (n=33), waste flakes and a core were found during excavation at Manor Farm, Ruislip in 1976-77 (LHER MLO18562). This scatter was residual and had been incorporated into a later feature alongside Roman material (*ibid.*). Flakes and cores, burins and scrapers were scattered and included pieces identified as an angle burin, a micro-intermediate, a notched flake, scraper on a thermal flake and a worked blade core (Derricourt; 1969).

5.3.2 Lower Colne sites

5.3.2.1 Kingsmead Quarry, Wraysbury and Yeoveney Lodge Farm

A small amount of Mesolithic material were distributed across a few locations in the Lower Colne area. A few Mesolithic blades, cores and burins were found *in situ* in a tree throw hollow at Kingsmead Quarry, Horton, (Chaffey *et al*; 2012). A single flint implement was also dated to the Mesolithic at Manor Farm, Wraysbury (LHER: MRM16290), and a single fine blade came from a gully (203) in trench 258 at Berkyn Manor Farm/Land to the East of Horton Road (Farwell; 1990, Ford; 2006). At Yeoveney Lodge Farm, a graver on a blank was struck from a prepared core, an unfinished sarsen macehead was made from a water-rolled pebble (*see chapter 6 and 7, fig 73: S16*), and a scalene (LM) microlith and bladelets (n=7) were excavated from the interior area of the Neolithic enclosure (Robertson-Mackay *et al*; 1987).

Chapter 6: Mesolithic taskscapes

Shifting settlement patterns are shown over time and between areas of the Colne Valley (Table 10), and the geomorphological context also indicates a difference between the Upper, Middle and Lower Valley, in terms of how land was used and lived in. The Middle Colne is defined by a fluvial geomorphology and was most densely occupied in the Early Mesolithic, with large settlement signatures along the valley floor. These settlements were close to the river, in proximity to fresh water for drinking, cooking and bathing, a constant supply of flint and an artery for transport and navigation. The river also attracted wildlife; fish, birds, insects and animals.

In the Upper Colne, there was sporadic activity on the valley side in the earliest Mesolithic, this area does not seem to have attracted people to settle in the same way as the valley floor further south. However, this began to change in the Later Mesolithic, when the area around Moor Park in Rickmansworth became more densely settled and the chalk outcrops in the Hampermill area became a focus of activity. In the Lower Valley tree-throw sites were situated on the edge of floodplain where it meets the river terrace. These sites are smaller-scale than either the Upper or Middle Colne, and may reflect short term stays while moving between places with more focus on settlement (e.g. the Middle Colne in the Early Mesolithic).

Table 10: Number of sites in each size category in the Upper, Middle and Lower Colne

	Area of the Colne Valley		
Early Mesolithic sites (by artefact count)	**Upper Colne**	**Middle Colne**	**Lower Colne**
1,000 + artefacts	0	4	0
100 + artefacts	0	1	2
10 + artefacts	0	1	0
Less than 10 artefacts and single finds	2	1	0
Unspecified quantity of artefacts	0	1	4
Total Early Mesolithic sites	1	8	6
Late Mesolithic sites	**Upper Colne**	**Middle Colne**	**Lower Colne**
1,000 + artefacts	3	0	0
100 + artefacts	2	1	0
10 + artefacts	0	0	4
Total Late Mesolithic sites	5	1	4
Early to Late Mesolithic sites	**Upper Colne**	**Middle Colne**	**Lower Colne**
Unspecified quantity of artefacts	0	3	3
Total Mesolithic sites in each Colne Valley area	6	12	13

6.1 Environment and seasonality

Reconstruction of the Mesolithic environment came from n=16 sites with palaeoenvironmental records, including sedimentary or faunal data (*figure 6.1*). The earliest Mesolithic people living in the Colne Valley would have experienced a landscape which was thickly forested with predominantly pine and some birch and hazel tree cover. Pollen data suggests this stretched across most of the Colne, although these counts can represent averages for an area *c*30km around the site (Bates; pers comm). It is likely that valley bottoms had more broken vegetation cover, with grasses and aquatics in places (*ibid.*). However, in the upper to middle valley, pine predominated in early pollen sequences at the Grove and Sandstone, and in the lower valley at the ABC cinema site, Staines Moor and Church Lammas. At Staines Moor this was represented in arboreal pollen taken at 165-85cm[205], which reflected a peak in pine landcover (Keith-Lucas; 2000). A sample taken just below this horizon (at 179-81cm)[206] gave a radiocarbon date of 8829–9303 cal BC. Radiocarbon dates were also taken from sediments at 99-101cm (8162-7588 cal BC) and 89-91cm (7595-7356 cal BC), where palynology marked a decline in pine and a rise in oak pollen (*ibid*). Pine and birch were also radiocarbon dated from the early postglacial (8800 – 8250 cal BC) at PA4 and Sanderson's, while charred hazelnut shells from Sanderson's were dated to 8606 – 8300 cal BC (WA; 2009a, MoLAS; 2006). Pine predominated in the lower pollen sequences at Sandstone (70%), with Birch[207], Hazel[208] and Willow (*salix*)[209] in roughly equivalent quantities (Lacaille; 1963). Willow, however, was not necessarily the same plant which is associated with later environments; *salix herbacea* is a dwarf variety adapted for colder climates and is known from palaeoenvironmental data at Welsh Mesolithic sites, for example (Walker; 2021).

The postglacial landscape of the earliest Mesolithic also reflects an initial stabilising and drying out phase along the floodplain, something which left gravel ridges or bars of land exposed, and channels or hollows in between that were filled with water (MoLAS; 2006,

[205] SM2
[206] SM1
[207] 10%
[208] 11%
[209] 9%

Brown *et al*; 2018). Traces of this landscape, these gravel ridges and palaeochannels, often contained flintwork, in the Upper Colne at The Grove, Moor Park and Tolpit's Lane, and the Middle Colne at Oakend, Sanderson's, Dewe's Farm and Sandstone, and reflect human traces along channels of the main river (*See chapter 3*). Some of the Colne's tributaries still flow today (e.g. the Pinn), while others had started to silt up by the end of the Mesolithic. There were also lakes or bodies of water at Moor Park, Dewe's Farm (Harefield Moor), Stanwell and Staines Moor, for example, as well as marshes and beaver dammed sections of river, which attracted wildfowl (the Whooper Swan is attracted to standing water, while the Mute Swan is usually found near freshwater, both were represented in the faunal assemblage at 3WW).

Palynological data from higher up the sequences (e.g. T5 sample[210] <18154>) showed increasing quantities of hazelnut, a reduction in pine, and a generally broader range of arboreal pollen indicating a more mixed deciduous woodland. For example, although sediments from layer SM3 at Staines Moor were not radiocarbon dated, pollen samples from this depth in the sequence[211] reflect a later environment (Keith-Lucas; 2000: 10). There were also more herbaceous pollens and seeds from wetland habitats. For example, trench 2 (the palaeochannel), at The Grove was bulk sampled[212] and pollen was taken from the bottom of the sequence in two layers of organic silts, underneath a very humidified peat (Le Quesne *et al*; 2001). Pine accounted for 42% of the total land pollen, while hazel comprised 28% and hazelnut shells were also found during excavation of the palaeochannel (*ibid*). One grain each of birch and willow were present (2%), and oak and elm made up 2% each, although willow may be underrepresented as it is both insect and wind pollinated (Bates; pers comm.). Macroscopic plant remains from the peat-organic silt in trench 2[213] included oak[214] and poplar[215], with some herbaceous taxa (12% sedge and 2% grass). Shrubs (whitebeam, rowan and hawthorn) made up 6% of the sample, and fern spores were also noted (Le Quesne *et al*; 2001).

[210] Area 17
[211] 85-60cm
[212] Monolith 9 (palynological report)
[213] Appendix ii sediment group 2.4
[214] Context 2043, samples 9 & 10
[215] Context 2045, sample 11

Herbs included stinging nettle[216], hemp agrimony[217] and duckweed[218]. Samples from an earlier sedimentary layer on the valley bottom[219] contained a few seeds of sedge[220] and a single reedmace (bulrush) seed[221]. Abundant fern spores were noted (*c*800 relative count), campion and hemp agrimony. Pine was abundant in this context (88%)[222], with birch (6%), oak (4%), hazel and willow noted. The valley slope sample[223] contained very small quantities of lime, alder, hazel and grass pollen (*ibid*).

The sedimentary sequence at Cassiobury Park is similar; cold climate fluvial gravels underlying alluvial silts in the eastern area although there was no alluvium in the western section (Hunn; 2011). The western area was linked to the river Gade by a channel which had accumulated an organic peaty layer as the product of wet fen vegetation (e.g. grass and sedge), the upper surface of which was radiocarbon dated to the mid Holocene (*ibid*). Pollen samples were taken from both the alluvium and the peat, mainly consisting of pine and hazel, with oak and elm in lesser quantities (*ibid*). Deeper river channels like this one, had become established in the upper Colne at this time, with a wide, flat floodplain between the Gade and the Colne, dotted with river channels and islands (Le Quesne *et al*; 2001). There is also suggestion that a river channel existed on the east of the Gade (*ibid*).

Sedimentary contexts at The Grove were also dated to the Early and Middle Holocene (Le Quesne *et al*; 2001: 55, table 7), and the lower horizons suggested low-energy floodplain (marsh), and alder carr wetlands with occasional episodes of faster river movement. Duckweed, from the palaeochannel peat, for instance, is a flowering aquatic plant which floats on or just beneath the surface of still or slow-moving bodies of fresh water and wetlands (Le Quesne *et al*; 2001). However, above the peats were also the tufa rich sediments of braided freshwater chalk streams, shallow ponds, pools[224], and

[216] Context 2043, sample 10
[217] Context 2045 & 2043, samples 11 & 10
[218] Context 2043, sample 10
[219] Appendix ii sediment group 1.3 (Tables 3 & 6)
[220] Context 2110, sample B
[221] Context2107, sample 8
[222] Monolith 4, see appendix ii
[223] Monoliths 12 & 15, sediment 3.5, see appendix ii, Table 5
[224] Sediments 1.2, 2.3, 3.4 (see appendix ii, tables 3-5)

freshwater spring sources (Bates; 2001). For example, valley side sediments (trench 3) at The Grove, contained cemented tufa and silts[225], and three sets of pool and barrage systems were identified in a declining elevation (*ibid*). Two monoliths were taken from an organic sediment, and large quantities of freshwater molluscs were found across the four stratified sequences that were sampled. The main species were types which were found in moving, oxygenated water systems[226], usually encountered in streams and rivers (Robinson; 2001). The spring had probably created enough clean water for these species to colonise via overflow from the river (*ibid*). These features may have been common in the chalk landscape of the Upper Colne, and the Moor Park site has evidence for a similar pool and barrage system (see Jacobi; 1965*b*). Tufaceous deposits, described at Three Ways Wharf as '*reworked tufa*', were also recorded in the Middle Colne Valley at PA4 (WA; 2005, 2009a), Riverside Way (WA; 2006, Stafford; 2015), Oakend and Sanderson's (MoLAS; 2006, Cotswold Archaeology; 2014, 2015), and in the lower valley at Bedfont Court (Framework Archaeology; 2003). These tufaceous deposits were dated from the Early Holocene at The Grove (Bates; pers comm) to *c*7500 – 5000 BP (5550 – 3050 BC) at Sanderson's (MoLAS; 2006, Cotswold Archaeology; 2017).

The dataset from the Middle Colne reflects similar environmental sequences. Dewe's Farm, for example has a similar profile consisting of pine, birch, hazel, willow, alder and fern (Lacaille; 1961), while the Sandstone sediments contained progressively less pine, and increasing quantities of mixed deciduous arboreal pollens (Lacaille; 1963). For instance, earlier in the Sandstone pollen sequence, in the peaty flint horizon (layer 2 and layer 4 at 2.11m and 1.67m), pine accounted for 70-73%, hazel 11-24% and elm 0-3%. Birch and salix (possibly the dwarf variety, rather than willow), were also present in the earliest layer (2). However, in samples taken from higher up the sequence at 1.44m[227], hazel was the main arboreal pollen (71%) and pine only accounted for 4% of the sample. Ilex (holly) was also present in the sample (4%), as well as elm (13%) and oak (8%). In the same layer, but later at 1.20m, hazel still predominated (61%) with oak accounting for 18%, pine for 8%, elm 7%, birch 3%, holly 1% and alder 2% (Mitchell; 1956). The Lower Colne data represents a similar change in landcover, with monolith samples

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[225] Sediments 3.2 and 3.3 (appendix ii table 5)
[226] *Valvata piscinalis, Valvata cristata, Bithynia tentaculata*
[227] Layer 6

showing oak pollen taking over from pine, and then a peak of willow (carr) (Scaife; 2000, Keith-Lucas, 2000; 85-93). The pollen sequence from Staines Moor indicated this change from a pine dominated tree cover (SM2[228]), to closed woodland of predominantly elm and lime, with alder-willow carr and reedmarsh along the floodplain (SM3[229]) (*ibid*).

Environmental changes during the mid Holocene led to the development of increasingly wet fen in the Colne Valley, creating a floodplain of reedmarsh, grass and sedge, and on a local level temporary surfaces would come and go as land intermittently flooded and dried out again (MoLAS; 2006). While climatic and environmental events are often discussed at a sub-epoch scale, the regional impact was also pertinent to ways in which daily life was part of reciprocal, multi-agentic interactions. Reedbeds, for instance, provided grazing for aurochs, nesting for birds, and supplied raw materials for thatching, basket making etc. However, these relationships were impacted by flooding events (possibly with reedbeds becoming more extensive and dying back in drier periods), as well as through more direct modifications such as clearance and burning. For example, further upriver along the Thames at Dorney (*c*13km) palaeoenvironmental records suggest that reedbeds were burnt at this time (Parker and Robinson; 2003: 55). Burning old or dead reedbeds over the winter would have encouraged early new growth in the plants, attracting aurochs for grazing, and promoting straighter shoots (*ibid*). Straighter shoots could make weaving easier and these reeds might be used in a variety of tasks including making baskets or fish traps.

Similar practices might be reflected at Colne Valley sites, where environmental records show evidence of wood charcoal, although fires were not always of anthropogenic origin. Palynology from hollow 2 at Church Lammas indicated pine dominated forest in the late Pre Boreal (CL1), wood charcoal from the whole pollen sequence (CL1-CL5, but particularly CL4) suggested the possibility of small and localised clearance from the late Pre Boreal until *c*7000BP (*c*5050 BC) (Jones *et al*; 2013). Pine cones could also be collected and used as kindling. Elk and aurochs were also found in hollow 1 (and in the Kennet Valley at Wawcott III, Marsh Benham, see Froom; 2012), and were animals which

[228] 165-85cm
[229] 85-60cm

generally preferred the open woodland environment of northern Britain, where *'differing environmental conditions in the early postglacial landscape including the local dominance of pine in the Kennet and Colne Valleys and the earlier colonisation of Southern Britain by denser vegetation providing conditions favoured by wild boar but pushing the larger, open-woodland adapted elk and aurochs, further north'* (Conneller and Overton; 2018: 301). However, isotope analysis from the bones of Mesolithic aurochs have also shown them to inhabit marshy areas and forests on floodplain (van Vuure; 2002, Lynch *et al*; 2008). The Lower Colne valley may have been particularly suitable for elk and aurochs, with small clearances in the forest as well as a marshy floodplain basin[230].

Faunal material from the Colne Valley also reflects a diversity in seasonal settlement rather than the utilisation of a specific ecological zone. For instance, red deer could be hunted in the winter, with juveniles available in January and February (Whooper swans were also winter migrants), so at 3WW, for example, there was at least one occupation over a winter season. At Sanderson's however, there were no juveniles in the faunal assemblage, and the quantity of red deer bone was significantly smaller than the '*sheep/ox sized*' bones of wild pig (MoLAS; 2006, Conneller and Overton; 2018). The fauna at Sanderson's reflects a dominance of wild pig, and a hunting season of late summer into autumn, along with autumn collection of hazelnuts. Although these assemblages suggest larger seasonal dwelling in the Middle Colne area (assemblages were >1,000 artefacts), occupation in the lower Colne may have been in smaller groups and a reflection of 'off-site' actions linked to settlements in the Colne and the Kennet valleys. For example, seasonal hunting signatures at Church Lammas included red deer (winter), wild pig (late summer-autumn) and elk (late summer to late winter) (Jones *et al*; 2013). Although there is less faunal material in the Late Mesolithic dataset, seasonal settlements can still be discerned. For example, red deer and aurochs were found at Tolpit's Lane, along with charred hazelnuts from pits (Rawlins; 1977[231], Burleigh *et al*;

[230] Created by the draining of the Colne into the Thames at this point (see Jones; 2013)
[231] Item 55

1982, Bowman *et al*; 1990). At least two occupational signatures at Tolpit's reflect summer to autumn occupation (hazelnuts) and a winter occupation (red deer).

Several large assemblages[232] have radiocarbon dates associated with earliest Mesolithic activity in the pine and birch landscape of the early Holocene. At Three Ways Wharf pieces of bone from 3 individual roe deer, representing a couple of species, produced the earliest dates of 8804-8280 cal BC, 8705-8295 cal BC and 8616-8284 cal BC. The Sanderson's dates overlap one of the samples at Three Ways Wharf (8606-8300 cal BC), while the boar from Preferred Area 4 may also be contemporary (8536-8257 cal BC). Although waterlogged wood from PA4 may be contemporary with 3WW, there was no suggestion it had been worked, and was not associated with any flintwork (*see footnote in chapter 5 for dates of all five samples*).

[232] 1,000 plus artefacts

6.2 Knowledge of landscape and 'quotidian' tasks

Table 11: Types of flint recorded for sites in the Upper, Middle and Lower Colne Valley

Chronology	**Area of the Colne Valley**	**Site count by flint type***	
		River flint	**Chalk flint**
Early Mesolithic	**Upper**	0	1
	Middle	6	3
	Lower	1	0
Late Mesolithic	**Upper**	0	2
	Middle	2	1
	Lower	2	0
	Area of the Colne Valley	**River flint**	**Chalk**
Total for Early and Late Mesolithic flint sources by area	**Upper**	0	3
	Middle	8	4
	Lower	3	0

* Quartzite and sandstone pebbles were also used as hammerstones at Sandy Lodge in the Late Mesolithic

The Upper Colne appears to reflect a knowledge and use of chalk outcrops locally, as all the assemblages were noted to be chalk manufactured, at sites that were generally close to this source. The reverse is true of the Lower Colne, where all assemblages were derived from river pebbles. Interestingly, in the Middle Colne there was a mix of both river flint and chalk derived flint, and apparently more activity, at least during the Early

Mesolithic. The data for Late Mesolithic flint sources may be skewed as many of the smaller sites do not have information on flint raw material.

Oakend and Sanderson's were the only sites with large quantities of smashed or shattered flint nodules, both assemblages suggesting that tasks associated with sourcing and testing raw nodules, were carried out here on a large-scale. Flintwork at Oakend, Sanderson's and PA4 also comprised less than 5% flint tools, while hammerstones from Sanderson's, 3WW and Sandstone suggest primary manufacturing, and flakes at 3WW were predominantly removed with a hard hammer. Almost 60% of the flake assemblage at Oakend were the result of primary or secondary flaking, and concentrations of shattered flint had similar distributions to the struck flint flakes. Oakend seems to have functioned as an area for the selection of flint nodules and initial cortex removal. It had an abundance of raw material and shattered chips, a large proportion of flakes were in the early stages of a reduction process, and cores were rough and predominantly flaked (only one had blades removed from it). Additionally, there were no signs that cores had been extensively worked, and no suggestion of preparation or rejuvenation pieces (the presence of which usually represents the removal of flakes from an old, overused striking platform). This lack of sustained core reduction and rejuvenation points to a plentiful supply of raw flint, repeated visits, and a nearby place of occupation, creating little need for the curation of materials. Nodules were smashed, cores were roughly and casually knapped, while debitage was left behind, and struck flints were taken elsewhere for the production of tools. Oakend was also situated in a different geomorphological context to the other Middle Colne sites (Gerrards Cross Gravels, *see figure 4.4*), and would have provided access to a wider range of rock types.

The assemblages from Sanderson's also included large quantities of debitage, comprising flakes and blades, spall, chips, and smashed or shattered pieces from primary working (although the MoLAS flint assemblage has not been fully analysed, see MoLAS; 2006) (Table 12). Several dense concentrations of this debitage were situated away from the main hearth (*figures 6.2 and 6.3*). Unlike Oakend, however, a cluster of cores in the northernmost cluster suggests longer-term storage and curation of workable flint.

Table 12: Artefact type for all Early Mesolithic sites with assemblages > 100 artefacts

Sites **Flintwork quantity *(c)***	**Oakend**	**Sanderson's**	**3WW**	**PA4**	**Sandstone**	**London Road**
Struck flint total	3,000	15,000	2,000	1,000	300	300
Flakes/blades/bladelike flakes	1,800	3,850	1,065	743	250	140
Blades/bladelets	56	1,587	717	118	n/a	50
Cores	27	315	51	31	5	7
Core preparation/reduction	n/a	86	55	9	5	1
Spall/chips/smashed or shattered pieces	1,203	2,721	n/a	87	n/a	56
Burins/gravers	1	15	9	n/a	2	1
Burin spall	1	n/a	10	n/a	n/a	n/a
Axe/adze/pick	4	1	5	n/a	1	n/a
Axe sharpening flakes	4	3	89	n/a	n/a	1
Hammerstone	n/a	3	1	n/a	1	1
Microliths	3	44	48	15	15	4
Microburin	n/a	n/a	20	10	1	3

Sites Flintwork quantity *(c)*	Oakend	Sanderson's	3WW	PA4	Sandstone	London Road
Scrapers	31	12	100	n/a	9	n/a
Serrates	n/a	13	n/a	n/a	n/a	n/a
Awls/piercers	4	2	2	n/a	n/a	2
Retouched pieces	n/a	12	n/a	n/a	n/a	13
Utilised pieces	13	32	22	n/a	n/a	n/a
Miscellaneous pieces	n/a	105	n/a	38	n/a	18

Spall, chips and shatter were distributed on a smaller scale at PA4, London Road and Majestic House. However, the assemblage at PA4 consisted of mainly unretouched debitage and primary waste (including chips), particularly in scatters 5 and 6 (WA; 2009a). Again, like activities at Sanderson's, a more cautious approach to flintworking, by sustaining a supply of raw materials, were reflected in a small quantity of core preparation and rejuvenation material. Flint knapping waste including chips and smashed flints were also distributed across three hollows at London Road, and at Majestic House debitage from both primary and secondary reduction was particularly concentrated in one pit (1166). These Lower Colne assemblages, however, were representative of a range of tasks, carried out by smaller groups, in contrast to the large-scale flint procurement at Oakend or PA4.

Late Mesolithic assemblages also represented different scales of settlement, dominated by flint-knapping related activities. All sites with >100 artefacts contained cores and knapping debitage (flakes, blades, bladelets). However, very few included rough waste from primary working (no spall, shatter or smashed nodules). In the Upper Colne, however, sites closer to exposed chalk outcrops *c*450m west of Hampermill, were associated with large and small scale flint procurement and reduction. For example, at SLGC '*chipping floors*' extended across large areas of the site, while at the Moor Park site a few chippings were found in a pit. Large quantities of knapping debitage and cores were found at Tolpit's Lane, while material from The Grove consisted of predominantly debitage from primary reduction. At the Hampermill site tools only accounted for 0.5% of the assemblage, while the majority of flintwork comprised cores and debitage from core working, predominantly primary flakes which made up 56% of the assemblage.

Table 13: Artefact type for all Late Mesolithic sites with assemblages > 100 artefacts

Sites **Flintwork quantity *(c)***	**Tolpit's Lane**	**Sandy Lodge**	**Hampermill**	**The Grove**	**Dewe's Farm**	**Mansfield Farm**
Struck flint total	2,525	1,000	216	180	100	746
Flakes/blades/blade-like flakes	1,000	315	170	n/a	n/a	584
Blades/bladelets	n/a	65	50	Yes	Yes	106
Cores	56	48	13	Yes	37	37
Core preparation/ rejuvenation	n/a	33	3	Yes	Yes	n/a
Spall/chips/waste or smashed pieces	n/a	Yes	1 (from burin)	2	n/a	n/a
Burins or gravers	Yes	3	2	n/a	1	n/a
Axe/adze/pick	2	n/a	n/a	1	1	1
Axe sharpening flakes	n/a	1	n/a	n/a	1	1

Sites Flintwork quantity *(c)*	Tolpit's Lane	Sandy Lodge	Hampermill	The Grove	Dewe's Farm	Mansfield Farm
Microliths	23	7	n/a	Yes	2	n/a
Microburin	Yes	3	1	1	n/a	n/a
Scrapers	Yes	5	6	1	4	1
Denticulates	n/a	2	n/a	n/a	n/a	n/a
Awls or piercers	n/a	6	n/a	n/a	n/a	n/a
Retouched pieces	n/a	23	5	1	n/a	16
Utilised pieces	n/a	n/a	n/a	n/a	Yes	n/a
Miscellaneous pieces	n/a	115	17	n/a	n/a	n/a

When sites are close to areas with a raw flint source, they often contain less curated pieces; cores with more cortex and fewer flakes and blades removed (Butler; 2005). This has generally been taken to mean that people did not need to be prudent as they had a localised supply of flint nodules which they could return to time and again (*see* Myers; 2015). However, at Hampermill, several rejuvenating flakes in the assemblage suggest that some cores were well worked (although this is also associated with LM styles of practice). It may indicate that although the site was used fairly intensively for sourcing and testing nodules, on occasion these tasks extended into other arenas, including smaller scale or ad hoc toolmaking and use. The raw material was of variable quality at the site and some nodules may have been identified as better for making particular tools, and utilised more thoroughly. At Dewe's Farm, on the other hand, pieces of flintwork were also derived from local chalk outcrops (Lacaille; 1961, Scott; 2018), but suggest a more casual use of resources. Cores were not intensively worked, they were mainly from single striking platforms (although some had been prepared with a second), with fewer blade scars. However, while this might indicate short episodes of procurement, other aspects of the assemblage suggest variable rhythms in tool use and repair. For example, axes were used locally and intensively, then brought back to Dewe's Farm to be resharpened for reuse. Tools were often appropriated from debitage; most of the flakes and blades (from the earlier assemblage) were used as ad hoc tools, rather than being specifically crafted pieces.

6.3 Tool production and 'specialised' tasks

All Early Mesolithic sites and most small assemblages comprised elements of flint knapping at some scale and most assemblages >10 artefacts included cores or evidence of core working. However, while the assemblage at Oakend suggests a task-specific location mainly used for short-term, multiple episodes of primary sourcing and processing, at 3WW, Sandstone, London Road and Majestic House, flint knapping led to further processing and refining of tools. For example, 3WW, Sandstone, London Road and Majestic House had assemblages with more than 5% tools. Debitage at 3WW consisted of predominantly tertiary flakes (56.5%), secondary flakes making up 38%, and primary flakes only 4% of the total (*see* Lewis and Rackham; 2011: table 17). This suggests debitage was produced from tool production rather than initial flint core reduction. Blades and bladelets were also produced in large numbers at 3WW, using predominantly soft hammer working (65%), and at least one piece of deer humerus with numerous 'chop' marks suggests it was probably used in this capacity for the crafting of tools (Lewis and Rackham; 2011). All except two of the cores also have blade removal scars (*ibid*).

At Majestic House a large quantity of shattered chips were mainly concentrated in one pit (1166), while the same pit also contained large quantities of blades and bladelets, a few microliths, and crested blades from their manufacture (Ellis; 2016). Cores were mostly well worked, and although no cores were found in the pit assemblages, flakes from core rejuvenation accompanied microlith manufacture in pit 906 and a tree-throw fill (*ibid*). A large quantity of core tablets, and several *flanc de nucleus* were also identified in the scatter at 3WW, plus a core tablet at Jewson's Yard (Lewis and Rackham;

2011, Barclay *et al*; 1995). Core tablets were specific to Mesolithic flintworking, a product of creating new striking platforms when old platforms became exhausted. The presence of rejuvenation pieces and well-worked platforms suggests cores were curated for repeated tool making, suggesting extended episodes of occupation.

Core preparation and microlith production was carried out *in situ,* on a large scale at 3WW, where the assemblage also includes large quantities of bladelets, microburin and crested pieces in association with the main concentrations of lithic material (*figures 6.4 and 6.5*). However, the same tasks were also carried out on a smaller scale at other sites including PA4, Sandstone and London Road which all have microburin, and at Jewson's, and Majestic House which also have crested blades. At Majestic House this work was particularly focused in one pit (906) which contained the majority of crested blades (n=5), microburin and two or three diagnostically EM microliths, along with the largest deposit of worked and burnt flint (Ellis; 2016). This fill represents accumulated material from tasks which included primary knapping, tool manufacture, heating, and probably cooking, and disposal of used tools. The pit may have been dug out initially to heat food and flint, and then left open for refuse. A similar event at Jewson's, where a pit was used for heat assisted flintknapping, toolmaking and tool discard may represent a smaller-scale extension of the activity at 3WW.

Tools were generally manufactured from chalk derived flint or on river pebbles, but a few other materials were found in the dataset. A small number of non-flint tools in the study included a sarsen macehead[233] (the only one of this tool type), while regionally a perforated pebble hammer was excavated from the palaeochannel at Eton Rowing Lake. Further examples of these macehead-type tools have been recorded as finds from the Thames, including antler mattocks (*see* Haughey; 2000: table 21.1), but although few bone and antler tools survive in the study dataset, this may be due to soil type and the preservational properties of the sediments (Pipe; pers comm). However, worked bone and wood that can be securely dated to Mesolithic is rare in Britain, and Star Carr is unusual for having well preserved antler artefacts and a birch wood paddle (*see* Conneller and Overton; 2018: 298 *for discussion of worked bone*). There are also several

[233] From Yeoveney Lodge

regional examples, including a couple of bone tools (a large spear and a small point or awl) at Thatcham site IIA, as well as bone harpoons from the Thames at Battersea and Wandsworth (*see* Haughey; 2000: table 21.2 *for Mesolithic animal bone, stone, antler etc. spot finds in the Thames*).

Burins are often associated with the crafting of these types of tools (bone and antler), but could also be used as a type of chisel for woodworking. Whereas Jacobi (1978) argued that sites without burins may represent summer activities when antler was not available, some study sites reflect both summer and winter occupations (e.g. wild boar and red deer bone at Sanderson's), and a range of tasks that probably included woodworking and boneworking (e.g. Sanderson's and Church Lammas). Clark (1972) and Jacobi's (1978) vision of summer hunting camps is also problematic as the idea of red deer as the primary meat source for Mesolithic groups has been contested for many years (e.g. Clarke; 1976, Pitts; 1979, Conneller and Overton; 2018) and the range of animals found in assemblages across Britain is echoed in the study dataset (e.g. *see* Milner; 2006). However, burin were specifically crafted at Oakend, 3WW and Sandstone while at Sanderson's there was no evidence for their manufacture (no spall), although they were in use at the site.

Woodworking was carried out at different scales across the sites, and included the crafting and maintenance of axes. Burin were distributed across all scatters at 3WW and Sanderson's, at Oakend, Sandstone and London Road. At London Road, for example, burin and an axe-sharpening flake were discarded in the same tree-throw hollow[234], and may signify repair work on both handle and axe head. At Oakend, burin may have been used to carve timber into axe or adze handles (as well as other carpentry tasks). Axes sometimes have tool marks where they were chipped to slot into a wooden handle, and although wooden handles are rare in the archaeological record, experimental studies suggest that chisel-type tools were used for carving wood (example). At Sanderson's burin were concentrated in the southernmost material, along with the largest

[234] 149

concentration of bone and axe or core tools (*figures 5.15 and 6.6*), while at Sandstone a notched burin could also have assisted in the hafting process.

In a Later Mesolithic taskscape, Dewe's Farm represented mainly small-scale flint procurement and ad hoc tasks, while activities at Mansfield Farm spanned the whole reduction process, and were carried out on a larger scale. For example, the assemblage was about eight times larger than Dewe's Farm, while cores were of similar numbers at both sites. At Mansfield Farm they represented only 5% of the assemblage, while flakes made up the majority (78%), and blades represented 14% of the flintwork (RPS Clouston; 1994). These flint signatures were suggestive of less procurement and more tool production; 15% of flakes and blades were produced during primary reduction, 31% from secondary processing, and 54% tertiary reduction[235] (*ibid*). While the majority of cores showed single platform blade or flake production, unlike Dewe's Farm, the raw material was derived from small river pebbles (the diameter of the largest core was 82mm). Some cores, however, had been worked more intensively (there were several multi-platform cores in the assemblage), and may indicate that some tasks were carried out with the intention of them being an isolated event, rather than the caching or casual knapping suggestive of repeated visits. The make-up was similar to Early Mesolithic debitage at 3WW, with smaller quantities of flint nodules from early stages of reduction, and main tasks seemingly focused on later stages of tool production and refinement. Axe use and repair work was also carried out, although this may have been relatively ad hoc (there were single surface finds of an axe and an axe-sharpening flake). And, unlike EM communities at 3WW, most of the tools made at Mansfield Farm were taken away and used elsewhere (there were very few identifiable tool types in the assemblage). Tools mainly consisted of retouched flakes and blades (*ibid*), and like Dewe's Farm, were relatively expedient pieces.

Larger tool-based taskscapes were concentrated in the Upper Colne, particularly at Sandy Lodge Golf Course, where artefactual signatures reflect toolmaking and other tasks. For example, microburins accompanied microliths in a pit (sandpit A), and in the area of Sandy Lodge Farm (Jacobi; 1965*a* and *b*, 1966). Pit deposits reflected

[235] This represents the whole Mesolithic assemblage (Early and Late)

accumulated tasks over time, including primary core work (cores and core flakes, unretouched blades and flakes, and pebble hammerstones) and the manufacture of microliths (bladelets, microburin and microliths). Charcoal, woodworking tools (burin and gravers) and axe-sharpening flakes from the same feature suggest that occupation included multiple tasks, and was durational. For instance, tools were used and repaired (e.g. axes) and areas of woodland were cleared for timber (oak, ash and willow charcoal). Axes and adzes were also distributed across the Golf Course at Sandy Lodge (*see map*). Woodworking tools and microliths were also made and used at Hampermill (burin spall, burin with signs of manufacture, and notched pieces including flakes, a blade and a microburin). Burin were made and then used on site, possibly to chisel pieces of wood into handles for axes, while notched pieces could be used for hafting. At Tolpit's Lane the main concentration of knapping debitage came from a large tree throw hollow radiocarbon dated to a Late Mesolithic occupation from the late 8th millennium BC. Woodworking tools, on the other hand (tranchet and gravers), microliths and manufacturing pieces (microburin) were associated with small shallow pits, and possibly dated to one of the later occupations (Franks House documents; no date). Axes and gravers may have been used for making timber supports in the construction of a shelter (one of the post-holes was radiocarbon dated to the mid 6th millennium BC).

Other areas in the Upper to Middle Colne showed traces of similar toolmaking and maintenance activities on smaller scales. For example, while most of The Grove's *in situ* material were products of primary knapping, at least one of the cores had been worked into an axe, which had been disposed of alongside a broken microlith and flakes from manufacture, including microburin. A tranchet axe found in the Colne somewhere between Dewe's Pit and Farm could be related to Early or Late Mesolithic activity, although sharpening flakes and a tranchet axe fragment suggest axes were used and maintained in the Late Mesolithic at Dewe's Farm. A graver also suggests possible wood and bone working at Dewe's Farm.

Evidence of similar tasks, but more widely dispersed and on a smaller scale, were represented in the artefactual signatures of the Lower Colne. While pits, hollows and tree throw holes across the study landscape were sometimes associated with features (e.g. post or stake holes at The Grove, Tolpit's and Bedfont Court), settlement was predominantly represented by tree pit activity in the Lower Colne. Artefactual signatures from both feature fills and surface distributions correspond with the idea of durational tasks, and repeated episodes of occupation, similar to that found at Wawcott in the Kennet Valley (Hey and Robinson; 2011). For instance, flintwork scattered across mainly residual contexts and sites at ICSG/RMC/LEWGF were representative of specific types of toolmaking (microburin and a crested flake), and diagnostically Late Mesolithic microliths were in use and dropped across the site. Blade cores and rejuvenation material, as well as an axe thinning flake also suggest that tools were serviced and intended for repeated tasks over time. At Hengrove Farm several tree throw deposits included microburin and microliths *in situ* in primary deposits, while the T5 assemblage, like ICSG, was mainly residual and dispersed across a wide area. However, durational activities at T5 were indicated by the artefactual material as well as by structural features. For example, burin and burin spall, an axe or adze and axe thinning flakes (from a Neolithic ditch) represented tasks associated with making, using, maintaining and discarding multi-functional tools. While burin were often used as chisels on wood or bone engraving tools, they have also been used as scrapers on other material including fish scales, plants and minerals (*see chapter 1*). Tasks at T5 and Bedfont Court probably included carving logs into posts and stakes for at least one structure dated to the late 7th millennium/early 6th millennium BC, while a couple of occupations were represented through intercutting pits and middened flintwork (at T5).

6.4 Domestic artefacts

People cleared spaces and made settlements at varying scales across the Colne Valley, and axes were found at all Early Mesolithic sites except at PA4. They were used, sharpened and repaired at 3WW, Oakend, Sanderson's and London Road, suggesting occupation of some duration at these sites. Carpentry, woodworking, felling etc. were all large-scale activities at 3WW, and axes needed repairing frequently (the only place in the dataset with > 50 axe sharpening flakes). Additionally, 47% of identified use-wear on tools at 3WW was attributed to woodworking (see breakdown). A single axe (or adze) at Sandstone may have split logs for use as timber or kindling for the hearth, while axe spot finds, found away from main occupation areas, were probably used, sharpened and repaired on site, then lost or broken and abandoned while felling. However, axes could also be used for tasks other than woodworking or felling, they were needed for cutting through sharp brambles, for example, and for clearing undergrowth in order to access fruits, berries and nuts.

Accessing plants, collecting them (i.e. the need for containers), processing and cooking, for example, all required the making and use of assorted tools or implements. These items could consist of pieces that had been specifically made for cutting (e.g. knives or denticulates), as well as ad hoc implements that were crafted, reworked or used in response to the environment and the materials encountered. Although Graham Clark emphasised hunting as a primary task associated with the use of microliths, he also recognised the importance of plants for food or medicinal use in the Mesolithic (1940). The landscape of the Colne Valley provided grazing for deer, but the berries, shoots and shrubs could also be eaten by Mesolithic populations, and mushrooms would have grown in the same woodlands as the charred remains of hazelnuts that were found in the Sanderson's assemblage. Raspberry seeds were found at Newferry (Woodman; 1977), strawberry seeds at Lussa River (Mercer; 1970), and while Lesser Celandine (Slaosnaig) was found alongside apple, pear and lily seeds at Mount Sandel (Woodman; 1985), it was probably consumed in Colne Valley as well. For instance, the river Pinn has been named the 'Celandine route' after this wild food, which is mostly found by the banks of rivers and streams (Fowler; 2011). Leaves and roots of the plant are edible, but they would have been cooked on fire embers or steamed on hot stones, and carbonised tubers have been found at Welsh Mesolithic sites (Walker; 2021). Toxins may have been removed from celandine and other tubers by using graters made from microliths in a similar way to those manioc and cassava tubers described by Finlay (2003: *see chapter 2*). Plants and herbs would not only have provided food, but also medicinal properties. The petals of celandine, for instance, can be used to clean teeth, and has antibacterial properties when applied to the skin.

Large quantities of microliths were found at 3WW (n=79 across site), and at Sanderson's (n=44). However, at least n=23 of these implements at 3WW were used on wood, which may have included plant processing. And although fish bone was absent in all assemblages, a further n=7 microliths were used for processing fish at 3WW. Use-wear analysis suggests similar quantities of meat and fish were consumed at the site; 14% of tools were used for cutting fish compared to 18% used for meat butchery. At Jewson's Yard microliths were quite possibly boring and piercing implements for hide and woodworking. They were similar to those found at Thatcham sewage works (Grace; 1992), where use-wear showed n=2 microliths were used to pierce soft material, and n=3 microliths were used for boring holes in wood (Finlay; 1997: 27). At 3WW and Sanderson's the large faunal assemblages have suggested that meat was eaten on a large-scale, while analysis of microlithic use gives no indication that hunting was the primary task, and very few microliths were utilised as projectiles (*see chapter 4*). In fact most microliths in the dataset were found as part of large assemblages in proximity to the hearth area (e.g. 3WW and Sanderson's). Ethnographic evidence suggests that arrow tips may have been coated with toxic material when they were used for hunting, and for this reason would have been kept away from hearth areas and food (Finlay; 2000: 73). In contrast to those items found residually as spot finds (e.g. Late Mesolithic microliths in the Lower Colne), it seems likely that those found near hearths were used in food preparation rather than for hunting. Most of the 3WW microliths (from the analysis sample) were not used as barbs, and primarily showed no evidence of impact from firing. Of those that were possible projectiles only two had been used for this purpose (another two were unused), while the others were used for cutting and boring (Lewis and Rackham; 2011). Moreover, at 3WW the assemblage mainly consisted of long bones suggesting the animals were not butchered at the site. Fewer tools were directly related to animal butchery and the majority were related to woodworking (see chapter 4). It may be that butchery occurred elsewhere, while parts of the animal were selected for consumption and brought back to the site as a meeting and eating place.

The largest faunal assemblage was from 3WW, where the quantity of red deer bone suggests either a large-scale feast or an extended food source sustained by frequent hunting episodes over the winter. As a measure, a single red deer could provide a substantial meal for 50-75 people (Miracle; 2002: 83). If 3WW was, as has been suggested by the archaeological record, a winter-spring base for a group of around twenty people (Lewis *et al*; 2011), the quantity of meat represented in the assemblage would have fed them for some time. It may have been eaten alongside other foodstuffs, and hunted regularly, or it may have been preserved through drying or smoking. However, it has been proposed that where we find assemblages with the remains of large animals we should question the dynamics of these meals (Milner; 2006: 80). In other words, we need to consider a less subsistence-driven narrative, and the possibility that sizable assemblages of red or roe deer, wild boar, elk or aurochs were the remains of feasting rather than assuming this meat was part of the daily diet. The assemblage of long bones at 3WW, for example, may have been specifically selected for a large gathering or feast, where they could be roasted on a communal hearth. Some of these bones were burnt on the ends where they were charred to aid marrow extraction (bone marrow provides valuable nutrients), and may be linked to the need for extra calories when meat was scarce or food sources more limited (Lewis *et al*; 2011). However, if food shortage was the case we would really expect to see other body parts of the animal represented in the assemblage. Large group eating, on the other hand, would be a meaningful practice in that food was not wasted and social relationships could be established or strengthened.

Comparable assemblages to 3WW may be found in the Kennet Valley, where at Thatcham the quantity of red deer may also have been related to winter feasting (*see* Tilley, 1996: 63-64, *for discussion of deer as a symbolic resource*). Smaller mammals and birds were also eaten, and probably frequently (bird bone, including swan and sparrow were part of the faunal assemblage at 3WW). Beaver was also found at 3WW and Sanderson's and eaten at Faraday Road, Thatcham, where there are butchery marks on the bone (Milner, 2006: 65). Pine marten inhabited the same pine and birch forest as red and roe deer, and bones of this small mammal were found at 3WW, alongside fox and wolf (Lewis and Rackham; 2011). Special arrowheads may have been used in hunting fox and pine marten so as not to damage their fur pelt (*see* Clark, 1940: 17), but it is hard to distinguish these in the dataset. Swans were also eaten at 3WW, and cut marks on several of the bones show, for instance, where the flesh was cut off the wing. Waterfowl, including swan, provided eggs as well as meat.

While microliths may not have been primarily used for regular deer hunting at 3WW, they were, on the other hand, found residually at Church Lammas, for example, and were probably dropped after use (possibly hunting). Bone and antler from red deer and elk in the assemblage, could have been worked into similar hunting and fishing tools e.g. points with barbs and notches (harpoons) and fish hooks (gorges). Again, although there was little in the way of direct evidence for bone or antler tools, use-wear at 3WW identified tools used for scraping and whittling antler. Microliths were the most frequently occurring tool type at PA4 and Sandstone, as well as at Sanderson's, and suggests that they were used for multiple tasks including hunting, plant processing, fishing etc. Similarly, although scrapers are often associated with hideworking, like microliths and other tools, they were unlikely to be limited to specific tasks. Scrapers were also used for bone and woodworking, and on fish and plant products. At the same time, knives, denticulates and scrapers could be used on animal skins to cut and clean and make leather for clothing or shelter for instance, and skins pierced with awls so they could be sewn together. Animal tendons could be dried and processed into strong fibrous cordage to sew skins together, for bow backings, hafting etc., while fiber and plant bast could be used similarly and material from the inner bark of birch trees could be used for matting (Fletcher *et a*l; 2018).

These tasks were carried out to some degree at all of the larger sites (> 100 artefacts), except at PA4. Awls and piercers accompanied scrapers in most assemblages and at 3WW scrapers made up 63.75% of the formal tool assemblage, at Oakend 22%, Sanderson's 8.75% and Sandstone 5.5%. The fact that 3WW represents a winter occupation suggests that scrapers, awls, piercers etc. were often used for tasks other than skinning and tanning. Awls, for example, were used to perforate wood, bone and even beads at Star Carr, where they were found in association with one another (Little; 2019). They may or may not have been hafted, but this would have made the perforation process quicker and easier (*ibid*). Sanderson's, on the other hand, may have been inhabited during the summer and early autumn, when higher temperatures would aid the fermenting process for tanning (*figure 6.7*). Skins could also have been transported from one site to another once the initial fermentation stages had been carried out (this type of practice was identified at Mesolithic sites at Hognipen in SW Norway, *see*

Mikkelsen; 1978: 95). At Sanderson's, scrapers were concentrated in the southernmost scatters (*see figure 5.15*), along with the majority of bone, the two awls and a few serrated tools which could be used as saws. Sites with scrapers, awls and piercers were all located on the edge of rivers; the Colne, the Misbourne, the Thames, for instance, and provided a source of water for the tanning process, similar to the skinning and cleaning area on Lake Flixton (e.g. Pitts; 1979: 36). However, the smell from areas of leather working would be strong and might be a factor in keeping these places spatially distinct from living areas. Lacaille also describes use-wear on knives, saws and scrapers at Sanderson's, knives at Sandstone, and utilised knives and saws at Dewe's Pit.

Some activities also required the use of fire, and hearths in the EM tend to be represented by spreads of burnt flint, which would have bounded large open fires where people could keep warm, craft and cook, probably roasting or heating food directly over the fire. These tend to be found in the larger Middle Colne aggregations (e.g. 3WW, Sanderson's), while concentrations of burnt flint also suggest communal or large hearth areas at Oakend and London Road, and a small pit may also be associated with the hearth area at 3WW (Lewis and Rackham, 2011: 154). At least five or six concentrated scatters of burnt flint at 3WW and Sanderson's, were contemporary with dense concentrations of worked lithics and animal bone (MoLAS; 2006, Lewis and Rackham; 2011). Burnt flint mainly consisted of tools or tool debitage, and at 3WW animal bone, including burnt material, was scattered around the same area (Lewis and Rackham; 2011: figures 16 and 173). Similarly, Sanderson's had an extensive distribution of over 6,000 pieces of burnt flint weighing over 23kg, fairly evenly distributed across the site but again more concentrated in areas with animal bone (*figure 5.14*). Scrapers were also focused in these areas, although at Sanderson's there were no butchery marks on the faunal assemblage (MoLAS; 2006). There was a particularly dense concentration of burnt flint in the north of area 6 where a main hearth was identified (*figure 5.14*). Further pieces of burnt flint surrounded the hearth, which appears spatially distinct from other working areas (there were no tools and the area may have been kept clear for cooking and eating). The hearth was positioned on an area of gravel ridge (higher and drier than the rest of the site) which was later covered by black sedge fen clay (similar sediments were dated to the Late Mesolithic[236] at William King Flour Mill (Grant *et al*, 2014, pers comm.). At Sandstone, the hearth is on a smaller scale, but '*much interest attaches to the badly heat-crackled no. 5 (flint flake/blade). Its condition is no doubt due to a camp-fire which also affected some of the other flints at this site*' (Lacaille; 1963: 157-158, figure 3).

In contrast to the spreads of activity represented by flintworking tasks and faunal material, and the large hearth areas of the Middle Colne, in the Lower Colne Valley tree throw hollows or pits were more common, while assemblages represent smaller scale events (e.g. London Road and Majestic House). On this terrace-floodplain area, landscape was inhabited differently to the valley floor context of the Middle Colne. At London Road, for example, three hollows, which may have been created by tree throws or by pit digging, were of contemporary usage, and the flint assemblage reflected all stages of reduction, toolmaking and ad-hoc tool use (Hayman and Ayres; 2001: figure 8). Pits at Majestic House functioned similarly, with at least one[237] which contained burnt material, and another with a fabricator or strike-a-light[238] (Ellis; 2016). These features may have served as repositories while flintknapping, and for broken tools and hearth material over several temporal episodes, and the site may have been used episodically or seasonally. People may have sat or crouched and directly discarded flint waste into the pit or hollow while they were working. For example, one of the pit fills (pit 1166) included fresh knapping debris and burnt flint (Cotswold Archaeology; 2014), which was deposited in a single fill. This suggests that hearth material was swept up and disposed of along with fresh flintworking waste. Hearth middening may also be represented at Church Lammas where large quantities of wood charcoal were distributed across tree throw fills which also contained animal bone (Jones *et al*; 2013).

While there may be little in the way of 'permanent' structure for the Mesolithic dataset, not all occupation was temporary or for a single season. '*Tents, shelters and wind breaks of branches*' (Lacaille; 1961: 106), covered with animal hide or thatching, for instance, could create dwellings for varying degrees of permanency (*see image; The Grove*). Pit

[236] 5620-5470 cal BC
[237] Post-pit 906 (fill 907)
[238] Pit 957

features are more frequently understood to be settlement signatures (Blinkhorn *et al*; 2013), while the number of potential 'pit-houses' in Britain has increased over the last twenty years or so (Mithen and Wicks; 2018). Materials for building could be lightweight and transportable, or easily collected from the local environment, and suggest flexibility in the way occupation was approached and conceptualised. Environmental resources acted within the social arena to provide options for people to be rooted in one place for longer or to move elsewhere, and the study dataset reflects these varying durations and scales of settlement. For example, domestic disposal was characterised by large spreads of accumulated middening (pronounced edges may suggest they were bounded by a lightweight structure) at Sanderson's and 3WW (concentrated scatters). Sites in the lower Colne, however, reflect smaller scale events of shorter duration, but also represent settlement. For instance, concentrations of flintwork in the upper fills of pits and hollows, with less in lower layers (e.g. London Road), may indicate organic flooring of bark, reeds, and branches etc. (*see Star Carr, vol 1: 173*), and at London Road it is possible that some of the larger hollows acted as shelters with branches and coverings. Large quantities of wood charcoal at Church Lammas also suggest regular felling, clearance and local occupation.

Later in the Mesolithic, the Moor Park site represents small-scale temporally distinct events, while similar signatures were found at Tolpit's and Sandy Lodge Golf Course. These events were not defined by specific tasks but by domestic practices which incorporated a spectrum of quotidian and specialised undertakings including hunting. For example, microliths at Tolpit's Lane (n=23), in association with animal bone including red deer and wild cattle, were possibly used as projectiles that became embedded in the animal carcass. Residual distributions, however, including a rod type microlith from an unstratified, presumably redeposited context [239] at Cranford Lane (Elsden; 1996), suggest 'off-site' tasks, also represented at Misbourne Viaduct, Prospect Park, ICSG, Sealand Road and Yeoveney Lodge, and may reflect tasks where microliths were fired as arrows and lost. Flintwork, however, (including microliths), animal bone and other food remains were also deposited in pits or scoops at the Moor Park site. Microliths were used as tools, not only for hunting, but also for cutting or grating plant foods, while tip

[239] 1611

fragments (at Hampermill, for example) may have been intentionally snapped and inserted into a wooden handle for threshing. Microlithic implements were used at The Grove, Dewe's Farm, and T5, while 'off-site' tasks were particularly visible in the Lower Colne.

From the Early Mesolithic dataset (e.g. 3WW) we know that microliths, as well as awls and piercers most probably, were used as drilling and piercing tools for wood or other soft materials including animal skins, fish and plants (Lewis and Rackham; 2011). Similarly, scrapers, awls and denticulates (saws) at Sandy Lodge were probably used for a wide range of tasks that were not limited to hideworking. Sharp tools would be needed to pierce the shells of hazelnuts at Tolpit's Lane and The Grove, for example. And while these sites might have provided resources for tanning, with bodies of water, rivers and marshes that were a particular feature of the Colne Valley, microliths may have been used as harpoon barbs for fishing, cutting reeds, filleting and cleaning fish etc. (*see methodology chapter: 1.2*). However, research has often focused on coastal sites during the Late Mesolithic, while seasonal settlements were often linked to salmon seasons and migrations of wildfowl (Gaffney *et al*; 2009: 52), and a greater reliance on coastal resources, particularly shellfish. This is comparable with the emphasis on red deer meat and the suggestion that Early Mesolithic settlements were dependent on hunting seasons (e.g. Clark; 1972, *see 2.4*). In this study red deer were not represented as the primary food source in the Early Mesolithic, the dataset suggests that diets were seasonal and mixed. Similarly, seafood and marine resources were easily accessible and available across the western Scottish coastline in the Late Mesolithic, but people's diets were more varied. For example, shell middens on Oronsay also contained bones from red deer (Mithen and Finlayson; 1991), while midden material from An Corran in Skye included aurochs and wild boar (Saville and Miket; 1994, Milner and Craig; 2009).

Although there is little direct evidence (i.e. fish bone) for the consumption of fish in Britain (*see* Milner; 2006: 66/67: figure 18, for variation in types of Mesolithic diet across Britain), there may be traces of this practice in other materials. For example, in the Lower Colne Valley a linear arrangement of stakeholes at Bedfont Court may be the traces of fishing or hunting equipment (Framework Archaeology; 2006, 2010), or racks for drying or smoking meat or fish (see Leary; 2015). Local reed beds (*see chapter 3*) could also have provided material for making baskets or fish traps, similar to those found at Runnymede (Needham; 1991: 38, 2000: 224) (*also see* Haughey; 2016: 114).

On the other hand, an assemblage of red deer bone and aurochs at Tolpit's Lane (from separate contexts), as well as butchered aurochs at the Grove were the only animal meats recorded in the Late Mesolithic dataset in comparison with a greater variety of wild meat in the Early Mesolithic. Plant foods, however, were fairly well represented. Hazelnut shells, for example, were found roasted at Tolpit's Lane from at least two autumn/winter occupations (mid 6th and mid 5th millennium BC). Foods were also stored (e.g. unburnt hazelnut shells at the Grove), while Rowan [240], Hawthorn [241] and Whitebeam at The Grove provided edible berries in the early to late autumn. Rowan and Whitebeam are rich in vitamin C and the whole fruit (including seeds) are safe to eat when cooked (Fowler; 2011). Hawthorn also produces red berries which taste like apples, while nutty tasting leaves and buds could be collected and eaten in spring (*ibid*). Bulrush (reedmace) would have been common across the whole valley, not only at The Grove, and these roots could be roasted and eaten like yam from autumn through to spring, while shoots could be harvested from spring into summer. Nettle, again, would not be limited to the area around The Grove, and is both a food and a medicine; in the Bronze Age it was woven into cloth for household use (Bergfjord *et al*; 2012, Bangsbo; 2016), while Roman Britons used it for improving circulation and keeping warm (De Cleene *et al*; 2003). Hemp agrimony, also found at the Grove, has medicinal properties and could be used on wounds, or for fevers.

Many tasks were still centered around open fires and communal hearth areas where people gathered to share food, roasting hazelnuts at Tolpit's Lane, for example, or tubers in the autumn (many foods needed roasting or cooking to make them edible, and many crafts were aided by the use of fire). In the Late Mesolithic dataset these activities were represented by spreads of burnt flint at all of the larger sites (Tolpit's Lane, SLGC, Hampermill, the Moor Park site, the Grove and Harvil Road near Dewe's Farm). In the

[240] Sorbus Aucuparia
[241] Cretaegus

Lower Colne, however, burnt materials were found in pits or hollows at T5, Bedfont Court and Hengrove Farm. Fabricators or strike-a-lights were also found at the Moor Park site. A total of 16 pits across T5 and Bedfont Court included many that were associated with cooking food several in the southern pit group contained burnt stone but no other associated artefacts. Similar features and material were identified in the Upper Colne at Sandy Lodge. In the dataset there were traces of different cooking techniques or methods of preservation, and heated stones could be used in a variety of ways. For example, food may have been seared or steamed on hot stones at Sandy Lodge and T5, while meat or fish could be dried or smoked on racks at Bedfont Court. Stones could be used to heat water to which plants or herbs might be added (they could be heated on a fire and added to a container with liquid to boil it) (Milner; 2006). They could also be positioned into the embers of the fire, while meat, fish or plant food could be placed directly onto the hot stone to cook it. Alternatively, meat or fish could be placed onto the hot stone in the hearth and covered with vegetation to steam it. In the spring, leaves and shoots could be eaten raw or used to flavour and steam meat or fish which may have been preserved over winter.

Hearth areas would be warm, busy, noisy and smelly, while pits could be used as cooking holes. Hengrove Farm hollow 6027 may have been used similarly to the Majestic House features (*see 1.2.3*), with burnt flint, knapping and toolmaking debitage on the scale of a single event. Some of the pits at T5 and Bedfont Court also contained unburnt waste material and a piece of timber at Bedfont Court was still preserved as part of one of the posts. There were localised small-scale clearances in areas of woodland where timber structures were built and used (e.g. The Grove, Tolpits, T5 and Bedfont Court), while pit fills also contained wood charcoal at Tolpit's, The Grove, Sandy Lodge and Hampermill. Woodland management was also noted at Meadlake Place in Staines (Branch and Green; 2001, 2004: 13).

6.5 Placemaking

The Colne Valley, like the Kennet, might equally be described as; '*a palimpsest of repeated activity, establishing the floodplain terrace (at Thatcham) to be a place in the landscape that was reoccupied at numerous times throughout the year, where groups* *were undertaking a range of tasks and hunting a range of different species within a mosaic of wetland and woodland habitats*' (Conneller and Overton; 2018: 298). Some places were lived in by large groups over several seasons (e.g. 3WW and Sanderson's), as well as generationally (e.g. Tolpits), while other places were occupied for short periods but returned to often (e.g. T5, Majestic House). Like the Kennet, there were multiple seasons, scales and rhythms to these inhabitations. River basins may also have been territories for small clans of Mesolithic people, (e.g. Spikins; 1996, Preston and Kador, 2018), and the study area was no doubt part of a wider landscape which might include the Kennet, the Middle Thames etc. (Lamdin-Whymark makes a similar point for the Middle Thames; 2008: 186).

The assemblage from 3WW reflects taskscapes of the earliest Mesolithic groups in the study area, and possibly represents a transitional period between the material culture of those people using 'Star Carr' and those with 'Deepcar' type technologies [242]. Radiocarbon dates also overlap both typologies (Lewis and Rackham; 2011: 184). Although 3WW has been interpreted as a single event (Lewis and Rackham; 2011), the context of flintwork was contemporary with the artefactual horizon of some artefacts at Sanderson's, i.e. material was sealed underneath the peat (MoLAS; 2006). Most of the Middle Colne material were located on the floodplain, and display the same sedimentary sequences (flintwork was either positioned in the basal layers of the peat or in the alluvial sands underneath (overlying the Pleistocene gravel). Events at 3WW, however, may predate some of the other Middle Colne occupations by several hundred years, while episodes at Sanderson's, Oakend and PA4, could be separated by years or by seasons (like Thatcham site III Star Carr and Deepcar assemblages). For example, most of the tools from 3WW and Sanderson's were made with predominantly local gravel flints, which were available across most of the river floodplain. At Sanderson's, however, raw flint nodules were cached in the northern area of the site, in isolation from other material, and may be compared with Seamer D, Flixton School House Farm, AC8 at Star Carr and till flint nodules at Lake Flixton (Milner *et al*; 2018). This suggests a level

[242] A Type microliths and narrow, obliquely backed points (mean length = 29mm)

of caution and curation, rather than an expectation of continued access to local resources, and may reflect unfamiliarity with local environments at this time.

The task-specific signatures of Oakend or PA4, on the other hand, do suggest a detailed level of local knowledge (e.g. the use of specific gravel procurement sites), and like Deepcar assemblages in the Vale of Pickering, may be indicative of the '*shifting mobility and procurement strategies*' adopted by later EM groups (Conneller and Overton, 2018: 290). Oakend and PA4 were used almost exclusively for procurement of raw material and primary flintworking on a large scale, and Oakend is spatially distinct from the other sites. In other words, flint nodules were initially flaked, tested and discarded at Oakend, while tool making material was taken to other locations for further reduction and tool production. Recent work at Star Carr has shown how procurement of flint took place off-site, with large nodules split and carried back as smaller pieces which were easier to work bladelets from (Conneller *et al*, 2018: 497). This is echoed in the assemblage here; large nodules at Oakend were probably broken down on site and then taken elsewhere as smaller pieces to be made into tools and used. People brought their own tools to Oakend (e.g. microliths), while other pieces were constructed or modified ad-hoc as tasks were encountered. For example, axe heads and handles were made on site (roughouts, burin and spall), they were used and repaired frequently (broken axes, primary and secondary sharpening flakes), and they were also reworked into other tools when necessary (an axe reused as a blade core).

Similarly, limited tool types at PA4 may not have been the result of a short-term stopover (WA; 2009a). It seems more likely that the PA4 assemblage reflects specific tasks carried out for the procurement of flint, and core preparation work, with nodules then taken to other sites where they were knapped into tools and made use of. Both Oakend and PA4 were easily navigable along the Colne and the Misbourne, either on foot or by water. PA4, particularly, looks like somewhere with a short-term episodic signature. In other words, it was used for specific tasks, probably repeatedly, while cooking, eating, sleeping and other daily activities happened elsewhere. For instance, there was no burnt material at PA4, so it was unlikely to be a place where people cooked or sheltered, and the warmth, noise and companionship of the hearth were located elsewhere. On the other hand, at 3WW and Sanderson's there were at least two large hearths (one at scatter c west and one in area 6) where people could come together to cook, eat, warm themselves and chat, where they could satisfy '*emotional as well as physical hunger*' which was '*central to social life*' (Milner; 2006: 63). We can speculate that the PA4 assemblage is reflective of multiple and repeated events, which did not involve this particular social arena, but may have been a regular location for procurement of raw material, tasks carried out by younger adults or less experienced knappers maybe (*see* Conneller *et al*; 2018).

Knowledge of local environment also extended to fresh chalk sources for Mesolithic groups in the dataset, although tools made from this material were found in smaller quantities and generally associated with axe-making (e.g. a broken axe and axe fragments, axe thinning flakes and a roughout at 3WW). Nodules or roughouts for axes must have been brought to 3WW, for example, from a possibly local, chalk outcrop, such as that found in the Dewe's Pit area, *c*3km north of 3WW. The Sandstone assemblage, on the other hand, was possibly the signature of a later group and was manufactured primarily from chalk flint. Raw material was selected and transported to the site as nodules or cores, and most tools were made on site, seemingly on a fairly expedient basis, although there were also rhythms of planned tasks. For example, blades and flakes were used as tools, scrapers were made on anything that was available, core trimmings or blades, for instance, while both burin and microlith manufacture have left distinctive waste products. Axes were also brought to the site and taken away again, with no suggestion of repair work or extended usage.

In the earliest assemblages, however, Three Ways Wharf and Sanderson's represent at least six 'household units', with dwelling events that may have spanned a period of several centuries. Occupation was between late summer and late spring, with at least five or six large scatters of domestic debris at Sanderson's and a less intensive occupation over winter at 3WW. Tasks were performed both at the immediate location and in the wider landscape at different scales (*figure 6.8*). It is possible that people also erected temporary shelters of circular tent-like structures covered with animal skins or thatching (*figure 4.6 and 6.2*). These buildings would have left a light footprint with no post-holes, but may be witnessed through discretely bounded areas of flintwork, including burnt material and animal bone (*see figure 5.26*).

For example, the Colne Valley households might be compared to those in the 'Moores Area' at Star Carr, for example. At the Lake Flixton site, a potential feature in the western dryland area was represented by a concentration of bounded flintwork, similar to the artefactual signature of an adjacent structure (Milner *et al*; 2018: 162). A bordering post-hole feature (as well as a couple more in the central and eastern dryland areas) contained very dense artefactual scatters with different signatures (high quantities of burnt material in the eastern and western structure which were not present in the central structure). However, material may have accumulated similarly in the 'Moores Area' curved and bounded scatter, and in the western structure, while tool types and use-wear are consistent across both spreads, including the area surrounding the post-hole feature (*ibid*). One of the interpretations is of a midden which collected in the area of a structure after it had been dismantled (*ibid*). These midden scatters at Star Carr represented durational elements to the occupations; units of people who erected circular tent-like structures for shelter, using the area for middening once they were abandoned (*ibid: p.175*). Refits from the central structure also crossed outside the boundaries of the hollow and postholes (*ibid: figure 8.7*), indicating the multiple components (and authorship) of making and using (*see* Finlay; chapter 2).

Similar phenomenon may be reflected in spreads of animal bone and flintwork at both 3WW and particularly at Sanderson's. For example, the density of knapping waste at Sanderson's suggests that, similarly to 'Moores Area' at Star Carr, living and working areas were turned to midden after tents were dismantled. The southern scatters may represent spatially distinct activities (MoLAS; 2006), as they contained more concentrated clusters of microliths, scrapers and serrates, particularly. However, artefactual signatures of daily tasks (e.g. crafting containers, weaving baskets, making tools, shelter etc.), were fairly evenly distributed across the site and also involved 'off-site' rhythms and interactions. For example, a single axe and a few sharpening flakes were located close together in area 4, but otherwise there was little suggestion of repair work on site (or axe manufacture). On the other hand, people were collecting wood to bring to the site (hearths and burnt material). In contrast to the concentrated flintwork and animal bone clusters, the area around the main hearth was spatially distinct (*figures 5.14 and 5.15*). This has a similar artefactual signature to the central structure at Star Carr, which was clear of flintwork and used differently from the eastern and western features (Conneller *et al*; 2018: figure 8.9). Although the hearth feature at Sanderson's was bounded by burnt flint, there was very little other material nearby (awls were the only tools found near the hearth).

These sites and artefacts reflect the temporality of tasks, and like Star Carr, indicate *'logistical use of the landscape…with sites of longer and shorter duration and with greater and lesser degrees of specialisation'* (Conneller and Overton; 2018: 291). However, in terms of specialisations, I would suggest that the distinctions are rather less bounded. The signatures are of a group or groups of people who occupied and reoccupied a network of places, a '*single system of mobility*' similar to the Star Carr assemblages at Warcock Hill South, Turnpike and Rushy Brow, for example (Conneller and Overton; 2018: 287). People performed different activities not only according to season (Conneller and Overton; 2018: 301), but at different scales, and at different levels of expertise. However, rather than a specifically logistical use of landscape by humans (e.g. Binford; 1980), the making of places were not independent of agency in non-human elements. Tasks were variable, distributed and incorporate smaller footprints left at Jewson's, Long Lane, Cowley Mill Road etc. Jewson's Yard, for instance, was described as a separate activity area from 3WW (Lewis and Rackham; 2011), but the material is also suggestive of multiple tasks (similar to those at 3WW) carried out on a smaller scale. For example corticated cores were reduced, and tools including microliths were made with soft hammers. Flints were heated and tools were made, flakes, blades, scrapers and points were used.

Most people probably acquired a repertoire of modifiable skills and knowledge, which not only enabled specific tasks to be carried out on a large scale, but also meant that 'specialist' activities could be performed as and when, by small groups, in 'domestic' contexts. For example, cores were sometimes cached (e.g.) or curated (e.g.), representing future tasks and the intention to either return or not. At other times, however, cores were also used ad hoc, carried around as a personal toolkit so that flakes, blades and bladelets could be removed as and when to make tools or implements as required (e.g. future tasks were not yet known). The Long Lane assemblage is an example of this. This material was from a secondary context but makes sense as a one-off action. Most of the flakes were from secondary knapping and the cores were both single platform with only one blade removed on each (a couple of blades were also part of the assemblage). These were not curated, well worked pieces but were probably picked up nearby, used and discarded as a disposable option. A microlith was knapped out quickly and a small fire was built to heat some of the flint material. One or two people may have been following the river, gathering plants, mushrooms, nuts, trapping small mammals or birds, before returning to a larger settlement site. Traces similar to this, of people working in smaller groups, are found across the whole study area. For example, further along the river, at Pinn Meadow, another assemblage of <50 artefacts, included several scrapers as well as burin (wood or bone work) and cores (knapping), although this may have been related to Late Mesolithic activity.

Late Mesolithic groups were differently represented in the dataset, they were mainly smaller groups who left traces over wider areas and over more frequent occupations. For example, a large area of activity extended across Moor Park (*figure 5.5*), and incorporated the footprints of discrete occupations over several generations. Temporally distinct events were distinguished from the accumulation of midden material and stepped deposits at the Moor Park site, for example, while two or three separate occupations at Tolpit's Lane were radiocarbon dated to occupations between the late 8th millennium to mid 5th millennium BC. In general, groups were smaller, more dispersed, and made more frequent visits to the same sites. Very few sharpening flakes in Late Mesolithic assemblages may suggest axes were used less than they were in the Early Mesolithic, and that felling timber and clearing spaces were on a smaller scale, indicative of shorter occupations.

For example, along the Gade, a small group of people have left traces of activity at The Grove. They used this site for both primary flintworking (assemblage is largely debitage from initial reduction) and as a base for preparing food, cooking and eating (fire pits and a hearth). A range of crafts including woodworking were carried out, shelters were made and used (pits and post-holes at The Grove[243] and at Cassiobury School were Late Mesolithic-Early Neolithic, *see chapter 6*), and the location was next to a spring source. Similar groups were active at Dewe's Farm, possibly on several occasions where there were at least two scatters. The site was used for procurement of both fresh chalk and river pebbles, and for primary flintworking, and may have operated similarly (although smaller-scale) to PA4, where tools were brought in and used, and there was no indication of hearth material. Nearby at Colney Farm (Bowen; 1977) a few items of probable Late Mesolithic chronology suggest traces of one or two people, maybe from the Dewe's Farm group.

People have also left visible traces in the Lower Colne area, and although these signatures were often small-scale, they were also suggestive of repeated occupations, which were not necessarily short-term. T5, for example, has a small residual scatter, which like the ICSG/RMC scatter is dispersed across the whole site (Framework Archaeology; 2010). The flint assemblage and pit features, however, suggest a degree of longevity to the tasks. For instance, cores were well worked (the assemblage includes preparation and rejuvenation material), a total of sixteen pits were dug out across T5 and Bedfont Court, and timber posts and stakes were used for building a structure of some sort. Light signatures at ICSG/RMC/LEWGF, on the other hand, suggest non-settlement activities but indicate nearby dwelling. For example, tree throw holes were used for ad hoc flintworking, disposal of broken tools, and probable core caching, indicating a range of tasks in the immediate landscape, a tethering to place, repeated visits, and/or preparation for future use. Axes were also repaired (axe sharpening flakes), an indication that felling occurred locally, and for a sustained period of time, while microliths were made, used, dropped or discarded. A small signature at Prospect Park reflects similar tasks and rhythms (making microliths and axe sharpening). When microliths were used for hunting, they are more likely to be found as single surface artefacts (Barrett *et al*; 1991, Butler; 2005), representing actions which were generally carried out away from the place of dwelling. An arrow fired could be picked up and

[243] Area C

reused, lost in the landscape or become embedded in a dead animal (and then might be discarded when the carcass was processed).

6.6 Social spaces and special places

Mesolithic lifeways, pathways and places were structured by performance of mundane or quotidian tasks, as well as by special events. Specialist skills and knowledges were acquired, built upon and transformed in all contexts of the domestic arena. Tasks discussed as ‘quotidian’, ‘specialist’ and ‘domestic’ were all part of the same processes, and people were able to apply their knowledge and abilities in a variety of interdependent tasks (including those which were non-anthropogenically generated). For example, someone with the resources and the knowledge for weaving plant or animal fibers might apply these skills to hafting axes, or weaving willow rods into baskets or fish traps, for instance. In this way aspects of the environment and the artefact could influence the tasks a person engaged in, as well as future relationships (*see chapter 2*). For instance, someone collecting willow rods or reeds would enter into various object and social relations; with someone who makes a basket from them, or someone who uses the basket to store food, for instance. The ability to become expert in a particular task (e.g. flintknappers of fine blades at Oakend, Dewe’s Farm and Berkyn Manor Farm), was dependent on factors including the nature of the material, interpersonal relations, obligations and reciprocity (*see chapter 1*). Various people might also share use of an item, including repair work, and someone else could lose or discard this ‘*product of more than one individual involved in a network of social obligations*’ (Finlay; 2003: 170).

The dataset reflects this fluidity in the taskscape, rather than a reification of specialist and person-centred activities (*see chapter 1*). Some types of flint knapping were performed by experts (e.g. fine microliths at SLGC), but the outcome would depend on variables including the type of flint available (e.g. a local fresh chalk source), or the experience and familiarity to know where to source it. Large quantities of microburin at 3WW and PA4 suggest microlith manufacture as a principal and quotidian activity, and most people probably had these skills in their repertoire. At London Road and Sandstone, for example, episodes of toolmaking in response to necessity were carried out as singular ad hoc flintknapping. Oakend, also, shows how stages of flint reduction were performed by a series of people, something which required interpersonal actions of planning, negotiation and cooperation. For example, some items were brought to the site ready made as tools, and in expectation of certain tasks, while other pieces were knapped out and used ad hoc on site (e.g. at least n=13 pieces of debitage were utilised). This is also suggestive of multiple events, as familiarity with the site was required in order to predict the type of tools that were needed. At Seamer C (Lake Flixton area) one of the scatters (K) is distinctive for the poor quality of the raw material, and has been tentatively interpreted as the work of more inexperienced knappers (Conneller and Overton; 2016). The Oakend site may have functioned similarly, with an opportunity for those less practiced to learn knapping skills alongside those with more experience as there are also some fine tools in the assemblage. As Finlay has pointed out, identification of multi-authorship is a positive move away from gendered attribution of tasks, while '*age and other social constructions of difference*' can be brought into the narrative (Finlay; 2003: 170).

Expertise was not limited to specific crafts or tasks, and places were not defined by hierarchical categories in task performance. We can assume that places were made and given meaning where people came together, employed in both anthropogenic and non-anthropogenic interactions. These processes applied equally to any scale of informal gatherings and ad hoc activities as to more organised and formalised practice. For example, Star Carr may have been given meaning as a place through formally identified craft activities (e.g. making and exchanging beads and art), or the performance of ceremonies involving antler headgear (Conneller and Overton: 302-303). The significance of the site relied on interactions between tasks, environment, objects and social performance, and some places may have accrued particular associations and affective attachment through more formalised practices and social events. In the study dataset similar processes of placemaking can be seen, at 3WW for example, which may have acted as a focal point for feasting on at least one occasion, while the spatial grouping of red deer limbs and an antlered skull, suggest Sanderson's was marked with placed deposits (Overton; 2014, Conneller & Overton; 2018).

However, smaller and less formal signatures also gave affect and meaning to places through arenas of social and material agency, along a multi-authored spectrum of quotidian to specialised practice. People engaged with objects and their environment (including plants and animals), through daily small-scale tasks like collecting fruits, nuts and berries, or firewood, for example. These interactions generated material and experiential qualities, which were translated into knowledge through interpersonal and social relationships (*see* Overgaard and Zahavi; 2009). Place making came about through multiple agentic actions (human and non-human) in mundane and other activities (*see* Warren; 2000, Overton and Taylor; 2018).

Interactions between social and material agency were equally represented in other types of daily task. For instance, flints were predominantly collected locally from river gravels, in the Early Mesolithic (e.g. 3WW and Sanderson's), while Later Mesolithic groups also made use of local chalk outcrops, in the Moor Park area, particularly. In terms of mobility rivers and channels provided routes between resources, while also linking people across regions (e.g. Middle Thames and Chilterns). These waterways may have been experienced as fragments rather than routes (*see* Haughey; 2016), while places could be meaningful and tethering through social exchange and interaction (Warren; 2000). The spatial distinction of Oakend as a task specific site is interesting and suggests regular travel along the Misbourne, for flint procurement or exchange, and maybe gossip. As Finlay has pointed out, the daily processes of production, use and discard may reflect people's attitudes towards the interpersonal qualities of these processes, as well as towards the raw materials and manufactured objects (1997: 24).

6.7 Transitional times: inheritance or acculturation?

The study dataset represents processes of social-object-environmental interaction and affect which spans chronologies. However, artefactual assemblages are still used to interpret Mesolithic and Neolithic groups as communities separated by different cultural behaviours and practices (*see chapter 1*). In the study area, Early Neolithic groups are also considered to be colonisers or pioneers from Europe, making gradual contact and small-scale incursions into Britain (Chaffey *et al*; 2012, *and see* Sheridan; 2013). For example, Neolithic material from Kingsmead Quarry in Horton were interpreted as the work of '*people colonising a new area'*, with a '*near absence of Mesolithic activity from the immediate site*' (Chaffey *et al*; 2012: 205), which is incorrect and reductive at site level. While there may only have been small-scale Mesolithic activity at Kingsmead Quarry (although at least one tree-throw hollow contains Mesolithic material), Late Mesolithic signatures were fairly intensively dispersed across the Lower Colne and Middle Thames Valley (e.g. at T5 and Bedfont Court, Hengrove Farm, and Eton Rowing Lake). Different (and smaller) scales of practice were not representative of 'near absence'. There is very little distance between these sites[244], especially when using waterways or larger rivers as conduits. Bedfont Court was probably less than fifteen minutes on foot, for instance. However, similarly to recent translations of the Stonehenge landscape, the material from Kingsmead Quarry was interpreted as the signature of '*pioneer farmers*' who '*introduced a Neolithic way of life to the Colne Valley*' (Chaffey *et al*; 2012: 201). On the other hand, indigenous Mesolithic groups were seen to be part of a one-way direction of change, adopting lifeways and marriage partners from their Neolithic counterparts (*see chapter 1*). The idea of side-by-side living, and the opportunity for Mesolithic people to absorb a new culture, has also been interpreted through distribution of material culture, where, for example, in the Upper Thames and the Cotswolds, Neolithic activity is often noted adjacent to Mesolithic sites (Barclay; 2007: 337).

A transition from what we understand as Mesolithic to Neolithic lifeways, however, was much more socially nuanced than these sorts of 'Neolithisation' narratives account for. One of the difficulties in challenging this comes from Late Mesolithic material being underrepresented in the dataset, as it is more widely. However, indigenous and immigrant communities often adopt aspects of each others cultures and 'transition' was '*a highly varied dialectic between Mesolithic perceptions and understandings of the material world, conscious human agency, and the unintended consequences of human choices*' (Robb; 2004: 138). In fact, both Mesolithic and Neolithic material culture are not only found adjacent to each other, they are also found together contextually, and while rod microliths are usually associated with the Latest Mesolithic dates, Griffiths has shown that they were in use during the Early Neolithic at South Haw in Yorkshire *c*3950-

[244] Bedfont Court is *c*5km east, Hengrove Farm is *c*8km SE, Eton Rowing Lake is *c*11km west of Kingsmead,

3700 cal BC (2014: 235). The idea that Neolithic people 'introduced' specific types of material culture may be contested by new data, including a polished stone axe or adze which has been associated with a Mesolithic cremation at Hermitage in Ireland (Little *et al*; 2016). Bayesian modelling also shows an overlap in the use of both Late Mesolithic and Early Neolithic material culture in the Yorkshire and Humberside region, and South Wessex (Griffiths; 2014: table 3). The contemporaneity of Late Mesolithic and Early Neolithic practice is also echoed in the study area, where several spot finds and assemblages were associated with a larger pattern of mixed LM-EN material. At Dewe's Farm, for example, a large assemblage of LM and EN material were located within the same stratigraphic contexts, '*the majority of identifiable Late Mesolithic and Early Neolithic artefacts*' came from (084003) and (084002), including a rod microlith from sample (00049)[245], and a serrated blade '*characteristic of the Early Neolithic*' amongst the bulk of LM material in (084002) (Scott; 2018: 75). At Colney Farm a small scatter of mixed Mesolithic and Neolithic material (probably similar to Dewe's Farm) includes a pyramidal core and Neolithic pieces (*figure 5.72*). The Grove has mixed Late Mesolithic-Early Neolithic material (from stratified pit and posthole contexts in area C, *see chapter 6*), while a scalene microlith and bladelets from the interior of the enclosure at Yeoveney Lodge, and Latest Mesolithic artefactual signatures at Tolpit's Lane were also associated with Neolithic material. A similar phenomenon occurs in the wider region and across a variety of contexts; material from the 5th to the 4th millennium BC underneath Ascott-under-Wychwood long barrow, at Wawcott in the Kennet Valley and Daisy Banks near Abingdon (Hey and Barclay; 2007; 400).

[245] Context 084003

Chapter 7: Neolithic data

Sites are presented in a similar format to chapter 4, in the Upper, Middle and Lower Colne regions, where they are divided into assemblages with more than 1,000 artefacts, more than 100 artefacts, more than 10 artefacts, or small assemblages (less than 10 artefacts or single item spot finds).

7.1 Early Neolithic

This section presents material which is assigned to the Early Neolithic (*see figure 7.1 for distribution and density*). Although radiocarbon dates were only available for a limited number of sites (Table 3), Early Neolithic sites and finds were also identified through typology or by association with typologically diagnostic material (e.g. Carinated, Plain and Decorated Bowl pottery), and context of deposition.

7.1.1 Upper Colne sites with assemblages of 100 plus artefacts

7.1.1.1 The Grove

Investigations at The Grove between 1999 and 2000, produced the largest Neolithic assemblage and main palaeoenvironmental dataset for this area. Although there had been an expectation of finding LUP and Mesolithic material in the alluvial deposits, Neolithic archaeology had not been anticipated away from the plateau surface (Le Quesne *et al*; 2001, Bates; pers comm). However, it turned out that extensive EN stratified material turned up on the alluvial fringe, in area B particularly, and was confirmed by both lithic and pottery analysis (Le Quesne *et al*; 2001). There was also some slightly later material in Area D (Le Quesne *et al*; 2001). The main area of Neolithic material came from the valley slope in area B, adjacent to environmental trench 3 (*figure 4.5*). Area B1 (largely Neolithic), was in the same field, *c*120m north west of the evaluation trench, about 6m higher up the valley side, in the area of a fresh spring source (Le Quesne *et al*; 2001).

The evaluation trench (A125) comprised predominantly Mesolithic material (*see chapter 4*), with the exception of a piercer and fragment from a polished implement (a polished

Group VI stone axe was also found in a small pit in area A[246]), redeposited with LBA material (Le Quesne *et al*; 2001). During the excavation phase, however, n=764 pieces of mainly Neolithic worked and burnt flint were recorded in areas A-D, possibly including some BA material.

The assemblage was made up of predominantly debitage, consisting of n=28 cores or core fragments, n=680 flakes, blades and blade-like flakes, and a couple of chips, distributed across all areas of the site (Table 14). Flakes dominated the assemblage across all areas (A1, C, D, BI, BII). Watching briefs also produced n=15 pieces of worked flint, again consisting of debitage (n=12 flakes, a blade-like flake and a couple of core fragments), and walkover survey in area BII produced mainly flakes, and a single blade-like flake from a pit fill in area B1. Cores included single, multi-platform, keeled and opposed platform, a blade core and a tested nodule (Le Quesne *et al*; 2001). Some degree of curation in the material was suggested by a couple of core rejuvenation flakes.

Tools included n=27 retouched pieces from area A1, A4/6, A7, BI, BII, C, and WB (Table 14). This consisted of retouched flakes (n=11), a serrated flake and a denticulate or saw, n=9 scrapers (side, end, end and side), an arrowhead, a miscellaneous piece and a stone axe fragment.

Area BI contained the largest assemblage of stratified flintwork (n=418), particularly in context (2166). Several sealed contexts[247], as well as context (2255), contained diagnostic pottery alongside flintwork. The material was fairly mixed, including an oblique arrowhead and other retouched pieces which were attributable only to a broad Neolithic to EBA date. The assemblage was dominated by debitage[248]; flakes and mainly flake cores, although some showed blade scars as well. Both hard and soft hammers were used for flaking, suggesting different stages of initial reduction and toolmaking. One end scraper on a blade-like blank was diagnostically Earlier Neolithic (*ibid*). Area C produced mainly debitage (n=167), and some of the post-holes (particularly the most

[246] Context 8136
[247] 2166, 2291, 2300
[248] Particularly context 2075 which produced 199 pieces of mainly debitage

northerly[249]) included an end and a side scraper, as well as a couple of other retouched pieces.

Table 14 Distribution of flintwork at The Grove (AOC, 2001: table 17, page 78)

Area	Debitage				Retouched tools	Total
	Flakes, blades, blade-like flakes	Chips	Cores, core fragments	Burnt unworked flint		
C	167	0	2	0	4	173
D	8	0	0	0	0	8
BI	374	2	19	16	7	418
BII	47	0	1	11	2	61
A1	25	0	2	0	7	34
A3	2	0	0	0	0	2
A4/6	41	0	2	0	5	48
Area 7	0	0	0	0	1	1
WB	13	0	2	0	1	16
STAB	3	0	0	0	0	3
Total	680	2	28	27	27	764

[249] (3068)

A total of n=77 sherds of Early Neolithic Plain Bowl Ware were found predominantly in Area B across 8 contexts, including three which were sealed (*ibid*). Pit or scoop (2319) was sealed by an organic material which also contained sherds of Carinated Bowl. A couple of Plain Bowl rim sherds and at least n=17 wall pieces were found in a sealed context[250], and in combination with further sealed deposits[251], produced what was probably an early bowl and a few sherds from a separate similar vessel. This suggests a contemporary episode of disposal as pieces of the same vessel were spread across both pits or scoops and sealed. Similarly, a couple of vessels were represented by n=27 wall, neck and shoulder sherds from pit context (2075), while the remaining wall sherds were scattered across a further four contexts[252] (an additional n=5 pieces, including a rim were also found in area B). At least four more vessels were represented by a diagnostically Early Neolithic wall sherd, and n=4 pieces including a base[253] (*ibid*).

Burnt flint from hearth deposits were also concentrated in area B1/I (n=16) and BII (n=11), while n=225 animal bone fragments were recovered from Areas B & D. While at Yeoveney Lodge, for example, the faunal assemblage was made up of predominantly domestic animals, at The Grove red deer comprised 67% of the assemblage, and other deer species made up 4%. Cattle on the other hand comprised 12.5%, cow-sized fragments 12.5% and sheep-sized fragments 4%.

7.1.2 Middle Colne sites with assemblages of 1,000 plus artefacts

7.1.2.1 Dewe's Farm

Recent works in advance of Hs2 were carried out in the area of Dewe's Farm, and two nearby sites were identified with preserved Neolithic land surfaces[254] (Scott; 2018). Most of the assemblage were given an Early Neolithic date through typology, and although no radiocarbon dating had been carried out at the time of the report, charcoal

[250] 2166
[251] 2291 & 2300
[252] 2002, 2062, 2331, 2255
[253] Context E62/2016
[254] Mopes and Warren Farm

and cereal grain[255] from trench TT084, including context (084002) may provide these at a later date (Scott; 2018: 18.8.14).

Neolithic flintwork derived from the same raw material as the Mesolithic assemblage, and comprised both chalk and river pebbles (Scott; 2018). As mentioned in chapter 4, fresh chalk outcrops were located in the south west area of the site. Neolithic material was mainly distributed across TT084, although a single posthole feature [065004] containing an undiagnostic blade (Early to Late Neolithic) was located in trench TT065 (*figure 5.65*). Early Neolithic flintwork were mainly concentrated in the same context as Late Mesolithic material (084003) and (084002) (*see chapter 6*). There was very little abrasion or edge damage to the flint (except in topsoil artefacts), although bioturbation in the topsoil[256] and other deposits[257] suggest some may have been worked down from a former occupation horizon (Scott; 2018: 4.1.5). The scatter predominantly consisted of worked flint and n=25 features consisting of pits, ditches, stakeholes and a gully (*figures 7.3 and 7.4*).

From TT084 a total of *c*1,405 pieces of worked and n=803 unworked flint were recovered from across n=15 contexts, as well as from environmental sampling (n=14 samples from TT084, n=3 samples from TT065 and TT106) (*see* a*ppendix iv for distribution of flintwork across contexts and samples*). Most of the unworked flint was burnt (n=541 pieces or 67%). Cores (n=21) and core fragments (n=*c*15) were mostly casually worked cobbles with very few flakes or blades detached, although the presence of a rejuvenation piece suggests some curation. Although blade cores were typologically assigned to the LM assemblage (*see chapters 5 and 6*) and flake cores to the Neolithic, some showed both blade and flake removal. Almost half the flintwork (n=694) comprised flakes (49.5%), n=132 of which were broken and n=157 which were burnt. Blades made up a small component (9.4% of the assemblage, n=131) and of these n=53 were broken and n=6 which were burnt. There were also n=65 pieces of shatter and n=457 pieces of small debitage recorded. A further *c*300 flints were distributed across the site (*appendix v*).

[255] Sample [084025] {48} from pit [084024], Sample [084033] {47} from pit [084032]
[256] 084001
[257] 084002, 084011, 084012, 084014

Both primary knapping and toolmaking were represented in the assemblage, which included evidence of both soft and hard hammer percussion (*ibid*).

Although tool use (utilisation) was not observed with confidence, and only a few pieces were formally retouched (n=8 tools)[258], expedient working was suggested by n=9 retouched flakes and blades (n=5 flakes and n=4 blades), and a notched piece. Formal tools included a burin, a couple of scrapers, an awl and a couple of serrated blades. The nearby Colney Farm assemblage also included a Y-shaped piece and horseshoe scraper, along with a small quantity of diagnostically LM material (*figure 7.5*).

Features were identified in the main trench (TT084) (*figures 7.3 and 7.4*), including a gully[259], a possible three-pit alignment, a couple of ditches (084015 and 084037), and a possible structure, which consisted of a large[260] (*figure 7.6*) and small[261] pit, with six stakeholes located around them (*ibid*). Although none of the fills from the structure contained any finds, the gully, pit alignment and ditches all contained flintwork. This comprised mainly debitage from the gully fill (084005)[262], a couple of pits[263] (084008[264] and 084042[265]) and two ditch fills (084016[266] and 084038[267]). Debitage consisted of blades and blade fragments (n=6), a couple of cores (one of which was rejuvenated), and n=9 flakes from the pits[268], and included shatter and burnt material (ditch fill 084016). A further concentration of mostly debitage was clustered near to the gully terminus (a core, n=9 flakes, n=3 blades, a piece of unidentified debitage and a couple of pieces of shatter). The only tools from these features were a burin from the gully terminus, and an awl and retouched blade from the ditch fill (084016) (*see appendix iv*). It is likely some of these features represent Late Mesolithic activity (see 5.2.2.2).

[258] See 18.1.10 (Scott; 2018)
[259] 2.5m length x 0.42m width x 0.22m depth
[260] [084032]
[261] [084024]
[262] see 18.2 (Scott; 2018)
[263] The third pit from the alignment was not investigated (see 9.1.7, Scott; 2018)
[264] 3.5m length x 1.48m width x 0.33m depth (two fills)
[265] 5.5m length x 2.25m width x 0.26m depth (two fills)
[266] Sample (36)
[267] Sample (49)
[268] Primary and secondary fills

7.1.3 Lower Colne sites with assemblages of 1,000 plus artefacts

7.1.3.1 T5

The Terminal 5 and Perry Oaks sites were archaeologically investigated between 1996 and 2007, and in addition to Mesolithic material (*see chapter 5 and 6*), a significant quantity of Early to Late Neolithic artefacts were also found dispersed across the site in tree throws, pits and postholes, and the ditch fills of various enclosures and linear features (*figure 7.7*) (Framework Archaeology; 2006, 2010).

The majority of flintwork were made from local river gravels, and *in situ* material was predominantly assigned to the Middle and Late Neolithic through typology. However, several tree throws produced lithic material which was chronologically diagnostic by association with EN pottery (*ibid*). Although this amounted to at least n=263 pieces of probable EN flintwork, diagnostically identifiable debitage was only recorded as a total of n=32 pieces. This was comprised of secondary and tertiary flakes (n=14), blades or blade fragments (n=5) and a core preparation flake (a*ppendix vi*). Most of the flakes, a blade and the preparation flake came from bulk sampling in TEC05 (*figure 5.69*). However, material from flintknapping was distributed across the site in mainly EN tree throw hollows. For example, tree throw 156191 [269] contained one of the largest assemblages, which included blades, bladelets and bladelike flakes, a large number of chips and flakes and a few core fragments (Cramp and Leivers; 2010). Tree throw 527288 also contained n=129 pieces of worked flint, which comprised chips and two pieces of burnt unworked flint, and tree throw 125108 produced n=134 pieces of worked flint (n=29 were burnt unworked pieces) [270]. Another large assemblage of flintwork came from an alluvial layer (559495) in ditch feature 617042 (PSH02, area 15), while core or core fragments, core preparation flakes, and flakes (including broken pieces), came from the lower fills of a MN pit group[271], in association with Plain Bowl (Framework Archaeology; 2010, Cramp and Leivers; 2010).

[269] Site code WPR98

[270] Burnt flint over these two pits weighed *c*14g

[271] 964

Most tools were also concentrated in a secondary fill of tree throw 156191. This included scrapers, two serrated pieces, a couple of piercers or awls, and an axe or adze sharpening flake. Other Early Neolithic tools at T5 comprised a serrate denticulate, a couple of end or end and side scrapers, and a couple of polished axe fragments. A total of n=15 polished axe fragments were found, mainly during the western excavations in 1998[272] (also in 1996[273] and 2002[274]), as well as sharpening flakes (n=3). One fragment was refitted with a flake from a pit, indicating axe repair on site, while both flaked and polished axes were located in the same area (WPR98 and PSH02) (Cramp and Leivers; 2010). Leaf arrowheads (n=2), on the other hand, were found residually in different contexts[275]; an isolated tree-throw and a disturbed Bronze Age pit deposit. A laurel leaf point also came from the disturbed deposit of a medieval pit[276] (*ibid*).

A total of *c*1,178 sherds of Plain Bowl Ware, estimated at approximately n=126 vessels were found distributed across n=170 different contexts within 75 hectares (f*igure 7.8*). Sherds were mainly small and 'moderately to heavily abraded' (Leivers *et al*; 2010: 7), suggesting secondary deposition of midden material. They included rim pieces[277] from a maximum of n=34 vessels, predominantly of open or neutral Plain Bowl Ware type. At least one Carinated and two shouldered vessels were also identified from angled sherds[278]. Over half of these vessels (52% or n=65) had been distributed across tree-throw hollows and a few pits (Table 15). The largest concentration (n=541 sherds or a probable 12 vessels) were associated with flintwork in a secondary fill of tree throw 156191. A further n=31 sherds of pottery were associated with flintwork in tree throw 527288, while another tree throw (558057) contained n=52 sherds but no flintwork. Pit feature (836044) represented a similar depositional event of Plain Bowl (4 vessels, or n=45 sherds). However, while many of these larger assemblages were interpreted as single depositional events (e.g. tree-throws 156191, 527288, pit 836044), others were temporally staggered and continued into the Middle Neolithic. For example, a single

272 WPR98
273 POK96
274 PSH02
275 Site code PSH02, area 34, context 594130 & WPR98, area A6, context 180046
276 PSH02 excavations, area 14
277 n=51
278 n=3

vessel of Early Neolithic typology (n=38 sherds) was spread across three pits which also contained Peterborough Ware. A further three Plain Bowl vessels (n=68 sherds) accompanied a larger concentration of Peterborough pottery, while the lowest fills[279] of an intercutting pit group[280] (964), comprised an assemblage of Plain Bowl vessels (n=45) and fragments of sarsen saddle quern (Table 16 *and figure 7.9*). Other pits were also cut into later; e.g. pit 561277 in the NE corner of the site (PSH02 and WPR98), while a Late Neolithic complex of tree-throws, pits, postholes, gullies and ditches in the area of the C1 cursus included Plain Bowl in the lower fills[281] of pit 527200. Pit 527500 (>40g Plain Bowl) was later cut into by a gully[282], while the gully was cut by the C1 cursus. A further n=80 sherds were found residually in a Bronze Age field system ditch (Framework Archaeology; 2010, Leivers *et al*; 2010).

Table 15: Features containing > 40g Plain Bowl Ware at T5 (adapted from FA, 2010: table 2.6)

Feature Type	**Feature number**	**Pottery Fabric**	**Sherd count**	**Weight (g)**	**Average weight of**
Tree-throw	120092	FL4	33	58	1.8
Tree-throw	156191	FL4	524	1325	2.5
Tree-throw	156191	QU13	17	119	7
Pit	158121	FL4	13	53	4.1
Tree-throw	511067	FL17	6	43	7.2
Tree-throw	525372	FL16	19	68	3.6
Pit	527200	FL4	7	96	13.7
Tree-throw	527288	FL4	31	259	8.4

[279] 527118-21 (section 2), 527126 and 527128 (section 1)
[280] Pits 527135, 527142 and 527124
[281] 527206 & 527291
[282] 527233

Feature Type	Feature number	Pottery Fabric	Sherd count	Weight (g)	Average weight of
Pit	548010	FL4	14	41	2.9
Tree-throw	558057	FL4	31	191	6.2
Tree-throw	558057	FL18	4	50	12.5
Pit	561277	FL4	76	565	7.4
Tree-throw	659082	FL15	10	75	7.5
Tree-throw	962200	FL4	13	118	9.1

Table 16: Stratigraphic position of Early and Middle Neolithic pottery in pit group 964 (adapted from FA, 2010: table 2.16)

Stratigraphic rank	Early Neolithic Plain Bowl	Middle Neolithic Mortlake
	Count	Count
8		167
7		42
6		6
5	31	
4	10	
2	3	
1	1	
Total	**45**	**215**

Four Early Neolithic vessels had applied lugs (identified by 'handle type' sherds) and were round-bottomed (*ibid*). Some were decorated (a total of n=51 sherds from across three areas of the site[283]), while the majority (84%) were from a single context (836047). The ratio of Decorated to Plain Bowl was given as 1:17 (Leivers *et al*; 2010: 9), which equates to about n=7 decorated vessels. Decoration was noted on the rim of at least three vessels; two with impressed dots (one also with twisted cord on the rim) and one with incised lines inside the pot. The fabric was predominantly tempered with flint inclusions (six types) and two quartz types. Rim typology[284] included plain (n=5), pointed (n=2), everted (n=2), rolled over (n=9), externally thickened (n=3), expanded (n=20), T-shaped (n=3) and angular (n=1).

7.1.3.2 Yeoveney Lodge and Farm

A possible causewayed enclosure was recognised from crop marks during aerial survey by Buckinghamshire County Council in the late 1950's (Robertson-Mackay *et al*; 1987). This led to 'rescue' excavations in advance of gravel extraction, between 1961 and 1963, by the Ministry of Works (*figures 7.10 and 7.11*). The site was located around 400m NW of Church Lammas, on the eastern side of Shire Ditch, a feature which is at least contemporary with the earthwork (Jones *et al*; 2013, Robertson-Mackay; 1987). Yeoveney Lodge was situated on a flat area of floodplain, within a network of (palaeo) channels, on the largest gravel island of what was described as the Colne delta (Robertson-Mackay *et al*; 1987: 23). Between 15.7-16.6m OD, it is one of the lowest-lying sites in the study area (*see figure 7.10*), and as a consequence, it periodically flooded and would have been marshy during the Neolithic.

A causewayed enclosure of inner and outer ditches, and a central area produced the largest artefactual assemblage in the dataset; over 24,000 pieces of struck and worked flint (Table 17), n=5,658 sherds of pottery (n=1,448 vessels), a large faunal assemblage and human bone (*ibid*). The enclosure covered an area of around 2.4 hectares, it was sub-circular in shape, with double concentric interrupted ditches and fairly flat bottoms (banks on the inside of both ditches). Ditches accumulated sediments when

283 WPR98: context 148109 (n=3 body sherds & n=1 rim sherd), PSH02: context 558059 (n=2 body sherds) & TEC05: contexts 836046 (n=2 body sherds) & 836047 (n=43 body & rim sherds)

284 Most EN rim typology in the study dataset were based on Yeoveney Lodge (Robertson-Mackay, 1987: fig 37)

the banks collapsed (i.e. they were not deliberately backfilled), although some small-scale recutting of ditches occurred (*ibid*).

Table 17: Flintwork from Yeoveney Lodge (Robertson-Mackey, 1987: table 12)

Flintwork	**Area of the causewayed enclosure**			**Totals**
	Outer ditch	**Inner ditch**	**Central area/interior**	
Cores	162	595	N/A	**757**
Struck nodules	48	88	N/A	**136**
Blades and flakes (unretouched)	1244	5067	N/A	**6311**
Serrated flakes	37	158	N/A	**195**
Debitage including all the above	N/A	N/A	16151	**16151**
Retouched pieces (unclassified)	1	18	0	**19**
Scrapers	45	108	224	**377**
Knives	11	31	61	**103**
Single piece sickle	0	0	1	**1**
Awls and piercers	6	26	128	**160**
Notched flakes	12	24	82	**118**
Saws	0	0	2	**2**
Gravers	0	1	0	**1**
Axes	1	6	14	**21**
Laurel leaves	6	23	37	**66**

Flintwork	Area of the causewayed enclosure			Totals
	Outer ditch	Inner ditch	Central area/interior	
Leaf arrowheads	2	5	27	**34**
Transverse/triangular arrowheads	1	2	10	**13**
Microliths and associated pieces	0	0	9	**9**
Hammerstones	4	13	26	**43**
Other	3	13	18	**34**
Totals	**1583**	**6178**	**16790**	**24551**

Flintwork typology was mainly assigned by ceramic association and context of deposition, although flintwork from the interior of the enclosure was less securely dated due to later disturbance, but assumed to be broadly contemporary due to an overall homogeneity (*ibid*). The condition of the flints was mostly fresh and unrolled, suggesting little in the way of lateral movement. A large amount of cores were casually flaked river pebbles with an average of six flake scars (*ibid*). Retouched tools, on the other hand, were generally worked from fresh chalk nodules found in the enclosure ditches, and were sourced in the Maidenhead or Denham area (Dewe's Farm, for example). All but a couple of axes were made from igneous rock (group VI Lake District & group VII North Wales), and were imported tools. Broken axe flakes, however, suggest use, resharpening and reuse of axes, while most axes were concentrated in the interior of the enclosure (n=14 of n=21), n=6 from the inner ditch, and just one from the outer ditch.

Hammerstones were also derived from local and possibly non-local sources. For example, n=45 flint pebble hammers were locally sourced from river gravels (some cores and nodules also show percussion which may be from use as hammerstones). A further n=29 stone hammers were made from sarsen, quartzite and re-used quern. While quartzite could have been accessible from river gravels, sarsen is unusual in this area and may have been imported from other places including Berkshire, Oxfordshire or Wiltshire.

Most stratified debitage (primarily from flaking) was concentrated in the inner ditch, although material from the interior comprised n=16,151 cores, struck nodules, flakes or blades, and serrated flakes. The largest concentration of cores came from the inner ditch (n=595), with n=162 from the outer ditch (*ibid*). These were predominantly single platform (63%) or two platform (20%), with just 5% multi-platform and 12% keeled. There were also n=136 struck nodules with single scars (n=48 from the outer ditch, n=88 from the inner ditch). Most of the cores were casually flaked and suggest local access to large supplies of small pebbles (*ibid*). Unretouched struck flakes and blades (n=6,311) comprised n=5,067[285] from the inner ditch (81% flakes, 19% blades), and n=1,244[286] from the outer ditch (78% flakes, 22% blades).

The tool assemblage was also concentrated towards the inner area of the enclosure. For example, serrated flakes (n=205) comprised 77% from the inner ditch, while a couple of saws, a sickle, and n=118 notched flakes were mainly from the interior (n=82 from the interior, n=24 from the inner ditch, n=12 from the outer ditch). Other tools included scrapers (n=377), again primarily from the centre of the enclosure and inner ditch[287]. They were mainly end scrapers (43%), or side-and-end scrapers (35%), (as well as n=35 side scrapers, and n=7 disc scrapers), although the assemblage also included a fairly rare hollow scraper. Awls or piercers (n=160) were similarly distributed[288], while knives (n=103[289]) were mainly from the interior (59%) (Robertson-Mackay; 1987: 96, table 12).

Laurel leaves (n=66) were mostly bifacially worked, the smaller ones were possibly unfinished leaf arrowheads. Leaf arrowheads (n=34) were mainly residual, although

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[285] 4,104 flakes, 963 blades
[286] 970 flakes, 274 blades
[287] n=45 outer ditch, n=158 inner ditch, n=224 interior
[288] n=6 outer ditch, n=26 inner ditch, n=128 x interior
[289] n=11 outer ditch, n=31 inner ditch, n=61 interior

n=10 were from stratified contexts. A few fabricators were mainly from the interior[290] (n=12), and burnt flint was also more concentrated here, as well as in pit fills[291] and the inner ditch. Querns (n=41), however, suggest food and cooking related tasks, distributed across both ditches (n=20) and the interior (n=21).

Pottery was again mainly concentrated in the inner enclosure ditch (41%, n=601 vessels or n=2,830 sherds) and the interior (42%, n=606 vessels or n=1,284 sherds), while the remaining n=241 vessels (17%) were distributed across the outer ditch fills. The majority were Plain Bowl Ware and mostly in a fresh non-abraded condition, in contrast to the assemblage from T5. Of the interior assemblage (n=340 vessels)[292], at least n=99 vessels were from Earlier Neolithic features (Table 18), while n=266[293] were from unstratified contexts.

Table 18: Early Neolithic vessels and sherd count from interior features at Yeoveney Lodge causewayed enclosure (Robertson-Mackay, 1987)

Earlier Neolithic features in the interior	Pottery sherds (count)	Vessels represented (count)
F2	12	9
F6	24	6
F15	39	10
F29	1	1
F34	12	7
F37	2	2
F88	3	1
F92	35	3
F98	78	16
F100	7	5
F101	26	14
F213	30	8
F249	22	11
F326	17	6
Totals	315	99

290 N=9
291 Pits F34, F101, F175 and F309
292 n=719 sherds
293 N=565 sherds

Local rim typologies (e.g. at ICSG) are generally based on n=154 reconstructable vessels at Yeoveney Lodge, and the assemblage includes rims identified as plain[294], rolled[295] or heavy[296] (*see* Robertson-Mackay *et al*; 1987: tables 9 and 10). Of these necks were open (n=55), closed (n=46), s-profile (n=24) and carinated (n=19), an assortment of vessels which were made and used for different tasks. For example, Carinated Bowl (n=29) had both open and closed necks, and one or two had lugs (*e.g. figure 7.15: P260*). One of these vessels was also decorated[297] and there were at least n=9 vessels with lugs. Some of the necked bowls may be Ebbsfleet Ware, while the assemblage also included cups, small, and girth cordon bowls (n=3).

Decorated vessels, in contrast to Plain Bowl vessels, were found predominantly in the outer ditches (60%[298]). Decorations were mainly incised or impressed, sometimes using fingernails or fingertips to make impressions but implements were also used (*figures 7.12 – 7.14*). Burnishers (n=2), were also part of the assemblage. These were natural pebbles, used for rubbing and levelling the pottery fabric (the surface of the pebbles were very smooth), but could also be used for other polishing tasks (*figure 7.16: S12, S19, S20*). Pin polishers (n=4), on the other hand, were grooved for more abrasive work. All of these items may have been ad hoc tools; one made from sarsen saucer quern, another from a fragment of sarsen, and another from a fragment of quernstone (*figure 7.16: S15, S17, S18*).

The faunal assemblage consisted of predominantly domestic animals (99.2%), although a small quantity of red deer bone (0.7%), and beaver (0.2%) comprised wild animal species, and a rare, worked bone point was made from either roe deer or goat/sheep bone (Robertson-Mackay, 1987: 122). Although there were no antler picks, an antler burr was recovered with its branches cut off. N=*c*1,000 fragments of unworked animal

[294] Plain, everted or pointed
[295] Rolled or beaded
[296] T-shaped
[297] P122, see Robertson-Mackay, 1987: Figure 46
[298] N=62 decorated vessels (n=37 outer ditch, n=6 inner ditch, n=19 interior)

bone were recovered from both ditches, and included cattle (the most dominant species at 78.4%[299]), sheep or goat[300], pig[301] and dog[302].

Scattered rather than articulated human bone were found distributed across both inner and outer ditches, while two burials were found in the interior; a female inhumation and a cremation. A male and a female skull were found with other human and animal bone in the outer ditch (including a mandible and right forearm). The male had two healed head wounds (he was later killed by blows to the head and then decapitated) (Robertson-Mackay; 1987). Bones of an infant (just pre or just post natal) were also found in the inner ditch.

Pits and post-holes from the interior of the enclosure (mainly areas A-D), sometimes overlay earlier features (e.g. pits f14 and F16, and post-hole F15), while gullies and palisade trenches were also recorded (Robertson-Mackay *et al*; 1987: 44, table 5, figures 13-16). Later fieldwork, carried out *c*300m north of the site at junction 13 on the M25 (*figure 7.17*), produced a Neolithic ditch containing n=12 pieces of worked flint, n=26 pieces of burnt flint and a few sherds of pottery (n=8). A pit and a posthole with no artefacts was also found (Oxford Archaeological Unit; 1994).

7.1.3.3 Cranford Lane

This site is just outside of the Colne watershed and has the most easterly concentration of EN material in the dataset (*figure 7.1*). Evaluation (1994) and excavation (1994-5) were carried out by MoLAS (Elsden; 1996). Pits were found as a cluster and as isolated features[303], with pottery and worked flint concentrated in pit sub-groups 346, 347 and 348, and two or three tree throw holes (*ibid*). Clustered pit features were located at the northern end of a possible house, a rectangular post-hole and beam-slot built (building 1), where some post-holes also contained Neolithic pottery (*ibid*). There were at least two phases of construction to this building, which had a very similar footprint to

[299] 78.4% of the bone assemblage, or 61.8% of the tooth assemblage
[300] 11.1% of the bone assemblage, 14.6% of the tooth assemblage
[301] 7.3% of the bone assemblage, of the tooth assemblage
[302] 2.3 % of the bone assemblage
[303] Pit or post-hole sub-groups 79, 449, 453

Kingsmead Quarry house 1 (Elsden; 1996, Chaffey and Brook; 2012). Cranford Lane is also only 1km east of the ICSG assemblage (Powell *et al*; 2015: 20).

Although not chronologically diagnostic, n=1,218 pieces of struck flint were assigned to Early Neolithic typology through association with Plain Bowl Ware (Elsden; 1996). These pieces were mainly derived from local river cobbles, and were concentrated in three main pits or postholes[304] (> 50 flints in each pit). Diagnostically EN flintwork included several broken leaf arrowheads[305], several fragments of ground flint axes[306], a couple of stone axes[307] and n=14 scrapers. A polished axe surface find[308] was of Langdale or North Wales origin.

In total around n=300 sherds of EN pottery were focused in the cluster of three large pits. One main pit contained *c*90 sherds of open Plain Bowl, while another two contained relatively undiagnostic pottery (Elsden; 1996). A further n=75 sherds of probable EN pottery were from the fills of a Late Bronze Age pit or water collecting sump (the fills probably represented an earlier truncated pit of Neolithic origin) (*ibid*). Building 1 contained a pit[309] with n=11 sherds of possible EN pottery, along with burnt goat or sheep bone and an amber 'doughnut' bead. Other Neolithic pottery was distributed fairly sparsely as residual material. An isolated hearth[310] (i.e. not part of the pit cluster and beam-slot structure) was also connected to Early Neolithic activity (*ibid*).

[304] Subgroup 346, 347 & 348: context [1197], [1293], [1400]
[305] Context [747] & [1400]
[306] [833], [928], [1482/3], [1812]
[307] [934] & [2144]
[308] Subgroup 137
[309] Subgroup 342: context 1077
[310] Subgroup 390

7.1.4 Lower Colne sites with assemblages of 100 plus artefacts

7.1.4.1 Imperial College Sports Ground (ICSG)/Ready Mixed Concrete (RMC)/Land East of Wall Garden Farm (LEWGF)

An original evaluation was carried out by MoLAS in 1996, at ICSG in the Harlington/Sipson area NE of Heathrow airport. This came in advance of mineral extraction (Powell *et al*; 2015). Wessex Archaeology also conducted investigations at RMC and LEWGF, and carried out a programme of excavation across all sites (*ibid*). The site of ICSG covers an area of land 23.6 ha, while RMC and LEWGF add a further 13.3 ha (*figure 5.68*). The study dataset has been taken from work at all three sites over the period from 1996 to 2000. Material from Sipson Lane, Wall Garden Farm (site codes WGF79-84 and WGD95), Nine Elms, and Victoria Lane were also included.

The combined site area has a fairly level topography ranging from 25.5m at ICSG to 26.5m at RMC. The solid geology is London Clay, over which lies a Taplow terrace Gravel (*figures 4.3 and 4.4*). The site produced a large assemblage of Early, Middle and Late Neolithic artefacts and features, with Early Neolithic material concentrated in areas C-D of ICSG (*figures 7.18 and 7.19*). This area included tree-throw holes and a large irregular shaped 'quarry' feature of intercutting pits or hollows[311] (G2004, *see figures 7.19 and 7.20*).

Most of the assemblage was dated to the Middle Neolithic through ceramic typology, radiocarbon dates from human bone, and flintwork, which is mainly discussed in 7.2.2.1. However, some pieces were stratigraphically associated with datable pottery, and diagnostic flintwork was also found residually (n=*c*108). Probable EN flintwork (n=12) from the fills of feature G2004 were mostly flakes, blades (n=2), an end-scraper and a flake of Bullhead flint (Powell *et al*; 2015). A tree throw in area D[312] produced a further n=50-60 struck flints and 14g of burnt flint, along with a substantial pottery assemblage (*ibid*). The flint assemblage was again mainly debitage, and included flakes, blades, bladelets, a couple of end-scrapers and a rough flake core (*ibid*). Another small quantity (64g) of burnt flint was found alongside a single sherd in tree throw (G3067), and tree-

[311] Contexts (30666), (30064) (30080/30081)
[312] (G2005)

throw (G151)[313] produced oak charcoal in a fairly large quantity (*ibid: table 10.14*). The flint assemblage was mainly composed of flakes, flake fragments, and cores, while burnt flint deposits in a couple of contexts suggest hearth material. However, tools or tool maintenance material were also distributed across several features. For example a couple of flakes from polished axes (as well as n=7 flint flakes) came from a from tree throw[314] fill in area C, and fragments of three polished axes were also recorded, one of which was reworked as a core (Wessex Archaeology; 1998). However, reworked and reused fragments of polished axes are often associated with later Neolithic assemblages. A possible knife fragment[315] on a Bullhead flint blade was associated with Plain Bowl pottery. A couple of leaf arrowheads were also found residually in Bronze Age features; one from a ditch[316], and one[317] from a well, part of an assemblage of n=23 pieces including a serrated flake, scrapers, a single platform flake core which had been used as a hammerstone, and a sarsen hammerstone (Powell *et al*; 2015).

A total n=365 sherds of mainly Plain Bowl pottery (no Decorated Bowl) included n=35 rim sherds or n=13 vessels, and 98% (n=357 sherds) were distributed across area C-D of ICSG (*figures 5.68 and 7.18*). The largest concentration (n=255 sherds) were from the intercuts of 'quarry' (G2004) and included at least one Carinated Bowl. Two of these cuts and recuts contained the bulk of the pottery[318] and cut through earlier features[319]. The pottery from this feature were of similar typology to vessels from a timber framed house at Kingsmead Quarry (*ibid: p.20*). The rest of the Plain Bowl were distributed across five tree-throw holes[320] and a ditched monumental feature (the penannular ring ditch) of MN date[321]. Tree throw (G2005) contained the largest quantity (n=47 sherds) and tree throw 17072 (n=15 sherds). A further n=32 sherds were concentrated in later features across ICSG and RMC (including n=24 from an MBA feature[322]).

[313] Context (19533), sample 18106
[314] 17072
[315] From 11095
[316] ON 18109, ditch G1211, context 16435
[317] ON 13085, well 11093, context 11092
[318] (30064 & 30666)
[319] (30681)
[320] Context (19382), (30044), (17072), (30478) & (RMC: 4478)
[321] (G3002)
[322] (30814)

Apart from a few pieces in quarry (G2004), the majority of sherds were in small fragments, and like the assemblage from T5, were quite heavily abraded (Powell *et al*; 2015). Over half had closed necks (n=8), and n=5 pots were open or neutral. At least one of the open-necked rim forms featured the sharp angled shoulder and burnished exterior surface of Carinated Bowl[323] (*ibid*). Most of the Plain Bowl (*c*360 sherds) were of flint-tempered fabric (FL1 and FL2), from local sources (Powell *et al*, 2015). Rim typology was based on Yeoveney Lodge (Robertson-Mackay; 1987: Figure 37), with mainly plain everted forms (n=30), a couple of plain, a couple of rolled over and a heavy T-section.

7.1.4.2 Manor Farm, Horton

Fieldwalking survey and follow-up investigations[324], were carried out by TVA at Manor Farm and the Lower Horton Channel, as part of work by the National Rivers Authority to construct a flood relief channel (*figures 7.21 and 7.22*) (Ford; 1990, Preston; 2003). A ring ditch[325] with inner and outer circuits represents both Early and Middle Neolithic activity. The inner ditch, for example, was an early construction while the outer ditch was a later addition, consisting mainly of Middle Neolithic material (Preston; 2003).

Worked flint was found in several contexts at this site; the inner and outer ditches of the ring ditch feature, pits and postholes cut into the gravel at the base of the inner ditch, and residually distributed across Roman and other features (*ibid*). Struck flint (n=776) were predominantly derived from river gravels, but a small quantity came directly from a fresh chalk source. The assemblage consisted of predominantly flakes and cores, *c*100 spalls, and an additional 20 'bashed lumps', which were distributed evenly between the inner and outer ditches (Table 19). Cores were fairly evenly representative of primary, secondary and tertiary flaking (38%, 31%, 31%), and eleven were identified with blade scars (*ibid*). Tools included serrates (n=6), scrapers (n=22) and a burin, several retouched pieces (n=35) and a hammerstone. Leaf arrowheads were found in both ditches and residually (n=8). Two[326] of the six inner ditch postholes contained a few

[323] From (G2004)
[324] Between 1989 and 1996
[325] Described as a barrow by Chaffey et al, 2012
[326] 307 & 308

flints (n=3), while bone, pottery and flint were all found in the main fill. Pit (222) also contained n=8 flints.

Table 19: Flintwork at Manor Farm, Horton (Ford & Pine, 2003: table 2.1)

Flintwork	Inner ditch	Outer ditch	Pits, postholes and other features
Cores and core fragments	51	25	9
Bashed lumps	10	10	0
Hammerstones	1	0	0
Flakes	217	185	96
Spalls	42	27	29
Retouched pieces	22	9	3
Scrapers	12	9	1
Serrated flakes/blades	1	3	2
Leaf shaped arrowheads	2	4	2
Burins	0	1	0
Awls	0	0	1
Other tools	0	0	2

Pottery was similarly mixed, and 66% of the whole assemblage (n=392 sherds) were assigned a general chronology of EN/MN, including at least a couple of Carinated Bowls. One of these bowls (vessel 10) was typologically dated to a later series of shouldered bowls (3600-3300 BC), and has a T-shaped rim comparable to other assemblages locally at Yeoveney, T5, and ICSG (Preston; 2003). In terms of other diagnostically Early Neolithic material, fragments from at least n=30 Plain Bowl were identified at the site. A saddle quern and a quern or rubber fragment, animal bone (n=375 plus fragments) and human bone were concentrated in the inner ditch. Similarly to the enclosure at Yeoveney Lodge, domestic animals made up the bulk of the faunal assemblage (85% cattle, 8% sheep, 3% pig and dog, and 1% red deer bone). Two of the red deer antler branches were scored around their base, showing where they were cut and then broken off (Preston; 2003, Ford *et al*; 2003). A large fragment of human skull, smaller fragments of skull (n=8 pieces) and a calcaneum had not been radiocarbon dated (*ibid: p44*).

7.1.4.3 Kingsmead Quarry, Horton

Wessex Archaeology investigated c34 ha across this site from 2003 onwards, in the locality of Manor Farm Horton and the Horton Brook/Lower Horton Channel (*figure 7.23*). At least four rectangular structures were probable houses, with the potential for a fifth house identified through a 'house void' surrounded by a pit group (*figures 7.24 and 7.25*) (Chaffey *et al*; 2012, Symonds; 2014). House 1 [327] was found during investigation in 2008 and measured 9.87m x 6.51m (WA; 2013). Use of this building has been dated to between 3800-3640 and 3690-3535 cal BC through Bayesian modelling (Chaffey *et al*; 2012, WA; 2013). Both this feature and House 2 still had gully foundations visible while, Houses 3 and 4 were represented through postholes (*figure 7.24*). House 2[328] was thought to be broadly contemporary, and was about a third larger than the first house (15.06m x 7.71m). Although House 3[329] and House 4[330] were roughly similar in size (House 3 measured 7.7 x 5.5m, and House 4 measured 5.86m x 4.7m), the footprints were slightly different; House 3 had n=27 postholes, while House 4 only had six (*ibid*).

The earliest flintwork was associated with House 1, which were found mainly in the gullies and postholes of this feature (*figure 7.26*). A polished bone awl and a polished flake from a Group VI Cumbrian axe were found in the NE corner (Chaffey *et al*; 2012).

[327] House 13125
[328] House 34500
[329] House 31314
[330] House 34035

The earliest pottery was also associated with house 1. Pieces consisted of rim and body sherds from both fine and coarse Carinated Bowls. These pieces were very fragmentary material, and some internal pits also contained pottery. These may have been midden and house cleaning deposits, which included foodstuffs (animal bone fragments, small quantities of charred cereal grain and hazelnut shells), burnt flint, and rubbing stones (*ibid*). A sample of charred hazelnut shells dated this building to the Early Neolithic, although the cereal grain from this house was intrusive (WA; 2009*c*).

On the other hand, Plain Bowl pottery sherds were also found in a group of pits *c*27m NE of the first house (*ibid*). These pits surrounded house 'void' 5, which may have been a more temporary structure or shelter (*ibid*). While this was in use slightly later than the first house, the midden deposits have similar signatures, including serrated flakes, leaf arrowheads (two of which were broken), and a couple of worked bone awls (*ibid: 207*). Cereal grains (charred barley and emmer wheat) were found in this pit group, signs of pottery manufacture (fired clay), and large amounts of animal bone.

7.1.5 Lower Colne sites with assemblages of less than 10 and single artefact spot finds

Diagnostically Early Neolithic small assemblages and single item spot finds were not recorded for the Upper Colne, and very little was noted in the Middle Colne dataset. At Mansfield Farm a few pieces of Early Neolithic material were found residually (a leaf arrowhead with a broken point, a retouched core rejuvenation flake, and a multi-platform cuboid blade core[331]). However, the majority of smaller, possible 'off-site' signatures were concentrated in the Lower Colne (where most of the site assemblages have been located).

7.1.5.1 Matthew Arnold School

Archaeological investigations at Matthew Arnold School, in the area of Caesar's Camp, were carried out by the SCAU during the 1990's and then again between 2000 and 2008 (Munnery; 2010) (*figure 7.27*). Although these works only produced a small quantity of Neolithic flintwork, later evaluation and mitigation, in advance of a new sports pitch,

[331] core 106

opened up a series of trenches, one of which (trench 1) contained an Early Neolithic pit [103] (Munnery; 2008, Munnery; 2010, Hayman and Jones; 2008). This pit contained flintwork (n=24), pottery (n=26 sherds) and burnt material (Munnery; 2010), while an assemblage of n=529 pieces of flintwork were recovered mainly from topsoil stripping (79.2%) (*figure 7.28*). A large proportion of this material, including cores (n=98), scrapers, notches and piercers were probable LN-EBA, except for a probable EN serrated flake[332], which was found near to the pit feature (Munnery; 2010). Another serrate and a bilaterally retouched flake came from the pit itself, and the flintwork was fresh and unabraded with gloss from exposure to the surface, possibly from reworking of the flint (*ibid*). The main assemblage derived predominantly from river gravels[333], and lithics from pit [103] were made on good quality non-local flint (*ibid*).

At least n=2 pottery vessels were also deposited in the pit fill. They comprised sherds from a couple of Plain Bowl vessels, one of 26cm rim diameter, the other 17cm. While the larger bowl was smooth and burnished both inside and out, the smaller vessel was finger pinched around the rim, rusticated on the outer face, and became progressively thicker in the body sherds (thinning at the neck of the bowl). The smaller bowl had been tempered with calcined flint and quartz, and the larger bowl calcined flint only. Sherds from other vessels were also deposited in the pit (*ibid*).

7.1.5.2 Nobel Drive

At Nobel Drive in Harlington a leaf arrowhead was found in a pit with a very small quantity of worked flint (*figure 7.29*). Microwear and residue analysis were attempted on the arrowhead but due to the decalcifying nature of the soil type there were no organic residues (Elsden; 1997). Surface wear could be related to hafting or to post-depositional factors, with fracture scars similarly ambiguous, but the condition of the flint suggests it was recovered *in situ*. A very few sherds of LN pottery were also found during these excavations (*ibid*).

[332] Square 4, strip 5
[333] A couple of pieces were from a fresh chalk source

7.1.5.3 Home Farm

At Home Farm in Harmondsworth, rim sherds in contexts [623][334], [680] and potentially [853] were considered to be of possible Plain Bowl, maybe Carinated Bowl (Hoad *et al*; 2010). These pots were found redeposited in a later feature and associated with a few struck and worked flints (n=2 flakes, n=4 blades or bladelike flakes and a broad blade, which may have been used as a scraper [623], and a flake [680]).

7.1.5.4 Hengrove Farm

Work at Hengrove Farm was carried out between 1997 and 2012 by SCAU, and the earlier excavations (up until 2006) identified predominantly Middle Neolithic activity (*see* 7.2.2.2). However, a few artefacts were diagnostically Early Neolithic, including a couple of residual leaf arrowheads[335] and a few sherds of at least two Plain Bowl vessels[336] (Poulton *et al*; 2017).

7.2 Middle Neolithic

This section presents material assigned to the Middle Neolithic using the same diagnostics as other chronologies (see *figure 7.30* for distribution and density). Typologies were mainly based on Peterborough Ware pottery (Mortlake, Ebbsfleet and Fengate), while radiocarbon dates were available for a few sites (Table 3).

7.2.1 Upper Colne sites with assemblages of less than 10 and single artefact spot finds

7.2.1.1 The Grove, Watford

Although predominantly an EN assemblage (see 4.2.1), n=8 wall sherds of decorated Mortlake Peterborough Ware were found in a single context of pit or fill (1895) in area D[337], located on the valley slope (Le Quesne *et al*; 2001). Six of these sherds came from

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[334] Pit 624
[335] Final fill of Roman ditch 4263 & an unstratified find from the northern bund
[336] Pit 6054, and possibly pits 6154 and tree throw 6126
[337] 1030

a circular pit[338] and were accompanied by flint and oak charcoal, which was radiocarbon dated to 3350 - 3030 cal BC (*ibid*.).

7.2.2 Lower Colne sites with assemblages of 1,000 plus artefacts

7.2.2.1 ICSG/RMC/LEWGF

Most of the flintwork from these sites (*c*1,175 pieces) were associated with Peterborough Ware pottery. Lithic artefacts were mainly distributed across pit features (n=60 at RMC and n=16 at ICSG) (*see appendix vii*), with small quantities in both the inner and outer ditches of a ring ditch (G2007). The pit assemblage mainly consisted of debitage; blades and flakes made up 55% of the assemblage (n=654), with n=390 chips and n=33 pieces of irregular waste. There were also n=23 single, multi-platform or discoidal cores. Tools included at least n=12 serrated flakes or blades, a couple of awls or piercers, n=19 scrapers, n=13 knives and n=17 other retouched tools. A small quantity of flintwork (n=65), in the outer ditch of feature G2007, also included a few tools (a chisel arrowhead, a couple of serrated blades and a scraper). The inner ditch (G2007) contained a burnt fragment of chisel or axe, a blade, n=32 pieces burnt flint and n=9 pieces of fired clay (Powell *et al*; 2015).

Axes were occasionally made on site, for example pit 17588[339] included an unfinished flaked axe in a single fill[340], along with a further n=16 pieces of flint and a small quantity of animal bone (n=3). Polished axes were also used, sharpened and reused as other tools. For instance, sharpening flakes were distributed across n=11 pits, 41% from one context[341], and a few fragments of polished axe came from a single fill along with a serrated flake[342]. Several axe fragments had also been reworked into cores (pits 2752, 11026, 733 and G345) or y-shaped pieces (pit 2752). A couple of sarsen pebbles (pit 2752 and 4422) may have been used for rubbing or grinding, and other several stones had percussion marks from being used as hammerstones [343] (*ibid: p.204*). A

[338] 1031
[339] ICSG Area D
[340] Fill 17589
[341] Pit 2752 (group B, area 2)
[342] Pit 4534, RMC group C, area 2
[343] Pit 4422, 2817 and 5386 (RMC)

hammerstone made from quartzitic sandstone was discarded along with a small assemblage of burnt quartzite (burnt quartz may have been used as flint temper)[344].

The largest concentrations of pottery were predominantly Mortlake Peterborough Ware (n=1967 sherds), 67% of which came from RMC Land (1324 sherds), while n=643 sherds were distributed across ICSG[345] (*see appendix viii*). The majority of these ceramics (93%) were recovered from n=99 pits[346], while pot sherds were also found as spreads, in a quarry feature, tree-throws[347], gullies and earthwork ditches (Powell *et al*; 2015). For instance, n=24 sherds of Peterborough Ware came from the lower ditch fills of a long enclosure (G3001), which was dated to the late 4th millennium through comparison with similar monuments in the area (i.e. typology). The enclosure was located in area A, with a broad ditch but no extant banks or mound (*figures 7.18, 7.19 and 7.31*).

A few sherds of Peterborough Ware also came from the ditch[348] of a u-shaped enclosure (G2008), along with two cremation burials or graves. One of the cremated individuals was aged 8-14, another was aged 13-16 years old, and the burials were radiocarbon dated to 3270-2960 cal BC, and 3100-2940 cal BC. A few more pottery sherds were found in both ditches of the double ring ditch enclosure (G2007)[349] and cremation burials were also found in both the inner ditch and the central area of this enclosure (*ibid*). The central grave contained the cremated bones of a female aged 25-35 years, and a child aged 3-6 years[350]. The central area also contained the grave of another child (5-8 years)[351], and an adult aged 30-45[352]. Cremated bones of a possible male (15-20 years) comprised the only grave from the inner ditch[353] (this grave cuts the uppermost fill). The central grave and inner ditch grave were probably contemporary or within a generation of the older adult (radiocarbon dates of 3345-3034 cal BC[354], 3336-2931 cal

[344] Pit 10480, ICSG
[345] Across the pit features this weighed in at 20.13kg
[346] n=23 from ICSG and n=76 from RMC Land
[347] E.g. 5616
[348] 17890 & 19203
[349] Inner ditch: 1 x potsherd (unspecified), outer ditch: 5 x Peterborough sherds
[350] Grave 19006
[351] Grave 19010
[352] Grave 19013
[353] Grave 19123
[354] Female in grave 19006

BC[355], 3332-2925 cal BC[356]), while the older child may have died slightly later (3090-2883 cal BC[357]). Although penannular enclosure (G3002) was dated through typological similarity, ditches only contained EN pottery (n=7 sherds) and some LN flintwork (*ibid*). These penannular and circular enclosures were concentrated in area D at ICSG (*figures 7.18, 7.19, 7.32 and 7.33*), while an isolated pit feature (40413) in area E, also contained the cremation of an individual aged 25 years or more, and radiocarbon dated to 3329-2904 cal BC (*ibid*).

Middle Neolithic pits generally occurred as clustered groups (60%), although some (including the cremation pit) were found as isolated features (*figures 7.18, 7.34 and 7.35, tables 19 and 20*). Pit groups were concentrated within an area of approximately 150m north to south (across both ICSG and RMC), and beyond this they were more widely dispersed. Pits ranged in size from 0.3m to 2.5m in diameter, most had flat bases, and the majority were circular shaped and fairly standard in form (*ibid*).

Pottery fabric types were assigned to eight categories (*see appendix viii*); six flint-tempered and two fabrics of grog and flint temper, and all pieces were assumed to be locally made (*ibid*). Sherds of several vessels with 'rusticated' (finger-pinched) decoration were found in a good state of preservation, where finger tips and nails have left deep imprints with nail marks, raised crescents of the finger tips or finger nail markings (*ibid*). Other decorations included whipped and twisted cord maggot impressions (single horizontal lines), plus a few pieces with more elaborate decoration. There were also pieces with incised lines and pieces with moulding on horizontal ribs (*see* Powell *et al*; 2015: figures 6.2, 6.3 and 6.4).

The faunal assemblage was small and no animal bones were detected in either area 1 or in the area of the isolated burial pit (area E) (Table 20). Cattle and sheep/goat bone were identified in a small faunal assemblage from tree-throw hole 5638, and pig teeth from a pit in area 2[358]. Other foods included concentrations of hazelnut shells, mainly

[355] Young male in grave 19123
[356] Older adult in grave 19013
[357] 5-8 year old child in grave 19010
[358] Pit 2817

in Area 2 (2628g) and Area B (1897g), a single seed of bramble from ICSG[359], the stone of a sloe in area 3[360], and a single tuber of onion couch grass which was associated with the double ring ditch cremations and some wood charcoal (Powell *et al*; 2015).

Table 20: Artefact distribution across areas of ICSG and RMC, not including ICSG EV114, see appendix ix for flint assemblage (adapted from Powell et al, 2015)

RMC/ ICSG	**struck flint (n)**	**burnt flint (g)**	**fired clay (g)**	**hazelnut shells (g)**	**pottery (g)**	**stone (g)**	**animal bone (g)**
Area 1	104	276	19	0	805	0	0
Area 2	347	2283	688	2628	12262	9287	51
Area 3	35	230	0	127	552	0	4
Area 4	116	572	68	127	2003	934	188
Area A	102	409	37	139	1503	70	101
Area B	37	112	33	1897	1779	629	4
Area C	2	1	49	137	1226	0	1
Area D	17	0	0	0	0	0	3
Area E	12	5	374	0	0	0	0
Total	772	3888	1268	5055	20130	10920	352

359 Pit G3444

360 5961

Burnt flint, however, was distributed across most areas of RMC Land (1-4), and mainly areas A and B of ICSG (Table 20 and *see appendix vii*). The highest concentration (59%) was from a single pit (5616) in area 2, along with the largest concentration of fired clay (n=538g or 54%). Fired clay came from Neolithic contexts across both sites, but the largest concentration came from pit 5616, and an isolated burial pit in area E (see above). A pit dug into the ditch of an enclosure in area 1 also contained burnt pebbles[361] (*ibid*).

7.2.2.2 Hengrove Farm

Between 1997 and 2006 SCAU identified at least n=23 pits, *c*24 tree-throw holes, *c*12 postholes and at least a couple of stakeholes across this site, mainly in areas A and C (*see figures 7.36 and 7.37*). Artefacts were typologically associated with Neolithic occupations, and while a few pieces were Early or Late (*see relevant sections*), the majority dated to the Middle Neolithic.

The flint assemblage consisted of *c*1,000 pieces mainly distributed across five pits and a tree throw hollow (Table 21), some in association with Peterborough Ware pottery (*figures 7.38 and 7.39*). The main concentration (n=610 pieces) came from all layers of pit 6008. Tool making debitage consisted of flakes and flake fragments (n=793), blades and blade fragments (n=50), cores (n=44), core rejuvenation or dressings (n=3), irregular waste (n=24) (*see Fig 3.2.6*), and also n=4 hammerstones (Poulton *et al*; 2017).

[361] Pit 10480, area B (ICSG)

Table 21: Distribution of flintwork at Hengrove Farm (Poulton et al; 2017: Figure 3.2.6)

Pit or hollow	Cores and core prep/rejuvenation	Flakes and fragments	Blades and fragments	Modified or retouched tools
115/116	1	25	0	21
114	1	21	4	11
6011	1	80	5	19
6087	3	104	5	25
6008	37	456	33	84
6154	4	131	3	3
Total	**47**	**691**	**60**	**163**

Tools included a fabricator or strike-a-light (*figure 7.40: 74)*, n=13 transverse arrowheads including chisel (*figure 7.41: 29 and 31-35*) and petit tranchet types (*figure 7.41: 26-28 and 30*), n=9 knives (*figure 7.42*), n=18 serrates (*figure 7.43*), n=28 scrapers, n=6 combination tools, n=4 piercers, n=9 notches. There were also n=4 pieces of polished axe and n=59 miscellaneous pieces which had been retouched or modified in some way.

As well as the five main pits, several others contained flintwork[362], and pit (6256) also contained a fragment of polished axe (*figure 7.39: stone 5*). Fragments of sarsen were also present in the fills of pit or tree-throw (6154) and pits (6087 and 6256).

While Middle Neolithic activity was mainly represented by flintwork at the site, at least six vessels of Mortlake and Ebbsfleet Peterborough Ware were distributed across pits,

[362] 6032, 6061, 6063, 6078, 6094, 6231, 6256, 6359

hollows and a waterhole (*figure 7.44*). Some of the material was mixed with Grooved Ware, but fabric types using flint temper (CALC1 & CALC2) were likely to be Peterborough Ware. Flint tempered sherds were found within the main concentration of flintwork. For example, pits/tree-throw 6154 (n=45 sherds)[363] included fabric CALC1 which may be Ebbsfleet, while 6087 contained quernstone fragments. Pit 6008 contained n=46 sherds which included at least n=5 Ebbsfleet and at least one Grooved Ware (LN) vessel. However, some deposits were representative of single short-term events, including several sherds of a decorated Mortlake vessel[364], and a complete Ebbsfleet bowl which had been placed on its side and collapsed in on itself[365] (*figure 7.45*). Three more pits[366] contained n=8 sherds of CALC1 or CALC2 fabric, while several pieces from a single vessel[367] were decorated with whipped cord and maggot decoration (*ibid*). Similarly in pit 1271 n=20 sherds of CALC2 fabric were also decorated with maggot-cord impressions. Residually, n=31 sherds of Ebbsfleet or Mortlake, were found predominantly in the upper fills of waterhole 814, while stakehole (817), in the waterhole, contained a few more sherds of similar pottery. Several pits were noted to contain flint and unspecified Neolithic pottery[368], including burnt flint and burnt bone in a small pit or post-hole[369] (*ibid*). A complete saddle quern and rubber were found in the fill of another pit (812).

7.2.3 Lower Colne sites with assemblages of 100 plus artefacts

7.2.3.1 T5

Middle Neolithic activities were focused around three clusters of intercutting pits[370] (*Figure 7.46*), although datable material was also distributed across T5 in other pits and features (*Figure 7.47*). Two pit groups in the far eastern corner (2889 and 97) have different styles of Peterborough Ware, while pit complex 964 was located a little distant, *c*8m north west of the C3 cursus/long barrow (*Figure 7.46 and 7.48*). This southwestern

[363] The largest concentration of pottery but includes n=21 sherds of grog tempered probably Grooved Ware
[364] Pit 727
[365] Pit 240
[366] 896, 1326 and 1498
[367] Pit 820
[368] E.g. pit 6359 & pit/posthole 6393
[369] 6393
[370] Pit groups 964, 97 & 2889

group have the largest sequence of inter-cutting pits, consisting of a depression[371] cut through by three pits[372].

The flint assemblage (n=235) was predominantly Middle to Late Neolithic (but see 7.1.3.1 for pieces attributed to EN). Diagnostic material included tool making debitage from three or four locations across the site (*appendix ix*), particularly pit groups 964 and 2891 in PSH 02. Pits in group 2891 were mainly small (<15 artefacts), and chronologically mixed Neolithic assemblages. However, one particular pit[373] contained n=98 pieces of struck flint, mostly (n=71 pieces) from the upper fill[374] in association with Mortlake Ware (Cramp and Leivers; 2010). The flints were exceptionally fresh and unabraded, and suggest primary deposition with little lateral movement. Pit group 964 also contained debitage and a few tools (*ibid*).

Levallois (n=7) and keeled cores (n=8) were distributed widely, across different contexts, although two were found together[375] (*appendix ix*). Pit 594228 (group 2891) also contained n=4 single platform flake cores and n=3 partially worked nodules, plus n=64 unretouched hard hammer struck trimming flakes (*ibid*).

Arrowheads (n=10 chisel and n=5 oblique) were generally scattered residually[376], including one which was notably large[377] (*ibid*). Another chisel arrowhead and flintwork were found in association with Mortlake pottery in pit group 97[378]. Axes were sharpened and possibly used as other tools (n=17 flakes plus two fragments from polished axes distributed residually. Most tools, on the other hand, were concentrated in the southwestern pits, and included serrate denticulates, scrapers, retouched blades or flakes, knives and awls[379]. One pit in group 964[380], for example, contained a small

[371] 527117
[372] 527135, 527142, 527124
[373] 594288
[374] 594233
[375] Context 593296 in PSH 02
[376] WPR 98 area A3: ditch 149021, PSH 02 area 77: waterhole 510047, PSH 02 area 72: LN/BA tree-throw hole 579156, PSH 02 area 61: MN pit 561075, PSH 02 area 77: MBA waterhole 510047, GAA 00 and WPR 98 topsoil
[377] PSH 02 area 99: 555941
[378] 561278
[379] From pit group 964
[380] 510074

assemblage of flintwork (n=11), mainly tools, which included retouched flakes (n=6), scrapers (n=2), a chisel arrowhead and a couple of cores. Another pit in group 2891[381] comprised at least n=4 retouched flakes, n=1 scraper and n=1 serrated flake (*ibid*).

Peterborough Ware pottery (Mortlake and Ebbsfleet) were of local manufacture with local flint inclusions, and n=451 sherds were spread less extensively than Plain Bowl (FA; 2010). Ceramics were distributed across a small number of pits, tree throws and the higher fills of earthworks (*Figure 7.8*). Burnt flint clusters and calcined animal bone in the same secondary fills of the C1 cursus may include a cow skull. A small quantity of fired clay, cattle or sheep/goat teeth, and a sheep-sized rib which had been gnawed by dogs, were also present in the fills of this feature. MN artefacts were concentrated in the middle and upper fills of cursus features (e.g. C1 and C3), and some sections were constructions post-dating Early Neolithic activity. For example, a pit containing Plain Bowl[382] (part of a possible complex), was cut by a gully[383], and this gully was later cut by the eastern C1 cursus ditch (*see appendix x*).

In the C4 cursus ditch[384], antler fragments were also found along with cattle-sized long bone from secondary deposits. Some pieces of Peterborough Ware were picked up as residual material in a collapsed bank of the HE2 southern enclosure ditch. This enclosure is thought to have been constructed later in the Neolithic, but the artefactual signature of the collapsed bank suggests MN activity nearby.

Main concentrations of pottery, however, came from three principal pit groups (97, 964 and 2889) (*Figure 7.46*). The largest assemblage came from pit group 964 in the area of the C3 cursus; n=215 sherds of at least four Mortlake vessels from the top three fills of the pits (Leivers *et al*; 2010). This included pit 594288[385], which also contained n=146 pieces of burnt flint. In the NE part of the site, pit group 97 also formed a complex of intercuts into an earlier deposit of EN pottery[386] (*Figure 7.49*, and see FA; 2010: 112).

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[381] Pit 594228
[382] Pit 527500
[383] 527233
[384] 621211
[385] Fill 594233
[386] Pit 561277

One pit in this group[387] contained n=40 sherds from an Ebbsfleet-type bowl[388] (Leivers *et al*; 2010). These were large and heavy sherds, probably representing a complete vessel, while another large sherd of Mortlake-type bowl was found in the same group (pit 561278).

7.2.3.2 Home Farm, Harmondsworth

Archaeological evaluation, watching brief and excavation were carried out by MoLA, between 1998 and 2002, in response to proposed mineral extraction (Hoad *et al*; 2010). However, fieldwalking survey and further evaluation had also been carried out in an area to the east of the site between 1988 and 1991 (Boucher; 1988). The site was situated on the Taplow Terrace at 24.94 – 26.5m OD, and covered *c*9.9 hectares (Hoad *et al*; 2010). Field walking had produced a large collection of flint implements dating to the Neolithic, while further evaluation revealed a large domestic tool assemblage (Boucher; 1988, Hoad *et al*; 2010). Most of the raw material were derived from local terrace gravels, with a few pieces of Bullhead flint and chert (*ibid*).

While some of the Neolithic material were residual in later features (e.g. droveway and enclosure ditches), large assemblages of flintwork were found in n=4 pits, including two which may have been used for cooking[389] (Hoad *et al*; 2010). The 'cooking pits' also contained burnt animal bone of sheep and ox-size (ibid), and a couple of wells may be contemporary (*ibid*).

The flint assemblage included Neolithic and Bronze Age material, and totalled *c*1,379 pieces. A large knapping element consisted of n=646 flakes, n=594 blades, bladelets and blade-like flakes, and n=74 cores (n=31 of which are flake cores). Some of this may reflect Middle to Late Bronze Age flintknapping, which is usually associated with makeshift use of poor quality flint (Hoad *et al*; 2010: 57).

Retouched pieces were worked on a better quality black flint (n=61) and were more consistent with typologies of EN-MN manufacture (Hoad *et al*; 2010). The assemblage

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[387] 555922
[388] 32 body sherds, 5 rim and 3 shoulder
[389] Pits 1034 and 1036

included n=41 scrapers, consisting of convex end scrapers[390], disc scrapers[391], end scrapers, a side scraper[392], nosed scrapers[393], side-and-end scrapers[394] and a Neolithic horseshoe scraper on a broken flake in context[395], from the fills of cooking or other pits. Other retouched tools comprised n=3 serrated blades, n=4 piercers, n=2 burin, a fabricator, a knife, n=3 miscellaneous pieces, n=2 notched flakes, n=3 blades and n=20 other. In context [1033] n=79 pieces of flintwork were diagnostically retouched, n=260 in context [1035] and n=55 in context [2068]. Some flintwork scatters, found during field walking, were stratigraphically related to the excavated material (*ibid*).

Predominantly Mortlake-type pottery, and to a lesser extent, Ebbsfleet (n=550 sherds) were distributed over n=24 contexts, including the main flintwork producing contexts of [1033], [1035], [1967] (also Grooved Ware, see following section). The largest concentration was from a single fill in pit 624[396] (n=164 sherds). Decorations were similar to those found at other sites; they were made with finger nails and whipped cord to produce impressions and incisions of herringbone, 'maggots', nested chevrons and incised lattice (*ibid*).

7.2.3.3 Manor Farm, Horton

While Early Neolithic activity was also concentrated at this site (see 7.1.4.3), the outer ring ditch contained a moderate amount of later material, particularly pottery. Flintwork from the upper fills included n=7 pieces of flaked stone (n=3 with traces of polishing), and were probably Great Langdale axe (Preston; 2003). These pieces of flaked stone were contextually associated with Peterborough Ware (*ibid*).

Pottery included n= 45 sherds plus a further n=55 undated residual material. Vessels from the upper fills included a couple of Ebbsfleet bowls[397], including one which was very securely stratified (vessel 24), along with a shoulder of Mortlake, and a couple of

[390] Subgroup 425, context [1033] n=6
[391] Subgroup 426, context [1035] & [1967]
[392] Context [1967]
[393] Context [1033], [1035], [1967] and [2068]
[394] Context [1967]
[395] Subgroup 925, context [2068]
[396] Fill 623
[397] Vessels 24 and 41

indeterminate Peterborough sherds (*ibid*). Other stratified pieces included a Fengate ceramic bowl with carbonised residue, from the same context as five or six birch bark bowls (one of which also had food residue), from context 208 on the base of the outer ditch (*Figure 7.50*). Birch bark bowls 1-3 had radiocarbon dates ranging from 3599-3029 cal BC to 3349-2627 cal BC (Table 3), B3 had the earliest dates and B2 the latest (*appendix xi*).

While upper fills of the ditch contained flintwork and pottery, there was little in the way of animal bone (although fig 2.6 notes 'bone' and 'cattle pelvis'). However, the lower fills produced a pair of pike jaws from a substantial sized fish (*c*1m in length). Deposits also contained red deer antler (n=9 pieces) and fragments (n=2) (*Figure 7.50*). The antler came from older animals, five with burr, four of which had been shed, and one which had been butchered. The antlers were radiocarbon dated to the Late Neolithic (*see appendix xi*).

7.2.3.4 Ashford Prison

This site was in was a very low-lying area (Kempton Park Gravels and Langley Silt 'brickearth'), at between 12.5 and 13.7m OD, and located on the river Ash, one of the southern tributaries/distributaries of the Colne, (*Figure 7.51*). Archaeological fieldwork was undertaken between 2001 and 2002 by Pre-Construct Archaeology (PCA), with three main areas of excavation (*Figure 7.52*). Neolithic material was distributed across one main tree-throw hollow [484], at least two pit groups in area A and one in area C, ditches and the fills of a ring ditch (Carew *et al*; 2006). The ring-ditch may originally have been a horseshoe feature (similar to enclosures at T5 and ICSG), later closed off by a continuation of the circuit (*ibid*), and the majority of finds were located in the northwestern section (*Figure 7.53*). Ditch fills were cut by n=43 pits or postholes, with no intercutting between the pits or postholes, while pit group 3[398] was located in the enclosure, and other pits or postholes surrounded the ditch (e.g. pit group 1[399], *Figure 7.54).* Seven of these pits or postholes contained artefactual material, and three to four fills produced the bulk of the pottery (*appendix xii*). Another pit cluster (group 2) was

[398] Area A
[399] Area A

located in Area C. Charcoal was found in a bulk sediment sample from one of the pits [754], and produced radiocarbon dates of 3620-3590 cal BC and 3530-3360 cal BC (*see figure 7.54 for location of pit*). Although there were no pottery vessels in this pit, it provides a *terminus post quem* for Peterborough Ware in the ring ditch and pit group 3. Distributions of burnt flint (1.6 kg) were also associated with the ring ditch pits, fills and postholes (*ibid*).

Flintwork (n=*c*643 pieces) was attributed to a broadly Neolithic date. The appearance of the cortex suggested flint was sourced from local gravels (*ibid*). The majority of pieces (n=450) were deposited in tree throw hollow [484] (*Figure 7.55*), with another fairly large quantity in fills of the ring ditch (n=163). Some residual material was also found in later features and through surface cleaning (mainly blades or narrow flakes).

The main flintwork assemblage from the tree-throw, consisted of small pieces of primary debitage[400]; decortication and trimming flakes, broken flake fragments and concoidal shatter. There were also n=32 blade and blade-like flakes and n=6 cores, which were all small (<60mm), with decortication and platform trimming, and many were worked to exhaustion (*ibid*). Material from the ring ditch fills were also mainly from primary reduction; decortication and trimming flakes, chips, concoidal or core-shatter, and n=4 flake cores. In an area adjacent to the ring ditch (group 1), pit [1895] also contained n=6 primary unretouched flakes (i.e. they were fresh flakes struck off the core with no further working), one from a nodule of Bullhead flint. A pig tooth and a grass pollen were included in the assemblage. In the same group, the primary fill from pit [1906] included n=14 struck flakes, some of which were from flint nodules in [1895], an oxen horn core, and a cattle long bone shaft. Pit [1148], inside the ring ditch, contained n=10 struck flints (knapping waste and flake fragments, some of which were from the same nodule), and a whetstone. However, some of the pit assemblages in group 1, for example, also comprised tools along with primary knapping material.

Tools included at least one scraper from a linear feature or ditch [2040], a couple of polished flakes from the ring ditch and a linear ditch[401] south of the monument (*figure*

[400] Tree-throw hole [484]
[401] [2044]

7.56). A few retouched or utilised pieces included a serrate and a backed blade. In pit [1906] tools included n=3 serrates made from blades (*Figure 7.57: 2, 3 and 4*), and a couple of flakes which may have been used similarly (*e.g Figure 7.57: 5*). There was also an edge-trimmed flake (*Figure 7.57: 6*), a fabricator (*Figure 7.57: 7*) and some knapping waste, while in the secondary fill a blade may have been a utilised serrate. The site assemblage comprised a large amount of serrated tools (n=154 possible serrates, n=8 of which were made of Bullhead flint).

Pottery sherds from Ebbsfleet and Mortlake Peterborough Ware were also recovered from pits, ditches and the ring ditch, mainly the ring ditch (71%). The largest quantity (48%) were from a secondary ditch fill [2086]. The total weight of Neolithic pottery is 717g (see Carew *et al*; 2006: table 8), but at least six bowls were represented by six fabrics[402]. Some of this resembled material from Yeoveney Lodge[403] (*appendix xii*).

7.2.4 Lower Colne sites with assemblages of less than 10 and single artefact spot finds

7.2.4.1 Cranford Lane

This site was also mainly EN material (4.2.3), with a small quantity of Peterborough Ware (n=10 ten sherds) in one pit[404]. This may have been a cremation grave, as the pit included charcoal and burnt bone, some of which was identified as human (Elsden, 1996). A couple of pieces of residual material comprised an unstratified rim sherd and a chisel arrowhead[405]. Unfortunately, the work was '*characterised by a lack of time and staff to excavate as fully as might have been desired*' (Elsden; 1996: D2).

7.2.4.2 Kingsmead, Horton

Again mainly an Early Neolithic site, with a few Peterborough Ware sherds deposited in a single feature[406], along with a larger quantity of Grooved Ware (n=4 vessels, including PW). These vessels all came from a Late Neolithic pit group consisting of n=12 pits; six

[402] CF1, CF2, CFQ, CFCQ, F1, FF
[403] FF and CFQ
[404] Context 2233, subgroup 118
[405] [1]
[406] 3370

of which contained Grooved Ware and one with Peterborough (*Figure 7.23: Area B*) (see 6.3.3). Peterborough Ware included a large rim fragment, in better condition than the Grooved Ware sherds (*figure 7.58*).

7.2.4.3 Yeoveney Lodge Farm

This site mainly comprised another large Early Neolithic assemblage (see 7.1.3.2), with small-scale Middle Neolithic activity. The outer ditch (secondary fills), produced n=17 sherds of Ebbsfleet pottery, representing a minimum of n=11 vessels[407] (*Figure 7.59*). Transverse arrowheads (n=12), consisted of petit tranchet (n=2), chisel-ended (n=7), oblique (n=2) and unclassified (n=1). Of the *c*100 knives, five or six were plano-convex, and typologically Middle to Late Neolithic (*Figure 7.60: F139-F144*).

7.2.4.4 Caesar's Camp, Heathrow

Caesar's Camp was excavated in advance of the first building work at Heathrow airport in 1944 (Grimes; 1960). The site is located on Taplow terrace Gravels at between 23 and 26m OD (*see Figure 7.10 for location*). During the excavations, two Neolithic pits were found with one of very few almost complete Peterborough Ware vessels in the area (*Figure 7.61 and 7.62*). Both pits had dark fills which were flecked with charcoal, and pit 1 contained unspecified material associated with fire (*ibid*).

Pit 1 also contained roughly n=12 pieces of mixed flintwork including core trimmings, broken blades, an edge-worked scraper, and a fragment of polished axe (*ibid*). The second pit also contained a few flints.

Pit 1 also comprised approximately three quarters of a Peterborough Ware bowl[408], with bird-bone impressions on the rim and shoulder area, and finger tip impressions on across the body (*Figure 7.63: 1*). This pot was standing upright and had only lost a small part of the rim which was present in the same fill and broken into a few sherds. The position of the pot suggested it was found where it had been left (*ibid*). The same pit also contained rim sherds from a further three pots, and body or miscellaneous sherds

[407] Layers 4 and 6
[408] Recorded as Mortlake in MoL, but the description is of 'Neolithic B' in Grimes (1960), which refers to Ebbsfleet style pottery

from at least another n=5. The material was described as '*flint-grit*' and '*hard-fired gritty ware*' (*ibid: p188*). Most of the fabrics were decorated, with the exception of one or two plain pieces (*ibid*). Decorations were impressed and incised, including twisted-cord impressions, finger tip and nail impressions, and incised lines or patterns made with a sharp point (*ibid*).

The second pit also contained fragments of over 20 pots, some of which may be Mortlake. The majority of these vessels were similarly described as '*hard-fired ware*' with '*flint-grit in paste*' (*ibid: p.191*). One vessel (n=21 sherds) was described as 'comparatively thin ware' *(Figure 7.64: 7*). Another pot (n=6 fragments), was a small, narrow, round-bottomed vessel, which was compared to a Danish 'blubber lamp' (Grimes, 1960: 197) (*Figure 7.65: 20*). It was, however, also noted that this particular vessel was somewhat shorter at around 17cm (the Danish vessel was 25cm in length). Decoration on these vessels were similar to pit 1; impressed, incised and some stabbed decoration, using finger tips and nails, twisted cord and bird-bone to make maggot and herringbone patterns, both impressed and incised.

7.2.4.5 Ashford Hospital

In 2002, MoLAS carried out evaluation and excavation across this site, in advance of redevelopment of the hospital, and in 2003 further monitoring continued during construction work (Cowie; 2008)[409]. Three Neolithic pits were cut into the Kempton Park Gravels (84, 136, 319), containing a small assemblage of high quality, typologically Early to Middle Neolithic flintwork (n=7 or 8) pieces. This included a single platform blade core (pit 319), and n=3 large well made flint scrapers in an elongated pit or ditch (136). A single utilised tertiary blade was found residually in a field ditch (1002) and all pieces except a small convex scraper, and a utilised flake core with two opposed platforms, were from a fresh chalk source (*ibid*). The scrapers may have been deliberately placed. A few sherds of pottery included n=2 sherds from pit (84), probably from the same

[409] Site finds and records are held at Spelthorne Museum: SU-ASH02

vessel, one with impressed decoration. Another piece with impressed bird bone decoration was residual in a Bronze Age pit (96).

7.3 Late Neolithic

Later Neolithic material was mainly concentrated in the Lower Colne area, on a relatively smaller scale. In comparison with Mesolithic, or earlier Neolithic assemblages in the dataset, none consisted of more than 1,000 artefacts (*Figure 7.66*). Artefacts were mainly assigned to the Late Neolithic through ceramic typology (Grooved Ware), although radiocarbon dates were available for human bone at ICSG, and red deer antler at Manor Farm, Horton.

7.3.1 Middle Colne sites with assemblages of less than 10 and single artefact spot finds

7.3.1.1 Mansfield Farm

A topsoil assemblage from this site has been chronologically attributed to the Late Neolithic through typology (see chapter 5). This comprised a mixed assemblage of n=77 pieces of mainly debitage, including n=64 flakes, n=3 blades and n=7 unspecified tools, mainly from flake blanks. Of the flake debitage, n=11 pieces were from primary reduction, n=17 from secondary, and n=36 from tertiary, while blades were all a product of secondary reduction.

Another small assemblage nearby, just north of Nockhill Wood, included n=8 sherds of Durrington Walls Grooved Ware, excavated from a pit fill which had cut through an earlier post-hole[410].

7.3.2 Lower Colne sites with assemblages of 100 plus artefacts

7.3.2.1 T5

Grooved Ware pottery and flintwork were concentrated in pits and tree throws, mainly in the far eastern area of the site (*figure 7.67, 7.68*). Some of these deposits were associated with a penannular or horseshoe enclosure (HE2) (*Figure 7.69*), and the upper

[410] HER 0508504000 - MBC34527

fills of a cursus ditch[411] (along with burnt flint) (*see Figure 7.67*. The HE2 enclosure[412] was located in the southeastern area of T5[413] and its construction was dated to sometime during the 3rd millennium BC (the southern ditch of the enclosure produced a few sherds of Grooved Ware across two ditch fills or interventions[414]). The HE1 ring ditch was an earlier construction, while another feature associated with the C4 cursus[415] contained a fill of mainly animal teeth (sheep or goat, pig, and cattle).

Flintwork were distinguished by a few diagnostically Early or Late Neolithic pieces, or those in association with datable material (Framework Archaeology; 2010). Otherwise much of the material was attributed to a Middle or Late Neolithic through typology or association with diagnostic ceramics. For example, n=10 chisel arrowheads were found across the excavations in a variety of contexts and were associated with both Middle and Late Neolithic pottery (Framework Archaeology; 2010). Flintwork continued to be made from local gravels, probably including a single flake of Bullhead flint from pit 531011 (*ibid*). An assemblage of *c*450-500 pieces were distributed across at least n=16 pits and the fills of the northern HE2 enclosure ditch, predominantly consisting of debitage from secondary and tertiary reduction (88%).

Grooved Ware Pit 827269 contained the highest single density of flintwork, while the largest cluster was distributed across pit group 1144. Group 1144 contained <15 pieces each of undiagnostic flake debitage and cores. The largest single assemblage (n=213 pieces) were distributed across n=11 contexts (pit 531011)[416]. This material was described as very fresh, uncorticated debitage, from secondary and tertiary reduction (Cramp and Leivers; 2010). On the other hand, pit 708007 contained the largest quantity of tools (particularly scrapers) with a high degree of use-wear on the pieces. Material from this pit and several others (e.g. 127022, 531011) were also noted as being exceptionally fresh (*ibid*). Most material from the HE2 feature came from the northern ditch, predominantly from a secondary ditch fill. An area north of the enclosure, near

[411] See HER MLO74237
[412] Entity 82
[413] Area 77
[414] 146205, 961747
[415] Tree throw 148110
[416] Main pit group (1144)

to the main intercutting pit cluster (1144) produced a large quantity of residual, which were also associated with Late Neolithic activity (see table; entity 706).

Grooved Ware pottery sherds (n=564 or 2,438g) were mainly distributed across n=15 pits (Framework Archaeology; 2010: table 2.17). The pottery assemblage were made up of a couple of grog tempered fabrics[417], mainly identified as Durrington Walls type (Leivers *et al*; 2010). They were fairly fragmented (average sherd weight of 3.4g), although at least three vessels were broken into notably large sherds. The largest concentration of material came from a group of four pits SE of the C3 cursus[418] (specifically pit 531011). Another area of focus was just north of the HE2 enclosure, where the main cluster of intercutting pits[419] produced a large quantity of Grooved Ware (e.g. pit 708007). A few sherds were also found residually in a BA waterhole[420]. A single Grooved Ware pit (631011) also contained cattle and pig teeth, and burnt sheep-sized bone in the upper fills (*ibid*).

Most of the burnt material, however, also came from the main pit group[421], particularly pit 531011 (n=97 sherds), where burnt and friable pieces of three vessels were distributed across four separate fills (*ibid*). A further n=942 pieces, or *c*5kg of burnt unworked flint were also deposited over several occasions (n=10 deposits). However, n=289 pieces or 1203g of burnt unworked flint reflected one depositional event in pit 127022[422]. A small quantity of fired clay came from pits containing Grooved Ware (pieces weighing less than 5g), with a similar quantity from 'linear monuments' or cursus features (Brown; 2010: 4). Small quantities of fired clay were also distributed across the HE1 enclosure (Framework Archaeology, 2010: 63 figure 2.20).

A piece of burnt wood also came from the pit fill of a feature in PSH02 (SG 663047). The pit fill included a quartered fragment of beech (*Fagus sylvatica L.*), which had been worked but had no toolmarks or evidence of further shaping (Framework Archaeology:

[417] GR2 (n=216 sherds) & GR5 (n=348 sherds)
[418] PSH02
[419] N=22 (entities 821 & 952)
[420] 581168
[421] 1144
[422] Fill: 127017

2010). Typical woodworking tools, however, including burin or chisels were absent from the Late Neolithic assemblage.

7.3.2.2 Prospect Park/Moor Lane

Between 1993 and 1995, Wessex Archaeology carried out three phases of investigation at this site, in advance of a new British Airways business centre (*Figure 70*). Phases consisted of evaluation, excavation and a watching brief (Farwell *et al*; 1999).

A 'hollow' (feature 1494), and several associated shallow post-holes suggested some sort of structure, while north of the hollow a slot feature[423] (319), a post-hole (1496) and an oval pit (380) contained the majority of material. The largest quantity of worked flint was from the basal fill of the pit (380)[424], which contained n=39 pieces of worked flint, including n=5 scrapers, a triangular arrowhead and n=18 flakes. These features also contained n=190 sherds[425] from at least four or five Grooved Ware vessels (*Figure 7.71 and 7.72*). At least three vessels came from the hollow (1494); the whole base of a Grooved Ware vessel was found *in situ* in the middle of the feature, and a probable 2 vessels (n=45 sherds) in fill 1472[426]. Pit 380 contained a further n=5 sherds of Neolithic pottery in the lower fill, and n=20 sherds of a single Grooved Ware vessel in the top fill[427], along with a quantity of burnt flint. The fill was sandy but also had a prominent charcoal lens suggesting it might contain residues from a nearby hearth (*ibid*).

Pottery fabrics were mainly grog-tempered (G1 and G2) with a small amount of flint temper[428] (F1), and similar pieces of pottery were found residually in later features (n=30 sherds) and otherwise dispersed across the site (n=10 sherds).

7.3.2.3 Home Farm, Harmondsworth

Excavated features included a north to south aligned ditch , with four associated pits in area S, which contained Grooved Ware. One pit also contained a fragment of stone axe,

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[423] N=5 sherds Neolithic pottery
[424] Fill 382
[425] And a further n=8 sherds from the watching brief
[426] Also a rim of Peterborough Ware
[427] 381
[428] G2, F1

and at least two were used as cooking pits[429] (*Figure 7.73*). Flintwork is primarily discussed in 7.2.3.2, as diagnostic pieces were typologically EN-MN. However, some pit fills with Grooved Ware also contained flintwork. For example, a fairly large assemblage of flintknapping waste in pit fill [1967][430] included n=233 flakes, n=18 blades or blade-like flakes, n=4 cores and spall plus a fairly large quantity of micro-debitage, while retouched tools (n=16) included n=2 piercers and n=14 scrapers (Hoad *et al*; 2010). A further two contexts[431] also produced knapping material and tools (n=68 flakes, n=339 blades or blade-like flakes, n=5 cores or core fragments, and n=12 retouched pieces including n=9 scrapers, n=1 serrate, n=1 burin, n=1 notched piece). On the other hand, pit [2070] consisted of mainly debitage (n=15 flakes, n=26 blades or blade-like flakes and a couple of spall).

Grooved Ware was distributed across at least three pits and the fills of a ditch[432]. During initial excavation in the 1980's, a large quantity of Durrington Walls type Grooved Ware were taken from a pit (n=500 sherds or *c*12 vessels), in association with carbonised hazelnut shells and sheep or goat bone (Cotton *et al*; 1986, Field and Cotton, 1987). Further work identified at least three decorated vessels (n=47 sherds) in pit fill [1967][433] (Hoad *et al*; 2010). However, sherds from these vessels were distributed across a further n=4 contexts including the fill of a quarry pit [868], and a well [873]. They were also mixed with LBA ceramics in the ditch [2070][434] (decorated sherds), and in pit fills [1033][435] and [1035][436], which produced at least n=40 thick base sherds (*ibid*). Samples from the cooking pits[437] also produced calcined (where temperatures reached above 500 degrees centigrade) sheep-sized long bone (*Figure 7.73: Area S*). Pit 2179 included body and base sherds from a flaring tub or bucket shaped urns[438], while samples contained charcoal and burnt flint (*Figure 7.73*: *Area T*).

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429 (1034) and (1036)
430 Both Peterborough and Grooved Ware pottery from this fill
431 [1033] and [1035]
432 Subgroup [926]
433 (subgroup 876)
434 (subgroup 926)
435 Pit 1034
436 Pit 1036
437 {2009} & {2008}
438 n=2 fabrics

7.3.2.4 ICSG/RMC/LEWGF

Diagnostic flintwork came from one main pit (5732), containing Durrington Walls type Grooved Ware, which was located on the northern edge of RMC Land (*Figure 7.74*). The assemblage consisted of n=29 pieces of worked flint, including a serrated flake, a multi-platform flake core, a sub-discoidal scraper, and discoidal knife (Powell *et al*; 2015). Other than this, four chisel arrowheads were recovered from ditches (including one from ring ditch G2007, see 5.1.1). The pit also contained fired clay (143g), burnt flint (2223g), burnt stone (642g) and charred hazelnut shells (n=300). Pottery consisted predominantly of rim and body sherds of a single vessel (n=38 sherds or 84g). Other than this main deposit, a few sherds (n=3 or10g) of shelly ware came from another pit[439], and a single sherd from a tree throw[440] (*ibid*).

A further n=30 sherds of Neolithic pottery (from 13 contexts) were distributed across LEWGF (*ibid*). This included fills of three pits (two of which comprised diagnostically LN material), and two tree-throw holes, with a further n=12 residual sherds in later features (Wessex Archaeology; 2009*b*). The condition of the pottery was highly fragmentary with abraded surface edges, and the scattered nature of distribution suggests these were loose pieces from middened material.

7.3.2.5 Lower Mill Farm, Stanwell

Archaeological monitoring by the SCAU, in advance of gravel extraction, led to a series of evaluations and excavations in an area south-east of Lower Mill Farm, on the edge of the quarry face (Hayman; no date). Worked flints, and features cutting early Holocene river clays were found during a site watching visit in 1991, and preceded full excavation of an area 600m^2 (*Figure 7.75*).

A total of n=1,214 pieces of flintwork were identified across the site, distributed across an area which included pits, tree throws and at least one posthole, and flintwork from pit 22 (n=97 pieces) were typologically associated with the main assemblage (*Figure 7.76*). The basal layer[441] of pit 22 comprised a charcoal rich soil, n=41 pieces of worked

[439] Pit 2720
[440] 5603
[441] 22C

flint, and a worked scoop made from aurochs bone (*Figure 7.77*). The secondary (burnt) layer[442] also contained n=24 pieces, while n=16 were taken from the tertiary fill[443], which sealed the pit deposit (*Figure 7.76*). A further n=16 flints may have worked into the layer above this which is derived from the same material the pit was cut into (subsidence feature). Most were river gravel flint with n=4 pieces (including n=2 blades and a single platform core) made from Reading Beds pebbles or Bullhead flint. Tools consisted of n=4 convex scrapers made on flakes, plus a scraper on made on Bullhead flint, a retouched flake from Reading Bed Gravels, n=2 utilised flakes, a serrated flake and a serrated blade (*ibid*).

Animal bones (n=137 pieces) were also distributed across all fills of this pit. The majority were from the basal layer (n=75), secondary (n=36), tertiary (n=25), and subsidence (n=1). The assemblage consisted of cattle (n=35), sheep/goats (n=3) and pig (n=5). Cattle bone made up 90% of the whole faunal assemblage (n=800 pieces of animal bone across whole excavation), with the remaining 10% fairly equally distributed between sheep or goat and pig bone (*ibid*). The only wild cattle bone was the worked bone scoop, while two cattle ribs showed evidence of flintwork from butchery and a pig bone showed canid teeth marks (*ibid*).

Pottery, on the other hand, was confined to a single fill. Fragments (n=29 sherds) of a burnt Grooved Ware vessel were found in layer 22 B/C (the secondary fill), along with calcined flint (also found in layer 22C). Pieces of the vessel included rims, base and body from a flat based, tub-shaped vessel with linear grooves (*ibid*).

7.3.2.6 Holloway Lane

Site investigations by the DGLA included excavation (1982), and a watching brief (1984), but very little detail on the site was accessible. A single pit contained Grooved Ware pottery (n=500 sherds), four transverse points, aurochs and goat or sheep bones, fragments of polished axes (found during site watching), and numerous carbonised hazelnut shells (Cotton *et al*; 1986). The Grooved ware vessel/s were flat based tubs

[442] 22B/C
[443] 22B

with simple rims (*Figure 7.78)*, and sherds were deliberately stacked on the bases of pits (*ibid*).

7.3.3 Lower Colne sites with assemblages of less than 10 and single artefact spot finds

7.3.3.1 Majestic House, Staines

Although predominantly Mesolithic (*Figures 5.47 and 5.48 for site location and plan*), a small assemblage of diagnostically Neolithic flintwork (n=52 pieces) were also distributed across the fills[444] of a LN ring ditch[445] (*Figure 5.48*) (Ellis; 2016: 136). Flintwork included a chisel arrowhead[446] (Type D transverse), a side scraper and four flakes made from Bullhead flint. Knapping debitage, on the other hand, was mainly concentrated in the north-east of Cotswold Archaeology's trench 9 (*See Figure 5.48*). Most features were focused in this area, and included post-holes and a post-pit from post-built timber structures, small pits, and quarry pits which may have been used to source clay. A very small cattle scapula was found in posthole 1232 and n=107 pieces of burnt unworked flint came from the site (*ibid*). Several features at nearby Hengrove Farm also contained sherds of grog-tempered probable Grooved Ware[447] (Poulton *et al*; 2017).

7.3.3.2 Kingsmead Quarry, Horton

A pit group consisting of n=12 features (site map) contained predominantly Durrington Walls Grooved Ware, charred sloes, crab apples or service fruits, charred hazelnut shells and other foodstuffs (Chaffey *et al*; 2012).

7.3.3.3 Mayfield Farm, East Bedfont/ West Bedfont

A hengiform monument (site code MFEB88), and a concentration of Late Neolithic flintwork (site code MFEB87) were recorded by WLAFG at Mayfield Farm in East Bedfont in 1987-8 (LHER; MLO57225 and MLO22687), following a series of extensive

[444] N=11 fills were excavated
[445] 40% of the feature was excavated and measured *c*21m diameter x *c*1.6m width x 0.35m depth. The ditch had concave sides and a flat base
[446] Ring ditch fill 935
[447] Pit 6008, 6154, possibly pit 6291

investigations during the 1970's and 1980's (Farrant; 1971, Cotton *et al*; 1986). Features identified in the area have included a large 240m diameter, double ditched enclosure (SML062) plus various hengiform monuments or ring ditches, '*the Neolithic landscape in the vicinity of Mayfield Farm was dominated by a series of hengiform and ring-ditch monuments that extended east-west along the false crest of the Taplow-Kempton Park interface 'scarp*' (Jefferson *et al*; 2004: 13) (*see Figures 7.79-7.81 for location of monument in relation to FA site*). The East Bedfont area at Mayfield Farm Reservoir was further investigated by Framework Archaeology, producing primarily Romano-British material (Framework Archaeology; 1998, Jefferson *et al*; 2004).

The double-ditched enclosure (SML062) was seen very clearly on aerial photographs, straddling the A30 (*Figure 7.81*). When the photograph was published by Ordnance Survey in 1966, this feature was interpreted as a causewayed enclosure, then later a henge monument (Farrant; 1971), and is now again recorded as part of a causewayed enclosure on Historic England's Heritage at Risk Register (2021) (*also see* Cotton *et al*; 1986). Late Bronze Age pottery was found in the middle and upper fills, associated with disuse of the monument, as tertiary silts from the inner ditch suggest it had silted up by this time. On the other hand, a concentration of Late Neolithic flintwork found inside the enclosure and in the surrounding area at Mayfield Farm during fieldwalking, suggested a Neolithic date for construction (Lewis; 2000: 73, Jefferson *et al*; 2004). The flint assemblage (including burnt material) were derived from local gravels, and included Bullhead flint (Jefferson *et al*; 2004).

The enclosure was excavated by Farrant (1971), and the surrounding area by Framework Archaeology (1998). It was situated on river gravel terrace overlain with 0.3m brickearth (the ditches of the feature cut through higher Taplow Terrace), and the ground falls fairly substantially at 4.6m over 500m onto Kempton Park Terrace in the south (*see Figure 7.82 for FA site area geology*). The enclosure ditch was *c*183m in diameter with a flat, wide bottom and 'flaring' sides and the north segment had a causeway up to 0.2m from the base of the ditch. Postholes in the middle of the ditch were interpreted as a palisade, while large gravel pebbles from ditch digging were used in the posthole fills (Farrant; 1971).

Although no finds were initially recorded from the enclosure (Farrant; 1971), later work identified a few sherds of Grooved Ware in the uppermost and primary fills (Framework Archaeology; 1998: 2.2.8, 2010: 40/113). The Mayfield Farm site (MFM98) produced very little additional Neolithic material: n=3 sherds of LN/EBA pottery with coarse-grained grog temper, which could not be attributed to a specific tradition. Two of these sherds came from the ploughsoil (evaluation trench 17) and one sherd was stratified in a pit[448] (Jefferson *et al*; 2004).

7.4 Mixed assemblages: Early to Late Neolithic

Many sites in the dataset were of mixed chronology and I have tried to separate the material for discussion in the relevant sections. However, most of the Upper Colne Valley assemblages were diagnostically non-specific, other than being Neolithic, and I have consequently included them in this section (*Figure 7.83*).

7.4.1 Upper Colne sites with assemblages of 100 plus artefacts

7.4.1.1 Batchworth Golf Course

In 1995 excavations were carried out by Hertfordshire Archaeological Trust (HAT) at Batchworth Golf Course, where scatters of Neolithic flints were found in four separate areas (*Figure 7.84*). Across the site n=209 pieces of flintwork were recorded, with the highest concentration in area C (52%). All four scatters contained a mixture of worked flint and debitage, predominantly consisting of flint flakes (n=174, 83%). A total of n=7 cores were recorded across scatters, a couple of blades, and a piece of spall. Tools included n=15 scrapers, n=4 points, two notches and n=4 composite notched scrapers. The raw material was identified as poor quality, and sourced from the surface of glacial drift (McDonald; 1995). A few sherds of pottery and some small features were also recorded (*ibid*). Less than a kilometer south of scatters B and C a few more pieces of worked flint, including scrapers, were recorded at an elevated position in Lockwell Wood[449], and may signify an extension of this taskscape[450].

[448] 5118
[449] Lockwell Wood
[450] Another small scatter is recorded *c*500m northwest at Andrews Ley Farm

7.4.1.2 Sandy Lodge

A dense concentration of Neolithic artefacts were found at SLGC during investigation by MTAS during the 1960's (see chapter 4) (Jacobi; 1965*a-c*, Murray and Walker; 1993). The area continued to be investigated, and in 1993 HAT also carried out remedial works in the vicinity of a quarry hole located in the northern area of the site (*Figure 7.85 and 7.86*) (Murray and Walker; 1993). These works were carried out adjacent to an area of flint scatters which had previously been trenched, and originally interpreted as Late Upper Palaeolithic (*ibid*). However, when the assemblage was re-assessed it was actually found to be mixed with Neolithic material (Humphrey; 1997). The archaeological layer was located at a depth of 0.40-1m and two test pits confirmed this horizon continued southwards across the site towards the excavated pit feature (sandpit B, *figure 5.60*). This pit was comparable in size to a similar feature at Bathend Clump (*c*3m diameter and *c*60cm depth).

Artefacts from MTAS's original trenching included worked tools of scrapers, knives, petit-tranchet derivatives and arrowheads, while tool making materials included cores, 'pounders, hammers and rubbers' (Jacobi; 1965*b*: 9), as well as fragments of pottery. Artefacts were likely to have been *in situ* if there had not been later Roman interference (*ibid*).

The pit feature produced two multi-platform cores and one opposed platform core for the production of broad flakes, n=*c*100 chipped flint flakes, n=30 lumps of burnt flint and pottery fragments (including a large piece and a rim sherd but with no further details) (Jacobi; no date). Tools included a fragment of polished axe, a serrated flake, a couple of hollow flakes, black flint scrapers (PaMELA)[451] and an unspecified quantity of arrowheads[452]. Residual material across the golf course also includes one or two transverse arrowheads on the Westbury Road[453].

[451] These flints are now in the Verulaneum museum and correspond with a reference to later Roman occupation (Jacobi, 1965).
[452] HER 4921
[453] HER 208/4927

7.4.2 Upper Colne sites with assemblages of 10 plus artefacts

7.4.2.1 Merchant Taylor's School

In 1997 HAT carried out evaluation at Merchant Taylor's School playing fields, on a site which lay *c*200m south of the Colne and *c*100m south of Hampermill Lake at between 51-54m OD on river terrace gravels. (*see figure 5.5*). Three trial trenches and n=19 test pits were excavated across the area and the same sequence of deposits were observed in all trenches, as well as the majority of test pits[454]. A layer[455] of topsoil with silty gravel terrace deposits was recorded at 0.09-0.28m in trench B. Although struck flint found in this trench were recovered as unstratified material from the spoilheap (n=6 pieces), most of the flintwork from test pitting was found in this same topsoil (Humphrey; 1997).

The flint assemblage (n=34 pieces) included core fragments, blades, flakes, scrapers and unspecified pieces. Several pieces of burnt flint were also found in the topsoil (from test pits). This is a fairly small flint scatter if taken as an isolated assemblage, but the stratigraphic, typological and spatial location (and low diversity component) suggest that it might be related to other material nearby (*see figure 7.1*). The same can be said of other small assemblages and single artefact spot finds found on these same gravels; worked flint including a leaf arrowhead from Hampermill Lake[456], a Late Neolithic discoidal knife[457] from Hampermill Lane (*Figure 7.87*), and an unspecified quantity of Neolithic flint[458] in the Hampermill area.

At the confluence of the Colne, Chess and Gade a few more spot finds of probably Later Neolithic date were recorded during evaluation in 2009[459]. A flint flake with a retouch scar suggested it was used as a denticulate scraper, while a flake from a polished flint axe may be from repair or reworking.

[454] Except test pits 13 and 19-22
[455] L1001
[456] HER 6030
[457] HER 1717
[458] HER 4937
[459] Scots Hill Croxley Green (Weale *et al*; 2009)

7.4.3 Upper Colne sites with assemblages of unspecified quantity

7.4.3.1 Bathend Clump

Bathend Clump on Batchworth Heath was another area investigated by Merchant Taylor's Archaeological Society (MTAS) during the mid 20th century (*Figure 7.88*). In addition to a small Mesolithic component (see chapter 4), the site also produced a concentration of Neolithic material. Two trenches were put in at Bathend Clump in 1958, and a roughly circular earthwork, which covered *c*0.40 hectares, was interpreted as a Neolithic enclosure with a double bank and causeway (*Figure 7.88 and 7.89*) (Phillipson; 1962). A pit feature was also identified (*ibid*). A large unspecified quantity of worked flint and debitage was taken from the bank (Phillipson and Collins; 1961). The assemblage consisted of mainly cores and flakes, while on the western side of the enclosure, more than n=20 fine scrapers with a semi-circular working edge were found in the fill of a square-cut ditch which lay over hard pan (Phillipson and Collins; 1961, Phillipson; 1962). This included end scrapers (*Figure 7.90: I*) a notched end scraper (*Figure 7.90: E*) and a double-notched flake (*Figure 7.90: F*). Worked flint were also found in the pit fills[460]. A Neolithic flint axe was also recorded from the ground surface at Bathend Clump (Castle; 1973), while pottery was represented by a few sherds thought to be Neolithic[461]. Burnt material was recorded 15cm above the hard pan at the highest point of the bank.

[460] 3.7m in diameter and 60cm in depth with almost vertical sides

[461] Unconfirmed by Isobel Smith who tentatively diagnosed the flint assemblage (Phillipson & Collins, 1961)

Chapter 8: Neolithic taskscapes

The Colne Valley reflects different patterns of settlement during the Neolithic. While Early Mesolithic occupation tended to be focused on the valley floor or floodplain, Neolithic signatures became densely situated on the river terraces in the Lower Colne (Table 22). Both the Upper and Middle Colne lost the focus of settlement, maybe as raw materials were beginning to be sourced from wider geographies (e.g. sarsen, quartz and jadeite).

Table 22: Number of sites in each size category in the Upper, Middle and Lower Colne

Early Neolithic sites (by artefact count)	**Upper Colne**	**Middle Colne**	**Lower Colne**
1,000 + artefacts	0	1	2
100 + artefacts	1	0	3
Less than 10 artefacts and single finds	0	0	4
Total Early Neolithic sites	1	1	9
Middle Neolithic sites	**Upper Colne**	**Middle Colne**	**Lower Colne**
1,000 + artefacts	0	0	2
100 + artefacts	0	0	4
Less than 10 artefacts and single finds	1	0	5
Total Middle Neolithic sites	1	0	11

Late Neolithic sites	**Upper Colne**	**Middle Colne**	**Lower Colne**
100 + artefacts	0	0	6
Less than 10 artefacts and single finds	0	1	3
Total Late Neolithic sites	0	1	9
Early to Late Neolithic sites	**Upper Colne**	**Middle Colne**	**Lower Colne**
100 + artefacts	2	0	0
10 + artefacts	1	0	0
Unspecified quantity of artefacts	1	0	0
Total Neolithic sites in each Colne Valley area	6	2	29

8.1 Environment and seasonality

Palaeoenvironmental records, including faunal data, were available from n=12 sites. Environmentally, the Early Neolithic would have been similar in climate and landcover to that of previous centuries. It was generally a wet and warm period, with temperatures and rainfall higher than today (*see chapter 3*). In the Thames and Chilterns region, landcover continued to be largely unbroken, and woodland was mixed deciduous, with lime dominated woodland higher up the valley sides, and alder carr along the wetter floor and floodplain. In the study area, the upper pollen sequence at The Grove suggests that dense alder and hazel woodland dominated the valley floor, while on higher ground a mixed deciduous woodland consisted of elm, oak and particularly lime. For example, two monoliths were taken from the valley slope in environmental trench 3[462], and contained pollen from Lime, Alder, Hazel and grass[463]. Both samples were taken from a higher layer of organic clay-silts and peat[464], which may be suggestive of colluvial hillwash, and typical of dry valley profiles in this area[465]. This colluvium was usually an accumulation of eroded sediments moving downhill from the upland and plateau surfaces of the higher valley areas, and is often linked to agricultural land clearance during Neolithic or Bronze Age occupations (Le Quesne *et al*; 2001).

Trench 2 contained a buried soil profile within the colluvial sequence[466]. Several terrestrial types of mollusc, as well as two other aquatic types[467] were present in a sample taken from the sediments, along with species which represented a fresh spring source (Robinson; 2001). Terrestrial types were predominantly woodland species with one which usually inhabits more open ground[468]. Large quantities of molluscs also came from archaeological features adjacent to trench 3, and the majority were terrestrial, including many that were characteristic of dry land, with some species known to inhabit open ground. The presence of these types of mollusc suggests that tree cover was not complete at this time, and the landscape included areas of drier open country (grass pollens were also recorded in the pollen sequence). Pollen samples taken from the podsol deposit at Bathend Clump (a podsolised Neolithic bank; *see figure 8.1*), also produced heather and bracken as well as '*forest trees*', '*indicating a fairly open clearing in the woodland*' (Phillipson; 1963: 226).

A little further south at Dewe's Farm in the Middle Colne, Late Mesolithic-Early Neolithic contexts produced pollen from n=14 environmental samples[469], predominantly from woodland and wetland shrubs and plants, including sedge and goosefoot pollens from the fills of two pits[470] (Scott; 2018). Samples were likewise taken from pit and ditch fills

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[462] Monolith 12 & 15 (palynological assessment)
[463] n= <50 pollens in each monolith
[464] Sediment 3.5 (appendix ii table 5)
[465] Sediments 3.1 and 3.6 (appendix ii table 5)
[466] Sediment 2.1 (appendix ii table 4)
[467] *Gyraulus albus, Acroloxus lacustris*
[468] *Vallonia costata*
[469] Trench 084
[470] 084008 & 084042

in TT065 and TT106 (n=3), suggesting a similar environment with dock, blackberry or raspberry seeds, and sedge pollens present in several pits, including an alignment NW of the trench (*appendix xiii*). Another shrub generally found in wooded areas is black nightshade, which was present in at least one sample. A shrubby woodland-wetland landscape was reflected in the data, with small patches of clearance (at least a couple of the samples contained charcoal[471], one contained burnt cereal grain, and dandelion pollen came from the fill of a ditch).

Wetland plants were also a feature along the edge of the Middle Thames at this time, which included the Lower Colne. Reed sedge swamp had developed across most of the floodplain in the preceding millennia (Sibbesson; 2014, Grant *et al*; 2014: 1), and the area was generally low-lying and more prone to seasonal flooding (e.g. Yeoveney Lodge, *see* Robertson-Mackay; 1987, Bradley; 2004). While reedbeds were probably still affected by flooding events, they were also impacted through interaction between human tasks and the local environment, *see chapter 1 and chapter 5*). For example, the burning of reedmarsh, identified at Dorney, for example, (Parker and Robinson; 2003: 55), may have continued as a practice into the Neolithic (*see chapter 3*). The Lower Colne and Middle Thames area also has more specific evidence for Neolithic cultivation, including cereal pollen at Thames Valley Park and Eton Rowing Lake, for example (*see chapter 3*). However, while cereal pollen at several sites in the dataset also suggest localised crops (e.g. Kingsmead Quarry), there was no indication of large-scale clearance. For example, cereal grain and charcoal suggest small-scale clearance and cultivation at Dewe's Farm[472] (Scott; 2018), while cereal caryopses were also found in samples from pit (103) at Matthew Arnold School, including n=3 of a possible wheat type, and n=55 fragments of wood charcoal (Munnery; 2010). Land cover was still predominantly woodland; wood fragments and samples included oak, ash and hazel, including hazelnut shells at Kingsmead Quarry, blackthorn (sloe) or wild cherry, and members of the rosaceae family (whitebeam, hawthorn or crab apple) (Chaffey *et al*; 2012, Wessex Archaeology; 2013). The causewayed enclosure ditches at Yeoveney Lodge contained pollen from similar deciduous woodland; oak, ash, hazel, alder,

[471] Pit 084024, sample (084025){48} and sample (084033){47}
[472] See 4.2.1 (Scott; 2018)

hawthorn, cherry, also pollen from birch and fern, while hazelnut shells were found in EN contexts at Kingsmead Quarry. Large deciduous woodland of oak, ash and hazel were dominant, with localised openings, hedgerow shrubs and smaller trees including blackthorn.

Fills from two Early to Middle Neolithic pits at T5 were also sampled[473], one of which[474] contained predominantly deciduous arboreal pollen; alder, hazel, oak and lime in higher quantities, a few birch, pine, willow and a type of prunus which again may be sloe or cherry. The majority of taxa, however, were herbaceous (grasses), suggesting larger areas of open landscape. This pollen-producing pit (527200) was cut by the eastern C1 cursus ditch and while reflecting the landscape prior to construction of this ditch section, low quantities of elm pollen suggest it post-dates the elm decline of *c*3,700 BC (Peglar *et al*; 2010). Climate and landscape did not change radically into the Middle Neolithic. However, some localised clearings may have been more extensive (e.g. T5), and smaller areas of open woodland were found at ICSG (e.g. onion couch grass, and deciduous shrubs or small trees including blackthorn/sloe, and blackberry or raspberry). Burnt spreads of oak charcoal from area B were associated with Peterborough Ware at the Grove, and interpreted as evidence of firewood (Le Quesne *et al*; 2001: 63). They may represent small-scale clearance in the Middle Neolithic. Cultivation was still relatively small-scale, e.g. cereal pollen at ICSG and T5, some of which is probably intrusive (*see 8.5*). The valley bottom was fairly wet until the end of the Middle Neolithic; alder and willow were found in most samples across the dataset, duckweed and pondweed in the T5 cursus pit were also suggestive of standing water at the time of infill accumulation (Peglar *et al*; 2010).

Around 3,000BC Britain started to enter a drier period (sub-Boreal). Regional sites near to the Upper Colne dataset (e.g. Boxmoor) also tend to show a drop in the amount of oak, lime, hazel and particularly elm pollen, which has often been interpreted as the result of clearance and agriculture (MacDonald; 1996, Le Quesne *et al*; 2001). However, the study dataset produced no evidence of cereal, grass or field pollen, although several

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[473] Sample 17094, pit 527200, area 49 and sample 29129, pit 836047, area P2A2
[474] Sample 17094, pit 527200, area 49

faunal assemblages[475] comprised mainly grazing animals (cattle, sheep or goats and pigs). Hazel woodland persisted in the Lower Colne (hazelnut shells at Holloway Lane, Home Farm, ICSG[476] and Kingsmead Quarry), while charcoal from pit fills[477] indicates some level of timber collection and clearance. Shrubs and small fruit trees (e.g. sloes and crab apples at Kingsmead Quarry), could be the product of both open and wooded areas, while the area around Mayfield Farm was still largely under tree-cover during the Bronze Age (Jefferson *et al*; 2004). Environmental data suggests little in the way of sustained clearance throughout the Neolithic.

Diversity in seasonal rhythms were also reflected in the environmental data, and in the faunal material (*see chapter 3*, Clarke; 1976, Pitts; 1979). For example, Early Neolithic groups at Matthew Arnold School, collected hazelnuts over autumn and winter (hazelnut shells), or hunted unshed male deer at Yeoveney Lodge (severed antler burr). At other times people collected antler branches in the spring once they had been cast (shed or cut antler fragments from the C4 cursus at T5). On the other hand, fruit seeds and stones, including sloe and blackberry or raspberry at ICSG, suggest late summer or early autumn dwelling. At Manor Farm, Horton, antler dated to the Late Neolithic (*see 5.2.3*) suggest local occupation over spring (n=4 branches were shed), and maybe a smaller occupation in the winter (a burr was also found butchered in the enclosure ditch). Age at death analysis on pig bone would help to identify other seasonal rhythms at some sites[478], while strontium and oxygen isotope analysis on cattle teeth could provide insight into grazing and seasonal droving (*see* Chan *et al*; 2016).

[475] T5, Home Farm, Lower Mill Farm, Holloway Lane
[476] Pit 5732
[477] Prospect Park, Home Farm and Lower Mill Farm
[478] Yeoveney Lodge, Manor Farm, ICSG, Ashford Prison, T5, Lower Mill Farm

8.2 Knowledge of landscape

Table 23: Types of flint and raw material recorded for sites in the Upper, Middle and Lower Colne Valley

Chronology	Area of the Colne Valley	Site count by flint type		
		River flint	Chalk flint	Other
Early Neolithic	Middle	1	1	0
	Lower	6	2	5
Middle Neolithic	Lower	4	1	5
Late Neolithic	Middle	1	0	0
	Lower	4	0	4
Early to Late Neolithic	Upper	0	0	1
Total	Upper	0	0	1
	Middle	2	1	0
	Lower	14	3	14

Chronology	Lower Colne sites	Raw material
Early Neolithic	Yeoveney Lodge	Sarsen and quartzite hammerstones
	ICSG	Bullhead flint tools
	Matthew Arnold	Non-local flint (unspecified)
Middle Neolithic	ICSG	Sarsen grinding stones and hammerstones Quartzite hammerstones
	Hengrove Farm	Sarsen
	Home Farm	Bullhead flint and chert
	Ashford Prison	Bullhead flint
Late Neolithic	T5	Bullhead flint
	Lower Mill Farm	Bullhead flint
	Majestic House	Bullhead flint
	Mayfield Farm	Bullhead flint

There was a wider geography to the distribution of raw material in the Neolithic, specifically across the Middle and Lower Colne Valley (Table 23). Both river gravels and chalk were utilised and Bullhead flint was also used for toolmaking in the Lower Colne. Bullhead flint is concentrated in the Lower Colne but this may be a factor related to the density of excavation in this area. Chert also turns up in the Lower Colne at Home Farm in Harmondsworth, while sarsen and quartzite were sourced and used as hammerstones, or for grinding and pounding material. Igneous stone and jadeite axes were also provenanced across Britain and Europe. The Upper Colne, despite having ready access to chalk outcrops, does not seem to reflect use of this material close to the source. The dataset reflects settlements that were not so connected to an immediate availability in raw materials.

However, the majority of raw material was still derived from local river gravels[479], and the immediate environment continued to act as a main source of material for most tasks. While flint continued as a primary resource, clays for making ceramic vessels were also locally derived (Leivers *et al*; 2010). However, Early Neolithic groups were mobile people, and therefore, like their Mesolithic counterparts, experience and knowledge were not limited to the immediate landscape; social-environmental interactions were at local and regional scales, as well as across wider geographies. For example, at Dewe's Farm good quality fresh chalk flint, as well as river pebbles, were sourced very locally and brought to the site as flint nodules to be knapped (primary reduction). On the other hand, fresh chalk flintwork were also found some distance from outcrops[480] at Yeoveney Lodge, Manor Farm Horton, and Matthew Arnold School, and were probably brought to these sites as tools. At Yeoveney Lodge, for example, many tools were crafted out of fresh chalk flint nodules or 'manuports' (Robertson-Mackay *et al*; 1987: 95), and the small pit assemblage at Matthew Arnold School was predominantly made of a good quality non-local flint source (Munnery; 2010). On the other hand poorer quality flints

[479] T5, ICSG, Cranford Lane, Yeoveney Lodge, Manor Farm Horton, The Grove, Dewe's Farm and Mayfield Farm

[480] The closest fresh chalk outcrops would have been equidistant at *c*15km in the Maidenhead area or Denham (Dewe's Farm)

from glacial till were also sourced and used for toolmaking at Batchworth Golf Course, for example (McDonald; 1995).

Flint sources and types were used differently across the study area, and particular qualities or aspects of agency meant that certain materials were used in particular ways (*see chapter 1*). For example, leaf arrowheads at Nobel Drive and ICSG were made of a similar raw material (Cotton; 1997: 4), while Bullhead flint (from Thanet Sands, underneath the Reading Formation[481]), was used to craft knives at ICSG. Locally derived quartzites tended to be used mainly as hammerstones (e.g. Yeoveney Lodge) or as a pottery filler (e.g. T5 and Matthew Arnold School), and sarsen, which may have been regionally local in Berkshire, was used predominantly for hammerstones (Yeoveney Lodge and ICSG), and querns (T5 and Yeoveney Lodge), while sometimes sarsen querns were also reworked into other tools (e.g. pin polishers at Yeoveney Lodge).

People also travelled and traded, acquiring objects and materials which were not available in the immediate landscape, and artefacts of non-local provenance in the dataset reflect these wider geographies and movements of people across Britain and Europe. Sarsen, for example, may not have been sourced locally, and querns or hammerstones may have been brought to Yeoveney Lodge, T5 and ICSG from other areas including Oxfordshire, Wiltshire or Dorset. Axes, particularly, were often acquisitions from much further afield, although many were also locally made (e.g. Yeoveney Lodge). For example, polished axe fragments at Cranford Lane were specific to either Langdale or Penmaenmawr in North Wales (Elsden; 1996). Similarly at Yeoveney Lodge and Kingsmead Quarry, several axes were also crafted from rocks particular to the Langdale (groups IV and VI) and North Wales quarries (group VII) (Robertson-Mackay; 1987, Chaffey *et al*; 2012). Langdale axes were sometimes in use at a distance from large sites, and were found as spot finds across the study area, including the Upper Colne (*see figure 8.2*). For example, a chipped unfinished flint axe[482] and a Great Langdale Group VI axehead were used and resharpened (the axes were accompanied by a sharpening flake[483]) at Shire Lane (*figure 8.2*). In the Lower Colne,

[481] The Reading Formation lies over the London Basin
[482] HER 9692
[483] HER 9693

unstratified spot finds of a horneblende gneiss axe[484], may have originated in Scotland (Vulliamy; 1930), while another made from dolerite[485] may have come from western Wales. There were also examples of travel and exchange outside Britain. For instance, a jadeite axe found close to an ancient water channel on Staines Moor originated from one of two sources in the high Alpine region of northern Italy (Mont Viso or Mont Bigua) (Jones, Cooper *et al*; 2013: 59, Sheridan; 2011). An amber bead was part of a post-hole deposit at Cranford Lane, and would be very rare if Neolithic (Elsden; 1996).

Unlike Early Mesolithic assemblages, no sites were particularly notable for large quantities of shatter. In other words, there were no equivalent sites in terms of scale, to somewhere like Oakend or PA4 (*see chapter 4 and 5*). This may be a consequence of social interactions across wider landscapes, as artefacts with extended geographies and biographies (e.g. polished or jadeite axes) were not quarried and made locally. Some sites, however, were still primarily used for sourcing flint and initial knapping work. At Dewe's Farm, for example, the assemblage was made up of a large concentration of debitage and unworked flint, and was located in an area of readily accessible chalk and river pebbles. Around 99% of the flintwork was related to primary reduction, and included a relatively high proportion of cores and core fragments or rejuvenation pieces, indicating fairly prolonged activity which maximised the availability of raw materials.

Other assemblages containing large quantities of debitage (>95%) tended to be concentrated in particular areas of a site. For example, area BI at the Grove was suggestive of large-scale flake reduction (the majority of stratified flake cores and flake debitage were focused in this area), while flake-based production dominated all areas of the site. However, along with Dewe's Farm, some of the tasks represented at The Grove may be indicative of concurrent Latest Mesolithic and Earliest Neolithic material and lifeways (see 4.4). At T5, on the other hand, flint knapping consisted of mostly secondary and tertiary processing in the area of TEC05. The Grove and Dewe's Farm also produced retouched pieces which were not identified as specific tool types, and

[484] From a field north of Sipson Lane: HER MLO2687
[485] From Colnebrook: HER MSL15454

were most likely to be expedient tools made quickly and discarded as an ad hoc option in places where primary flint knapping dominated as a task.

Locally derived raw materials continued to make up the majority of assemblages, but flint mines also meant people could access large quantities of good quality material (Clark and Piggott; 1933, Barber *et al*; 1999). Across Britain, flint mines have been radiocarbon dated from around 4490 to 3810 cal BC (Barber *et al*; 1999). In the study dataset there is reference to chalk flint mined in the Northwood area, and in 1927 shafts were found in sand along with antler picks at Sandpit Hill, Rickmansworth (Phillipson and Collins; 1961: 5, Peche; 1953). Quarry pits in the NE of the Majestic House site may also have been used to access flint or clay (Ellis; 2016).

Primary reduction of river pebbles, however, can be identified in the dataset at Ashford Prison as a fairly sustained and large-scale event, producing corticated flakes, shatter etc. At T5, on the other hand, debitage in one pit[486] particularly, consisted of several flake cores, partially worked nodules and flake chips (including Bullhead flint), and suggests a more ad hoc approach. Primary flintworking was also carried out at The Grove, where most of the assemblage comprised debitage (mainly Early Neolithic), alongside later, smaller-scale specialist toolmaking (e.g. keeled cores). On the whole there was very little in the dataset to distinguish specific procurement sites with distinct primary preparation activities, and as tool working was mainly carried out with hard hammers; this also means that flake fragments and shatter were usually present in fairly large quantities. Larger flakes and shatter at Bathend Clump and ICSG, for example, could mean an earlier stage in the reduction process, as well as chalk flint procurement at Bathend Clump, while large flakes at both sites were also worked into tools.

8.3 Inherited tasks and imported materials

Many Early Neolithic practices were, like Mesolithic tasks, based on knowledge and skills surrounding processes of flint tool making. Blades and long broad flakes were generally used for making tools, and flint knapping was carried out at some scale across all sites. This included sites with concentrated signatures of flint procurement and reduction, as

[486] Pit 594228

well as occasional ad hoc reworking or crafting in response to an unplanned event. For example, at Manor Farm, Horton, all stages of the flint reduction process were represented in fairly even distributions of primary, secondary and tertiary knapping material, including concentrated tool production. On the other hand, tools were improvised at Dewe's Farm (retouched blades and flakes), where tasks were largely related to primary flaking. At other times actions of knappers could be moulded by the character of raw material, in a similar way to Iron Age potters of funerary urns (*see chapter 2*). For example, laurel leaves at Yeoveney Lodge, T5 and Bedfont Road, were probably hand-held tools, mostly made on larger flakes and blades, and used as knives (*see figure 8.3: 5-6*). However, in the Yeoveney Lodge assemblage, some leaves were smaller, unfinished and possibly used as arrowheads, where qualities of the flint influenced process and final form.

Table 24: Artefact type for all Early Neolithic sites with assemblages > 100 artefacts

Sites **Flintwork quantity *(c)***	**DF**	**T5**	**CL**	**ICSG RMC LEWGF**	**YL**	**MFH**	**KQ**	**The Grove**
Struck flint total	1,405	263	150	108	24,562	776	n/a	763
Debitage	457	Yes	100	Yes	16,151	n/a	n/a	n/a
Flakes	694	14	n/a	8	5,074	498	n/a	680
Blades	132	5	n/a	1	893	69	n/a	28
Core fragments/ rejuv	16	1	n/a	n/a	Yes	16	n/a	2
Serrated flakes/	2	1	n/a	1	207	6	Yes	2

Sites Flintwork quantity *(c)*	DF	T5	CL	ICSG RMC LEWGF	YL	MFH	KQ	The Grove
blades/ saws/ denticulates								
Awls/ piercers	1	n/a	n/a	n/a	160	1	n/a	n/a
Scrapers	2	2	14	3	389	22	n/a	9
Notched piece	1	n/a	n/a	n/a	118	n/a	n/a	n/a
Knives	n/a	n/a	n/a	1	103	n/a	n/a	n/a
Fabricators	n/a	n/a	n/a	n/a	12	n/a	n/a	n/a
Sickle	n/a	n/a	n/a	n/a	1	n/a	n/a	n/a
Laurel leaf	n/a	1	n/a	n/a	66	n/a	n/a	n/a
Axe/axe fragments	n/a	2	4	3	21	n/a	n/a	1
Axe sharpening flakes	n/a	n/a	n/a	2	n/a	n/a	n/a	n/a
Hammerstone	n/a	n/a	n/a	2	74	1	n/a	n/a
Burins	1	n/a	n/a	n/a	n/a	1	n/a	n/a
Spall/shatter	869	n/a	n/a	n/a	n/a	n/a	118	n/a

Sites Flintwork quantity *(c)*	DF	T5	CL	ICSG RMC LEWGF	YL	MFH	KQ	The Grove
Leaf arrowheads	n/a	2	2	2	34	8	2	n/a
Retouched pieces	9	3	n/a	n/a	n/a	35	n/a	11

The range of tool types becomes extended in the Neolithic (Early and Middle, less in the Late Neolithic). There are fewer sites with large flintwork assemblages in the Late Neolithic.

Larger tool based assemblages (e.g. Yeoveney Lodge) also included items which were of non-local production, and had sometimes travelled a long distance (*see 7.1.3.2*). However, the presence of large quantities of single platform cores and casually knapped nodules of local flint, mainly from the inner ditch at Yeoveney Lodge, indicate that procurement and processing were carried out locally, on a large scale, and with styles of practice which were more akin to Mesolithic flintworking. For example, cores were mainly pyramidal or cylindrical pieces from one or two platforms (more common in the Mesolithic), often with just a single blade or a few flakes removed, indicating a local supply of raw material. Flintwork was fresh and unrolled from in-situ knapping, with 'numerous' core rejuvenation and trimming flakes also distributed across the ditches and central enclosure. This type of flintworking was less usual in the Neolithic, where cores were often worked from multiple platforms which produced cube shaped pieces and a lot less in the way of core rejuvenation pieces (Butler; 2005). Similar tasks were carried out at Manor Farm, Horton, where quantities of shatter, bashed lumps and debitage (again local flint), from all stages of reduction were distributed across both ditches of the enclosure, and the large tool-based assemblage was produced on local material with a small chalk-based element.

Despite being used as projectiles, like microliths, leaf-shaped arrowheads were also associated with other tools and tasks, which were carried out at various levels of expertise, rhythm or speed. They were often bifacially worked and made by experienced flintknappers, but they were also produced by novices or quickly manufactured as an ad hoc tool (e.g. partially flaked or unfinished leaves at Yeoveney Lodge). These pieces were sometimes hafted (*see figure 8.4*), as were serrated tools, y-shaped pieces and sickles (*e.g. see figure 8.5, also in Yeoveney Lodge assemblage*). Wooden handles could be made for these tools using chisels, either burin or a type made similarly to flaked axes (including the roughout process), on bifacially worked long flakes (Butler; 2005). We can speculate that burin at Dewe's Farm, for example, might have been used to chisel wood, while a notched piece (also in the Dewe's Farm assemblage), might be used to work an axe-head or a Y-shaped flint into the groove of a handle, and hafted at the butt end (*e.g. see figure 8.6*). Potentially, these tasks may be connected to a roughout from Hill End in Harefield, or use of polished and stone axes near to what is now the Grand Junction Canal in Uxbridge, and in Northwood on Ducks Hill Road (*figure 8.2*).

Similarly, at Yeoveney Lodge, while most axes were non-regional, a few of them, as well as a sickle and notched pieces, were made on local river flint. Locally made and non-regional axes were sometimes repaired at the site, while more frequently they were used and either repaired, abandoned or lost in the immediate area. For example, spot finds of axes were widely distributed in the lower valley, particularly on the east bank of the Colne (*figure 8.2*). Whole axes were often single artefact surface finds, while those from pit deposits occurred more often as fragments and were associated with Middle or Late Neolithic assemblages. Polished axes were found at Lawrence Road, Money Lane and Station Road, in the Yiewsley and West Drayton area, and a chipped flint axe at Dawley Manor Farm. Stone or flint axes were also found on the Western Perimeter Road, (a polished axe or adze), the Bath Road (partly ground), Laurel Lane primary school/Broad's Bricks (a chip from a sharpened axe), Groveley Road, Staines Road and Fawn's Manor (polished flint axes). Axes were also brought to T5 to be repaired and resharpened (fragments and sharpening flakes).

However, T5 was unusual and larger Early Neolithic sites in the dataset had little in the way of resharpening flakes. Spot finds of polished axes and flakes generally indicated trajectories of 'off-site' tasks and localised clearance. In the Upper Colne, this included the Moor Park area of Bathend, Batchworth and SLGC, or along tributaries and dry valleys. For example, a few chipped and polished axes, and a couple of sharpening flakes at Blacketts Wood Drive[487], suggest several episodes of woodworking, which along with a few flakes and scrapers also indicated some ad hoc knapping where scrapers were used as resharpening tools. Another flint axe was found west of Sarratt along the Chess river between Hanging Wood and Top Spring, while a couple more axes were found on the Gade floodplain (near to The Grove), including a polished stone axe from allotment topsoil[488] and a flint axe or pick nearby[489]. A lack of sharpening flakes on sites, however, may also be correlated with the number of imported axes (were they easier to replace than to repair?).

Distributions of leaf arrowheads also represented 'off-site' actions, or the trajectories of tasks undertaken away from a main dwelling. By this I mean they were also found as single artefact surface finds, in the middle to upper valley particularly (e.g. Merchant Taylors, Hinton Road, Haste Hill, Mansfield Farm), or in a localised distribution on the east bank of the Colne, with similar trajectories to polished and stone axes. These pieces were probably used and lost while working in woodland, although at other times they made it back to a site embedded in whatever they had been fired at, and were later middened. For example, they were swept into pits along with other waste at Nobel Drive and Cranford Lane, gullies and postholes at Kingsmead Quarry, and enclosure ditches at Yeoveney Lodge and Manor Farm, Horton. Not everything made it into pits, however, and some arrowheads, as well as other random items of flintwork turn up residually in later contexts, e.g. a Bronze Age ditch at T5, or Roman features at Manor Farm, Horton. Items of flintwork or pottery often became loose and scattered across a site, finding their way out of middened deposits and ending up in later residual contexts.

[487] Three Rivers District Hertfordshire HER 243 & 9688
[488] Cassiobury Park
[489] 30 Gade Avenue

For example, residual pieces of pottery from LEWGF (ICSG), displayed heavy abrasion and fragmentation, consistent with middening.

Table 25: Artefact type for all Middle Neolithic sites with assemblages > 100 artefacts

Sites **Flintwork quantity *(c)***	**T5**	**AP**	**ICSG/RMC/LEWFG**	**HF**	**MFH**	**HF**
Struck flint total	235	643	1,175	1,000	273	1,379
Debitage	Yes	163	n/a	n/a	n/a	n/a
Flakes	64	432	654	793	185	646
Blades		33		49		594
Cores and nodules	20	6	23	42/44	22	74
Core rejuvenation	n/a	n/a	n/a	3	3	n/a
Serrated flakes/blades/ microdenticulates	Yes	11	13	18	3	3
Awls/piercers	1	n/a	2	4	n/a	4
Scrapers	2	n/a	19	28	9	44
Notched pieces	n/a	n/a	n/a	9	n/a	2
Macehead	n/a	n/a	1	n/a	n/a	n/a
Knives	1	n/a	13	9	n/a	1

Sites Flintwork quantity *(c)*	T5	AP	ICSG/RMC/LEWFG	HF	MFH	HF
Fabricators	n/a	1	n/a	1	n/a	1
Sickle	n/a	n/a	1	n/a	n/a	n/a
Transverse arrowheads	13	n/a	3	13	n/a	n/a
Burins	n/a	n/a	n/a	n/a	1	2
Retouched/modified tools	5	n/a	17	163	9	3
Axe fragments and flakes	19	2	27	4	n/a	n/a
Hammerstones	n/a	n/a	5	4	n/a	n/a
Combination tools	n/a	n/a	n/a	6	n/a	n/a
Spall/chips/shatter	n/a	n/a	423	24	37	20

Procurement of flint and other raw materials may have become less dominant as domestic artefacts were circulated over wider landscapes, and by the Middle Neolithic, axes, for example, were less frequently manufactured locally, while sarsen was either imported as pebbles (e.g. at ICSG[490]), or brought to sites as a quern or fragment of quern (e.g. Hengrove Farm). Shelly ware pottery (e.g. ICSG) could either have been imported as ceramic vessels or as raw material from the coast. The type or quality of raw material

[490] Pit 2752 and 4422

influenced tool type and task, and specific fabrics may have applied themselves more effectively to the shaping and use of certain items, including those which were multi-functional. For example, Bullhead flint became more common in Neolithic assemblages[491] and at Ashford Prison a large amount of serrated tools were knapped from this material (Carew *et al*; 2006). On the other hand, a nodule of Bullhead at Majestic House produced a small assemblage including an arrowhead (chisel), a scraper, and a few waste flakes (Ellis; 2016).

Flintworking was quite often an opportunistic task. By the Late Neolithic cores were rarely well worked, with usually just a few flake removals, and consequently there was little or no core preparation or rejuvenation (Holgate; 1988). Tools were often crafted from long flakes rather than bladelets or blades, with more indications of reuse and reworking of tools. For example, convex scrapers were made on flakes at Lower Mill Farm, and most of the ad-hoc topsoil tools were produced on flake blanks at Mansfield Farm. Modified and miscellaneous pieces (e.g. Hengrove Farm) were often made on thick flakes, retouched and used as improvised scrapers or other tools at T5 and Lower Mill Farm, for example. Other retouched flakes were used similarly as ad hoc scrapers with denticulations, and were found residually as spot finds in the Moor Park area (Weale *et al*; 2009), while discoidal scrapers were made on short, rounded flakes at ICSG.

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[491] Home Farm and Ashford Prison in MN, T5, Lower Mill Farm, Majestic House and Mayfield Farm in LN

Table 26: Artefact type for all Late Neolithic sites with assemblages > 100 artefacts

Sites **Flintwork quantity *(c)***	**T5**	**Home Farm**	**Lower Mill Farm**
Struck flint total	500	740	1,214
Flakes	128	316	n/a
Blades or blade-like flakes	n/a	383	2
Cores or core fragments	3	9	1
Serrated flakes or blades	1	1	2
Awls or piercers	7	2	n/a
Scrapers	9	23	5
Burins	n/a	1	n/a
Notched piece	1	1	n/a
Knives	4	n/a	n/a
Transverse arrowheads	10	2	n/a
Axe or axe fragments	1	1	n/a
Retouched pieces	8	n/a	1
Utilised pieces	n/a	n/a	2
Spall or shatter	69	2	n/a

Opportunistic practice also involved the reuse of polished axes, which were frequently reworked into other implements. For example, at ICSG, on the RMC site, a small quantity of flint tools were made from worked down axes found nearby (Elsden; 1996, Wessex Archaeology; 1998, Powell *et al*; 2015). One axe fragment was worked into a y-shaped piece and potentially used as an axe again[492], while at least another four axe fragments were reused as cores[493]. Flakes (n=26) and an axe chip (LEWGF site), in association with Peterborough Ware, indicated repair and resharpening of axes at the site, and similar quantities of flakes (n=17) and fragments (n=2) at T5, suggest similar scales of rework, repair and reuse. Polished axe fragments (n=5) were also found residually and in a Peterborough Ware pit deposit (6256) at Hengrove Farm, and at Manor Farm in Horton, and in association with Grooved Ware at Holloway Lane[494] and Home Farm[495].

Although, on the one hand, opportunistic making and reused tools or materials dominated some assemblages, formal, specific pieces of craftwork were also produced. For example, keeled or discoidal cores were more commonly associated with LN flintworking and the production of thin blanks (Levallois flakes). These pieces were used to make plano-convex or discoidal knives (*Figure 8.7*), and transverse arrowheads (chisel, petit tranchet[496], oblique etc.). Discoidal and plano-convex knives are often associated with Grooved Ware, at Durrington Walls, for example (Parker Pearson *et al*; 2017), but they were also made and used in the centuries preceding this ceramic typology. In the dataset plano-convex knives were associated with Peterborough Ware at Yeoveney Lodge, and were found residually as spot finds at Park Wood in Ruislip. A bifacially retouched discoidal knife was also associated with Grooved Ware at ICSG, and a residual disc knife at Hampermill was dated to the LN (*figure 7.87*). Discoidal cores were also found in association with Peterborough Ware[497] and a ring ditch feature (G2007) at ICSG, and some were residually distributed across BA features[498].

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[492] Context 2754
[493] Context 2753 and 2754
[494] MLO18873
[495] ML013794
[496] Petit tranchet were similar to chisel
[497] Pit 733, 4593
[498] 1320, G468, 17561

Middle Neolithic generations at Yeoveney Lodge also produced this type of flintwork which was fairly tool and task-specific. For example, n=43 keeled cores were used to make knives or arrowheads, and some twelve or thirteen transverse and triangular arrowheads were distributed across ring ditch fills. Transverse arrowheads were found at Horton, and were also associated with Peterborough Ware in pit fills at Hengrove Farm and T5, or with Grooved Ware in a pit fill at Holloway Lane. They were used over several centuries spanning Middle and Late Neolithic lifeways, and were discarded, dropped or lost across sites and a wider landscape, residually distributed across the upper valley (e.g. Westbury Road), and Lower Colne (including Matthew Arnold School). Chisel ended arrowheads (*e.g. Figure 8.9: 1-4 and 8.10: 1-3*) were also distributed across Middle and Late Neolithic ring ditch fills at ICSG and Majestic House, as well as in residual contexts at T5, ICSG and Cranford Lane. Oblique arrowheads (*e.g. Figure 8.9: 8-13 and 8.10: 4-9*) were similarly distributed across MN, LN, and residual contexts at T5 and Yeoveney Lodge, while petit-tranchets were discarded along with other flint tools, debitage and burnt pottery at Sandy Lodge GC.

8.4 Domestic artefacts

8.4.1 Early Neolithic production

The concept of a Neolithic 'package' has been based on the idea that novel practices (e.g. making clay vessels, cultivating crops, and rearing livestock) were an imported culture, which produced settled lifeways and places. However, the task-rhythms of domestic life and placemaking in the Early Neolithic were very similar to those of indigenous Mesolithic groups. For example, wild plants continued to be a primary source of food for most people, while crop cultivation was initially very small-scale and localised in the study dataset, and cereal grain was only found at Kingsmead Quarry and Dewe's Farm. A continuation of reliance on woodland produce has generally been interpreted from hazelnut shells (*see* Powell *et al*, 2015: 255), and at Runnymede wild plants from the river margin had been collected and eaten (Serjeantson; 2006: 120). However, the process of creating small clearances for cultivation also produced different types of edible wild food. For example, at Dewe's Farm the leaves, flower and root of dandelion could all have been eaten, while goosefoot, both wild and cultivated, were edible. Blackberry or raspberry seeds were also found in ditch and pit fills at Dewe's Farm, hazelnut shells at Kingsmead Quarry, while plants with medicinal properties included black nightshade at Dewe's Farm (Chaffey *et al*; 2012, Scott; 2018).

Plant processing tools included querns and sickles at Yeoveney Lodge, microdenticulates and denticulates at T5 and Merchant Taylors, saws and serrated blades or flakes at Sandy Lodge, Dewe's Farm, T5, ICSG, Kingsmead Quarry, Manor Farm, Horton, and large quantities at Yeoveney Lodge. Although querns and sickles are mainly associated with domestic crops, sickles could also be used for cutting and threshing wild plants, and querns used for grinding and pounding both cereal and dried herbs. Serrated tools and sickles were often hafted and could all be used similarly for cutting or sawing wild plants (e.g. green wood and bracken), or cereal, while sedge (e.g. at Dewe's Farm) provided rush for basket weaving etc. (*see environmental details of pit and ditch fills*). As an example of this, usewear analysis on the tool assemblage at Bathend Clump identified a patina on the cutting edges of several artefacts, which was caused by cutting straw or thin twigs (Phillipson and Collins; 1961: 5). Although this has been linked this to agricultural tasks (*ibid*), an absence of cereal pollen suggests this was more likely to have occurred during the procurement and processing of wild plants (*see 4.1*).

Most tools and tasks were very similar to those of local Mesolithic groups. For instance, awls, piercers, scrapers, and knives were recovered from most sites, and it is probable that animal skins were worked to make clothing, covers etc. on a fairly large scale in some places (e.g. Manor Farm, Cranford Lane, The Grove). At Yeoveney Lodge, tools included a rare hollow scraper, as well as burnishing pebbles and pin polishers, possibly used on animal skins (Robertson-Mackay; 1987). However, it is unlikely that these sites represented task-specific tanneries, as most assemblages included signatures of other tasks which were at least as dominant (e.g. flint reduction at Manor Farm). Hideworking was also carried out at different scales across the dataset; for example an awl, a couple of serrates, and a horseshoe scraper at Dewe's and Colney Farm indicated similar practice on a smaller, ad hoc scale. Pit clusters near to house 5 at Kingsmead Quarry also contained serrated flakes, scrapers and bone awls, and a large pit midden deposit at T5 included a few scrapers, serrates and awls or piercers (Chaffey *et al*; 2012, Framework Archaeology; 2010). Scrapers, knives and serrated tools, however, were undoubtedly also used to scale and clean fish, for processing plant products, or for wood and boneworking (*see chapter 2 and 5*), and although worked bone is rare it is not absent regionally, nor in the dataset. For example, an antler comb was found at Eton Wick causewayed enclosure (Whittle *et al*; 2011), while a bone point from Yeoveney Lodge was made from either wild deer, sheep or goat, and may have been used as a netting needle for fishing (Robertson-Mackay, 1987: 122). A polished bone awl from the house 5 pit group at Kingsmead Quarry accompanied leather working tools and was probably used for sewing, while red deer antler may have been used as picks or mattocks at Manor Farm, Horton, possibly during construction of the enclosure (Preston; 2003, Ford *et al*; 2003).

Early Neolithic interactions within the local environment may not have been very different from Mesolithic groups in the first few centuries of the 4th millennium BC. While cereal cultivation had less of an immediate uptake in the study area, pottery production was similarly small-scale, although the use of Carinated Bowl was fairly widespread, particularly in the Lower Colne, at T5, Yeoveney, ICSG, Home Farm, Harmondsworth, Manor Farm and Kingsmead (and a single vessel in the Upper Colne at The Grove). Carinated Bowl could have been in use from around the 39th century BC, generally on a small scale, except at Yeoveney Lodge where nearly thirty vessels were distributed across both ditches and the interior (and were probably imported). Although a few generations later, Plain and Decorated Bowl were also in use across most of the larger sites, pottery as a craft was less widely spread. For example, although several ceramic vessels had evidence of burnishing[499] at Yeoveney Lodge, and polishers were linked to this process (*ibid*), there was no evidence of fired clay (a pottery waste product). And although Plain Bowl pottery was found in fairly large quantities in the dataset, the only site with any indication of pottery manufacture was from fired clay in the house 'void' 5 pit group at Kingsmead (Chaffey *et al*; 2012).

Carinated, Plain and Decorated Bowls included vessels used as cups and jars, or cups and small bowls at Yeoveney Lodge (Barclay; 2002). Although rim types were similar at

[499] Smoothing, bonding or sealing the vessel

Yeoveney, T5, ICSG and Cranford Lane, vessel form and sherd thickness suggest ceramics were made and used for multiple tasks both across and within sites (e.g. open and closed necks, or small bowls at Yeoveney Lodge etc.). For example, around n=30 vessels at T5 were mainly open or neutral bowls, probably for cooking and serving food. Although pottery may have replaced hot stones for heating water, a few burnt pebbles in a Middle and Late Neolithic assemblage at ICSG suggest 'potboilers' also continued in use. Bowls were round based and could be buried into hot embers for cooking, they were often heavy and thick walled, made of coarse, friable fabric which could withstand open fire cooking. For example, at Matthew Arnold School, one of two Plain Bowl vessels were smaller and thicker in the body sherds, rougher and rusticated in finish, and more likely to have been used on a fire. Those with applied lugs or cordons (at T5 and Yeoveney Lodge) would be easier to handle on and off a hearth.

On the other hand, closed necked jars at ICSG (62%) may have been used as containers for storage or local transportation of food or liquid. The second vessel at Matthew Arnold School was smooth and burnished, and significantly larger than the cooking bowl, probably reflecting a capacity for storage. Round bases also allowed for placement in a hollow on the ground where they could be used as containers.

8.4.2 Early Neolithic deposition

While production reflects multiple strands of practice, so too does deposition of artefacts. At T5 Early Neolithic vessels were mainly concentrated in the sedimentary fills of n=14 pits and tree-throws, but sherd counts, weights, fabric, form and levels of abrasion across the distribution reflect different scales and rhythms in this taskscape. For example, vessels included burnt and highly fragmented pieces of flint tempered pottery in tree-throw 156191, with an average sherd weight of 2.5g, which probably accumulated as midden material (this pit also contained large quantities of flint tools and knapping waste). On the other hand, much larger sherds came from pit 527200, with an average sherd weight of 13.7g, and may represent a placed container, broken *in situ*. It is also likely that vessels from both pits were contemporary as they were built using the same clay fabric (FL4).

These vessels had different spans and trajectories of use-life, where some were used frequently for cooking, becoming burnt, broken and degraded, and were eventually middened. On the other hand, containers were also used off the hearth, or for less time, and as a result had shorter histories and less fragmentation. Similar events were represented at ICSG, where most of the pottery sherds were from pits in the quarry feature (G2004), many of which were fragmented and heavily abraded. However, there were also larger, fresher pieces, from vessels which may represent a shorter occupation.

Pottery was also decorated, but these vessels were not widely distributed. In the dataset Decorated Bowl was found at only two sites; T5 and Yeoveney Lodge. Although highly decorated pottery tends to be associated with enclosure sites, e.g. Abingdon, (Barclay; 2002: 87), decorated pottery were mainly from a single pit deposit at T5[500]. Although smaller than the causewayed enclosure assemblage, the overall percentage was comparable to Yeoveney Lodge (5% compared to 4% at the enclosure site)[501]. Decorations were incised or impressed using fingertips and nails (at Yeoveney Lodge), or twisted cord (at T5 and Yeoveney Lodge). Twigs and pieces of wood, reeds, straw or bone could be pressed into or pulled through the wet clay and implements may have been collected specifically for pottery decoration, or used ad hoc in a secondary context (e.g. twigs from timber collection and kindling). Crushed knapping waste was also used in a secondary context, often heated first to prevent the pot shattering during firing or use (e.g. calcined flint[502] tempered vessels at Matthew Arnold School).

Plain and Decorated Bowl were generally recovered as larger, fresher sherds from the ditches of enclosures in the dataset (e.g. Yeoveney Lodge), and monumental sites are often associated with larger sherds and the placement or special deposition of artefacts (Gibson; 2002: 72, *see chapter 2*). For example, across Britain and Ireland, less fragmented vessels have been found in chambered tombs, earthen long barrows, cursus monuments, flint extraction sites, the Sweet Track, rivers, bogs and caves, while pit sites often have smaller, more abraded or weathered assemblages (Pollard; 2002: 24). However, in the study dataset the characteristics of 'domestic' and 'special' practice

[500] Context 836047 in area TEC05
[501] 25% at Abingdon
[502] Temperatures of over 500 degrees

were interwoven. For example, pit deposits at T5 contained fragmented midden material, moderately abraded pieces (e.g. a single vessel from pit group 964), and large fresh sherds (e.g. four vessels deposited in a single pit[503]), which were comparable to those found at enclosure sites, or in wetland contexts. Neither were typologies distinctly contained, and Carinated, Plain and Decorated Bowl were sometimes found in the same context (the quarry feature at ICGS, for example), while at The Grove, Carinated Bowl fragments were part of a fill which sealed earlier middened material (in pit or scoop 2319). At T5, a Carinated sherd with n=12 Plain or Decorated Vessels came from a secondary fill in tree throw 156191, while sherds from a single Plain Bowl vessel were spread across three pits with Peterborough Ware.

Further distinctions between Late Mesolithic and Early Neolithic practice come from suggestions that by around 3700 BC middens and tree-throws were going out of use and people were digging pits for their rubbish instead (Lamdin-Whymark; 2008: 208). The use of tree-throw hollows at this time has also been linked to clearance for the construction of large-scale earthworks (Framework Archaeology; 2010: 49). In the study dataset, however, tree-throw hollows and pits served similar functions and there is no suggestion either environmentally, or artefactually, that they were primarily associated with large-scale monuments. Pits were found in clusters and in isolation, possibly representing both short and longer-term occupations (e.g. at Cranford Lane and ICSG). They were also located with house or other structures (e.g. post and stake-holes at Kingsmead, Dewe's Farm), and adjacent to enclosures at ICSG and Manor Farm. Tree-throws were a feature at both ICSG and at T5, where, for example, they were used for disposal of large accumulations of midden material. Material was distributed widely and differently across sites suggesting the methods and reasons for discard were random and formal, multi-agentic, and multi-temporal (*see chapter 1*).

8.4.3 Animals and agriculture in the Neolithic

However, although some Mesolithic and Neolithic lifeways could be comparable, faunal assemblages suggest that livestock were maintained at some of the Earliest Neolithic

[503] 836044

dwellings. For example, animal bone at Yeoveney Lodge was predominantly domestic (99%); the majority were from cattle with some sheep or goat, and pig. Dogs were also kept, while a small quantity of wild animal meats were consumed (red deer and beaver). Domestic animals were probably grazed at the enclosure site, where overbank flooding contributed towards good seasonal pasture, and where faunal data is available, other sites reflect similar practices (e.g. Manor Farm and Cranford Lane). Grazing animals supplied materials for clothing (e.g. wool and sheepskin), milk and dairy products, as well as providing meat and materials for pottery making and decoration.

Neolithic practice continued to combine inherited traditions from multiple strands of cultural heritage, which may sometimes be missed in large-scale patterns. For example, Monte-Carlo modelling for a large dataset of radiocarbon dates now suggests that agricultural practice declined during the Middle Neolithic (Bevan *et al*; 2017). However, in the study dataset at the local level there were no indications of large scale cultivation in the Early Neolithic or a drop-off in the Middle Neolithic. Conversely, there may be increased evidence for agriculture. For example, cereal pollens distributed across n=6 MN pits at ICSG, consisted of hulled barley, wheat, bread wheat, rye and wholegrains of cereal. One LN pit (5732) also contained barley, bread wheat, rye and an oat grain. However, radiocarbon dating on a couple of pit contexts and the long enclosure at ICSG have shown some as intrusive, and samples of wheat from Neolithic features at T5 were similarly demonstrated (Healy *et al*; 2010). There is little suggestion that cultivation of cereal was necessarily continuous or widespread in the Colne Valley at any time during the Neolithic, and sites often have seasonal signatures associated with local wild plants, fruits and nuts. For example, cooked sloes or crab apples at Kingsmead, along with burnt hazelnuts suggest a Late Neolithic autumn occupation, while similar fruit and nut seeds, shells and stones at ICSG indicate a similar MN seasonal dwelling. Stoneware, in the form of sarsen quernstones and pebbles, were probably used for grinding, rubbing and pounding both cereal and wild plant food at ICSG[504], Hengrove Farm and at T5. A backed knife or sickle at ICSG[505], as well as serrated flakes with gloss, were associated with

[504] Pit 2752
[505] Pit 4239

cutting or processing silica rich plants, which could include both cultivated and wild plants such as rushes and sedge (Powell *et al*, 2015: 191).

Occupation in the Lower Colne included pasture of domestic animals, which were discernable as pig, cattle and sheep or goat in the Middle Neolithic at ICSG, and Late Neolithic at T5, where one tree throw was almost exclusively used for the discard or deposition of domestic animal bones[506]. Dogs were also involved in the processes of deposition at T5, where some of the animal bones produced evidence of canine tooth marks. Domestic animals comprised mainly cattle at Lower Mill Farm (90%), and pig, sheep and goat also provided meat, wool, milk etc., and similar products were also provided by sheep or goats kept at Holloway Lane. Animals were unlikely to have been kept in one place, however, and were probably driven between grassy pastures or clearings, including those used for larger gatherings. For example, a pig tooth and grass pollen at Ashford Prison, and cattle scapula from the ring ditch at Majestic House suggest pasture and grazing of animals. It is likely that these enclosures were multifunctional spaces, not necessarily restricted to what we understand as special, ceremonial or funerary events. As with the Stonehenge landscape (*see chapter 1*, Chan *et al*; 2016), droveways existed between places, and faunal assemblages do not always necessarily represent sites of large pastoral settlement. For example, a few sheep or goats, rather than a large mixed herd, were brought to Home Farm, along with a few Durrington Walls style vessels. A small group of people leading mobile lifeways settled here during an autumn season, if not longer, when hazelnuts were also collected from local woodlands.

While people moved around with domestic animals, wild meat was also hunted on a smaller scale. For example, aurochs bone provided the material for a scoop or spatula used at Lower Mill Farm, wild cattle were almost certainly eaten at Holloway Lane, and red deer antler were dated to the Late Neolithic at Manor Farm, Horton. Although the dataset presented very little in the way of fish bone, a pike jaw in a Middle Neolithic context at Manor Farm indicated that fish were eaten at this time. The lack of fish bone

[506] 148110

particularly, in the dataset, was potentially a preservational or a methodology issue[507] (*see chapter 5*). After all, people moved between places and used rivers for travel, navigation, burial etc. and it is unlikely that fish taboos (Richards; 2003, Thomas; 2003, Richards and Schulting; 2006) existed across the multiple cultural backgrounds represented by *c*7,000 years of Mesolithic and Neolithic material. For example, a mixed faunal assemblage suggested a varied diet at Runnymede, which included domestic animals as well as red and roe deer, badger, fox, polecat, aurochs and wild boar (Serjeantson; 2006: 120). And although most Neolithic faunal assemblages were predominantly domestic (mainly cattle), at The Grove wild meat dominated people's diets (71% of the assemblage came from deer).

8.4.4 Middle to Late Neolithic production

Environment and social practices were interconnecting, and the material reflects this. For example, combination tools (which often included a scraper and a notched piece) were suggestive of tasks involving multiple elements. These pieces were generally part of assemblages where hideworking and food processing (plant, animal and fish products) were indicated. For example, composite notched scrapers at Batchworth Golf Course and Bathend Clump were used alongside scrapers, notches and points, and were derived from predominantly flake based assemblages (i.e. more likely to be Middle to Late Neolithic). Similarly at Hengrove Farm, combination tools were found in four out of six pit assemblages, again dominated by scrapers, notches, points or piercers, and serrated tools. At Home Farm in Harmondsworth, notched flakes were part of large scraper-dominated pit assemblages[508], in association with both Peterborough and Grooved Ware, along with piercers, serrates and a knife (Hoad *et al*; 2010: 57). At least two of the pits containing these artefacts were interpreted as cooking pits and included a fabricator (strike-a-light), and burnt animal bone (sheep and cattle-sized).

Scales of practice were different across the dataset, but tools suggest similar tasks at many sites. For example, while the Home Farm assemblages included retouched tools made from a fine quality black flint, at ICSG reworked pieces of polished axe were used

[507] Sieving for small bone and invertebrates etc. was not always carried out
[508] Including horseshoe scrapers

for food preparation, making clothing and other craft. Moreover, at least n=28 pits across both ICSG and RMC contained scrapers, serrates, knives, piercers or awls, but a particularly focused area may have been context 113 at ICSG[509] (*appendix xiv*). While some pits contained a single knife or scraper, and were sometimes accompanied by a couple of flakes or blades (e.g. pit 4411 and 7177 at RMC), others comprised large assemblages of multiple scrapers and serrates (e.g. EV114 at ICSGG). Other, more unusual items may have had similar uses. For example bone 'scoops' at Lower Mill Farm were fairly common chisel-like tools in the Late Neolithic (Jones and Ayres; 2004: 151), and may have been used as spatulas or for skinning fish and meat.

Transverse arrowheads may not always have been used as projectiles, and their making also reflects multifunctionality and reuse of materials. For example, triangular arrowheads may have been reworked material (broken leaf arrowheads) or blanks for barbed and tanged arrowheads[510]. Flint and pottery were often reworked, reused and employed interchangeably as linings for pits, hearth fills etc. or in tempering ceramics. For example, Grooved Ware vessels were grog tempered at T5, Prospect Park, Hengrove Farm and Mayfield Farm, while grog and shells were also used to temper Peterborough pottery at ICSG. Although pottery manufacture was only indicated at a couple of sites, Grooved shelly Ware, for example, could have been manufactured at ICSG, with shell temper brought to the site as a non-local material. Alternatively, whole vessels may have been imported.

Pottery was decorated using fingertips and nails, tasks which were carried out while the clay was still wet and before firing. Other than sites at ICSG and T5, where these tasks may have been concentrated, there was limited evidence for the building and firing of clay vessels. Some of the pots from Caesar's Camp and ICSG had profuse finger tip and nail rustication, where the clays were pinched up to form raised lumps on the outer surface of the vessel wall, and at ICSG finger pinched vessels were concentrated in the area of the long enclosure. Organic materials which have not often survived in the archaeological record (e.g. wool, reeds, twigs or plant fibers) were also employed and

[509] EV114

[510] Also associated with Late Neolithic assemblages, although more often in a Bronze Age context

twisted to make cord impressions on vessels used at ICSG and Caesar's Camp, including whipped cord 'maggots'. This is where a piece of twisted cord has been looped around itself or another object (a stick or a flint blade, for example), and then pressed into the clay, and several of these have been pressed out to create a short linear motif of 'maggots' at ICSG, Home Farm and Caesar's Camp (*Figure 8.13*). While fish, bird or small mammal bones have not survived in faunal assemblages, it is probable they were consumed, particularly at T5 and ICSG, where pottery was decorated before firing (small bone decorations were found on pots at Ashford Hospital and Caesar's Camp) (*e.g. Figure 8.14*). Flint blades were also used to produce sharp incised lines on the Caesar's Camp vessel, for example (Lacaille; 1937: 294).

8.4.5 Middle to Late Neolithic deposition

At ICSG, Middle Neolithic pottery production was on a fairly large scale, and assemblages produced between 2g and 538g of fired clay across all areas except area 3 (RMC) and area D (ICSG). The greatest concentrations were distributed across four pits in area 2 (59% in pit 5616), while another large quantity of fired clay came from a single pit in area E[511] (*appendix vii and xiv*). Area 2 was a focused zone with multiple pits and pit groups, and distribution of material across these features suggests a spectrum of tasks including ad hoc toolmaking, firing clay pots, food processing and cooking. For example, pit group B[512] comprised two pits at a distance of 1.8m, between them containing one of the largest assemblages of pottery, flintwork, stone and burnt material. One of these pits[513] apparently reflected a single fill consisting predominantly of at least n=24 Peterborough Ware vessels, some of which had been specifically placed to line the pit. Other sherds, however, were left over from firing, or part of a general dump (where, similarly to Kilverstone, they were left to accumulate and later swept into pits as refuse). Broken tools (e.g. pieces of sarsen pebble), and fragments of polished axe were also part of the midden material, and large quantities of burnt flint, animal bone and charred hazelnuts reflect the location of a hearth and cooking nearby. The pit was used variously; on the one hand it was lined with broken ceramics and flintwork on the base and sides, an

[511] Pit 40252 (374g)
[512] Pits 2752 and 2817
[513] 2752

indication that it was intended (and used) to fire pottery (120g fired clay). However, it was then also used for the disposal of domestic rubbish (e.g. middened food and cooking waste), which had apparently been dumped in from the northern side of the pit (Powell *et al*; 2015: 41). On the other hand, only a small quantity of fired clay (9g) came from the uppermost fill of the second pit (2817), which also appeared to be lined before several depositional events produced four fills of similar character to pit (2752).

On the other hand, in area E (ICSG) there was very little in the way of domestic discard. A single spatially distinct pit appears to have been used for cremated bone, while at the same time it produced the second largest concentration of fired clay[514] and a small quantity of burnt and unburnt flint. T5 was the only other site in the dataset to suggest pottery manufacture, with fired clay and charcoal in Grooved Ware pit contexts, cursus fills and the HE1 enclosure. However, experimental archaeology has shown that pits with charcoal and/or ash and pieces of pottery (e.g. Cranford Lane and Caesar's Camp) can represent the material remains of pottery firing (Gibson; 2002: 45). Lumps of fired clay in Grooved Ware pits, particularly, have also been taken to suggest the collapse of pit ovens at Willington in Derbyshire (Loveday; 2012: 105). Pit ovens were also identified at Home Farm, in association with both Peterborough and Grooved Ware.

So, while some broken vessels may be the remains of pottery firing at ISCG, others were used for lining pits and infilling hollows in the ground (*see* Pollard; 2002: 23). At RMC the largest pit (2187)[515] was flat-based with concave sides and a Peterborough Ware lining. A Late Neolithic pit at Holloway Lane was also used similarly. It contained a large quantity of pottery sherds on the base of a pit filled with burnt nuts and some flintwork. This pit was initially dug out and lined with broken pieces of pottery, possibly used for storage or to act as a base, and later food waste and other rubbish were dumped in. Flintwork was deposited similarly to broken pottery, sometimes functioning as a pit liner or separating placement of materials. For example, the largest pit at ICSG (4239)[516] had a flat base and almost vertical sides with several fills. Although pottery sherds were not

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[514] Largest concentration was pit 5616 in area 2, RMC Land (538g)
[515] 2.5m x 1m (depth)
[516] 0.9m x 1.2m x 0.7m (depth)

used to line it, pieces of flintwork were centred in one area of the pit, with burnt bone in another (Powell *et al*; 2015: 41).

On the other hand, Ebbsfleet, rather than Mortlake vessels, were more frequently buried as complete pots, which had broken into large fragments at T5, Caesar's Camp, Hengrove Farm and Manor Farm. Whole vessels were sometimes placed into the ground, and may have contained food or other items for storage. For example, at Caesar's Camp an almost whole vessel was placed upright in a pit, and had probably broken *in situ*. Similarly, at Hengrove Farm a whole pot had collapsed in on itself, but conversely this vessel had been placed lying on its side (*figure 7.45*). At other times vessels may have broken before they were thrown out, but not middened. One pit[517] at T5, for example, contained large, heavy sherds of what was probably a complete Ebbsfleet vessel, generally bigger and less fragmented than other pottery. This vessel came from the pit group (97), with an average sherd weight of 21.4g, and may be compared with Hemp Knoll in Wiltshire where whole vessels were smashed then deposited in pits (Robertson-Mackay; 1980). It may be that Mortlake ceramics were more frequently used as cooking pots, and the majority of these vessels from pit 2 at Caesar's Camp were described as '*hard-fired*' (Grimes; 1960: 188). On the other hand, '*comparatively thin ware*' may have referenced serving or storage jars (*ibid*).

Other types of container were part of the Caesar's Camp assemblage, including a small, narrow round-based vessel described as a variety of lamp (*ibid*). Fengate vessels, on the other hand, were very rare in the dataset, with only one stratigraphically secure vessel in the lower fills of the outer ring ditch at Manor Farm, Horton, and a possible second vessel at Hengrove Farm. The Manor Farm vessel contained carbonised food residue and was used for cooking. While these containers were generally flat based, they also tapered and would need to be placed in the ground if they were to act as containers (*Figure 8.12*).

In the Thames Valley, Peterborough Ware were found in a variety of contexts including isolated pits, pit clusters, surface spreads or middens, earthwork ditches, and mortuary

[517] 555922

enclosures (*see chapter 3*). They were also deposited in rivers or other bodies of water (Barclay; 2002). In the Colne Valley dataset, isolated pits also contained Peterborough Ware at The Grove, Cranford Lane, Caesar's Camp, Kingsmead Quarry and Ashford Hospital, while vessels were discarded or deposited in pit and tree-throw clusters at ICSG, Hengrove Farm, T5, Home Farm and Ashford Prison. Pit fills sometimes reflected middens or surface accumulations which were later dumped (e.g. pit 2752 at ICSG, which included the single largest concentration of flintwork, including a very intensive episode of axe-sharpening[518]), while other fills reflect deliberately lined pits for storage (e.g. Holloway Lane) or for firing pottery. On the other hand, Peterborough Ware vessels were also deposited in the ditch fills of earthworks, including those constructed during the Early Neolithic. They were present in the upper fills, for example, of Yeoveney Lodge enclosure ditches, the upper and middle fills of the C1 and C2 cursus ditches at T5, mostly secondary ditch fills of the long monument at ICSG (Powell *et al*, 2015: 150), and the fills of ring ditches at ICSG, Manor Farm at Horton and Ashford Prison.

Late Neolithic pottery was similarly distributed in terms of making and use, and although assemblages were generally smaller, Grooved Ware was often of soft-grog tempered fabric and more susceptible to decay than other forms (Pollard; 2002: 23). Most Grooved Ware in the study area were found in small clusters of pits at T5, Home Farm, ICSG, Lower Mill Farm and Kingsmead Quarry, and in single pits at Holloway Lane and Prospect Park. At T5 they were associated with the HE1 and HE2 enclosure, and the upper fills of the cursus bank and ditch. Again T5 and ICSG were the only sites with evidence of fired clay in association with LN material (mainly Grooved Ware). For example, at ICSG fired clay was concentrated in pit (5732). Predominantly Durrington Walls type vessels were, however, also in use at most other sites[519], with a Clacton type, and two vessels of Woodlands-Durrington Walls hybrid identified at T5 (the Woodlands-Durrington vessel was more unusual as a tradition in the SE, *see chapter 2*). The latter vessels were found as large sherds (16g), which were above the average weight for most of the assemblage (4.15g), while another GW vessel consisted of two large sherds weighing 84g[520]. These were probably containers used similarly to Ebbsfleet vessels,

[518] n=122
[519] Except Majestic House
[520] Pit 561104

which may have been broken *in situ*. At T5 some of the closed neck, predominantly thin walled Durrington Walls vessels may have been used similarly, possibly for storing liquids rather than cooking, while open Clacton tubs may have been put onto the hearth (on the whole Grooved Ware vessels were normally flat and stable-bottomed, e.g. Home Farm). While larger fragments were probably not middened material, another pit deposit at T5 contained only burnt and friable pieces of vessel, along with a large predominantly knapping assemblage[521]. Grooved Ware vessels comprised tubs at T5, Holloway Lane, Home Farm and Lower Mill Farm, or buckets at T5 and Home Farm.

8.5 Placemaking

Several sites and places in the Colne Valley were inhabited repeatedly by different generational groups from the last centuries of the 5th millennium BC onwards. This included T5, Dewe's Farm and The Grove, for example. And while long barrows and causewayed enclosures are often used to reference the start of Neolithic practices, monuments were actually additions to earlier domestic signatures which varied in duration, scale and type (*see chapter 3*). For instance, the start of the millennium produced smaller scattered assemblages with diagnostically Latest Mesolithic (e.g. rod microliths), and Earliest Neolithic material in contemporary fills or contexts (*see chapter 5*). Neolithic material at The Grove, for instance, was dispersed more widely than Mesolithic flintwork, but several overlaps of activity occurred. This was particularly apparent in area A1 (including evaluation trench A125) and area C, where shallow pits and post-holes were sealed by the same colluvium, and material from the post-holes was diagnostically indistinguishable as either Late Mesolithic or Early Neolithic. Area B also contained some of the earliest stratified material, while area D represented actions of later generations during the Early Neolithic. These were multi-temporal, multi-authored spaces which were reinhabited and modified over numerous generations. Signatures and debris from previous occupiers would be recognised, interpreted and acted on in different ways.

[521] Pit 531011

The Lower Valley is where the Colne meets the Thames, and this is where the earliest, largest artefactual assemblages were centred. While it can be hard to imagine what places might have looked like, particularly without being able to visualise some sort of dwelling, Neolithic houses, like their Mesolithic counterparts, are fairly unusual in southern England. However, there were multiple signatures of settlement in the study area, some of which included house-type structures (*see figure 8.15*). Some of the larger sites may have used lightweight structures (including a post-hole feature at Yeoveney Lodge, M25 junction 13), and others dug deep gully foundations and constructed rectangular, wooden post-built dwellings with plank walls or wattle and daub. This included up to five houses at Kingsmead Quarry and one at Cranford Lane (Chaffey and Brook; 2012, Powell *et al*; 2015). The first phase of house construction at Kingsmead coincided with episodes of settlement at Runnymede, and construction of enclosures at Yeoveney, Eton and Staines Road Farm (*see* Healy, Whittle *et al*; 2011: 403). These events were also contemporary with the building and use of a large house at Yarnton[522] in Oxfordshire. This first house at Kingsmead was constructed *c*3800-3640 cal BC, and in use until c3690-3535 cal BC[523] (Chaffey *et al*; 2012: 204), while house 2, a much larger building than the first, was constructed and occupied slightly later. This later building was in fact, only a little short of Sheridan's 'large house' category, a type of dwelling which has been associated with earliest pioneering communities arriving from Europe (*see chapter 3,* Sheridan; 2013). While house 2 may have been a community dwelling, it was in use several centuries after the earliest Neolithic artefactual signatures in the area. In fact, the footprints of these buildings are contradictory to the implication that larger buildings were constructed and lived in by pioneer groups while they settled themselves in this area (*ibid*).

Taking house signatures into account in the study area, more ephemeral dwellings were also built and used at other sites, and represented through artefactual assemblages at ICSG, for example. On the other hand, gully foundations and stakeholes at Dewe's Farm, or post-holes at The Grove and Cassiobury School, suggest houses similar to Kingsmead

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[522] Dated to the 38th or 39th century BC (Healy et al, 2011)

[523] House 1 has been reconstructed in a collaboration between Butser Ancient Farm and Wessex Archaeology: *see* [*https://www.wessexarch.co.uk/our-work/butser-project-building-neolithic-house*](https://www.wessexarch.co.uk/our-work/butser-project-building-neolithic-house)

were built in the Upper Colne, including Gorhambury near St. Albans, *c*14km north of The Grove. A house at Gorhambury, for example, was of a comparable size to the first Kingsmead houses (9m x 7m), and like both houses 1 and 2, it had gully foundations and was divided into a couple of rooms of roughly equal size (*see* Hey *et al*; 2011: 232, figure 11.8). The walls were lined with wattle-and-daub (charcoal and burnt daub were found in the wall trenches) (Neal *et al*; 1990: 9), and may have been constructed similarly to houses 3 and 4 at Kingsmead Quarry. Oak timbers were dated 3770-3370 cal BC (Hey *et al*; 2011) meaning that occupation of the house was contemporary with, or overlapped episodes of occupation for Kingsmead communities. Later post-holes at Hengrove Farm, Ashford Prison, Prospect Park, Majestic House and Mayfield Farm (Middle and Late Neolithic) may be related to house structures, palisades or other features.

So, while Neolithic groups constructed houses of various sizes, dug gully foundations, erected timber posts and wattle-and-daubed their walls, they also used lighter structures which, like Mesolithic communities, left less of a footprint but were represented through material culture (e.g. ICSG). However, regardless of the perceived level of permanence associated with these different types of structures, living spaces were generally swept and kept clear of rubbish. For example, pieces of very fragmented pottery in the wall gullies of house 1 at Kingsmead were probably swept into a corner of the house, along with remnants of food including charred hazelnuts, cereal and animal bone (Hey and Robinson; 2011: 231, Chaffey *et al*; 2012). Comparative practices were equally noted for pit sites, which as Sibbeson has pointed out, can often provide tighter temporalities for deposition (2014: 52). For example, pits and tree-throws at T5, and a quarry feature and tree-throws at ICSG/RMC contained highly fragmented, small sherds from broken pots. These broken vessels were left to accumulate in a pile with other pieces of discarded food or tool waste, where they became more degraded and weathered, and were later swept into pits or hollows.

Open pits and hollows became sealed through human agency (e.g. backfilling at T5), as well as non-human actions (e.g. subsidence at Lower Mill Farm), and were sometimes recut when spaces were reoccupied and pits were no longer visible. Others, however, had tighter temporalities and were open for frequent episodes of deposition, with a shorter interval in between events. For example, as well as pottery production, over a hundred pits at ICSG and RMC represented clustered tasks over large areas. This included a substantial focus on tool production, concentrated in areas 1-4 and areas A-B, as well as smaller scale events, including a single cremation in area E. Multiple, single pits were kept open and fragments of the same vessels were scattered across pits (5783) and (2752), for example. A lack of intercutting features also suggest these being contemporaneous events, episodes of discard which occurred over a short period where pits were still visible to the digger. This was also indicated at The Grove, where several fragments of the same Plain Bowl vessel ended up in at least a couple of individually sealed pit contexts.

At ICSG several discrete events were also represented during Early Neolithic occupations which cut into 'quarry' feature (G2004). However, while most of the (Plain and Carinated Bowl) middening went into a couple of separate pit deposits, these pits were cut into earlier features which had filled in over time. Other pits at ICSG (e.g. 5638), which contained Peterborough Ware pottery[524], flintwork[525], burnt flint and animal bone had also been cut into tree-throws which must have been filled in for some time. Different temporal rhythms can also be distinguished at Ashford Prison. This is a site where interactions between material and human agency created a place which was used for large-scale procurement and primary knapping. For example, tree throw hollows exposed fresh flint, and there were evidence of both blade-based reduction in tree-throws, and flake-based reduction in the ring-ditch, indicating multiple events throughout the early to middle 4th millennium BC. However, within these larger timeframes and scales there were traces of smaller signatures and expedient events. For example, tree throws were used for tool repair and as ad hoc knapping spots, while pits 1895 and 1906 represented contemporary events with different signatures. Flakes from 1895 were refitted to a core in the same pit, where they had been knapped and discarded immediately. On the other hand, flakes from pit [1906] were also refitted to

[524] 19 x sherds
[525] 17 x flakes, 1 x blade, 1 x chisel arrowhead

the same core in 1895, but these had been retouched and used as tools before they were discarded.

At T5, pits containing Plain Bowl (in group 2889) had time to fill, and were then cut into by later generations, this time with Mortlake pottery deposited. Another period of time elapsed and these hollows became infilled again, and later groups recut new pits and discarded Grooved Ware. These were spaces where periods of occupation were interspersed with occasions when the sites went out of use. Intercutting pits in group 964 also contained Plain Bowl in the lower fills and pits with Mortlake Peterborough Ware above (e.g. pit 561278), while Peterborough and Grooved Ware were residually redeposited in the collapsed bank material[526] of the HE2 enclosure southern ditch. These events may be similar to pit sites like Kilverstone, where temporal rhythms reflected '*aggregation on a relatively long-lived basis*' (Pollard; 1999: 87). While Kilverstone was intensely occupied (for longer and shorter episodes) in the Early Neolithic, there were later, smaller signatures of dwelling too. For example, a couple of pits in area A included a few Fengate vessels (n=26 sherds), which were associated with a small flint assemblage[527] and burnt material, while further pits consisted of n=6 sherds from a probable Durrington Walls type vessel and (n=54) pieces of worked flint in area C (Garrow *et al*; 2006). In the dataset this can be compared to pit signatures at The Grove, Cranford Lane, Kingsmead and Yeoveney, which all saw larger aggregations of people during the EN, and smaller occupations in the Middle and Late Neolithic (*see 5.3.1-5.3.4*).

Pit fills indicated temporally discrete tasks at Ashford Prison, ICSG and The Grove, as well as discontinuous episodes of dwelling at T5 and ICSG. During a Late Neolithic dwelling at T5, a cluster of twenty or so intercutting pits were also representative of multiple rhythms. For example, during one, possibly short-term stay, pit (708007) was used for a large quantity of middened pottery and a primary deposit of piercers, scrapers, knives and serrates. These were dumped in a single fill, with most of the tools having been used intensively. Flint waste was often discarded immediately (e.g. fresh debitage in

[526] Intervention or fills 146205 and 961747

[527] 69 x pieces of worked flint including 6 x burnt pieces, 3 x pieces unworked burnt flint

the upper fill of pit 594288), while tools were thrown out directly following use-life. Pottery, however, often came from the hearth or midden and was later swept up and discarded across several pits at the same time (sherds from two broken vessels appear to be distributed across this pit and a couple of fills in pit 695027). A single fill in pit (127022) was also the result of primary deposition of flintwork (their condition was exceptionally fresh), while a few Grooved Ware sherds and just over a kilogram of burnt unworked flint were probable hearth deposits. A further distinct temporal episode was represented by a deposit of fresh knapping waste in pit (827269)[528].

On the other hand, a four-pit cluster in the SE of the C3 cursus feature were kept open for repeated discard, particularly for toolmaking debitage, and then deliberately backfilled. For example, a very fresh, primary deposition of secondary and tertiary knapping waste, mainly unretouched flakes, were added to pit 531011 over an extended period of time (material was distributed across n=11 fills). These fills represented regular clearance of living areas and included hearth material (n=10 fills contained burnt material). Three vessels were also distributed over four of the pit fills, but they were shattered, burnt and were extremely friable (1.5g average sherd weight). Again, while flint debitage represented several episodes of primary deposition (where it was immediately discarded), pottery had been used in a secondary context, for cooking or firing clay, and was discarded episodically from the hearth area. Equally, some vessels had other post-breakage signatures. For example, in pit fills several Grooved Ware vessels were broken into larger unburnt sherds (6g average sherd weight), and were interpreted as the result of deliberate placement[529], while the rest of the assemblage were much more fragmented with an average sherd weight of 3.4g (see pottery specialist report: 43). While debris from pits often contained material from middens, pit assemblages reflect assorted practices associated with discard. These not only reflect complexity in domestic disposal (*see* Lamdin-Whymark; 2008), but also the potential for multiple agencies to be recognised as contributors in these complexities.

[528] TEC05 area
[529] Context 531022, pit 531011

Components of a *chaîne opératoire* were also identified in a concentrated area of activity north of the HE2 enclosure (PSH02), and in the northern ditch fill. For example, while typical woodworking tools were relatively absent from the assemblage, composite pieces included a piece of beechwood which had been worked, possibly into an axe handle, and later used for firewood (in PSH02), while a small re-shaped ground axe came from a ditch fill of the HE2 enclosure. A concentration of debitage from toolmaking (secondary and tertiary reduction) also came from the northern HE2 ditch, and pit fills just north of this feature. These were particularly concentrated in pit 531011, also notable for the large concentration of burnt and friable sherds of Grooved Ware. Where flintwork was freshly knapped and tools were used and quickly discarded, pottery was part of a hearth clearance.

Smaller clusters or single pits, along with post-built houses also indicated that persistent, as well as intermittent dwelling, operated at variable scales in other locations during the Late Neolithic, at Moor Lane, and Majestic House, for example. At Lower Mill Farm, fills from pit 22 also represented several phases of deposition while the area was kept open for rubbish. In the first instance a pit was dug out and used for an oven or hearth (the basal layer was made up of a charcoal rich soil). Not long after this a large quantity of animal bone, flintwork and several tools, including a bone scoop, were cleared up and thrown into the pit. The next depositional event may have come directly from another hearth area, and comprised a 'burnt layer' which included a broken and burnt ceramic vessel, animal bone and flintwork. A final hearth clearance was sealed by a layer of flintwork and butchered animal bone. This sequence of deposition is comparable to pit 6 at Puddlehill, where deposits of hearth material were separated (Pollard; 2002, Hey *et al*; 2011).

Living spaces mutated and were maintained, and intentional discard was not the only process to produce evidence of placemaking. For instance, fresh, larger and less fragmented pottery sherds were not confined to monumental features or sites associated with 'ritualised' practice. Large ceramic vessels were not easy items for transportation and may have been left behind, particularly if people intended to use a place repeatedly (e.g. intercutting pits at T5). While large sherds of placed Ebbsfleet vessels were interpreted as a 'structured deposition' at Manor Farm enclosure (Hoad *et al*; 2010: 33), this was not necessarily related to one particular practice. Whole or almost whole ceramic vessels (broken but not fragmented) were associated with a variety of contexts and sites, and deliberate placement of vessels had numerous meanings and associations (*see chapter 1*). Deliberate arrangements were not specifically related to monumental features, and whole vessels were also placed at sites with pit and tree-throw groups (e.g. Hengrove Farm) and isolated pits (e.g. Caesar's Camp). At Hengrove Farm placement was not related to storage as the vessel had been put on its side. At Prospect Park the base of a Grooved Ware vessel was placed in the middle of a hollow, and at Holloway Lane, sherds of flat-based GW tubs were deliberately stacked on the base and sides of a pit. These placements acted as pit liners similar to Horcott Pit and Ashville Trading Estate (*see* Hey and Robinson; 2011).

Nor were enclosures or monumental features the only places where burials were carried out and placed in the study area. Although several adults and a neonatal were inhumated or cremated, and buried in the ditches or the interior of the enclosure at Yeoveney Lodge, at ICSG a cremation burial was also located in a pit in area E. And while Neolithic communities used the river for navigation and transport, it was also used for burial. For example, a dugout longboat was found near the Colne at Old Parkbury, St. Albans, radiocarbon dated to 3980-3790 cal BC and 4035-3705 cal BC[530] (Catt; 2010: 240). This boat had been placed in a pit and contained the cremated remains of a single individual (Niblett; 2001).

Neolithic spaces were not defined by specific categories and while enclosures (Yeoveney Lodge, for example) may have attracted groups of people for more formal gatherings and activities (e.g. burial), it was also a loud, busy living and working environment involving local people as well as those from further afield, possibly on their 'seasonal orbit' (Sibbeson; 2014: 53). As a site, for instance, Yeoveney Lodge comprised a range of social arenas and task rhythms, which were impacted by local environments (e.g. for procurement and primary reduction) and non-local places of dwelling. For example, some of the decorated Bowl were similar in style to vessels from Runnymede at *c*1km

[530] OXA-3301, Hedges et al., 1994: 354

distance. Conversely, other vessels were more like Abingdon Ware from Oxfordshire, or Mildenhall pottery from Orsett in Essex (Barclay; 2002).

People engaged with each other, with objects and with their environments, through local and non-local, inherited and imported tasks and traditions, which were visible in traces of the work that went into building the houses at Kingsmead and the enclosure at Yeoveney, for example (*figure 8.16 and 8.17*). At Yeoveney Lodge local production of axes was small-scale, so timber collection and carpentry tasks, perhaps including building houses at Kingsmead, relied far more on ready-made axes imported from Cumbria or Wales. On the other hand, river pebbles were collected locally and used to make tools on an industrial scale, producing great quantities of flint blades, flakes, general debitage and *c*1,000 cores, most of which were casually flaked, uncurated pieces, similar to those produced by Mesolithic core reduction processes. The ditches and enclosure also contained large quantities of hammerstones, as well as cores and nodules used as hammers for preliminary chipping and flaking.

It may be that different groups brought local and regional ways of doing things together at large enclosure sites such as Yeoveney Lodge. It is not hard to imagine a place where people came together in the creation of a taskscape which reflects the sharing of knowledge and traditions from diverse cultural histories, including those of Mesolithic lifeways. The make-up of these communities included people who were familiar with a local environment as well as those with experience of other places across Britain and Europe. Some tasks involved elements of salvage and reuse of material; reusing broken pottery and tools to line pits, for example, reworking axes into cores or other tools, or using ground up ceramics as a pot temper. Expertise included people who could locate raw materials (flints, clays, timber etc.) and locally available food (e.g. hazelnuts, sloes, pike), as well as people who brought knowledge of other practices (e.g. growing cereal). Tasks were inherited and imported, and included a spectrum of learned knowledge and skills passed between people.

Various people, places and materials were involved in multiple tasks associated with the production of flintwork and pottery. Knowledge and techniques were passed on through tuition and performance, and it is likely that skills were learnt at early ages, and were fairly common practice, as there were no suggestions of 'specialist' potters, for instance. While cores with hinge fractures, for example, suggest novice flintknappers who were learning to make tools (Inizan *et al*; 1999: 36), experimental stages in pottery are not as visible in the archaeological record (Gibson; 2002*a*). However, a Peterborough pot from Mortlake in the Middle Thames, for example, has the imprint of a small fingertip and nail almost to the level of their first knuckle (*Figure 8.18*). This may well have been the impression of a child learning the techniques of pottery making and decoration (*e.g. figure 8.16*).

Pottery manufacture, however, was generally a localised craft, at T5 and ICSG (mainly in area 2) during Middle Neolithic occupations, and on a smaller scale in other areas (Table 20). It may have become established at particular sites, with ceramic vessels mainly used by people living in the immediate proximity, while those who lived a little further from these sites acquired pottery on a smaller scale. At ICSG, for example, hundreds of broken vessels were scattered across pits and other features (up to n=24 vessels in each deposit), compared to non-production sites like Hengrove Farm, for instance, where far fewer ceramic vessels were in use, although flintwork assemblages were comparable. However, although people at most sites used ceramics, food vessels were not always necessarily clay manufactured, and bark bowls at Manor Farm were used along with ceramic vessels. We can speculate that making and using wooden or animal skin vessels may have been a common feature of Neolithic lifeways, as well as for Mesolithic groups. Radiocarbon dates from the birch bark bowls, and carbonised residue on an associated Fengate vessel, suggest they were contemporary, although used differently. For example, the ceramic vessel was used for cooking (carbonised food residue), while the wooden bowls were used for storage or serving (non-carbonised food residue), which might have included dried grains and cereal. Similar dates came from charred residue on a contemporary vessel at Woolwich Manor Way[531] (Stafford *et al*; 2012), a site which has been associated with some of the earliest cereal in the SE.

[531] 3630-3360 cal BC

8.6 Social spaces and special places

These taskscapes produced domestic arenas of affective social-material interactions, where it is needless to define gender specific, special or specialised tasks. It should be no surprise that the domestic arena produced 'deliberate spatial and compositional structuring in deposition' (Pollard; 2002: 27), as well as more random or ad-hoc elements. Knowledge, tasks and practice had multiple temporal rhythms and composite authorship. For instance, while a small deposit of mainly knapping waste, a few tools and some fragmentary Late Neolithic pot sherds were described as a domestic dump at Terminal 5[532] (Framework Archaeology; 2010), there was very little to distinguish this as a separate category from anything else in the dataset. Most pit, ditch and tree-throw deposits contained examples of domestic practice and settlement, as well as evidence of mobile lifeways, and included formal elements of dwelling which have been identified as structured or special. For example, a substantial pit deposit at 'Coneybury Anomaly' also contained weathered and fragmented pottery from secondary refuse, which had also been organised into groups rather than casually dumped (Richards; 1990, Cleal; 1990).

Neolithic material at ICSG reflects a variety of composite rhythms in domestic life. For instance, ceramics were made across the site at various scales, and used in a variety of contexts. Ground up pieces were used for grog tempering, or for lining a hearth or a pit oven to fire wet clay. Fragments of pottery vessels were also used as a liner for mainly flat based hollows or pits, similarly to Mount Sandel, where hollows were lined with animal skins for storage and longer stays (Small *et al*; 2018). On the other hand, larger pottery sherds may represent the placement of whole vessels. Pits functioned as quarries, cooking holes or ovens (e.g. Home Farm) and fire pits (including those used for firing ceramics), places to store food or to use as pot stands for storage, as well as being used to discard rubbish (Garrow *et al*; 2006). At the same time, wider ranges of material probably included wooden items, baskets, cloth and other fabrics, foodstuffs etc. which have not survived into the current archaeological record.

[532] Pit 695058

The area around ICSG was intensively occupied, particularly area 2, for an extended duration where enclosures were built, flat bottomed pits were dug, lined, kept open and refilled many times. However, once the site was vacated, some time elapsed before the same spaces were used again (a lack of intercutting features). Tasks and living spaces were, however, spatially organised to some degree, with distinct areas for cooking and eating, as none of the pits in area 1 nor in area E were used for the disposal of food items (there were no hazelnut shells or animal bones). On the other hand, hazelnuts were found in fairly large quantities across most other areas (*appendix xv*). Area E, also, while being part of the general distribution of fired clay, was the only pit area to be associated with cremation and burial. Several more cremations were buried in a penannular enclosure ditch[533] and in the ditches and central enclosure of a double ring ditch feature[534]. Burials were all radiocarbon dated to the Late Neolithic and may be associated with Grooved Ware phases of occupation, within several generations of one another.

While the causewayed enclosure at Yeoveney was used for burial and funerary practice, this was not necessarily consistent or a primary task. For instance, while several inhumations were placed, most human bone was scattered rather than articulated (Robertson-Mackay; 1987, Bradley; 2004). And conversely, while tasks included mortuary practice, this was very much a place of the living. Travellers may have headed here, with exchanges made between people from Scotland, northern England, Wales and possibly Italy. In fact, dominant activities were often associated with more quotidian tasks (e.g. flint procurement). Although burial may have created emotional attachment and tethering (Harris; 2010), processes of place attachment were not confined to mortuary practices, or defined by enclosures as distinct places fixed with functional, static meaning. Enclosures were also used for daily living, where houses were built and pits filled with domestic debris (e.g. Horton), places for the coming together of people and things, in burial, dwelling, working etc.

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[533] G2008
[534] G2007

The meaning and distinctions of places morphed and blurred, and sites were also multi-temporal. For example, the outer ditch at Manor Farm was a later addition to an Early Neolithic circular enclosure. At Ashford Prison pits and postholes were a later construction, dug into the enclosure ditch, and may have formed some sort of palisade, while a cluster of pits were also cut into the enclosure. Further pit clusters and postholes from some kind of structure were located in area C and surrounding the ditch, while linear ditches were cut between the enclosure and a palaeochannel (*Figure 7.56*). Hengiform monuments and ring ditches (e.g. Mayfield Farm, and the HE1 and HE2[535] enclosures at T5) may have been 'formative' or 'proto-henges' with mounds and palisades as later add-ons (*see* Burrow; 2010, *chapter 3*). At Staines Road Farm in Shepperton, the henge element of the enclosure also post-dates Early Neolithic burials and a ring ditch (Jones *et al*; 2008). Linear earthworks and ditches were also used over consecutive generations in the Neolithic, often built from the artefactual footprints of previous generations. The T5 cursus ditches (C1 and C2) postdated a timber post 'avenue' (Framework Archaeology; 2010: 53-4, Powell *et al*, 2015: 7), Plain Bowl pottery came from the basal layers and Grooved Ware pottery from the upper fills (FA; 2006/2010: 49-51, table 2.7). Rather than serving to '*create, formalise and celebrate an emergent community*' (FA; 2006/2010: 52-9), communities were actually well established in the area before construction and use of these earthworks. And, while it has been suggested that '*cursuses may be considered to relate to the concerns of the living, and were perhaps used in ceremonies of transition and initiation*' (Lamdin-Whymark; 2008: 173), they were actually part of multi-authored domestic taskscapes, which also produced temporal rhythms of tethering.

Rhythms of temporality included prolonged periods of settlement at ICSG, akin to Garrow *et al*'s 'developed' clusters at Kilverstone (2005). By this I mean that groups of fairly standard circular flat-based pits were kept open for an extended time, with hearth or midden material cleared up and thrown into several of these pits repeatedly. On the other hand, artefactual material at T5 suggested frequent, repeated occupations and single seasonal tasks, including the collection of shed red deer antler at T5 during the early spring. Developed pit clusters might also be found between Sandy Lodge Golf

[535] Slightly later than the HE1 enclosure

Course and Bathend Clump, where features were comparable in form and dimension. Multiple seasonal activities were also represented at Manor Farm, Horton, where, for example, shed antler was similarly collected during the spring, but deer were also hunted and butchered over winter. A combination of barely worked and intensively worked nodules at Yeoveney Lodge (large quantities of preparation and rejuvenation material) suggested inconstancy in the use of available resources, and could also be related to fluctuating intensity or duration of activity, as a result of both longer and shorter occupations (*see* Garrow, 2006: table 2.14 & table 2.19). Expedient or barely worked cores would be heavier and less transportable, reflecting longer stays, while heavily worked nodules were lighter and probably curated for travelling. ICSG, Yeoveney Lodge, and T5, for example, were all used as sites for shorter and longer episodes of dwelling during the Neolithic, perhaps seasonally.

It may be that *'the desire to alter a place physically, to secrete material culture within it, and to create a memory of what had happened there, appears to have been intimately related to the fact that people had ultimately to leave it'* (Garrow; 2006: 12), but the study dataset suggests that people were also returning.

Chapter 9: Inherited taskscapes

Although the taskscape of the Colne changed from one generation to the next, along with the places and practices associated with settlement, many traditions were passed on and continued for thousands of years. The use of tree throws, hollows and pits were consistent features in the Colne Valley throughout the Mesolithic and Neolithic (Table 27). The quantity of sites with tree-throw features is fairly stable across time, and although pit use increases in the Neolithic, this may reflect the fact that more Neolithic sites were identified in the dataset. Post and stake-holes are in evidence from the Late Mesolithic, suggesting the most lightweight structures were in use during the Early Mesolithic. Ditches and gullies are a feature of Neolithic sites only, so Late Mesolithic structures were unlikely to have foundations. Large, ditched enclosures and linear banks and ditches were also only evident as Neolithic practice (Table 28).

Table 27: Consistent and changing site features throughout the Mesolithic and Neolithic

Date	**Sites with features in the Colne Valley (site count)**				
	Tree throw/hollows[536]	**Pits**	**Post/stake holes**	**Ditch**	**Gully**
Early Mesolithic	3	2	0	0	0
Late Mesolithic	3	7	2	0	0
Early Neolithic	3	10	7	5	3
Middle Neolithic	4	9	2	4	1
Late Neolithic	4	11	4[537]	5	0

[536] Tree throws, hollows and pits are sometimes used interchangeably as descriptions in records, particularly for the Mesolithic

[537] See 7.3.1: post-hole is earlier than Late Neolithic pit at Nockhill Wood

Table 28: Ditched sites in the Neolithic

Date	Sites with earthworks (large, ditched enclosures or linear features with surrounding banks and ditches)	
Early Neolithic	3 sites	Circular ditched enclosures at Yeoveney Lodge and Manor Farm, Horton Linear bank and ditch (C1 cursus) at T5
Middle Neolithic	4 sites	ICSG: circular ditches (G2007 and G3002), long enclosure (G3001) and U-shaped ditched enclosure (G2008) T5: Linear banks and ditches (C3 and C4 cursus) Manor Farm, Horton: circular outer ditch Ashford Prison: ring ditch/horseshoe ditched enclosure
Late Neolithic	3 sites	T5: horseshoe shaped enclosures (HE1 and HE2) Majestic House: ring ditch Mayfield Farm: double ditched enclosure (SML062) and ring ditches
Early to Late Neolithic	1 site	Bathend Clump: double banked enclosure

Consistency was also evident in the use of raw materials which were primarily derived from river gravels throughout the Mesolithic and Neolithic (Table 11 and Table 23). In the Mesolithic, proximity to source material was a factor and fresh chalk artefacts were only found in the Upper-Middle Colne. By the Neolithic, geographical provenance appears to be wider, with chalk, sarsen and igneous rock artefacts brought to many sites across the valley, either as raw material or as made items. Having said that, quartzite and sandstone hammerstones were also associated with Late Mesolithic material at Sandy Lodge.

In terms of distinctiveness within the wider Thames area, the Colne valley suggests closer relationships between Mesolithic and Neolithic settlement sites than those which are generally more widely spread across the Thames and Kennet, where places tend to be suggestive of either Mesolithic or Neolithic communities rather than phased occupation. In the Lower Colne, around T5 and Bedfont Court, for example, rhythms between people-places-things in the Later Mesolithic set the context for the monuments and settlement which came during the Neolithic around Heathrow. Similarly, the Later Mesolithic presence here was preceded by smaller-scale rhythms of occupation, and connections across the landscape. Knowledge of places and resources were passed on through generations, through local journeys, and through on and off-site interactions within the environment. A transition from Mesolithic to Neolithic is much less sharply edged because we are able to see relationships that existed between people and places, knowledge that had to be shared for later generations or communities to become tethered. Colne Valley sites of different sizes and signatures show the multiple-taskscape nature of settlement, which meant many things over time, and were not produced by the material culture and traditions of a single people.

9.1 The impact of multiple agency: making, remaking, and marking places

The area of study was arbitrarily defined by the landscape surrounding the river Colne, from the Chilterns out to the Thames, but is not meant to imply that people were contained within these limits as a 'site'. One of the main issues in commercial archaeology, for example, is that the site can become the landscape, rather than a part of it, and interpretation becomes scaled to the site.

Geomorphologically, the study margins also meant the archaeological dataset was primarily derived from material on or adjacent to the floodplain, with little data collected from interfluvial environments in higher upland areas. However, the alluvial corridor and terrace edge of river floodplains have historically been rich in Mesolithic and Neolithic archaeology, notwithstanding methodologies designed to address the potential for geomorphological bias. For example, after a programme of fieldwalking and developer-funded projects were concentrated on areas away from the floodplain in the Nene and Ouse (on the valley sides and interfluves), Mesolithic and Neolithic material were still found to be focused on the floodplain and valley edge (Mills; 2006, Parry; 2006). On the other hand, environmental data may be more representative of higher valley landcover as pollen counts represent averages from a wider landscape (Bates; pers comm.).

Although my research has concentrated on the structure of a river valley, from the Upper to Lower reaches of the Colne, this is unlikely to have been a valid conception for people who were inhabiting it at the time. Not only would it have been part of a larger inhabited landscape, rather than a series of sites in the Colne Valley, but it was more probably experienced in parts, similar to the Columbia River Indians (*see* Haughey; 2016). This would mean that 'off-site' tasks such as collecting plants meant a back and forth between places and created markers and familiarity in the landscape, which could vary in intensity and focus (*see* Mills; 2006). Mills, for example, talked about movement in both the physical and conceptual sense, as a structuring process in the creation of a sense of place (2006). Prehistoric places became significant and meaningful through focused aggregated movements or '*public mobilities*' (e.g. feasting at 3WW), those which were ad-hoc or '*private mobilities*' (e.g. one or two person actions at Long Lane), as well as the areas in between which had little or no movement (Mills; 2006). Different traces were generated according to whether a person was alone, or in a family or large group, if they were hunting, foraging, fishing, experienced in their task or learning, were strangers to an environment or familiar with it, etc. (*see* Binford; 1978, Conneller and Overton; 2018: 290).

Neither were the places located between scatters or sites devoid of agency and action, and Mills has suggested that archaeologists need to deal with time reflexively in order to understand these spaces as much as the dynamic rhythms of the sites themselves (2006). For example, by shifting our focus 'off-site' and away from spaces demarcated by Neolithic houses or monuments, we are better positioned to interpret the processes by which these places obtained meaning or lost focus (*ibid*). This is also a concept which has recently come up in discussion of Mesolithic 'sites' (MAHGR; 2021).

Sometimes there was a 'fall-off' in the use of sites themselves (Mellars and Dark; 1998) and places became 'out of focus' (Mills; 2006), while there was also a distinction in the use of landscape over time. In the study area, Early Mesolithic settlement clustered on the valley bottom of the Middle Colne, and smaller, more temporary dwellings were located on the floodplain edge in the Lower Colne. At times some of the places went out of use due to environmental changes. For example, in the Late Mesolithic the wetter Middle Colne valley floor became '*out of focus*', while the terrace edge of the Lower Colne became more frequently and intensively occupied, a pattern which continued and became established during the Early Neolithic. Mesolithic settlement focused on the valley bottom, and on gravel islands and ridges of floodplain, similar to Late Mesolithic sites in the Ouse and Nene (Mills; 2006, Parry; 2006). Early Neolithic settlement followed similar patterns where the same places on the floodplain and valley terrace continued to be inhabited (*also see* Mills; 2006, Parry; 2006). However, '*this was not to say that* (Mesolithic and Neolithic) *people did not move outside of the floodplains/valley sides but that repeated areas of dwelling and taskscape were focused in a riverine setting*' (Mills; 2006: 294). In fact, in the Colne Valley, some Early Neolithic sites became established further away from the floodplain and the valley floor (e.g. Cranford Lane).

Similarly to prehistoric groups from the Nene and Ouse, 'off-site' tasks branched off into woodland along tributaries, and along the side of the valley in the Upper Colne. Task-trajectories choreographed and shaped these inhabited places through social and emotional geographies (Sauvet; 2019, Harris; 2010), places made familiar and given tether through kinship attachments, links to the past, burial, or mental cartographies, for example (e.g. Collignon; 1996). The knowledge of where to find fresh chalk at Dewe's Farm, or a choice of flint at Oakend, for example, might provide anchor points for generations of people, and a tethering through which people developed knowledge, familiarity and relationships with plants, woodland, particular landscapes and sections of river, as well as social relationships (e.g. Davies *et al*; 2005, Overton and Taylor; 2018). However these processes are labelled, they represent the attachment or affect that is the agency between people, places and things, perceptions of the world as relational constructs. This is situated mobility, how movement goes from the experience of an environment to an association, becoming formed as a concept or schema, and developing *in situ* as embodied (situated) knowledge (Haraway; 1988). Associations and attachments to places were created and reworked through tasks associated with non-human and human action and objects (Ainsworth; 1968, Bowlby; 1969, Low and Altman; 1992, Bell and Spikins; 2018, Ugwuanyi and Schofield; 2018). Tasks brought people and things together in certain places and these were the social arenas from which other places and practices took on their own rhythms.

Focus and meaning were also given to places through movements people made for travel and the exchange of tools, practices and information, for example. These could involve short local journeys as well as travel between regions or countries (e.g.

Cumbrian, Welsh and Italian axes). The tracks and waterways people used might follow established routes taken by generations of people, while new ones were also carved out by tasks such as collecting timber or clearing space for crops (*see* Bell; 2020). Some were created by repeated movements of groups to and from a resource (e.g. PA4), others by singular small-scale food collection (e.g. Long Lane). These were busy taskscapes which included novice and expert practitioners, mundane activities and special events including celebration, burial, memorial etc. For example, large-scale flintworking at 3WW incorporated networks of activity which included sourcing and testing nodules, learning and teaching toolmaking, repair, maintenance and use. Sometimes events were on a small-scale (e.g. fishing and hunting small mammals), while at other times feasts may have occurred (e.g. red deer). Some actions were formal and planned (e.g. the selection of red deer long bones at 3WW and the caching of flint nodules at Sanderson's), while others were ad-hoc.

9.2 Scales of practice and stereotyping tasks

The methodology of this study was designed to reflect the different scales at which routes and places were inhabited and to think about how these rhythms could establish a focus in particular locations. Artefact type, location and density were used to estimate the scale at which tasks were performed, as well as rhythms in their authorship and temporality. One of the difficulties I found, however, in analysing large quantitative datasets, is that it can be difficult not to let quantifiable data become prescriptive. For example, large densities of primary knapping waste are generally associated with sourcing raw material and the early or prototype stage of flint tool production. This can become the focus rather than looking for scales of action, multiple agency and 'private mobility', both on and 'off-site'. This can mean that tasks themselves become typecast, putting interpretations at risk of being framed within gender or age-specific binary distinctions, for instance (see Finlay; 1997, 2000, 2003, 2006).

However, my task-based approach did bring in scales of practice, not only by using densities and distributions of artefacts at particular sites, but also at the 'off-site' and between site level, something which can attempt to address multiple rhythms and diversity of authorship. For instance, going back to the example above, large quantities of primary flint waste at Oakend associated the site with flint procurement, testing and initial reduction. However, there were also signatures of '*private movements*' including ad hoc flintworking where an axe was reused by one resourceful person in order to knap blades, while between site actions might be identified by a lack of burnt material at PA4 (*see* Wessex Archaeology; 2009).

For Neolithic narratives, places such as Yeoveney Lodge can also be in danger of being reduced to a bland or prescriptive 'causewayed enclosure site', focused on the seriality of construction (*see* Barrett; 1999, *and 2.5*). However, multiple task-rhythms included '*public mobilities*' of large-scale flint sourcing, as well as construction, and over time communities included local people, as well as people who moved around Britain and beyond, trading tools, expertise, stories, information. At the level of '*private mobility*' there were signatures of people learning to make things (e.g. laurel leaves) alongside experienced flintworkers, for example. Neither were task-rhythms confined to human action. For example, while Overton and Taylor (2018) demonstrated how the multiple agentic actions[538] of humans and non-humans worked together at Lake Flixton, similar reciprocal relationships shaped dynamic taskscapes in the study dataset. For instance, collecting plants and timber from woodland areas at 3WW, or cutting back sedge from the floodplain created spaces and environments for new types of flora or for fresh shoots, attracting deer, insects, fish and waterfowl etc., while beavers also created environments for particular types of flora and fauna (e.g Whooper Swan).

Defining scales of practice, however, can also be complicated by methodological aspects of archaeological practice, as well as archaeological interpretation. For example, Mills noticed that her methodology was mainly defined by the scale of developer-funded projects in the study area, and may have missed the '*interplay between the routine/extraordinary*' (2006: 295). The size of an excavation can influence how many or what type of artefacts or ecofacts, are recovered, and where time or money is limited for sampling and sieving, smaller pieces of flintwork such as microliths or microdebitage, or environmental material, may be underrepresented. This is also a potential issue for 'off-site' archaeology, where surface spot finds are unlikely to include microdebitage or

[538] See Rowe; unpublished for details of agentic action

environmental material. For example, work carried out by MoLAS at Cranford Lane was acknowledged as being hampered by a lack of staff and ample time to fully excavate (*see 7.2.4.1*). On the other hand, large-scale projects (e.g. T5, Hs2) might be more likely to have a budget for environmental sampling, for instance. The depositional environment is another factor which influences density, as preservational contexts vary and organic materials will only survive in environments such as waterlogged or burnt contexts. Other methods of practice contribute toward chronological bias, for example, where excavation methodology is designed for particular types of archaeology.

Sites with Mesolithic and Neolithic activity in the Colne Valley span long and diverse histories, and interpretations can present problems with 'scalar tensions' and problems with chronological markers. On the one hand there is a long chronological duration, while on the other analysis is generally at the scale of the site or typology, for instance. For example, if a new generation is roughly every 25 years, and a lifespan is *c*70 years[539], this constitutes several hundreds of generations of people over thousands of years. Radiocarbon dates in the study were limited to a few sites, and Bayesian modelling, for example, could only provide shorter-term, generational dates for the causewayed enclosure at Yeoveney Lodge. This tends to mean broad chronologies where it is easy for particular characteristics to become part of a Mesolithic or Neolithic 'package'. What may be specific to a few generations of people, from a few specific sites, can become generalised practice, '*smeared across regions and time periods*' (Elliott and Griffiths; 2018; 349, Barclay; 2009). For example, if I had only used the Bayesian dates from Yeoveney Lodge, which were specifically related to elements of construction, this would have completely missed the extended and multi-rhythmic taskscape suggested by the study data, 'leaving the issues of diversity or dynamism *within* a block of time neglected' (Elliott and Griffiths; 2018: 349).

Although there were typologically distinguishing features within my chronological markers and categories (*see chapter sections*), I have tried to avoid a narrative dominated by a particular type of site or artefact, and I have not focused on an 'absolutely' dated moment in time. This is not only because of limited radiocarbon data,

[539] See Griffiths; 2012, Whittle et al; 2011

for example, but also because there are generational overlaps and blending of material culture traditions in the dataset (e.g. Dewe's Farm and The Grove). I hope to have given a sense of the mixing and merging of people, places and things. 'Transition' from any chronologically marked point to another, including Mesolithic to Neolithic lifeways, were part of extended, inhabited histories, rather than a specific moment or one-way process.

For example, the study data suggested an extended taskscape in the Lower Colne Valley, which was linked to the construction of the causewayed enclosure at Yeoveney Lodge. This area was part of a taskscape which was known and inhabited by many groups of people over an extended temporal span, maybe through '*rumours*' and '*tall tales*' (see Warren; 2000: 103). Bayesian dating at Yeoveney Lodge helps to frame stages of construction and use in generational terms, but the material is also representative of knowledge, skills and traditions inherited in multiple ways, including those which came from Mesolithic lifeways. People who were living in parts of 'Neolithic' Britain, for example, continued to learn how to make microlithic tools for several hundred years after leaf arrowheads had supposedly replaced them as a hunting tool (Griffiths; 2014, *sensu* Butler; 2005). The dataset also suggests that Early Neolithic groups at Yeoveney may have taken on Indigenous knowledges and practice, for sourcing and testing raw materials, collecting food, medicinal plants etc., as well as trading knowledge and resources with groups of people from Cumbria, Wales or Italy. For example, in the context of Aegean Neolithicisation, Reingruber talks about how people chose to adopt some practices while ignoring others, and how these were differently spread according to 'motility' and networks of communication (2017). Particular styles of ceramic vessels, for example, were produced through a blending of local environment, materials, and different cultural traditions, and the purpose of them (e.g. heating food or liquid) were not specifically Neolithic practices. People carried out similar tasks using different raw materials which may not have survived in the archaeological record. For example, in the study dataset, birch bark bowls were still being used along with Peterborough Ware at Manor Farm in Horton.

9.3 Public inheritance, research and commercial practice

The way in which this material is contextualized not only affects the academic narrative, but also the way in which prehistory is translated for commercial practice, and into public discourse, which affects the way archaeology is carried out, reported and understood, and has an impact on the way we use heritage. For example, reaching wider audiences and engaging the public with anything other than a chronologically specific, stereotypical hunter-gatherer Mesolithic, is still something which needs work (*see* Milner *et al*; 2015, Billington; 2016, Henson; 2016). On the other hand, my approach has tried to take tasks out of the confines of a 'Mesolithic' or 'Neolithic' way of doing things. I hope to have challenged distinctions between 'mundane' and 'special' practice, 'specialisms' or 'domestic' arenas, which should make it easier to reframe authorship and redefine chronologies. However, while a task-based methodology can start to do this, one of the problems in constructing multi-authored narratives is the tangibility of the archaeology. For example, in the study dataset there were no above ground features and most of the artefacts were archived, sometimes as part of a collection but often as random unconnected pieces. Some small assemblages were on display in local museums or libraries, but these places are either run by volunteers or by staff without the time or budget to transform the material into more dynamic histories. However, there are ways of introducing alternative interpretations into public consciousness. For example, HUMAP (Humap – The user-friendly interactive mapping platform), has been built on the same principles as the Layers of London project (Home | Layers of London | Recording the Layers of London's Rich Heritage), and provides opportunities for all sorts of documents, maps, excavation reports etc. to be added and accessed by communities, professionals, academics etc.. There are also community engagement projects which directly involve local participation in heritage and archaeology, including methods conducive to locating and recording Mesolithic (and Neolithic) 'off-site' flint scatters (e.g. Wickham-Jones; 2021*b*).

Access to data is equally important and impacts on how the archaeological record is translated. LHER's, for example, are a public resource utilised in research agendas nationwide (e.g. Oxford Archaeology; 2019). They generally provide the starting point for a background to commercial projects, synthesis and publication, which are also updated with data from resulting fieldwork. On a national level, Historic England's Thematic Research Strategy for Prehistory (TRSP; 2010: 32) proposed the development of standards for HER's, making them (as well as related resources) '*more accurate, relevant and useful for prehistory*'. A Strategy for Researching the Historic Environment of Greater London refer to NHPP (5C1) '*enhancing the capabilities of historic environment records*'[540] (Museum of London; 2015), to improve access and draw attention to the research opportunities of unpublished prehistoric data (grey literature, archive research, backlog publications etc.). As a consequence they should provide the opportunity to integrate small-scale or 'background' material into site narratives in the context of 'off-site' actions, something which is particularly important for Mesolithic research agendas (*see* Billington; 2016, Blinkhorn and Milner; 2013). Oasis has also been redeveloped (Oasis V) for enhancement of archaeological archives. This resource aims to improve links between digital, physical and documentary material via the ADS online database. Not only that, but if it is utilised in the initial stages of commercial projects (e.g. for WSI's or Project Plans), relevant research frameworks will be flagged up for consultation.

The cyclical nature of archaeological practice means that the kind of narrative produced is also determined by academically driven research objectives. For example, the South East Research Framework resource assessment talks about how Grooved Ware assemblages were largely absent (in the SE of England), and restricted to coastal sites, more or less as a consequence of a region lacking in henges and related monuments (Barclay; no date). However, Grooved Ware assemblages were part of an active Late Neolithic taskscape in the Colne Valley, which did not include features that were recognisable as henges (although ring ditches at Mayfield Farm and T5 may be proto-henges, *see 4.4* and *8.6*). If this study methodology had started by trying to identify 'henge' monuments in the region the focus on identifying henges would have produced a completely different narrative.

The other question is how academic research and objectives are operationalized or translated into commercial practice, as methodologies are not always adapted to anticipate particular types of archaeology. The TRSP, for instance, has very generalised

[540] SA12

strategies (*see 1.1*), and research frameworks might be more easily translated if they were explicit. For example, there could have been an opportunity to produce a methodological framework for investigating contemporary Late Mesolithic and Early Neolithic activity at sites like The Grove and Dewe's Farm. While parts of the study area had the potential to encounter *in situ* lithic scatters in the alluvial sequences of floodplain sediments, conventional evaluation methodologies have not usually been effective for scatters located in the ploughzone (*see* Billington; 2016: 361). The legacy of this thinking was demonstrated at The Grove where Mesolithic material was predicted in the alluvial deposits, but Neolithic artefacts and features were also unexpectedly encountered in colluvium. Another similar example comes from an Hs2 Tier 1 contractor (Costain-Skanska joint venture) in their initial project plans for trial trenching in the New Years Green area, adjacent to Dewe's Farm. In this case the potential for a robust methodology was limited by a misunderstanding that Neolithic activity in the area was 'limited' to Kingsmead Quarry (Tetlow; 2019)[541]. This was particularly unhelpful considering that priorities for knowledge creation in the GWSI: HERDS for Hs2 included:

'*Identifying settlement location and developing models for settlement patterns for the Mesolithic, Neolithic and Early Bronze Age'* (KC5), *'understanding the evidence for change in the environment and management of the landscape for the Mesolithic and Early Neolithic periods'* (KC6), '*exploring the degree of continuity that existed between Late Mesolithic and Early Neolithic communities in terms of population, mobility and subsistence strategies'* (KC7). Furthermore, what was the understanding of 'settlement' for these methodologies? Did it factor in pits as evidence for settlement, for example (Blinkhorn and Milner; 2013; 4.1.10), or wider landscape synthesis which includes 'off-site' and 'between site' material.

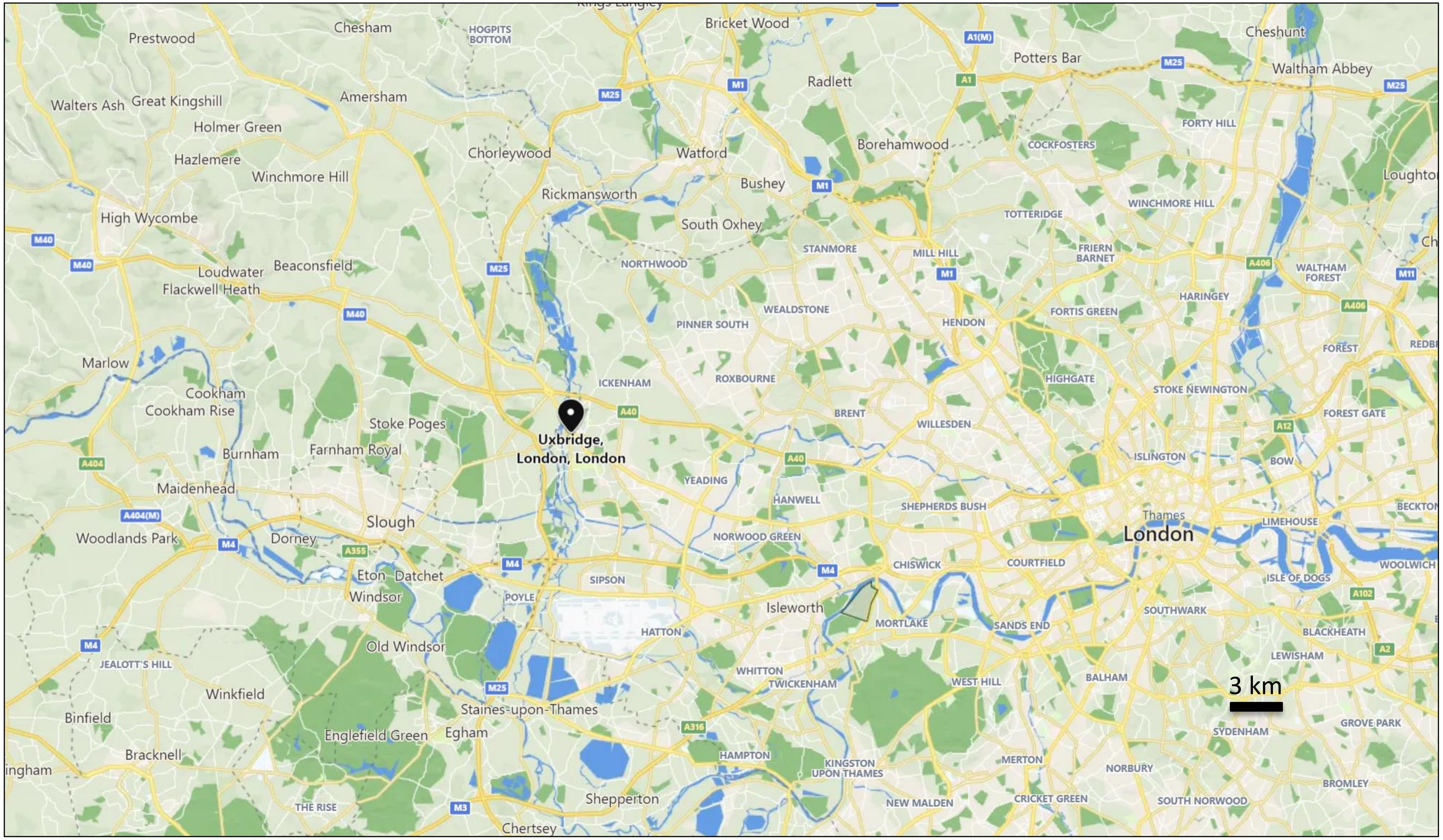
Since sites are artificial constructs, created through the nature of archaeological practice and interpretation outlined above, they are not something which can be defined and tightly dated. There is no such thing as an 'Early Neolithic settlement' or 'enclosure' site, for example, since it was part of a multi-temporal taskscape, and witnessed multiple

[541] Document number: 1EW02-CSJ-EV-PLN-S002-000054

peoples with different rhythms in tethering, and the coming together of different cultural practices. It is the relationships (scale, type, context etc.) between the artefacts that is important, and how they connect as a task-based *chaîne opératoire* of people, places and things. For example, Early Mesolithic sites were connected at different scales through human and non-human agency in the Middle Colne Valley. Some places saw extended seasonal dwelling (3WW and Sanderson's), perhaps over generations, where knowledge was passed on, and where spots like Oakend or Dewe's became known for their access to raw material. Connections between these places, for example, became visible through the type and scale of tasks, and how they were distributed across the valley bottom, the course of the river, its tributaries and woodlands. This was only achievable through interrogation of all available material, rather than looking for sites which could fit specific criteria. A small scatter of axe-sharpening flakes at Oakend, for example, or distribution of axes (*figure 5.71*), represented '*subtle woodland management and localised clearing*' (McFadyen; 2006). It is for this very reason that it should be an imperative to make use of a diverse archaeological record, to bring together the rhythms between 'sites' and spot finds, and to see overlaps or gaps in and between 'absolute' dates, typologies etc. as a strong argument for the integration of diverse material sources and types for standard practice.

Chapter 1: figures

Figure 1.1: Uxbridge, Middlesex (Bing Maps)



Chapter 2: figures

Figure 2.1: Racks for drying or smoking fish (Leary; 2015)

Figure 2.2: Cranbourne Chase study area and Early Neolithic monuments in South Wessex (Barrett et al; 1991: figures 1.1 and 2.18)

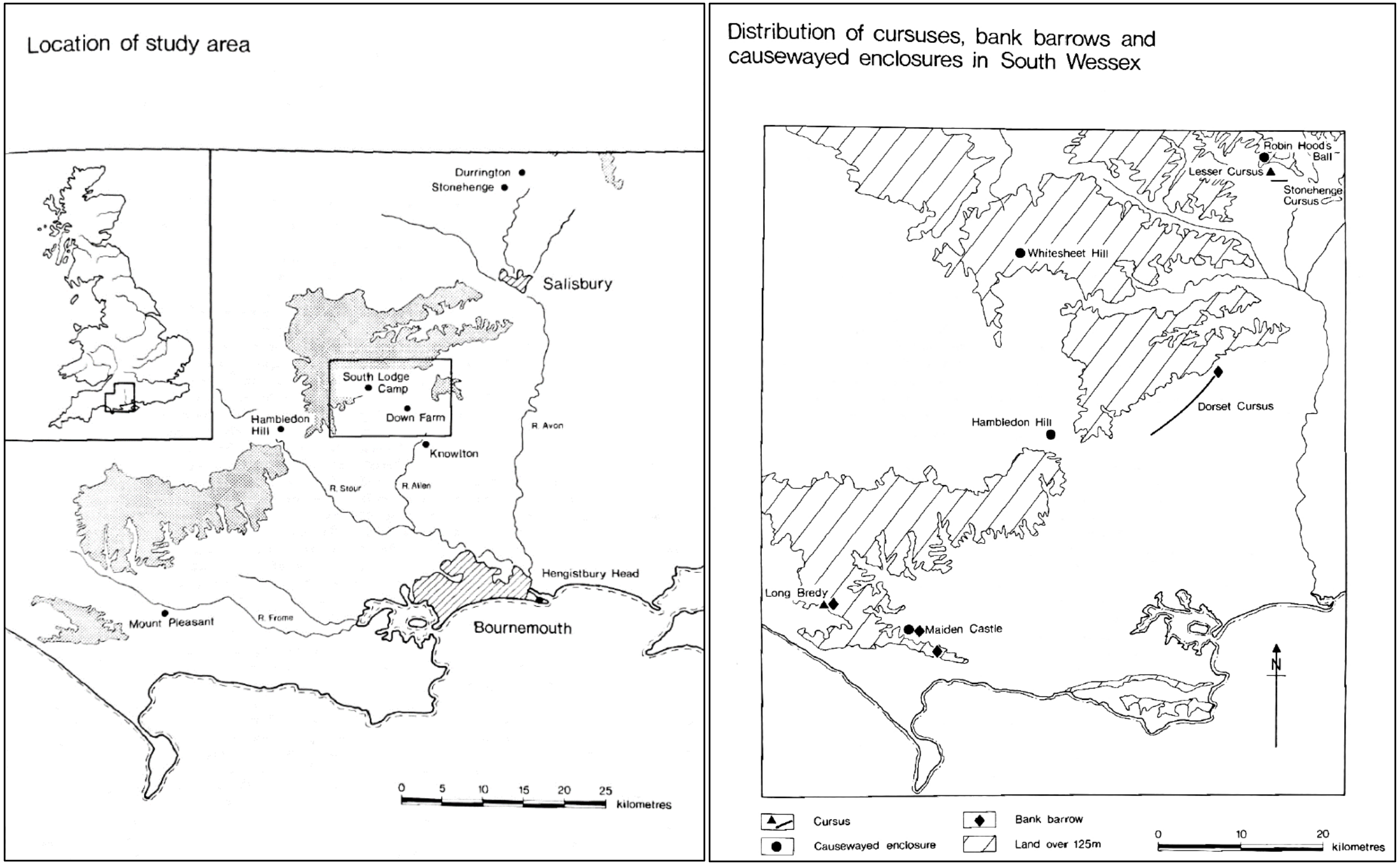
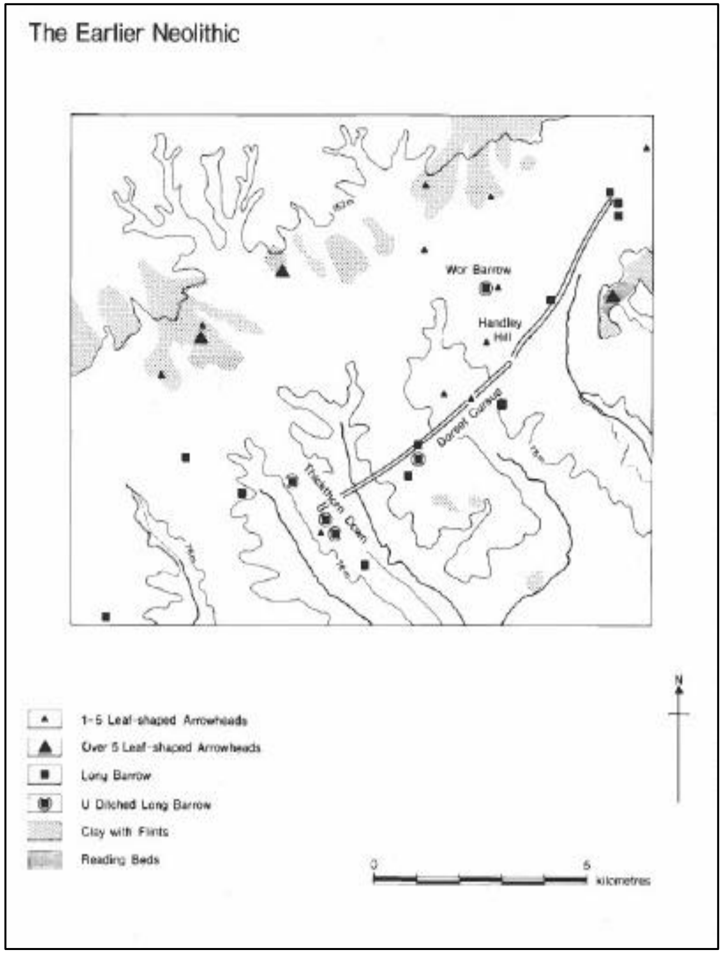
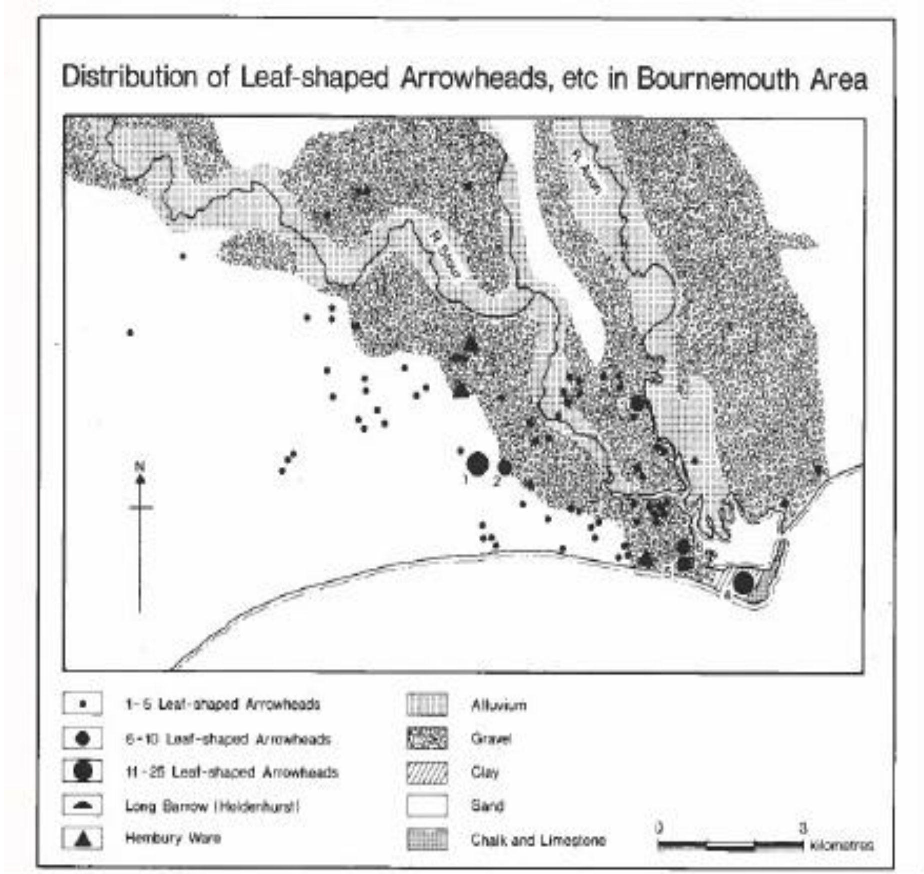


Figure 2.3: Distribution of leaf arrowheads in the Cranbourne Chase area (Barrett et al; 1991: figures 2.4 and 2.5)





Chapter 3: figures

Figure 3.1: Methodology in diagrammatic form

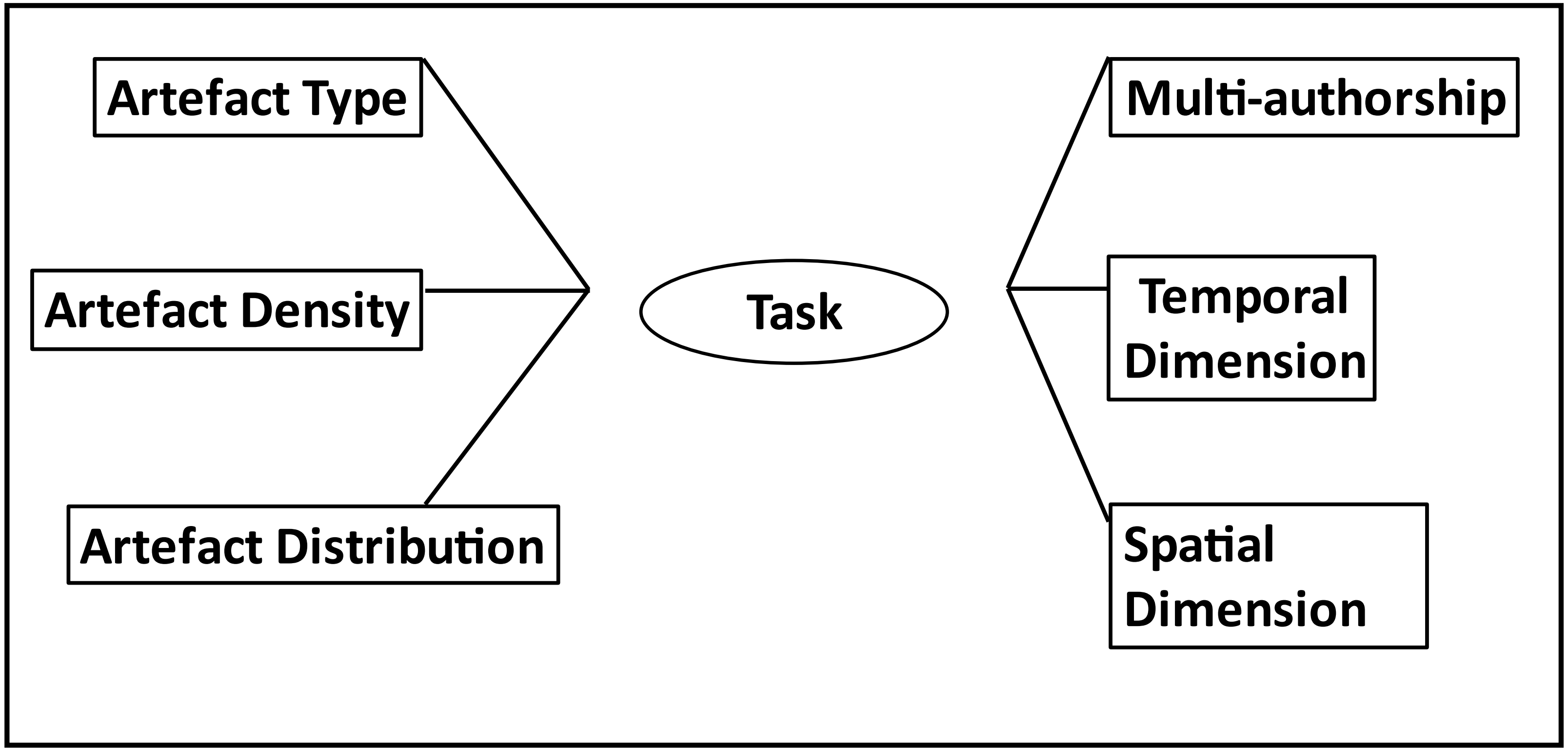


Figure 3.2: Microliths as harpoon barbs (after Clarke; 1976)

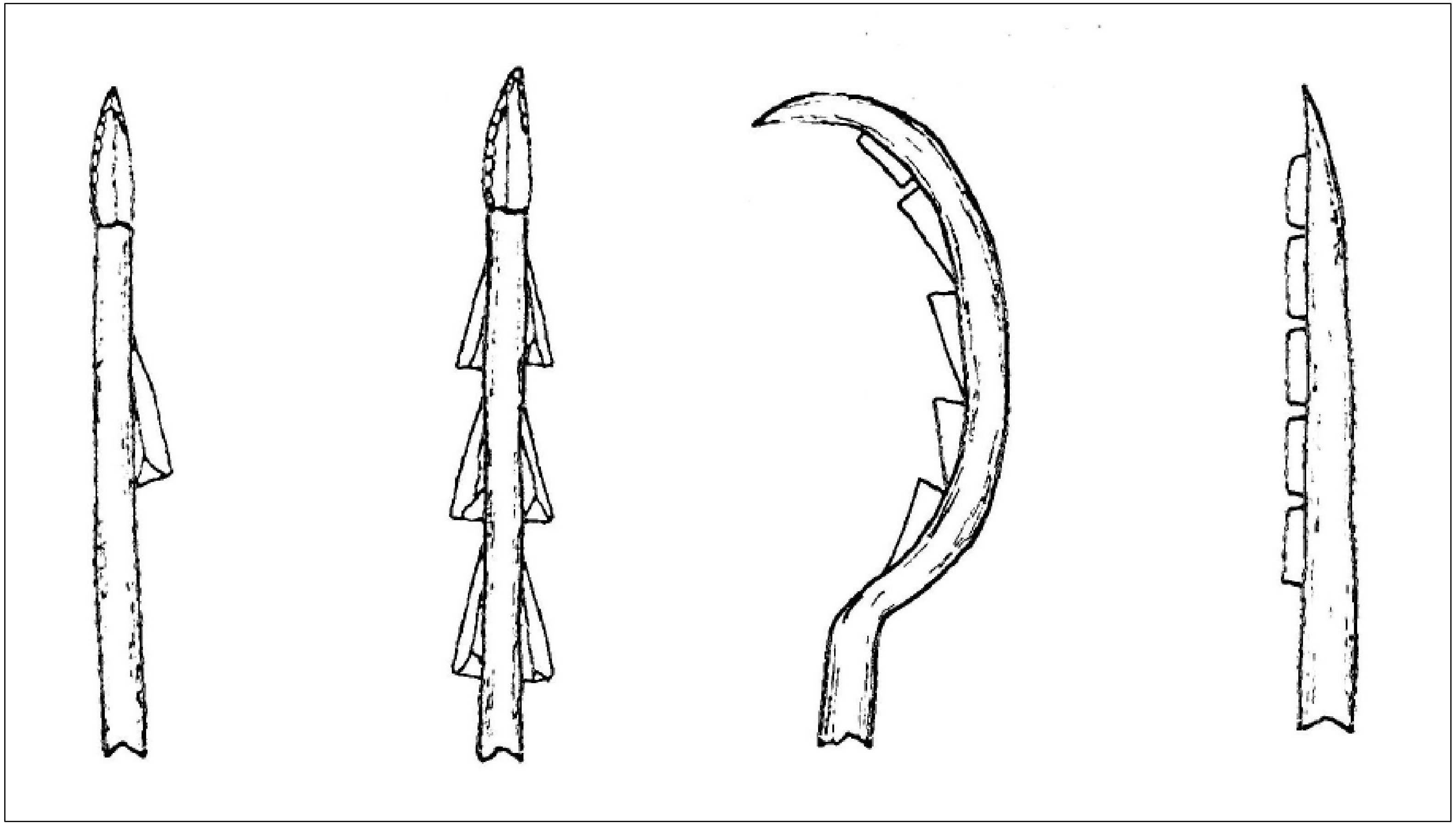


Figure 3.3: Study area and regional topography (Chilterns to the north and Thames to the south)

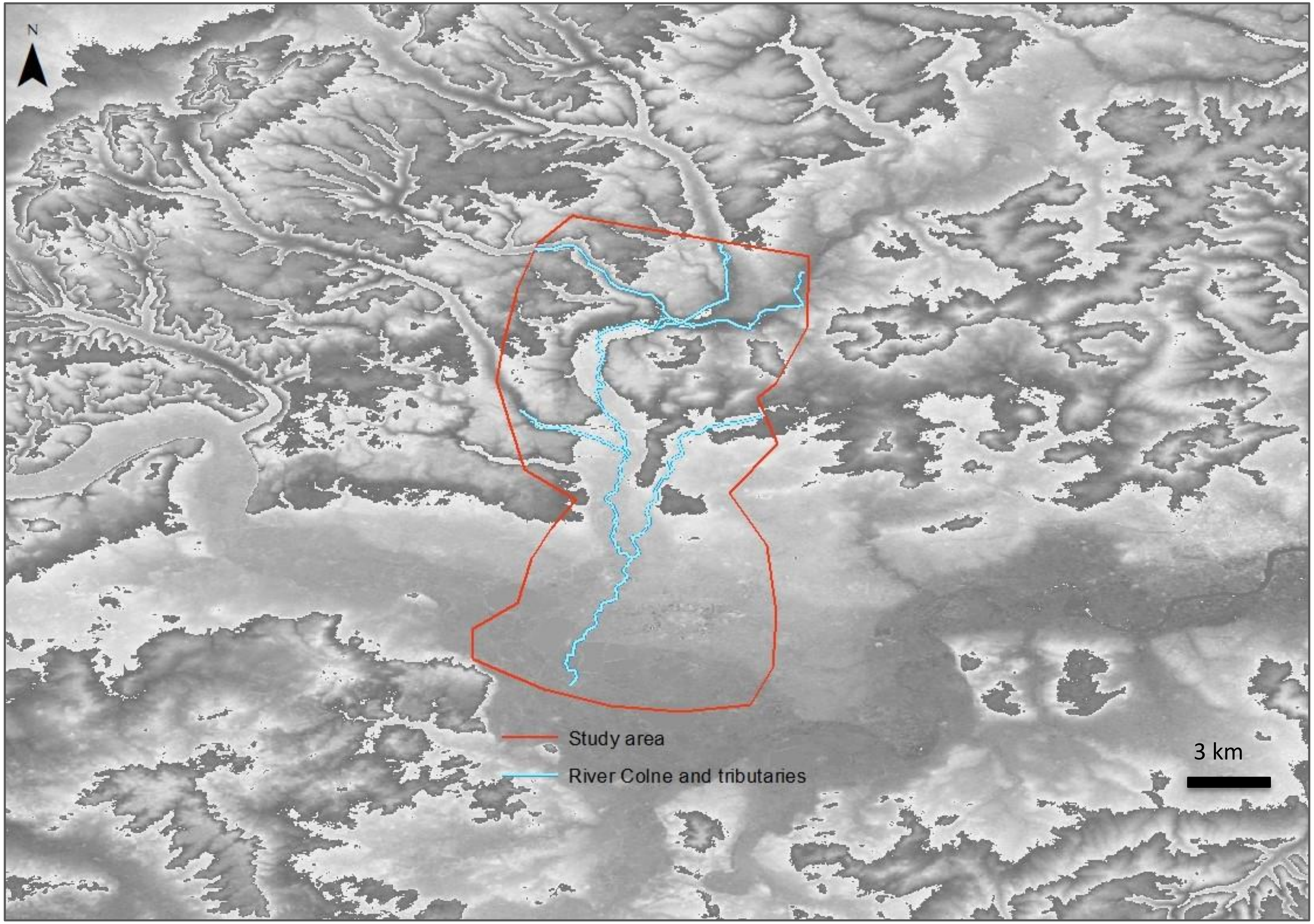


Figure 3.4: Study area

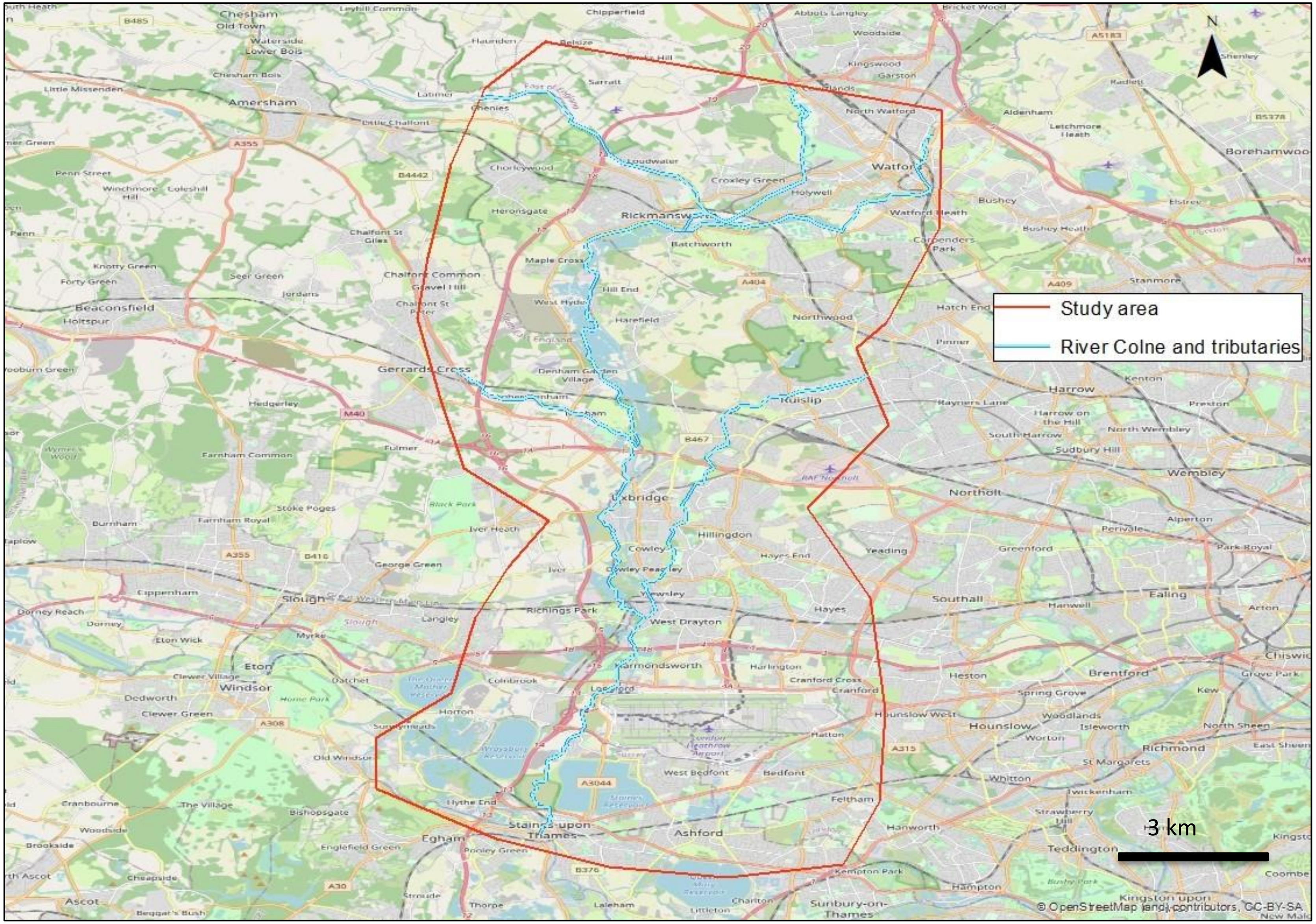


Figure 3.5: Example of a Local History Environment Record (Greater London: Hillingdon)

HER Number 050183/00/00 - **Site Name** 57 MONEY LA

HER Number	**Site Name**	**Record Type**
050183/00/00 - MLO25612	57 MONEY LA	Find Spot

Monument Types and Dates

FINDSPOT (Neolithic - 4000 BC to 2201 BC)

Description and Sources

Description

POLISHED AXE FOUND BY OWNER IN GARDEN.

POLISHED AXE (Artifact). SLO45853.

West London Archaeological Field Group, *SMR* (Unpublished document). SLO45852.

Sources

Artifact: POLISHED AXE.
Unpublished document: West London Archaeological Field Group. SMR. C280.

Associated resources - None recorded

Location

National Grid Reference

TQ 0570 7940 (point) TQ07NE Point

Administrative Areas

Borough HILLINGDON

Address/Historic Names

57 MONEY LA

WEST DRAYTON

Designations, Statuses and Scorings

Associated Designations

Archaeological Priority Area (APZ) - DLO36183	Colne Valley	Active	DLO36183

Other Statuses and Cross-References

Historic Environment Record - 050183/00/00	Active
Site of Archaeological Interest - Y	Active
SHINE Candidate (Unlikely)	Active

Ratings and Scorings - None recorded

Land Use

Associated Historic Landscape Character Records - None recorded

Other Land Classes

Landuse Residential,unidentified

Related Monuments - None Recorded

Associated Finds

FLO6342 AXE (Neolithic - 4000 BC to 2201 BC)

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Figure 3.6: Distribution of Mesolithic and Neolithic artefacts in the study area (from LHER's)

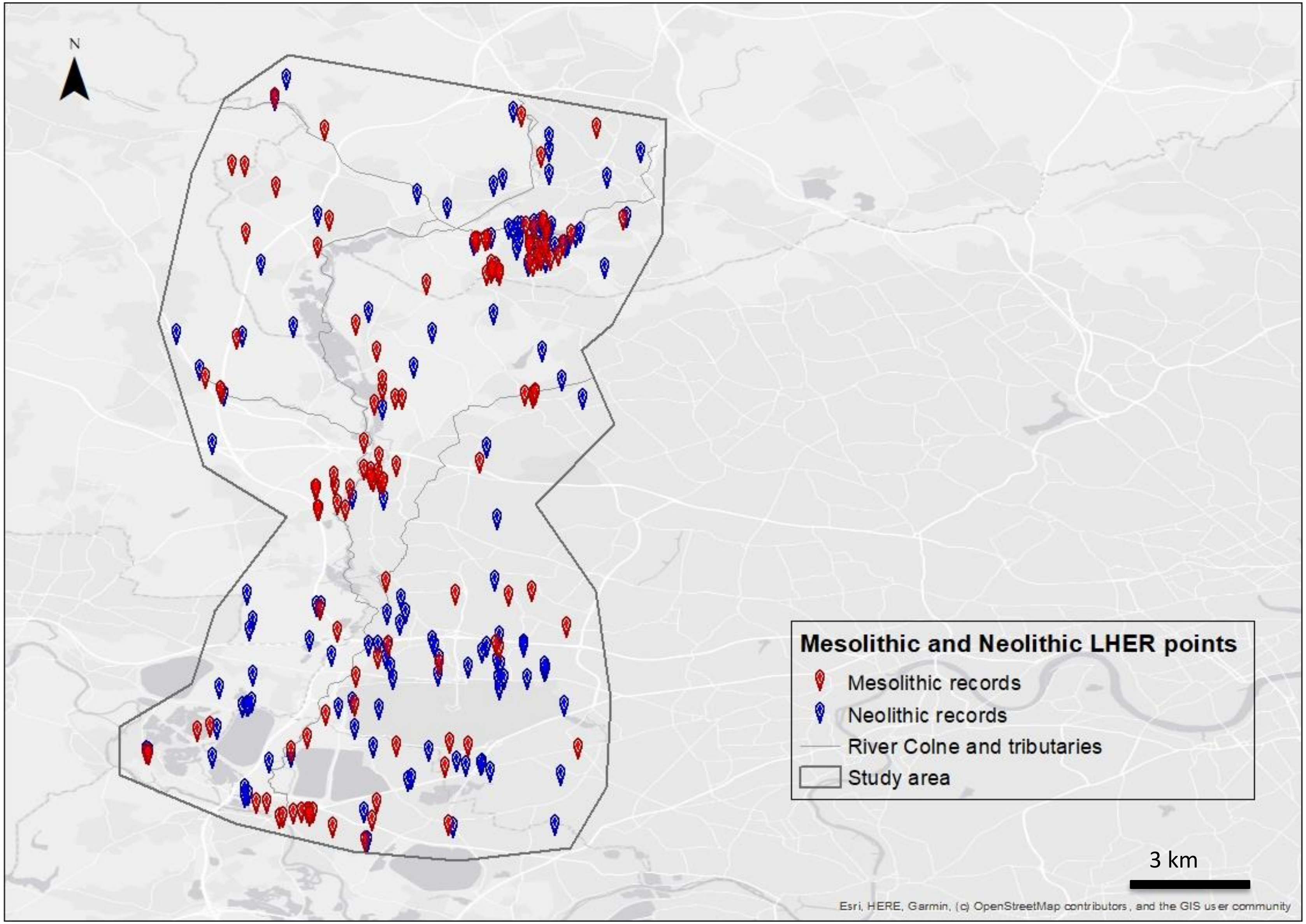


Figure 3.7: Clark's (1934) microlithic classification scheme. Type 'A' microliths (1-4), geometric microliths (11-20), and hollow-based including 'Horsham' (22-25) (Butler; 2005: figure 35)

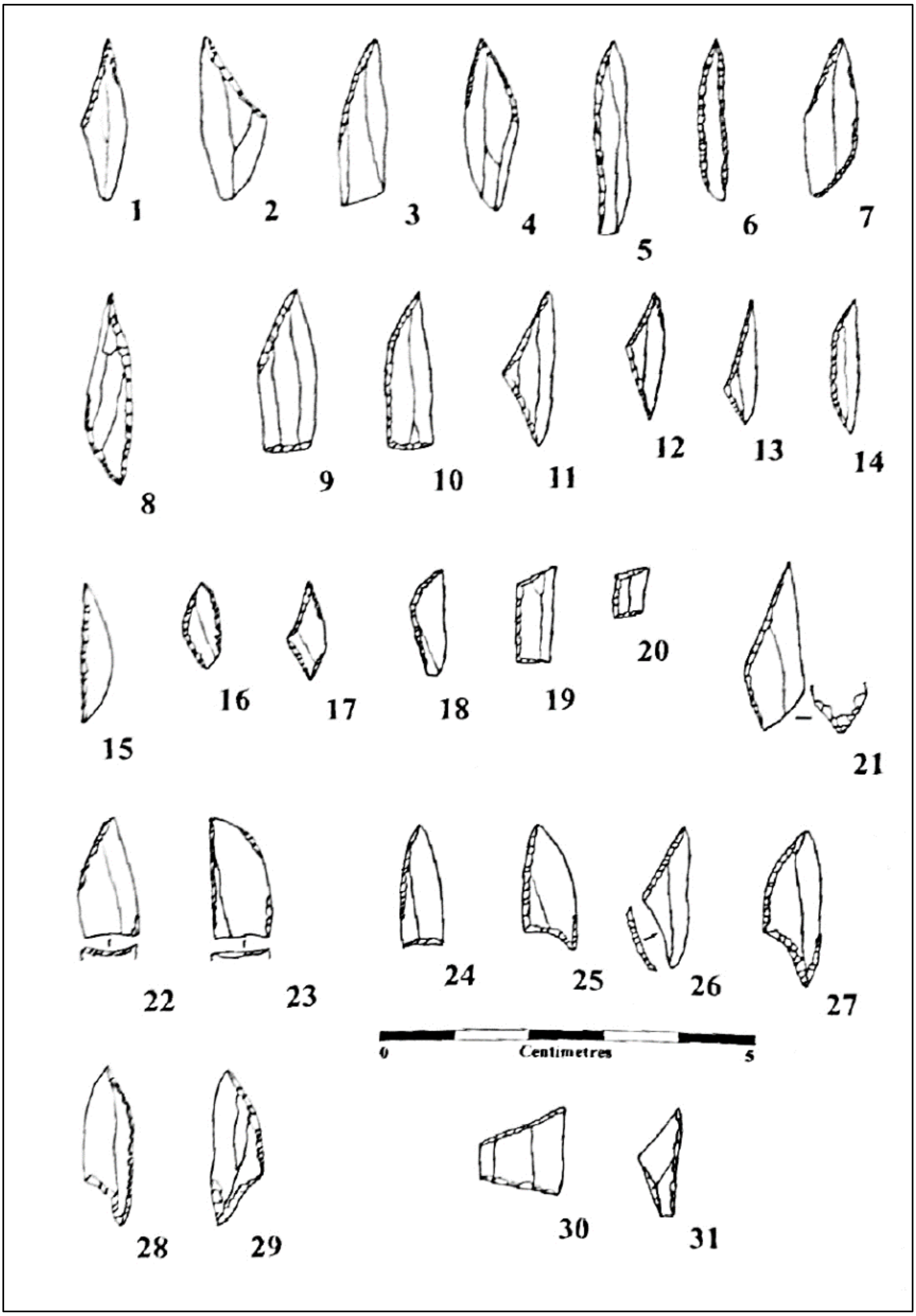
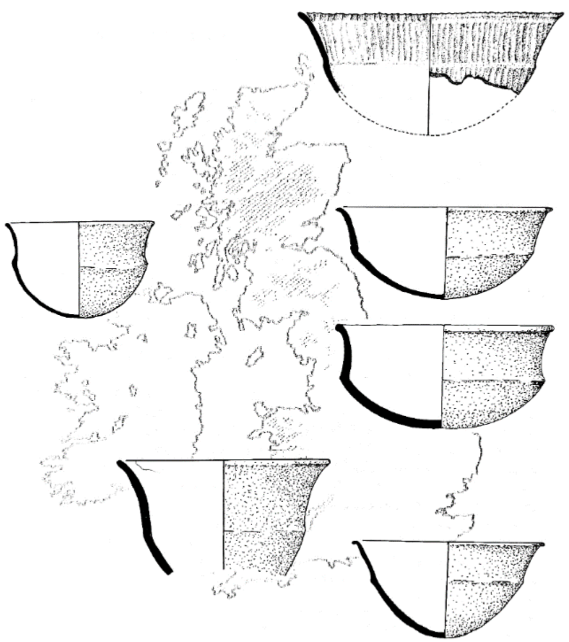


Figure 3.8: Types of rod microlith (Griffiths; 2014)

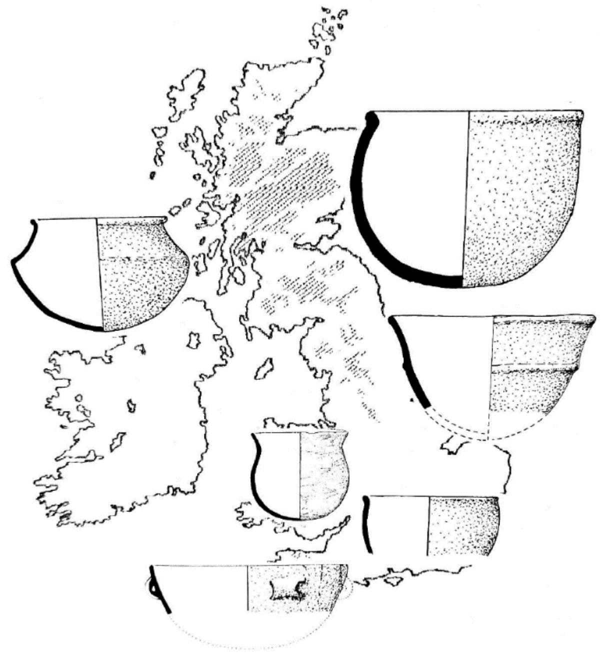
Figure 2

Microliths from Fir Tree Field shaft (copyright Martin Green; reproduced with permission). The definition of 'rod' microliths varies according to different recording approaches and authors, and can include material defined using Jacobi's (1978) 'class 6a' – tools with square cross-section, invasively retouched 'needle-points' – as well as narrow, backed blades or bladelets. Five microlith examples from Fir Tree Field – the second to fifth items from the left – represent the back blade range of the spectrum.

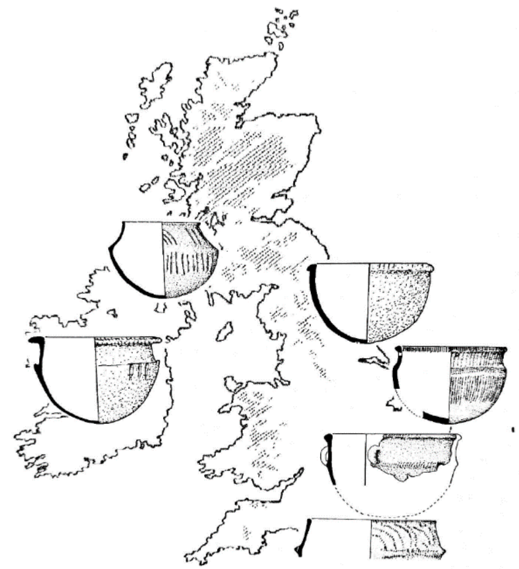
Figure 3.9: Regional styles of Early Neolithic Carinated, Plain and Decorated Bowl (Gibson; 2002, 2011)



34 *Carinated Bowls from England, Scotland and Ireland. Clockwise from top left: Ballyutoag, Co. Antrim.* After Sheridan 1995; *Boghead, Moray; Balfarg, Fife.* After Barclay & Russell-White 1993; *Hanging Grimston, Yorkshire.* After Manby 1988; *Deal, Kent and Coneybury, Wiltshire.* After Richards 1990. *All scale 1:6*

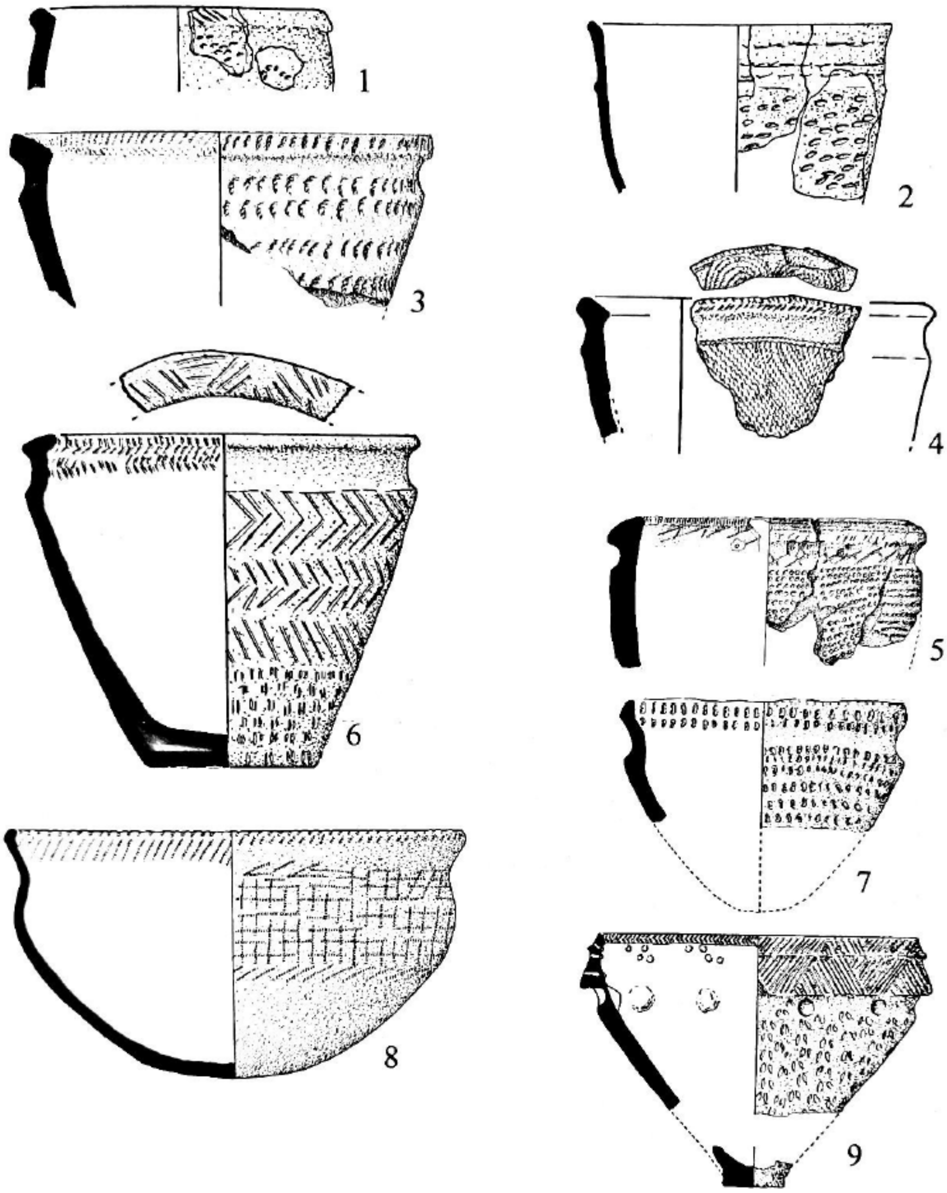


35 *Developed bowls and baggy pots of the earlier Neolithic. Clockwise from top left: Carnanbane, Co. Derry.* After Sheridan 1995; *Balfarg, Fife.* After Barclay & Russell-White 1993; *North Carnaby, Yorkshire.* After Manby 1988; *Windmill Hill, Wiltshire.* After Smith 1965; *Carn Brae, Cornwall.* After Mercer 1981; *Four Crosses, Powys. All scale 1:6*



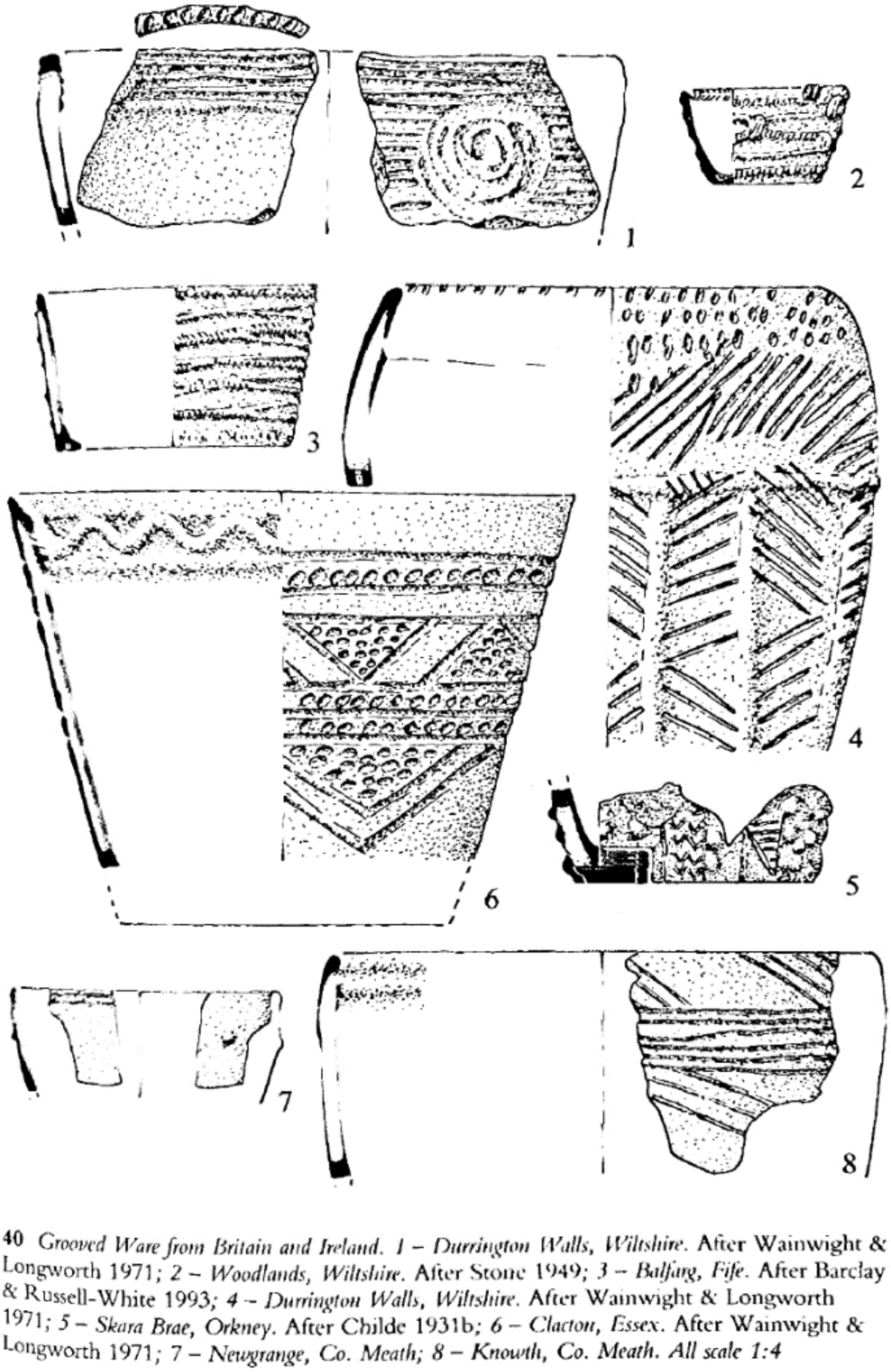
36 *Some early Neolithic decorated bowls of around 3500 BC. Clockwise from top left: Beacharra, Argyll. Scale 1:8.* After Scott 1964; *Rudstone, Yorkshire. Scale 1:8.* After Manby 1988; *Hurst Fen, Norfolk. Scale 1:8.* After Clark *et al.* 1960; *Abingdon, Oxfordshire. Scale 1:8.* After Avery 1982; *Whitehawk, Sussex. Scale 1:12.* After Whittle, 1977; *Lough Gur, Limerick. Scale 1:6.* After Sheridan 1995

Figure 3.10: Regional styles of Impressed or Peterborough Ware including Mortlake, Ebbsfleet and Fengate (Gibson; 2002, 2011)



38 *Various Impressed Wares. 1 – Impressed Ware bowl from Amisfield, Dumfriess.* After Strachan *et al.* 1998; *2 – earlier Neolithic bowl with impressed belly from Kenny's Cairn, Caithness.* After Davidson & Henshall 1991; *3 – Meldon Bridge style bowl from Meldon Bridge, Peeblesshire.* After Burgess 1976b; *4 – Ford style bowl from Ford, Northumberland; 5 – Welsh Mortlake style bowl from Sarn-y-bryn-caled, Powys; 6 – Rudstone style bowl from North Carnaby, Yorkshire.* After Manby 1988; *7 – Mortlake style bowl from West Kennet, Wiltshire.* After Piggott 1962; *8 – Ebbsfleet style bowl from Windmill Hill, Wiltshire.* After Smith 1965; *9 – Fengate style bowl from West Kennet, Wiltshire.* After Piggott 1962. *All scale 1:6*

Figure 3.11: Regional styles of Grooved Ware including Durrington Walls, Clacton and Woodlands (Gibson; 2002, 2011)



40 *Grooved Ware from Britain and Ireland. 1 – Durrington Walls, Wiltshire.* After Wainwight & Longworth 1971; *2 – Woodlands, Wiltshire.* After Stone 1949; *3 – Balfarg, Fife.* After Barclay & Russell-White 1993; *4 – Durrington Walls, Wiltshire.* After Wainwight & Longworth 1971; *5 – Skara Brae, Orkney.* After Childe 1931b; *6 – Clacton, Essex.* After Wainwight & Longworth 1971; 7 – *Newgrange, Co. Meath; 8 – Knowth, Co. Meath. All scale 1:4*

Figure 3.12: Bayesian modelling based on Bayes' theorem (Whittle et al; 2011: figure 2.4)

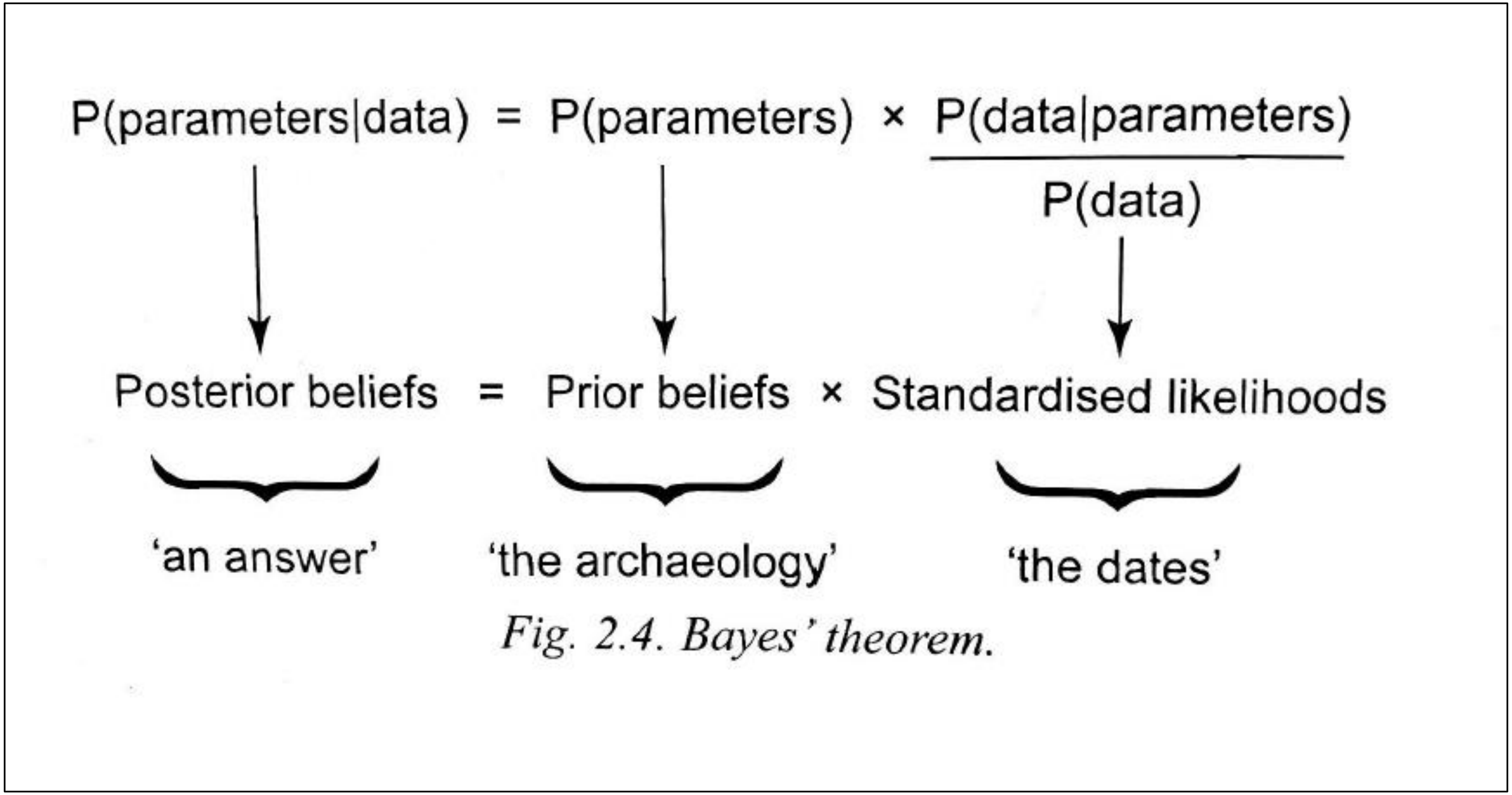


Figure 3.13: Polished axe from Watford Museum (Authors photograph)

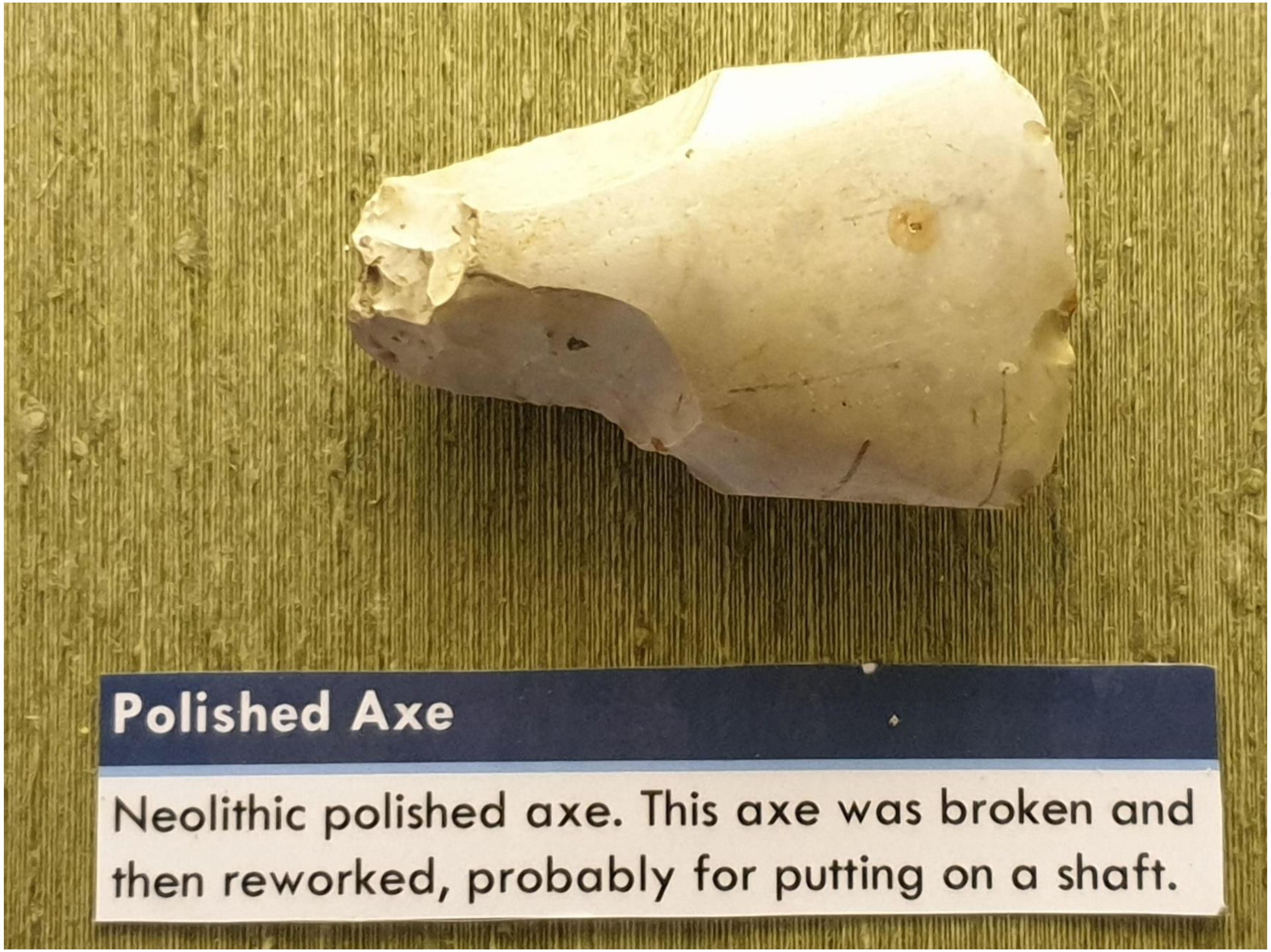


Figure 3.14: Polished axe from Spelthorne Museum (Authors photograph)

Figure 3.15: Leaf arrowhead surface find from Buckinghamshire (Portable Antiquities Scheme (PAS): SUSS-44E512)

Figure 3.16: Domestic-craftwork activities in and around a possible structure at Star Carr western dryland area (Conneller et al; 2018)

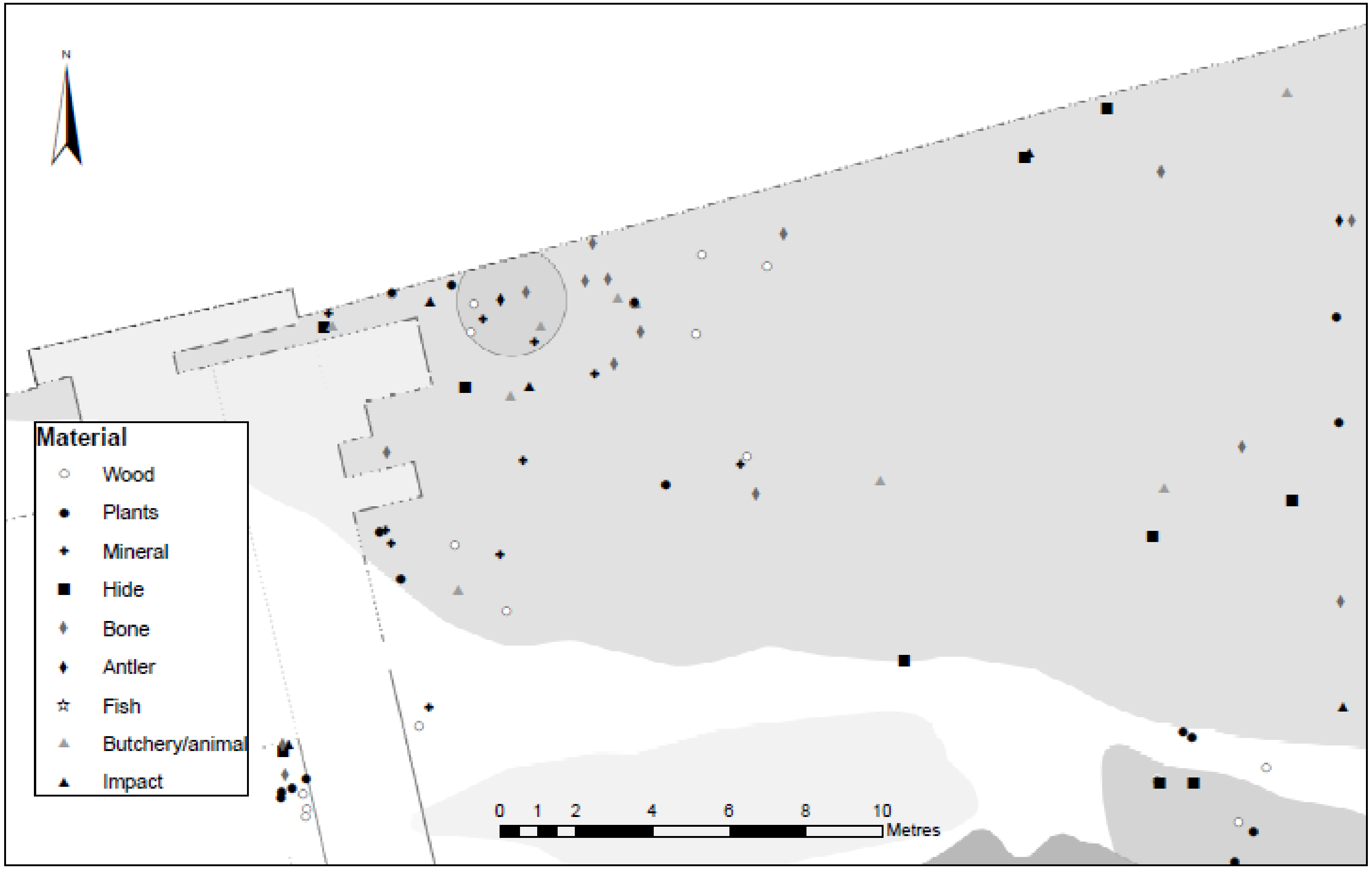


Figure 8.5: Microwear results from the western dryland area (Copyright Star Carr Project, CC BY-NC 4.0).

Chapter 4: figures

Figure 4.1: Map showing study area in relation to the Chiltern Hills, and the Thames, Kennet and Lea Valleys (ESRI OpenStreetmap)

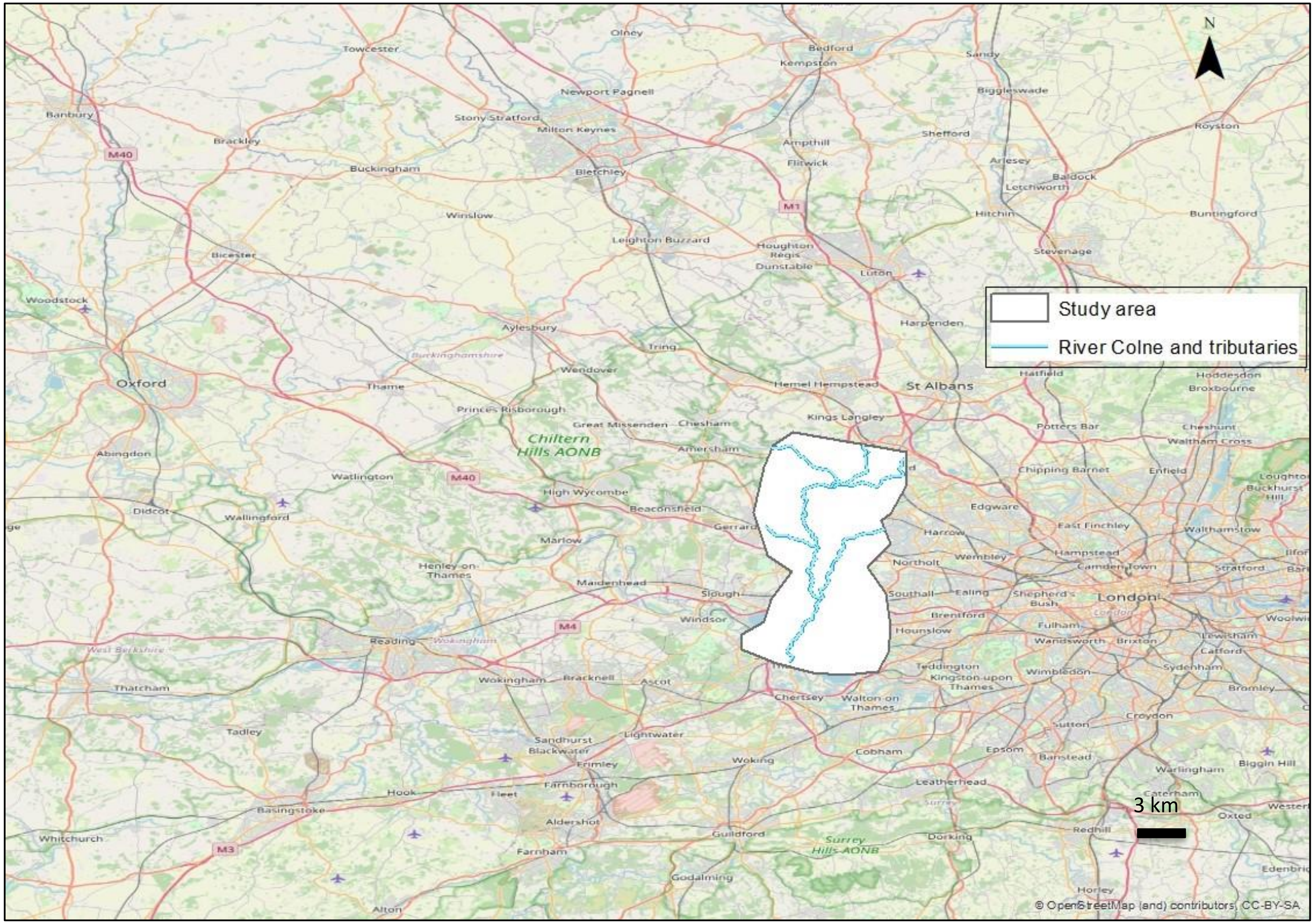


Figure 4.2: Early Holocene Doggerland area (legend pers. comm.) (Gaffney et al; 2021)

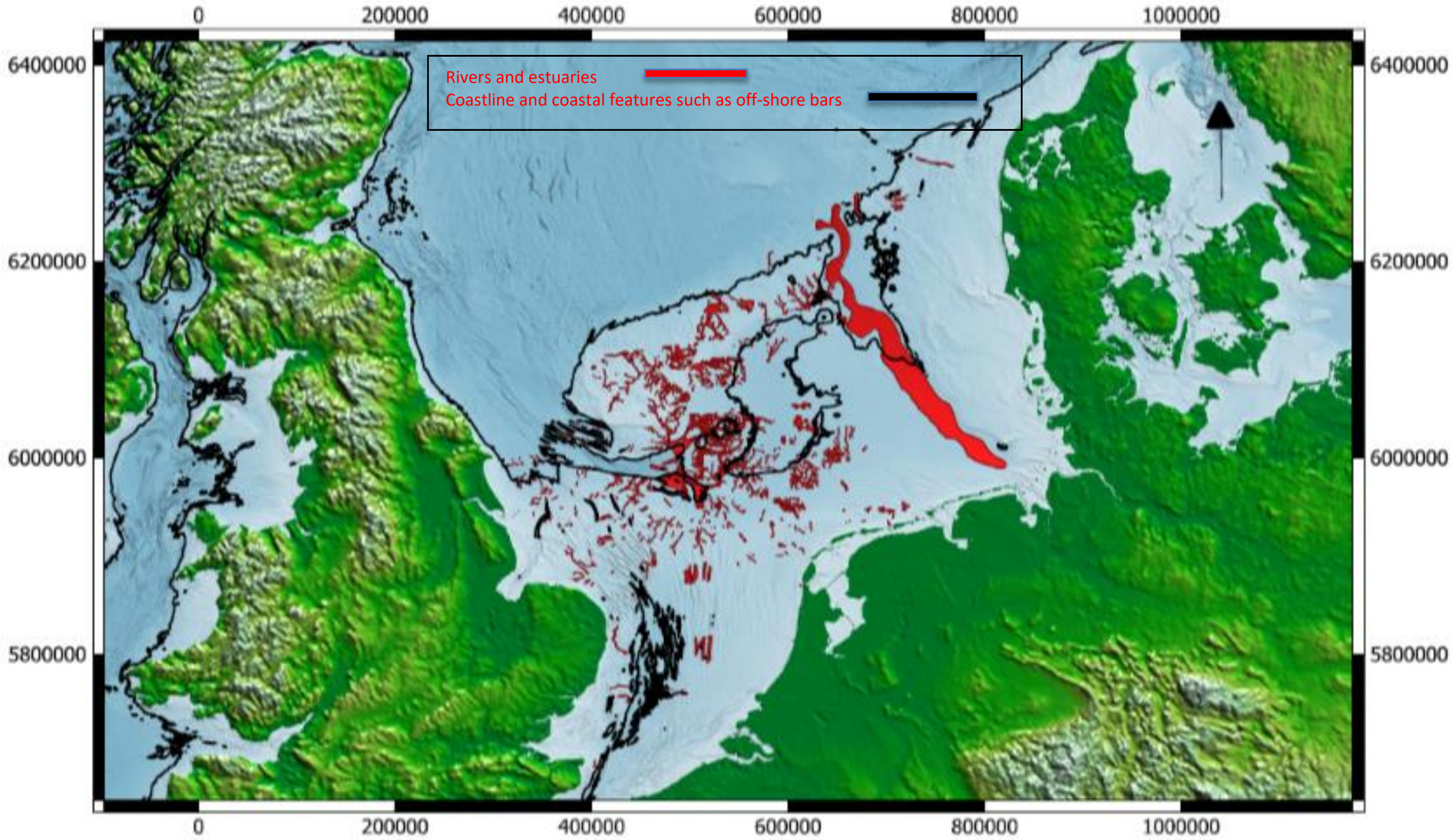


Figure 4.3: Bedrock geology of the River Colne, River Thames, Chilterns and the London Basin (British Geological Survey and Royal Geographical Society with IBG)

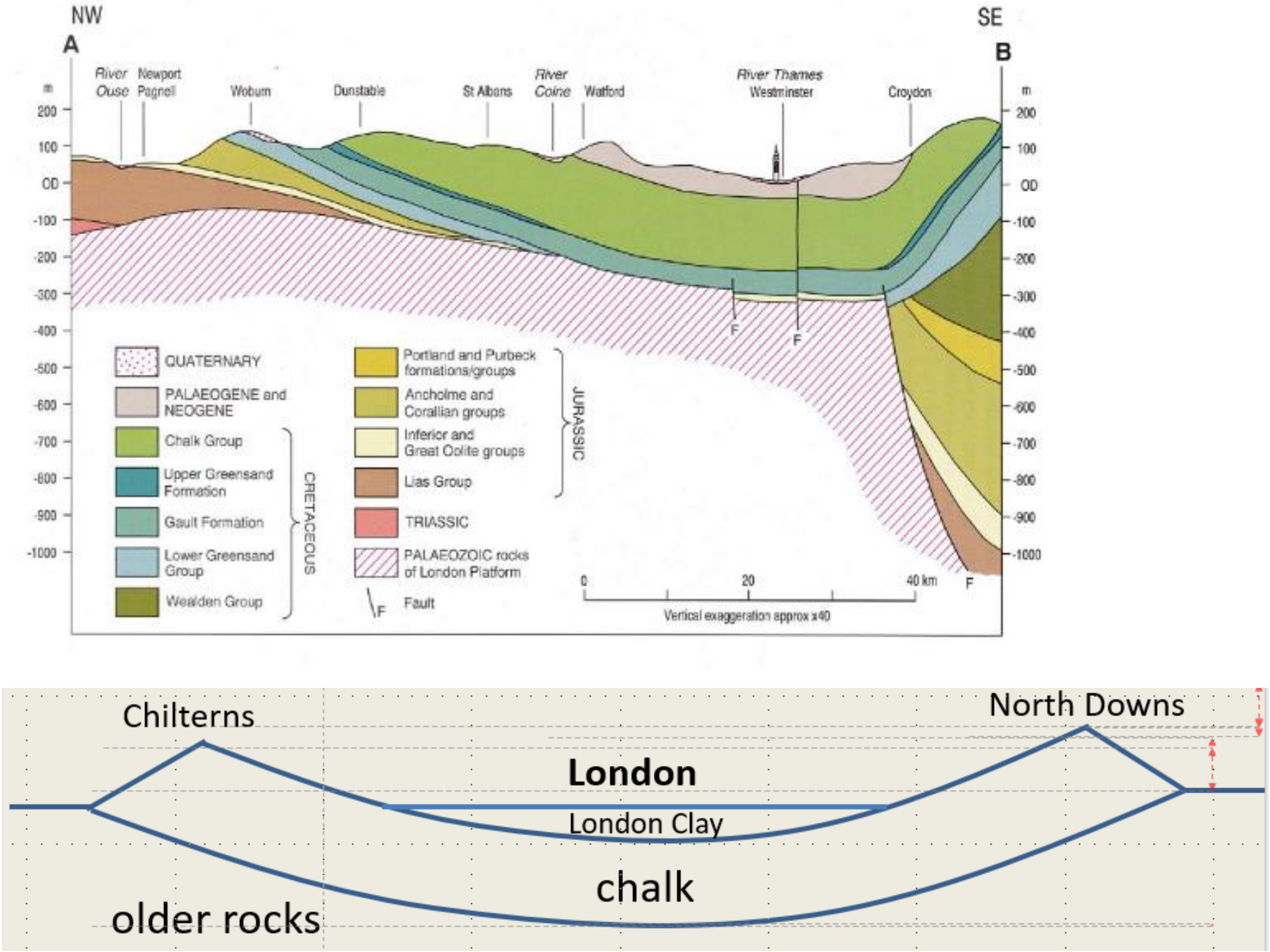


Figure 4.4: Pleistocene River Terraces and Floodplain in the Colne and Thames Valley (Lewis and Gibbard; 2010)

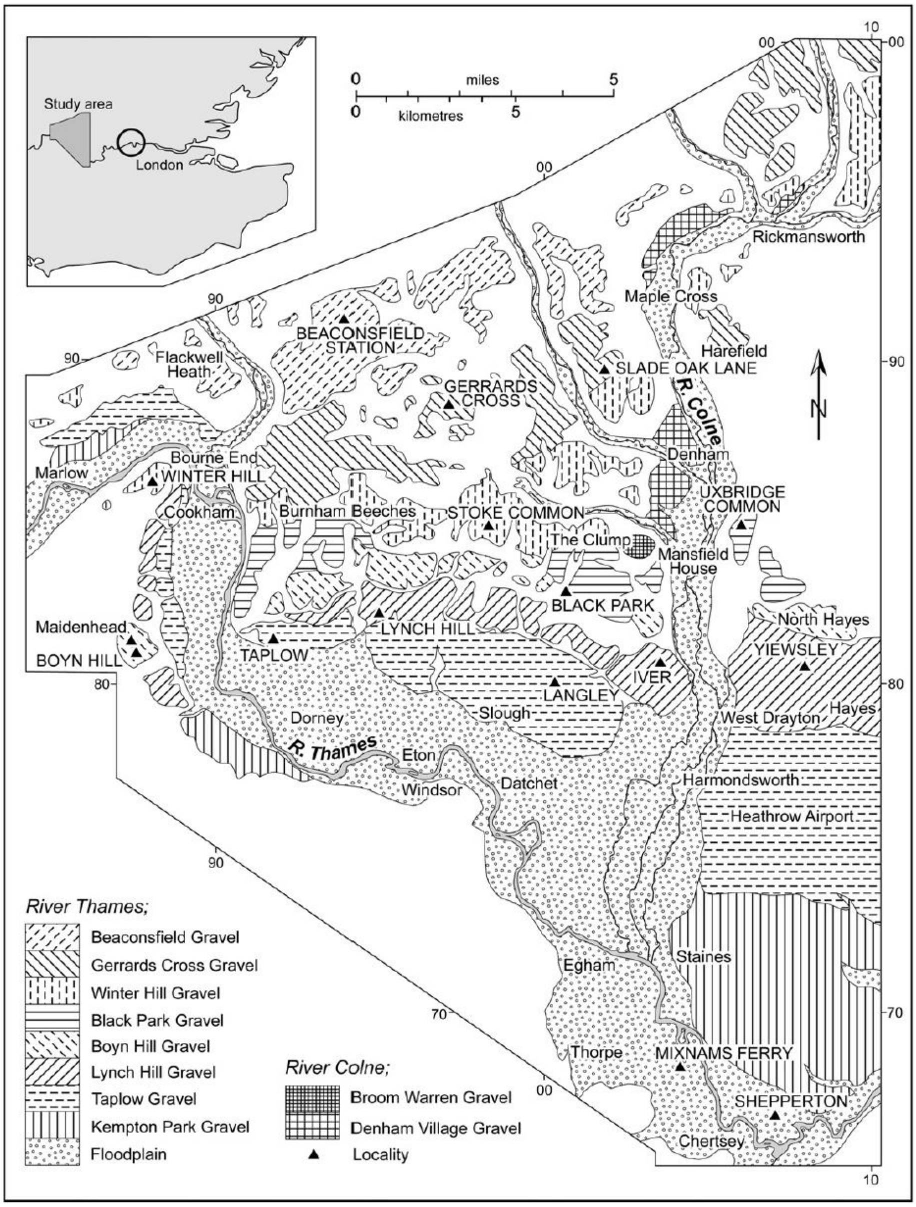


Figure 4.5: The Grove site plan (in two sections) showing Area A1, Area B, Area C and palaeoenvironmental trenches 1, 2, 3 (Le Quesne et al; 2001)

Figure 4.6: A shelter constructed in woodland surrounding The Grove (Authors photograph)

Figure 4.7: Difference in post-breakage pot histories at Kilverstone (Garrow et al; 2006)

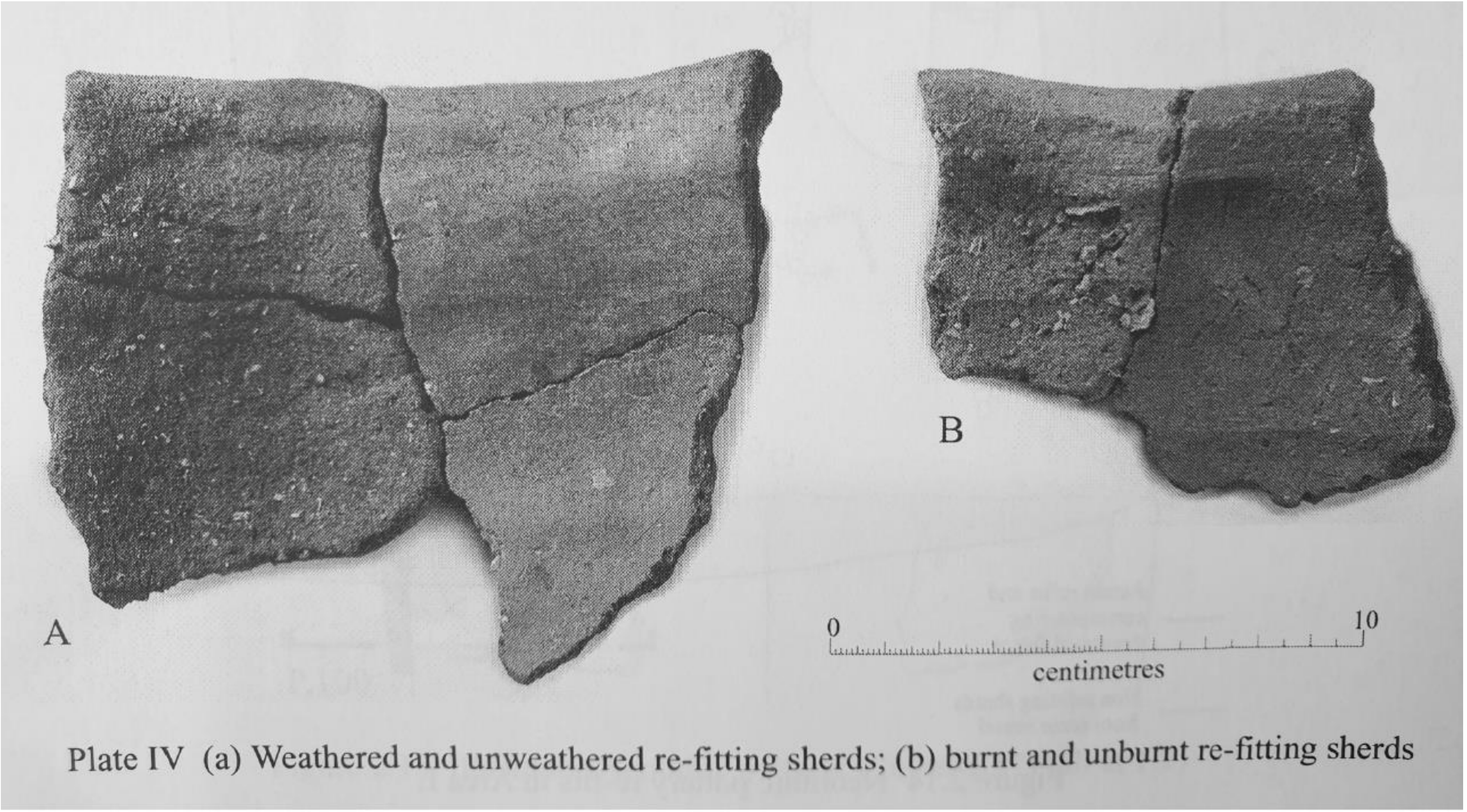


Figure 4.8: Diagram of refitting from cores and knapping waste at Kilverstone (Garrow et al; 2006)

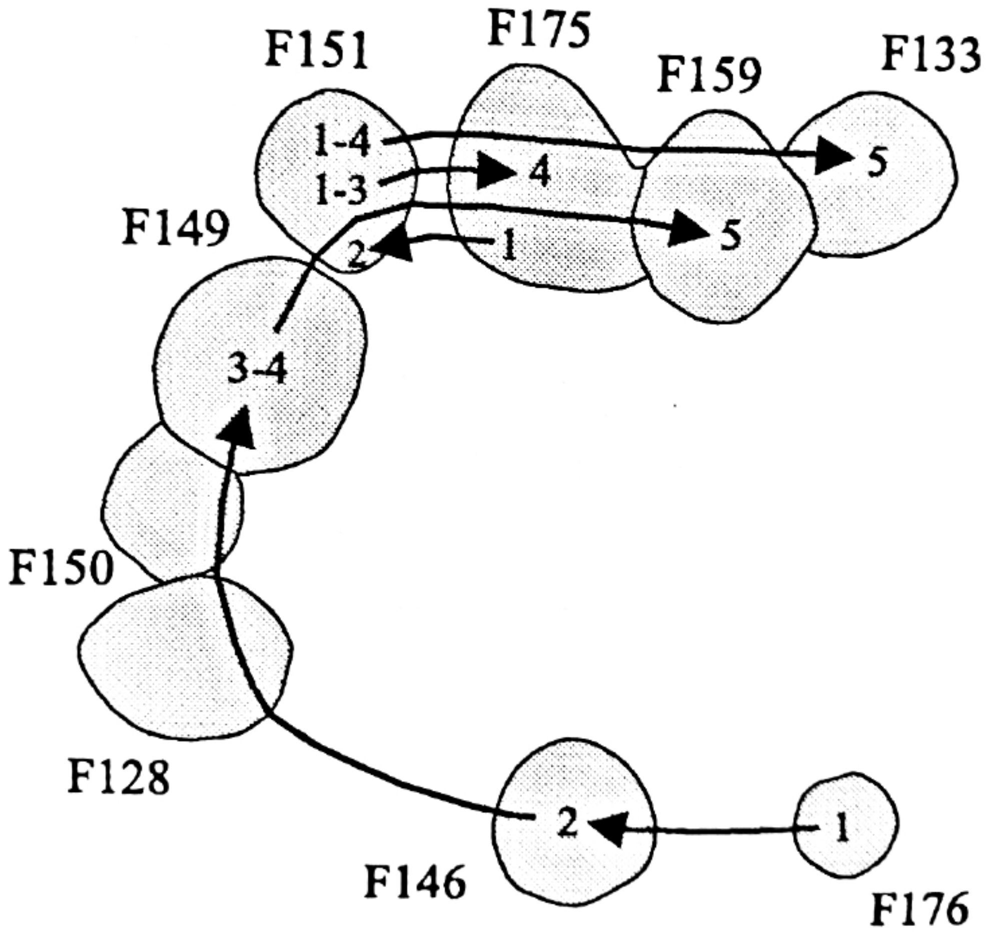


Figure 2.47 Re-fitting sequence from Cluster B

Figure 4.9: Yarnton-Cassington areas of archaeological investigation (Hey et al; 1994: figure 2)

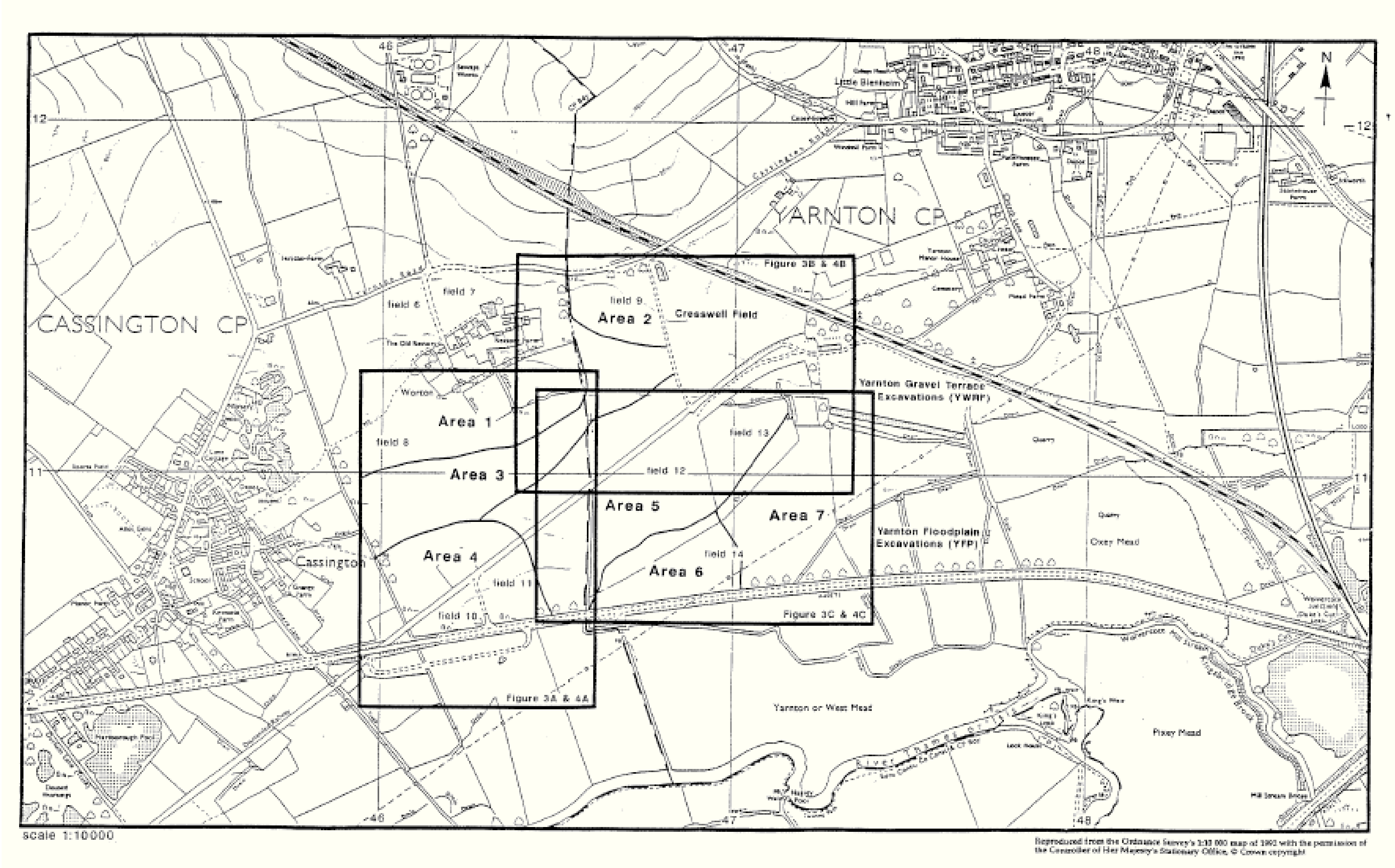


Figure 4.10: Causewayed enclosures, long and oval barrows in the Lower Thames and East Anglia (Whittle et al, 2011)

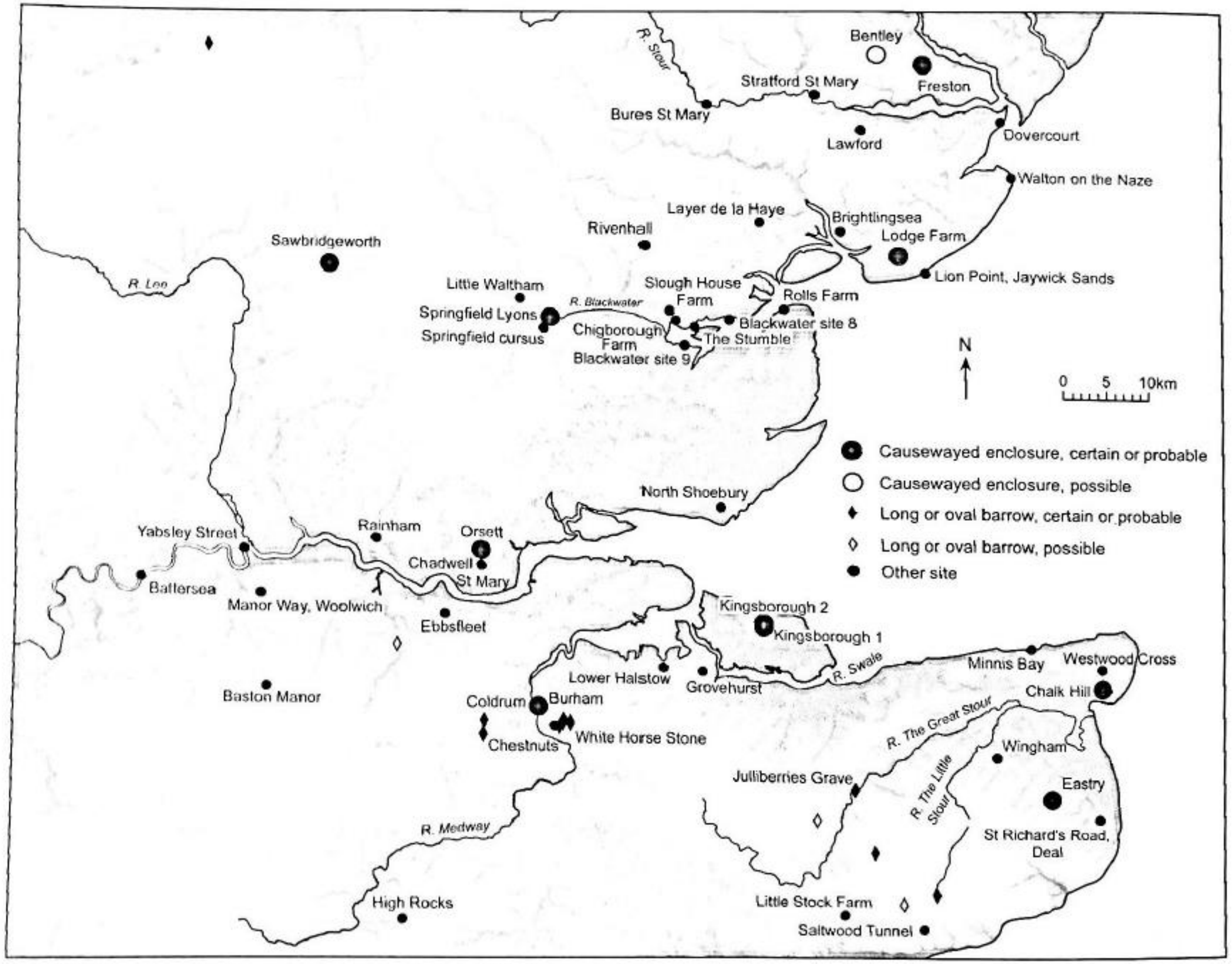


Fig. 7.1. The Greater Thames estuary and the adjoining part of eastern England, showing causewayed enclosures, long barrows and other sites mentioned in Chapter 7.

Figure 4.11: Causewayed enclosures, long and oval barrows in the Middle and Upper Thames (Whittle et al; 2011)

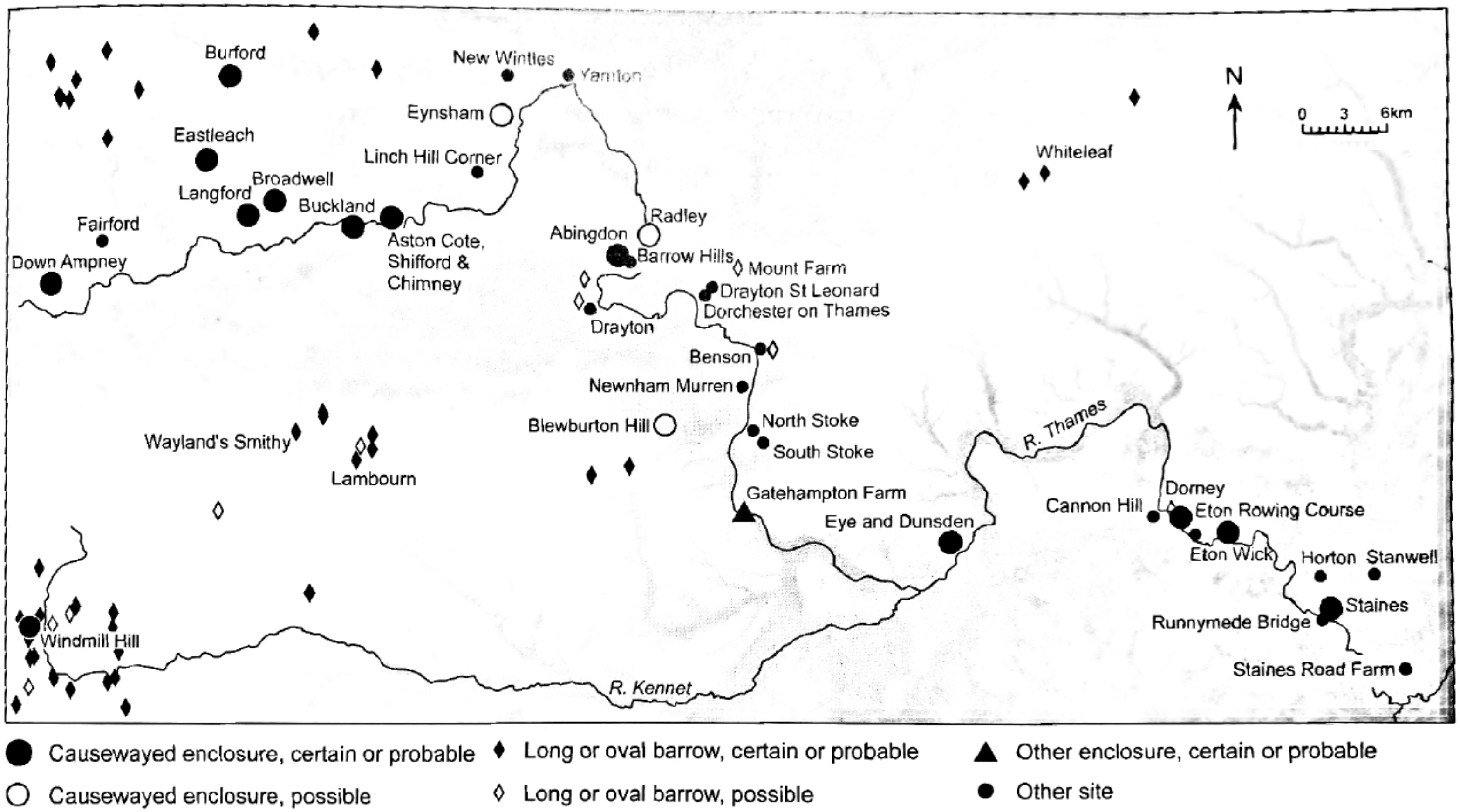


Fig. 8.1. The Middle and Upper Thames catchment and the adjoining parts of the Cotswolds and eastern England, showing causewayed enclosures, long barrows and other sites mentioned in Chapter 8.

Chapter 5: figures

Figure 5.1: Mesolithic sites with radiocarbon dates (produced using ArcMap 10.7.1)

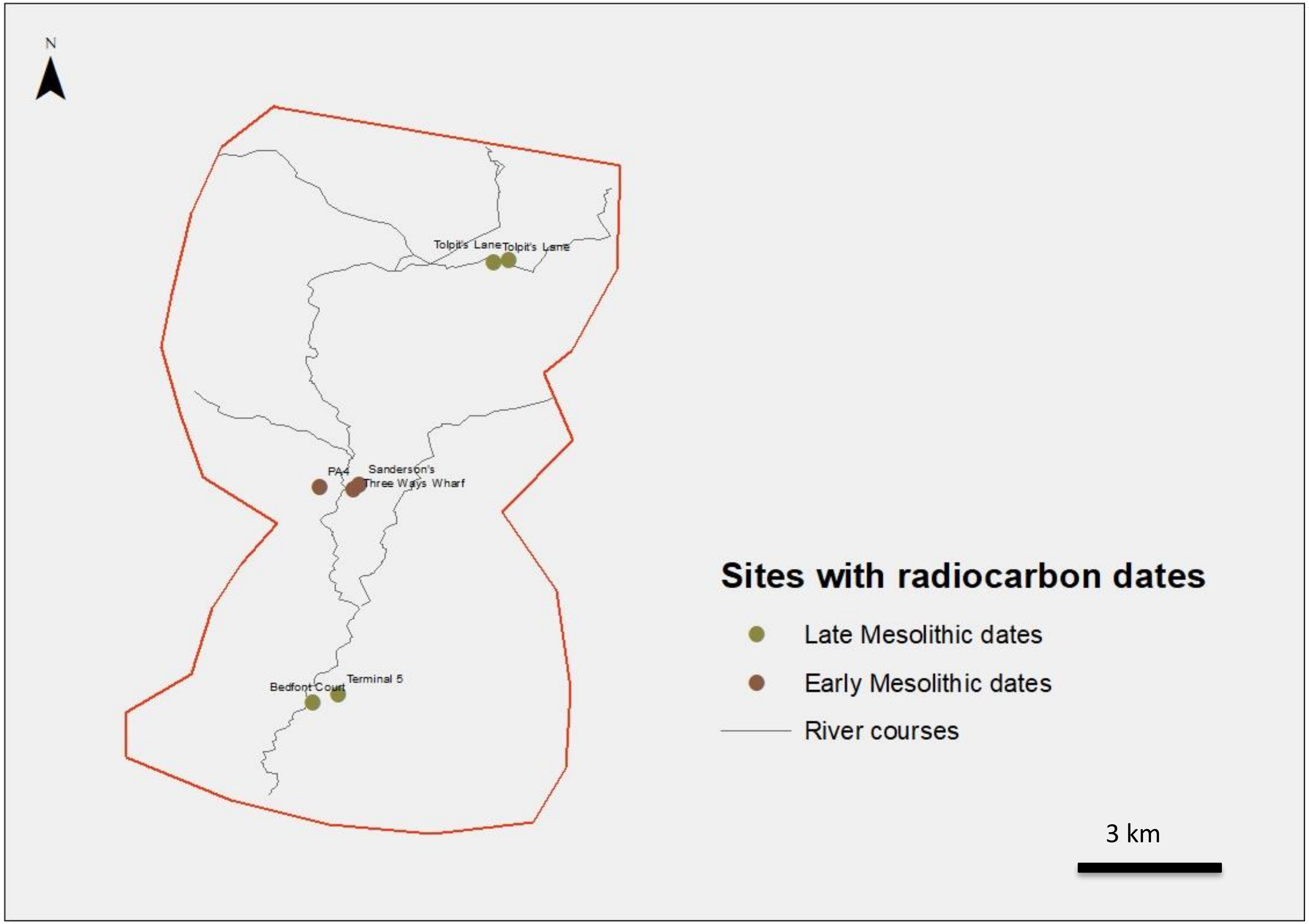
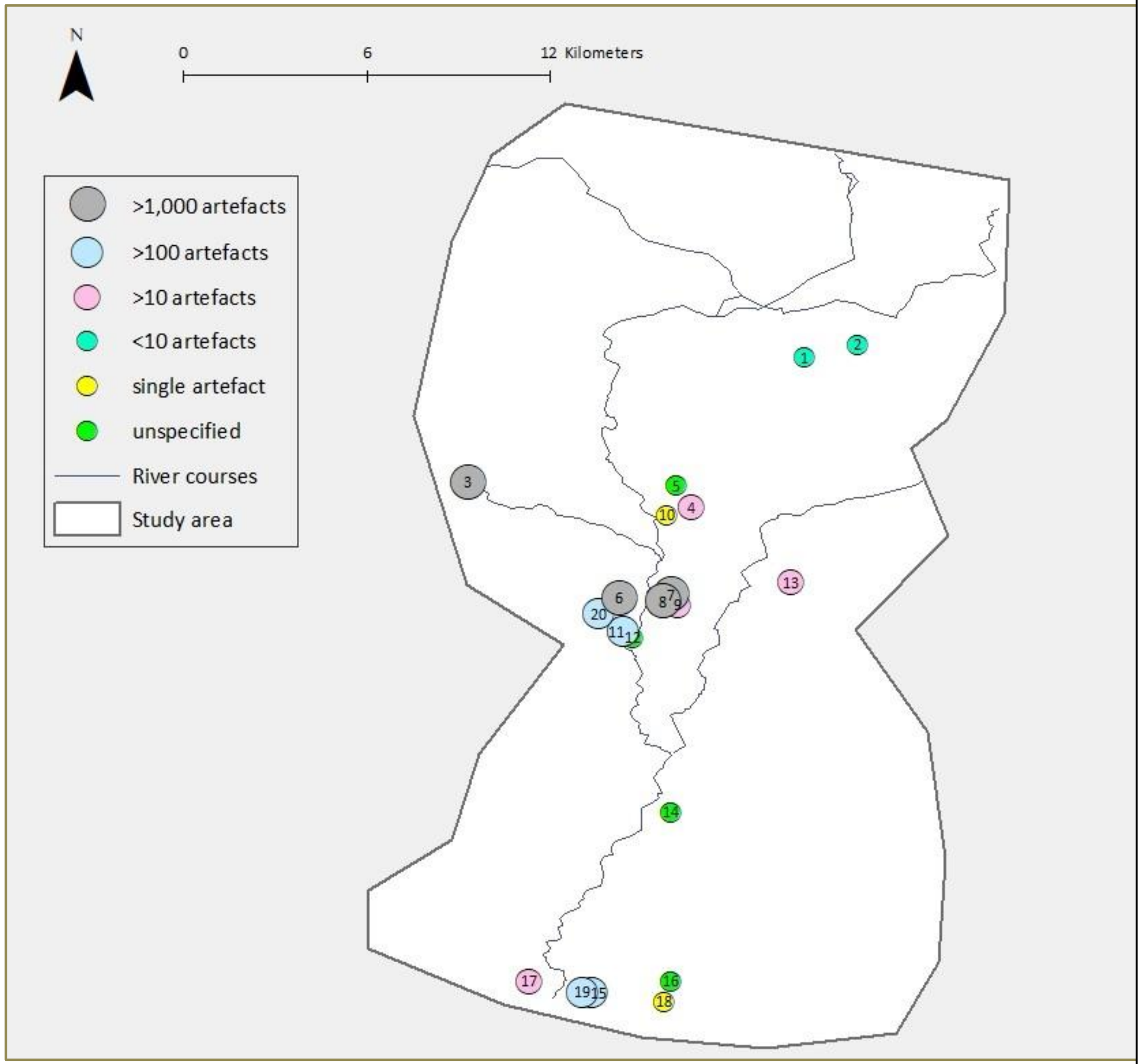


Figure 5.2: Early Mesolithic sites and finds spots showing cluster in Middle Colne (produced using ArcMap 10.7.1)



Early Mesolithic sites, scatters and spot finds

1. Bathend Clump
2. Sandy Lodge Golf Club
3. Oakend Site I
4. Dewe's Farm
5. Dewe's Pit
6. Preferred Area 4
7. Sanderson's Fabric Factory
8. Three Ways Wharf
9. Jewson's Yard
10. Colne Valley Country Park
11. Sandstone
12. Cowley Mill Road
13. Long Lane
14. Manor Court
15. London Road
16. Hengrove Farm
17. Church Lammas
18. Ashford Prison
19. Majestic House
20. Mansfield Farm

Figure 5.3: Early Mesolithic sites and finds spots by density (produced using ArcMap 10.7.1)

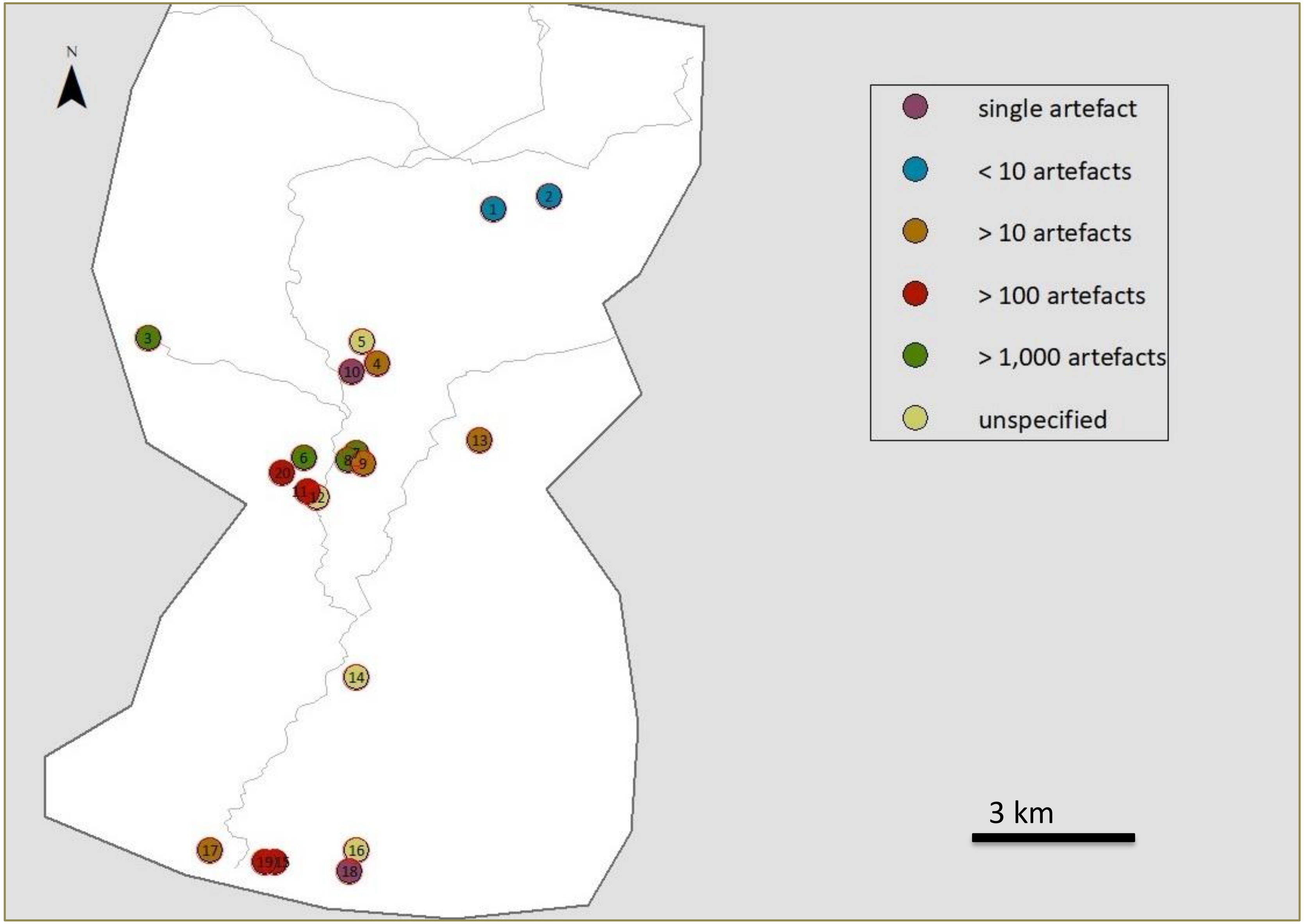


Figure 5.4: Moor Park sites in the Upper Colne Valley (produced using ArcMap 10.7.1)

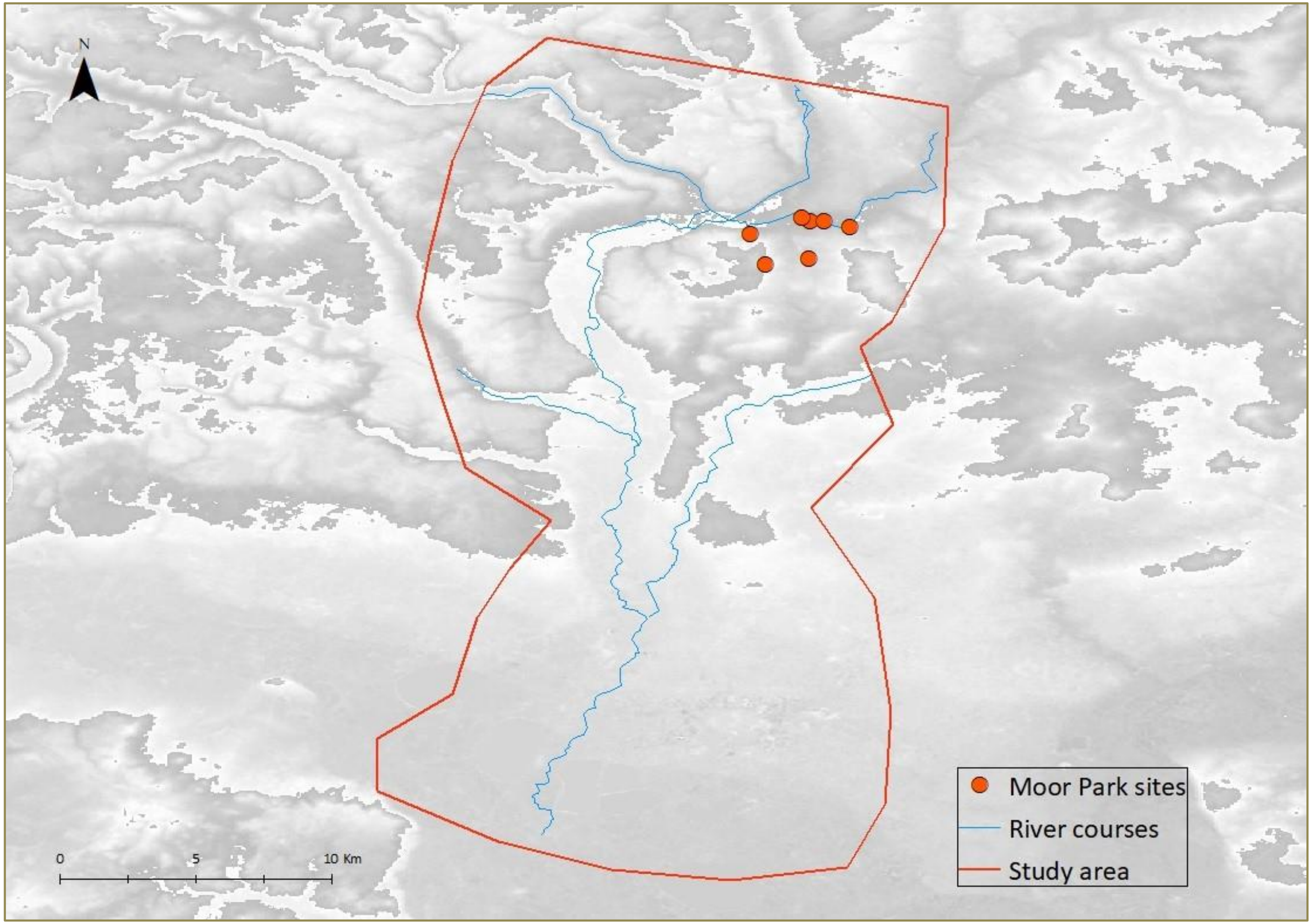


Figure 5.5: Moor Park sites (produced using ArcMap 10.7.1)

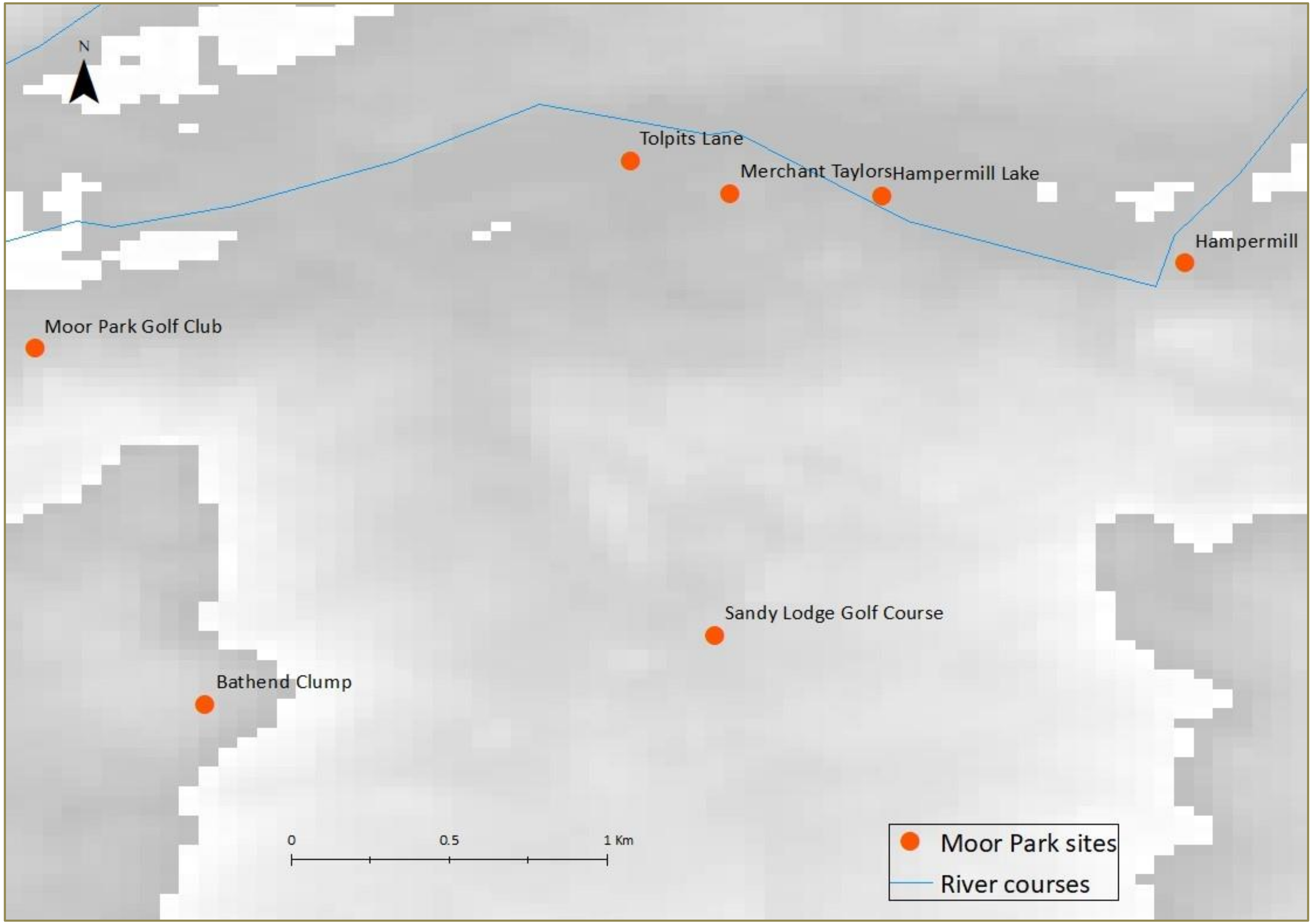


Figure 5.6: Bathend Clump microliths B, C & D (Collins, 1962: Figure 2)

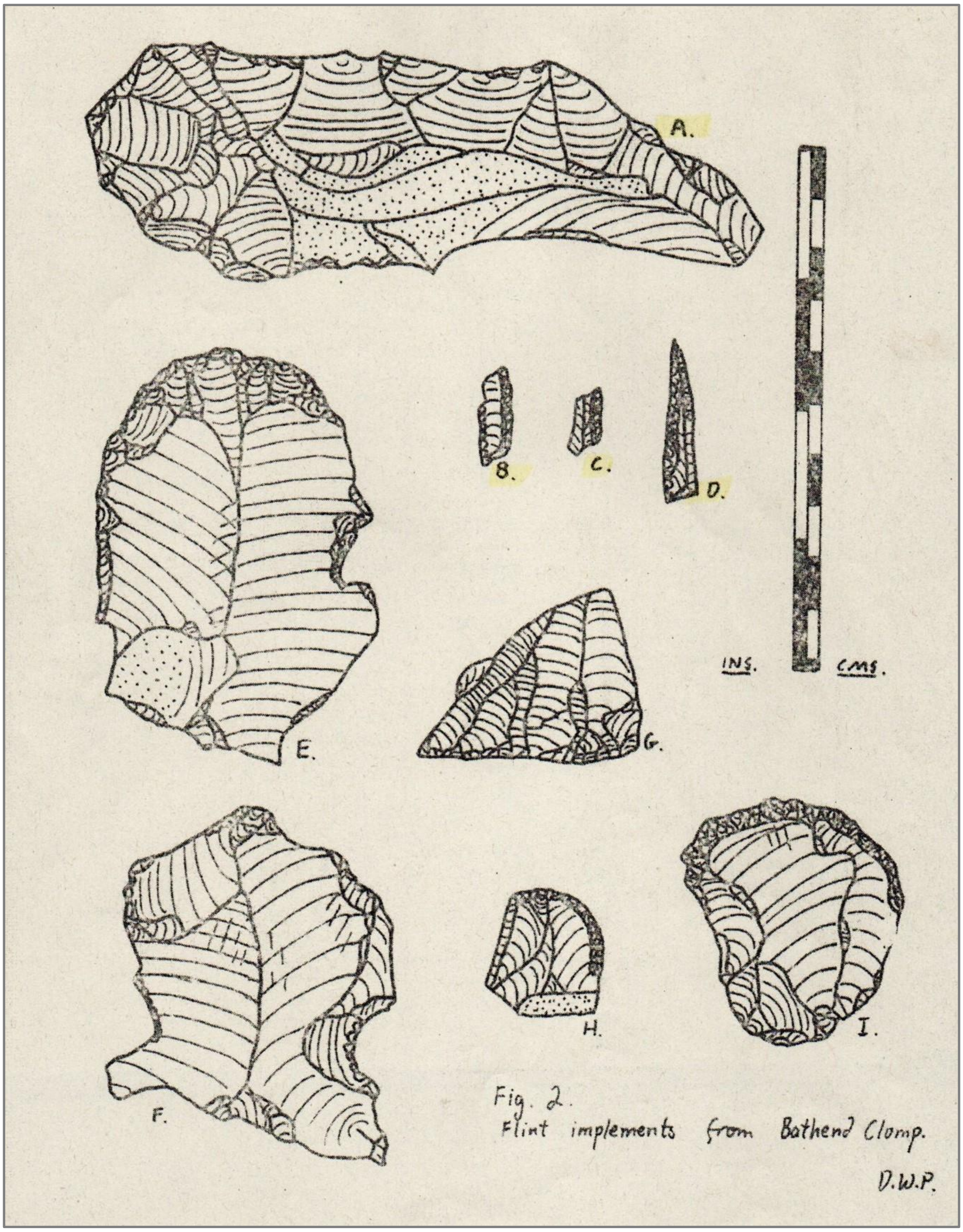


Figure 5.7: Location of Oakend sites along the River Misbourne (Barfield, 1977)

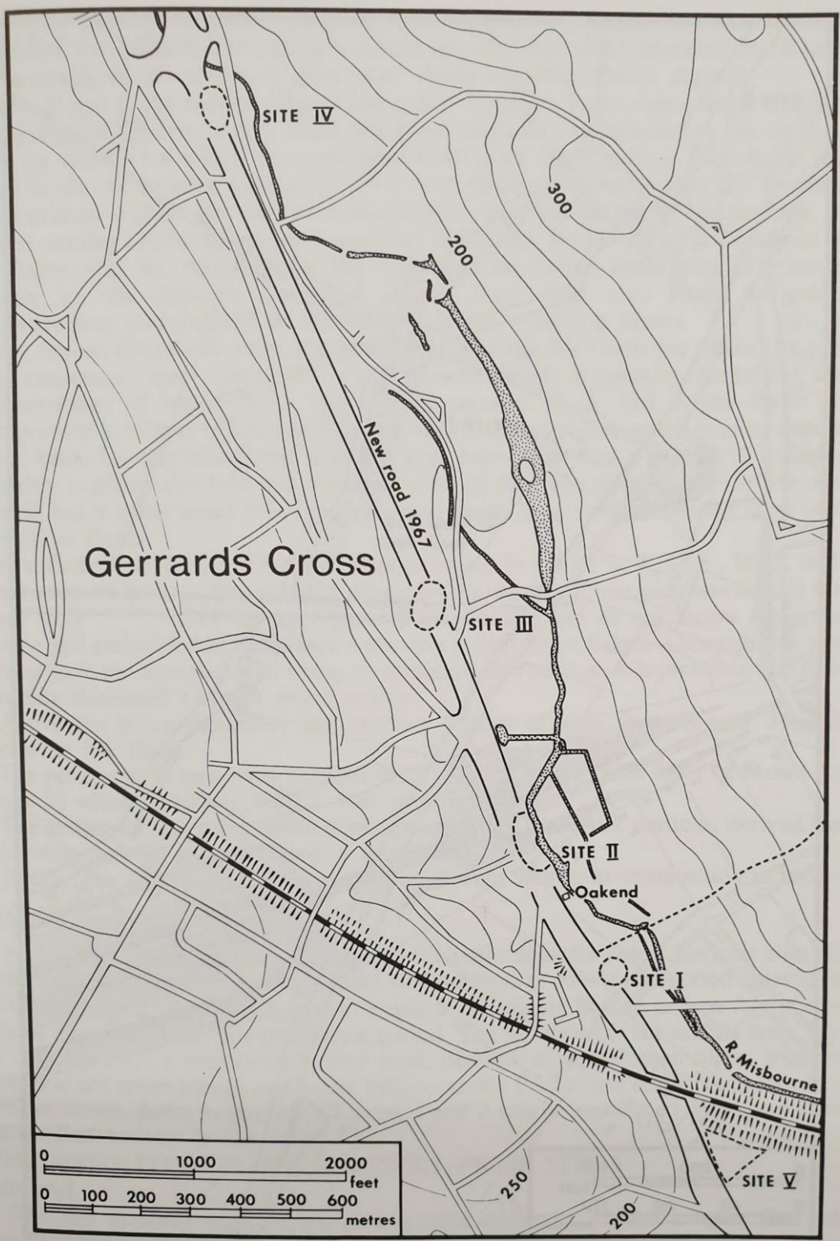


Fig. 1. The Misbourne Valley at Gerrards Cross. Archaeological sites investigated in 1966 – 67.

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Figure 5.8: Location of Oakend site I (Barfield, 1977)

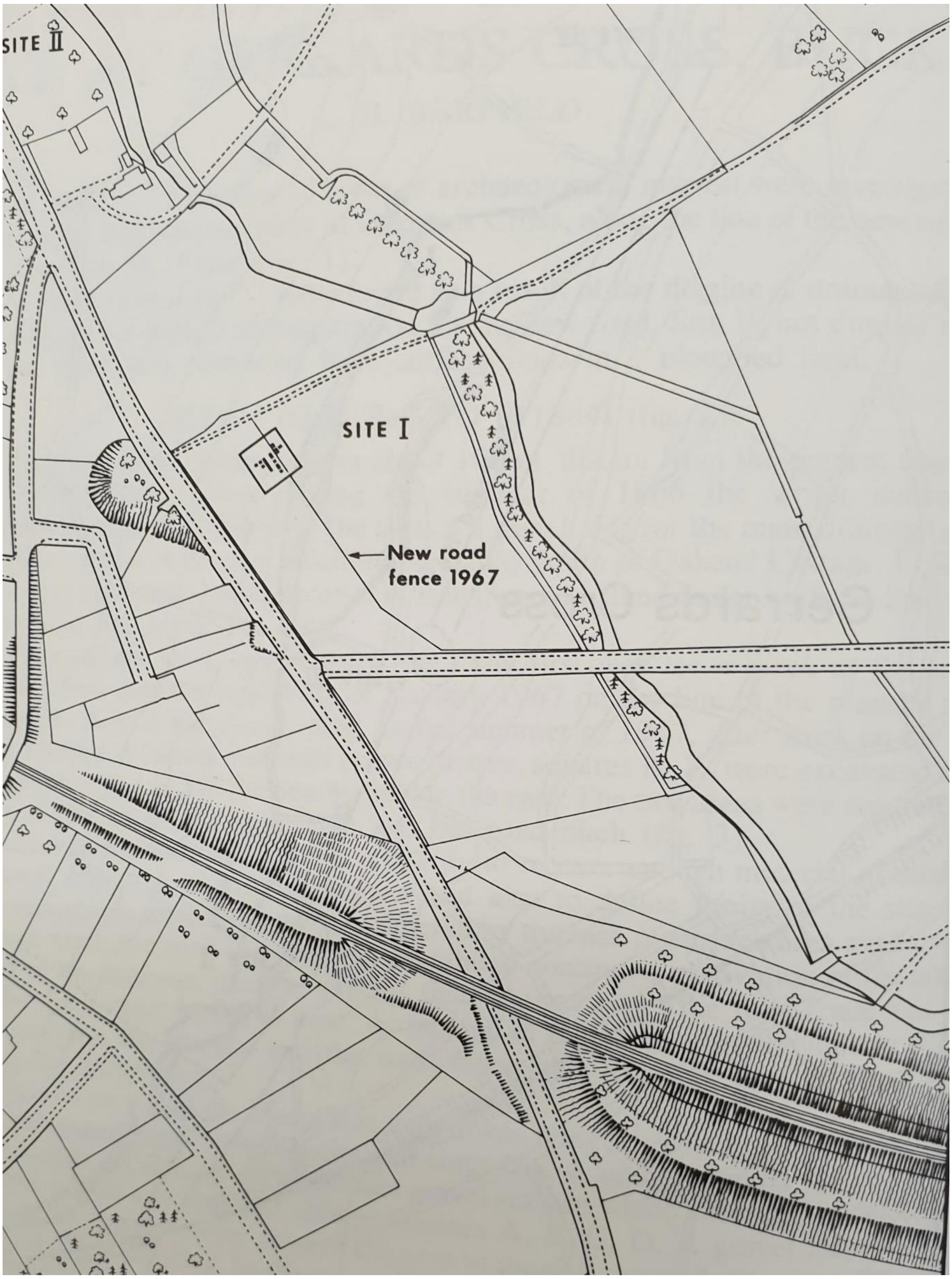

Figure 5.9: Oakend (Gerrards Cross) Site I grid plan with subsoil descriptions (Barfield, 1977)

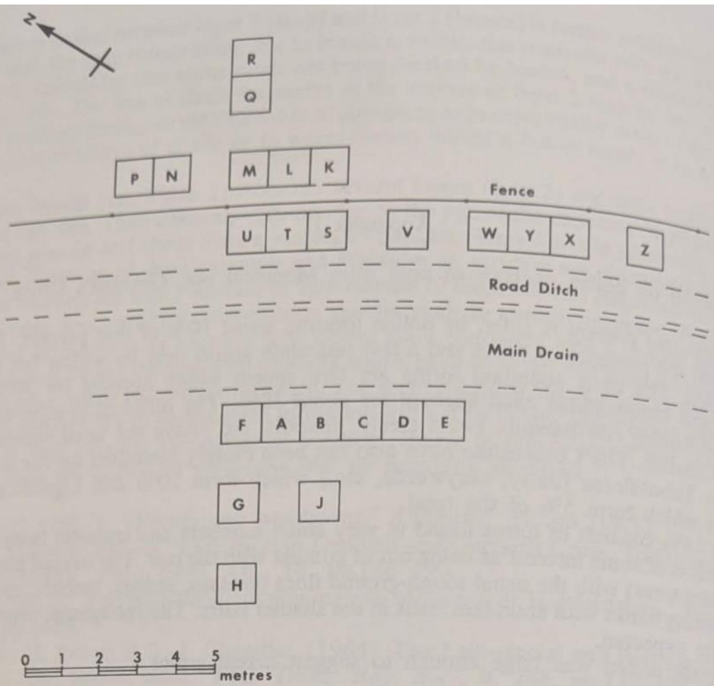

Fig. 3. Gerrards Cross Site I. Grid Plan.

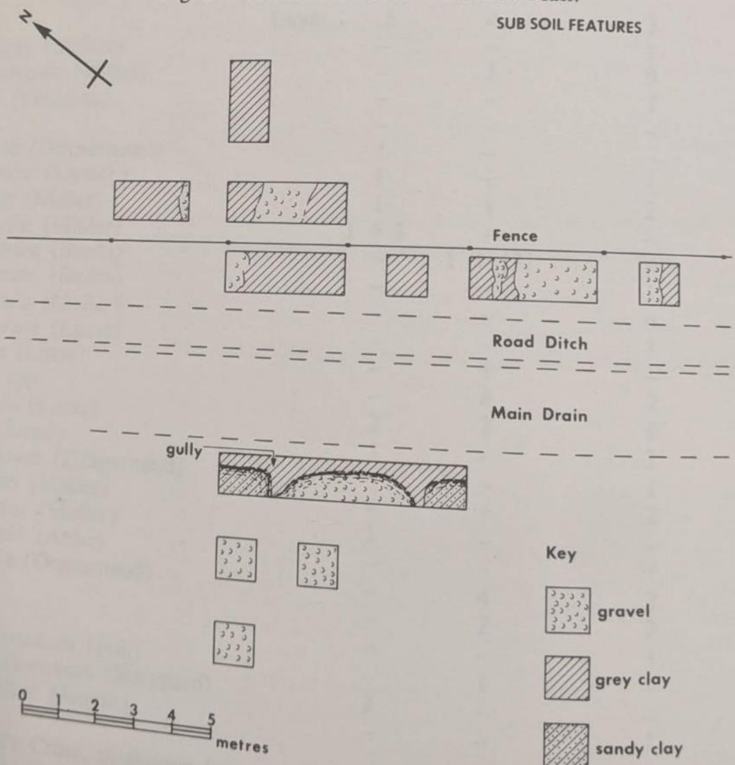

Fig. 4. Site 1. Sub-soil features.

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Figure 5.10: Oakend (Gerrards Cross) Site I section along squares containing Mesolithic flint layers (Barfield, 1977)

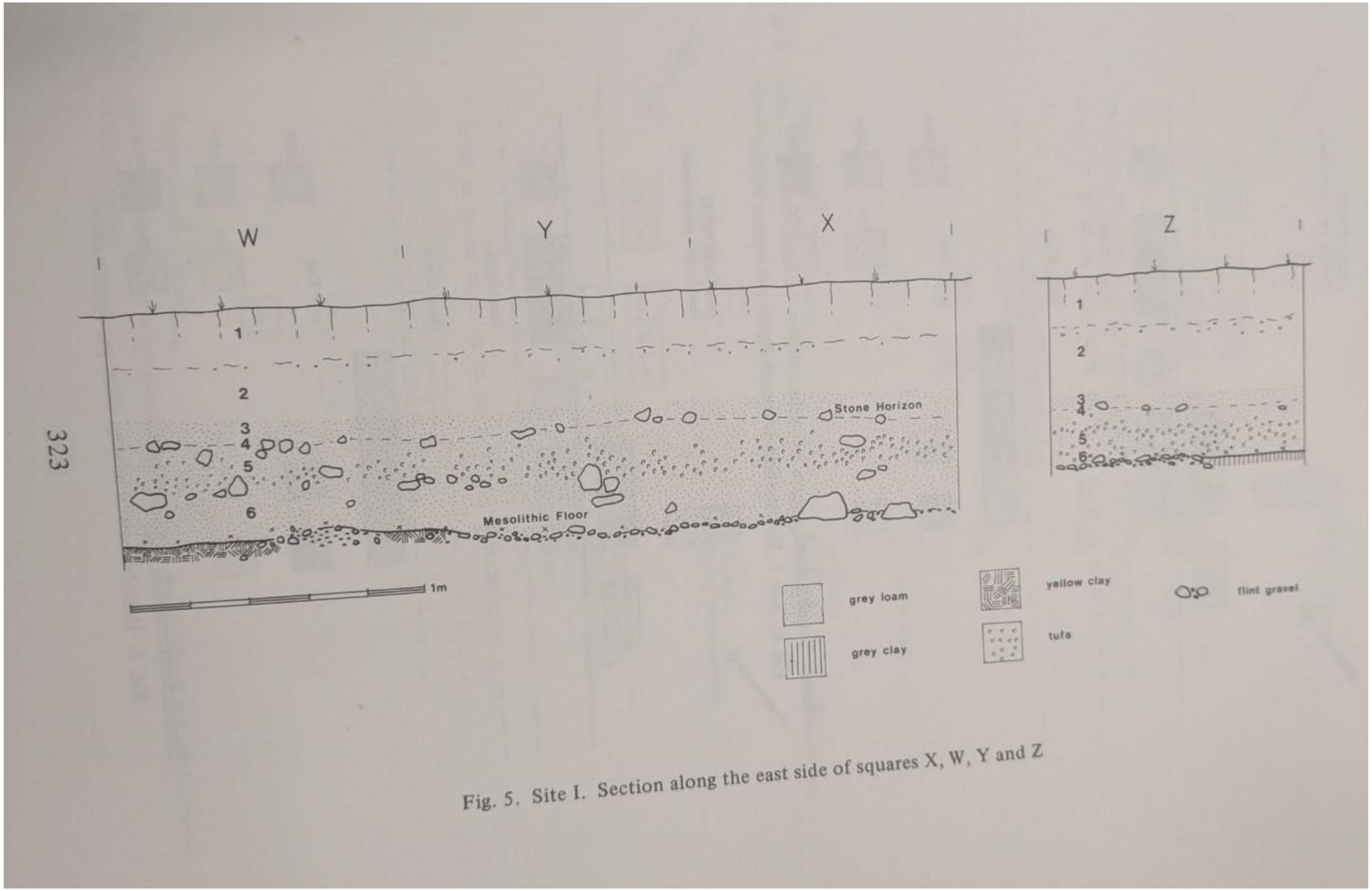


Figure 5.11: Oakend (Gerrards Cross) Site I distribution of struck flakes and shatter (Barfield, 1977)

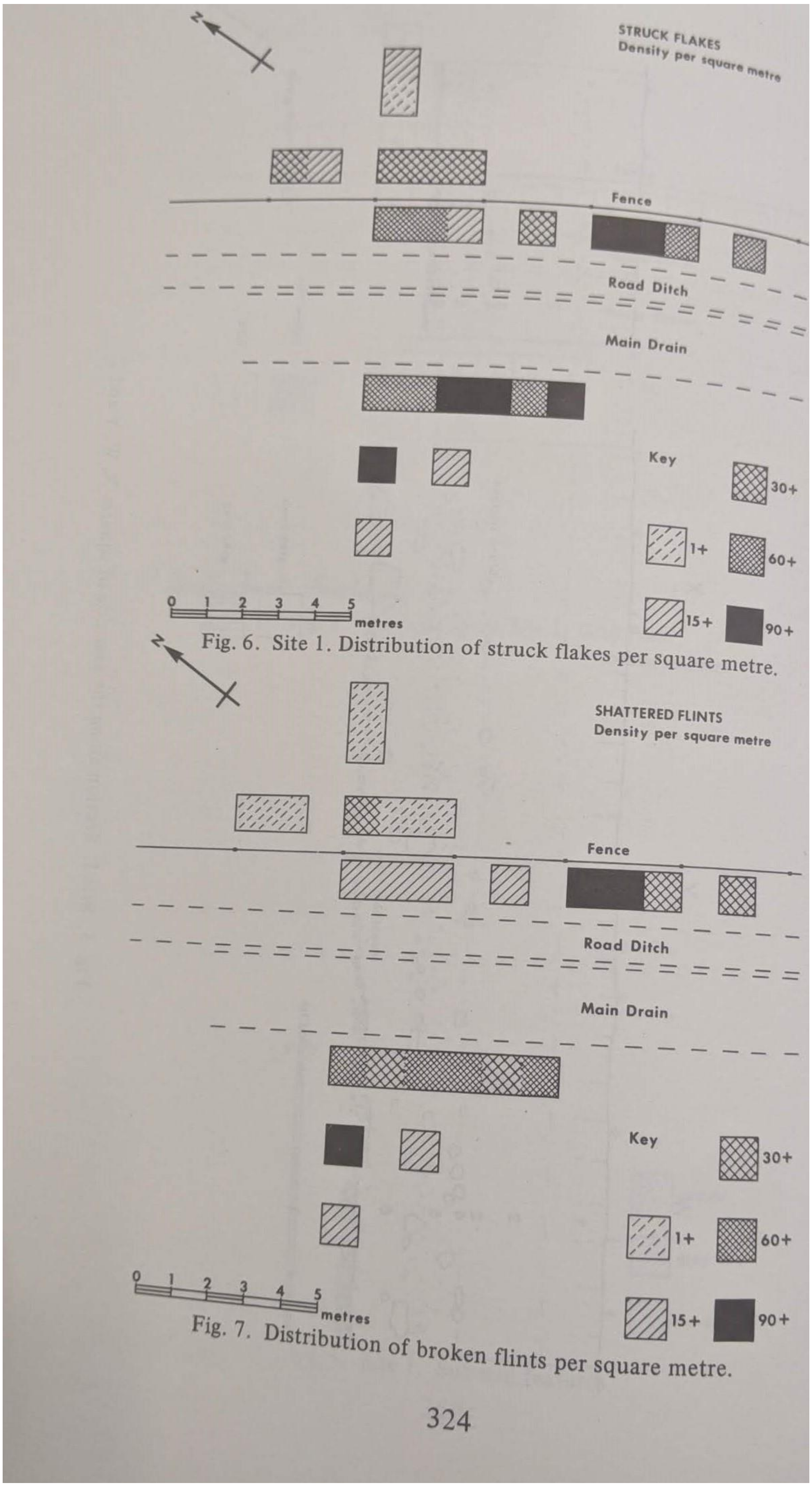


Figure 5.12: Areas of evaluation and watching brief interventions and Sanderson's site plan as insert (MoLAS, 2006: Figure 1 & 2)

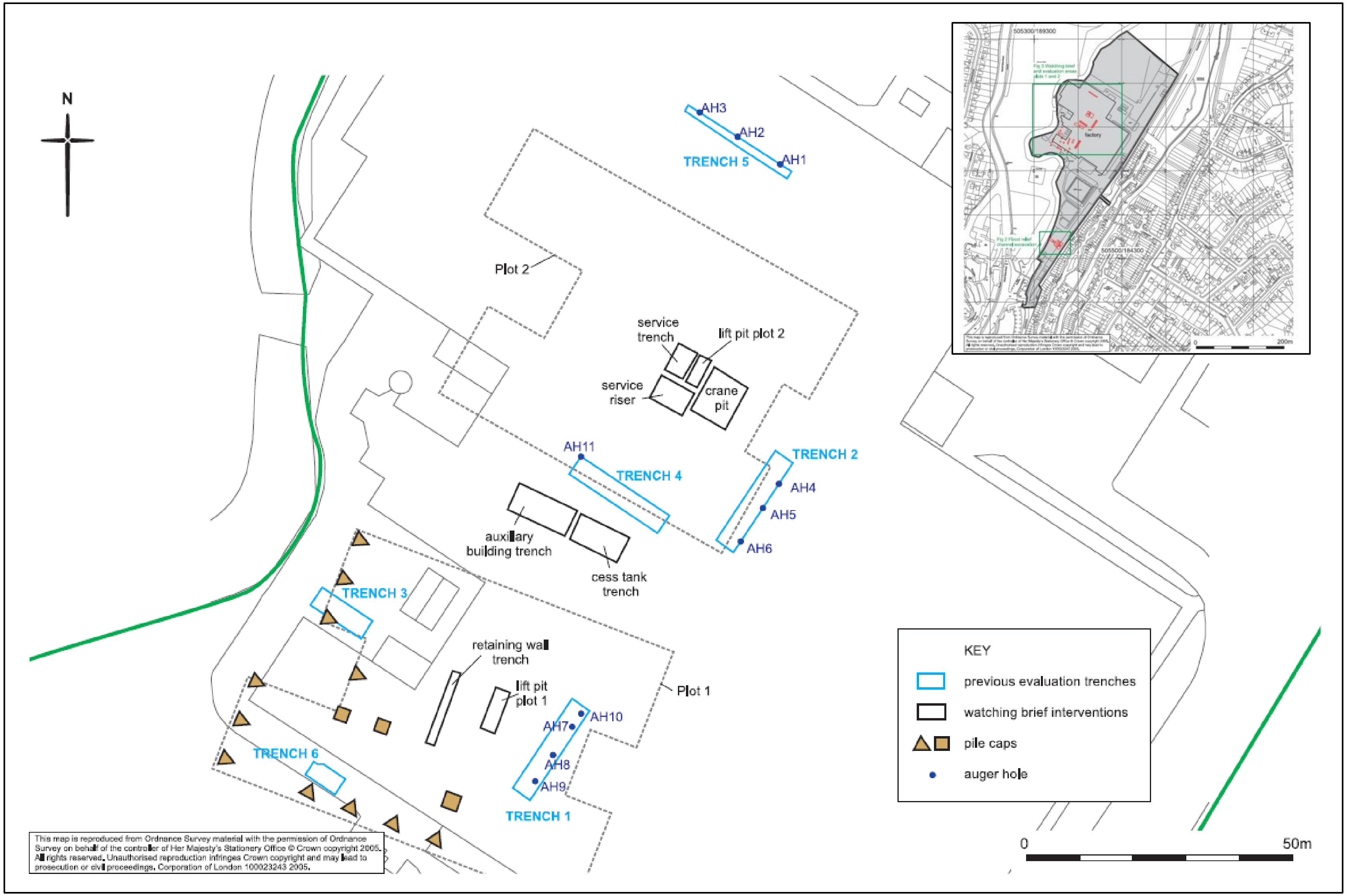


Figure 5.13: Areas of excavation on flood relief channel and Sanderson's site plan as insert (MoLAS, 2006: Figure 1 & 3)

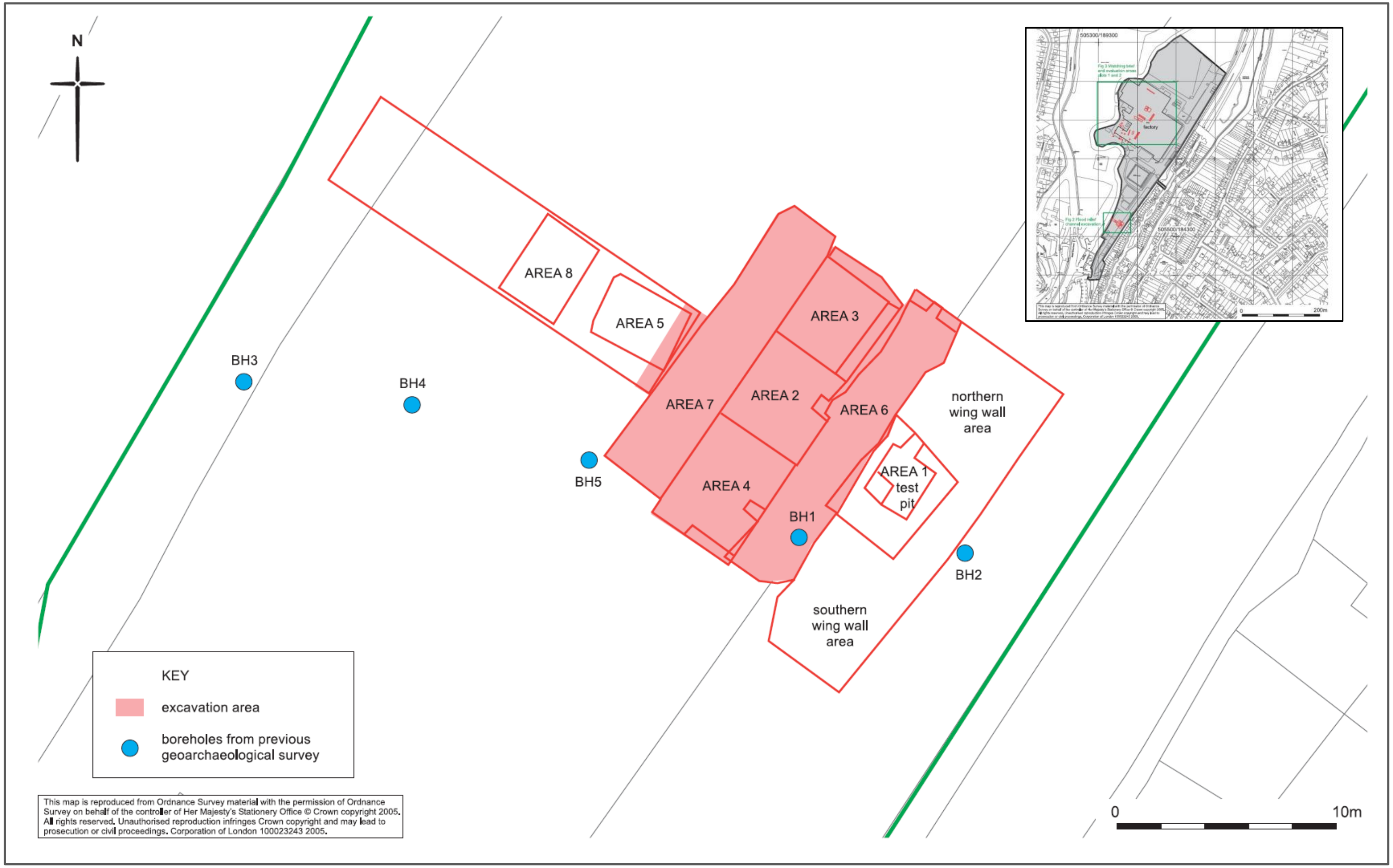


Figure 5.14: Excavation area at Sanderson's showing, flint scatters, animal bone and burnt flint distribution (MoLAS, 2006: Figure 5)

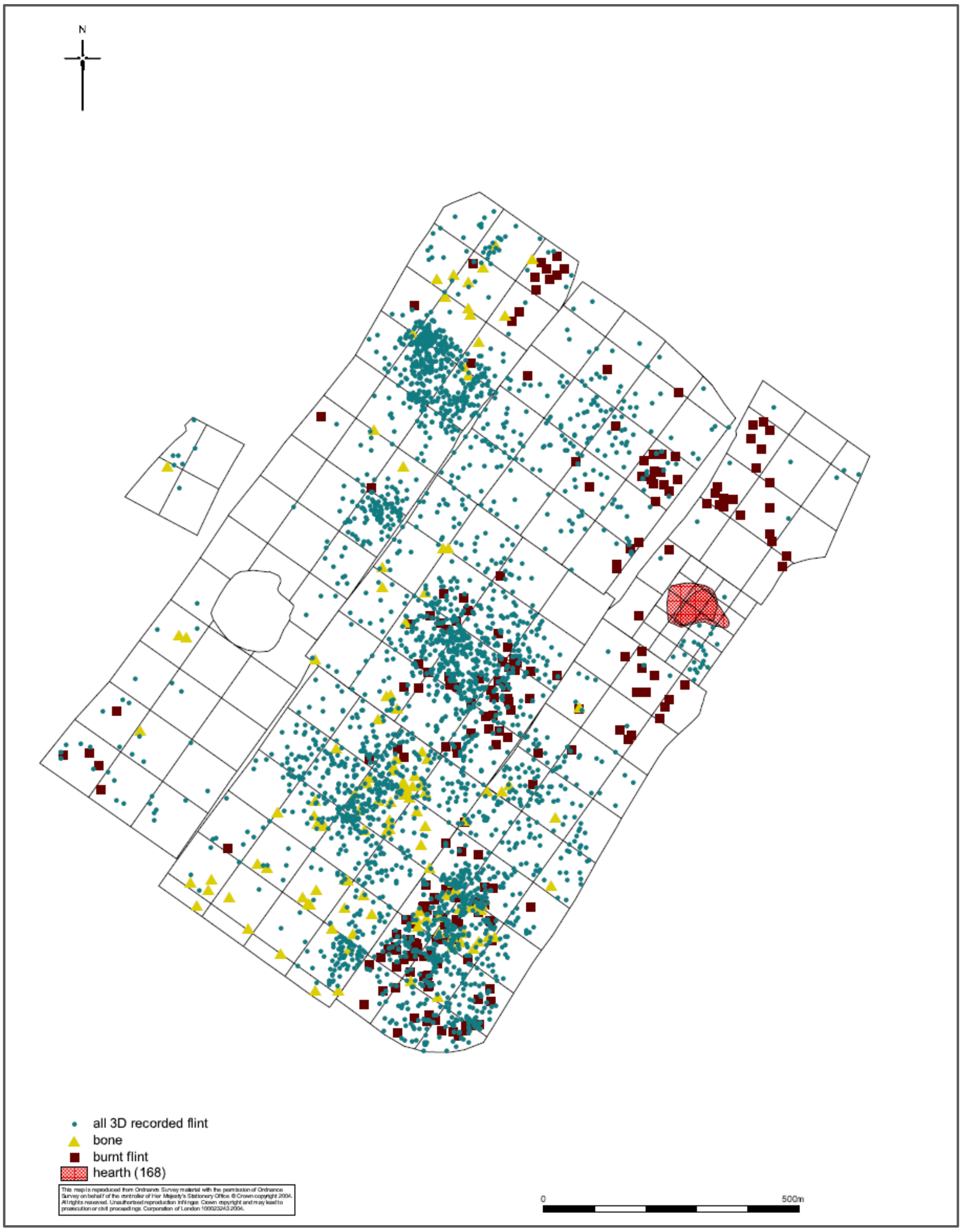


Figure 5.15: Excavation area at Sanderson's showing animal bone and tool distribution (MoLAS, 2006: figure 7)

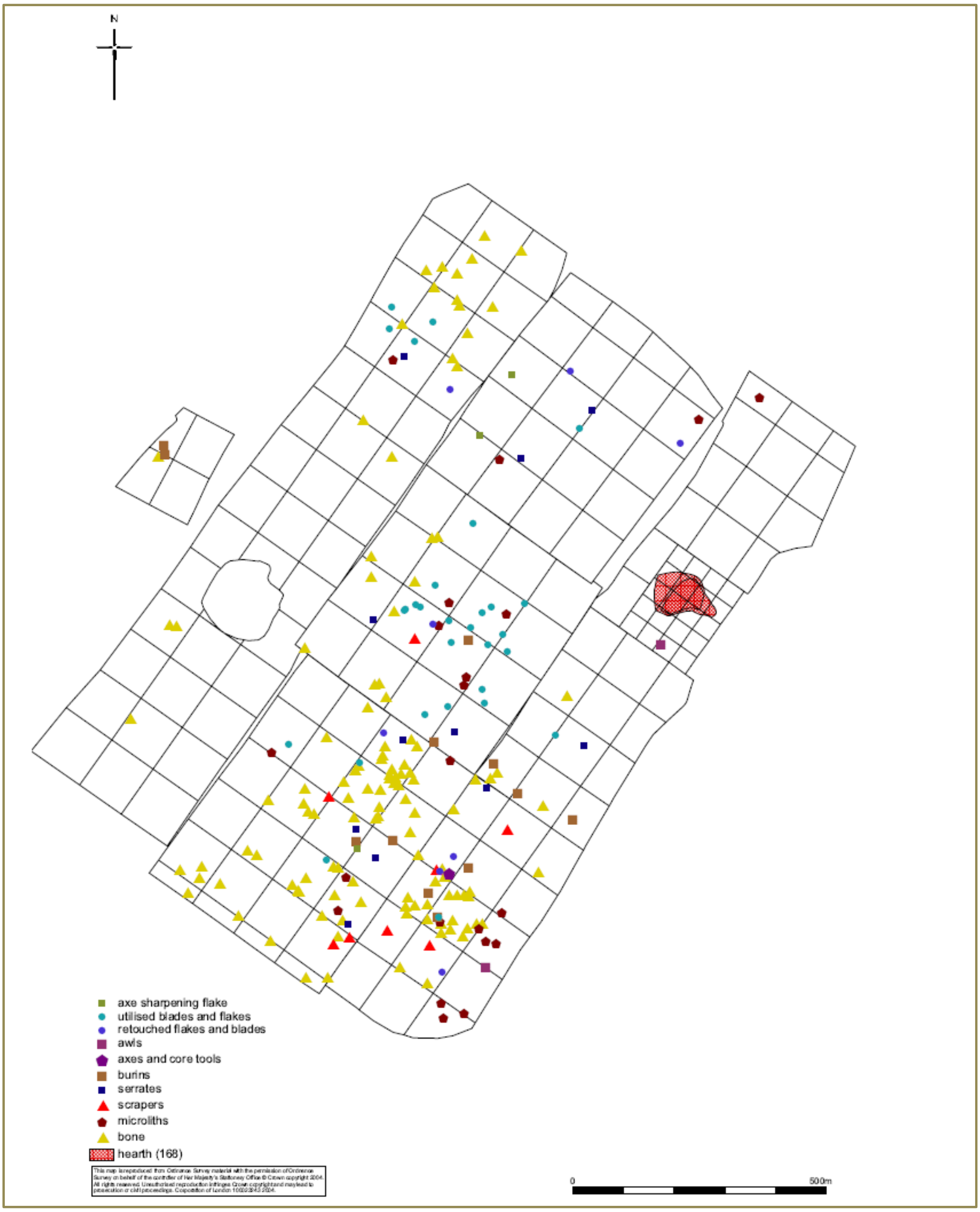


Figure 5.16: 3WW site plan showing phases of excavation 1986-1990 (Lewis & Rackham, 2011: 7, Fig 3b)

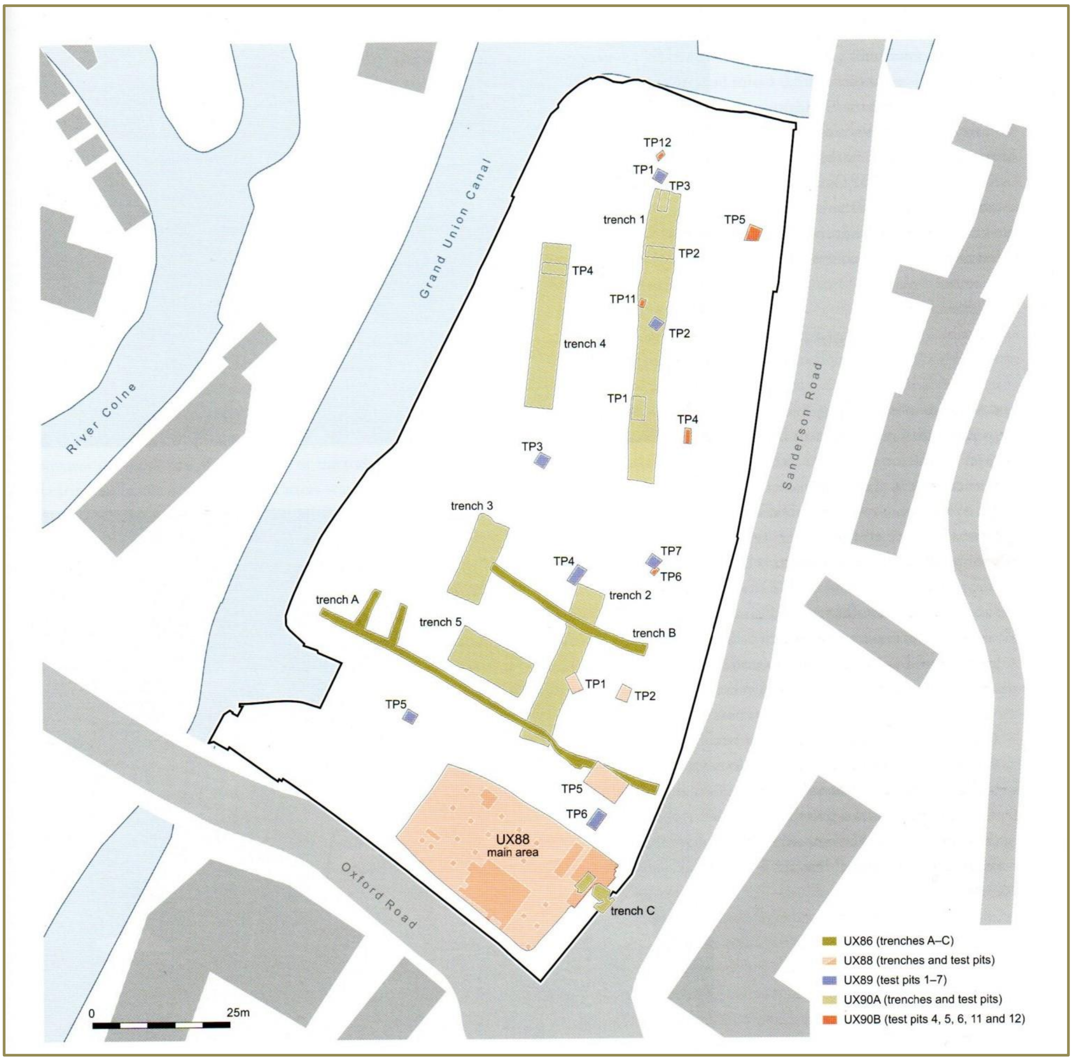


Figure 5.17: 3WW main area (UX88) showing scatters A-C, and scatter D (Lewis & Rackham, 2011: 11, Fig 8)

Figure 5.18: Location of Former Jewson's Yard site (Barclay et al; 1995: figure 1)

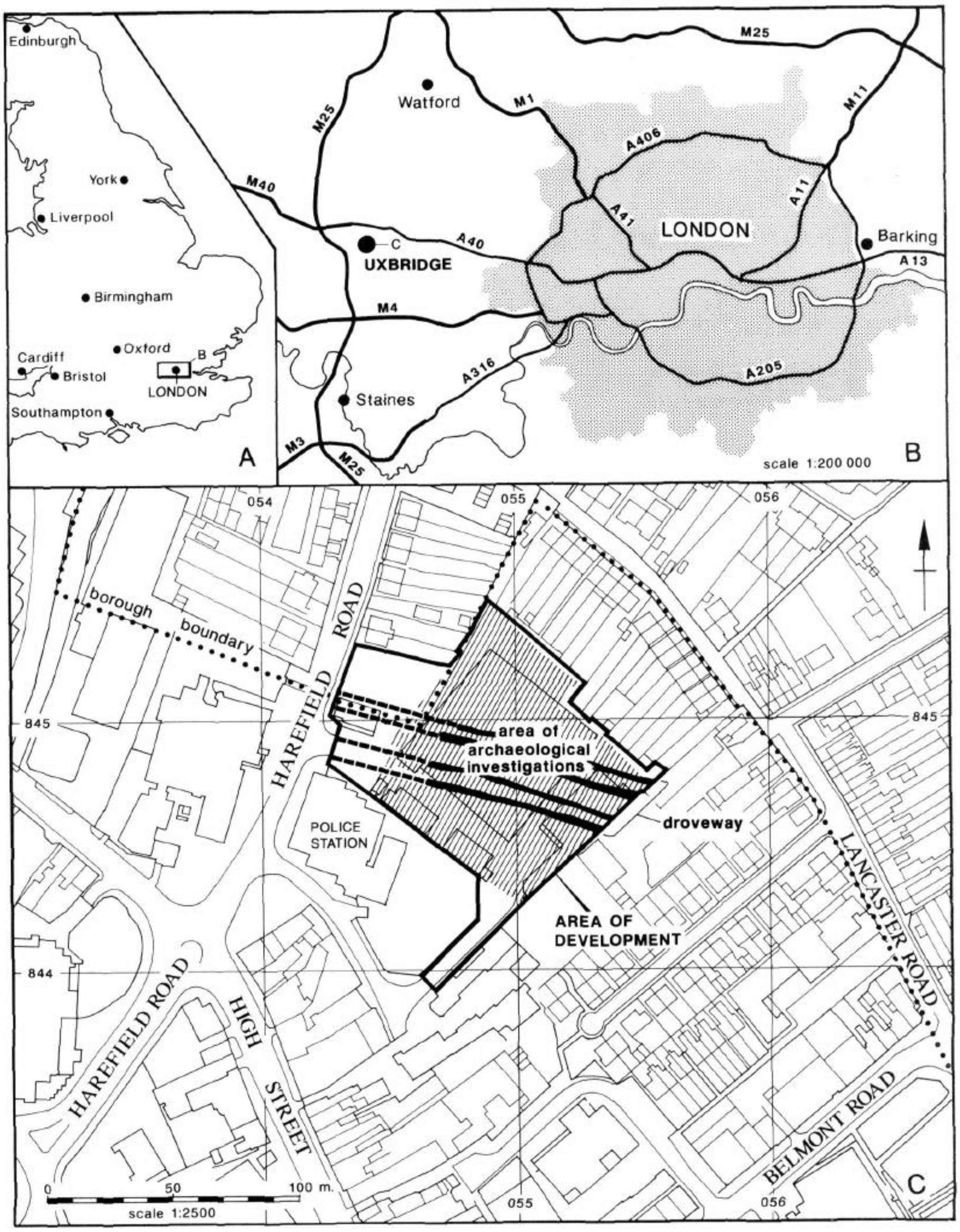


Figure 5.19: Site plan of Jewson's showing trench 6 (Barclay et al; 1995: figure 2)

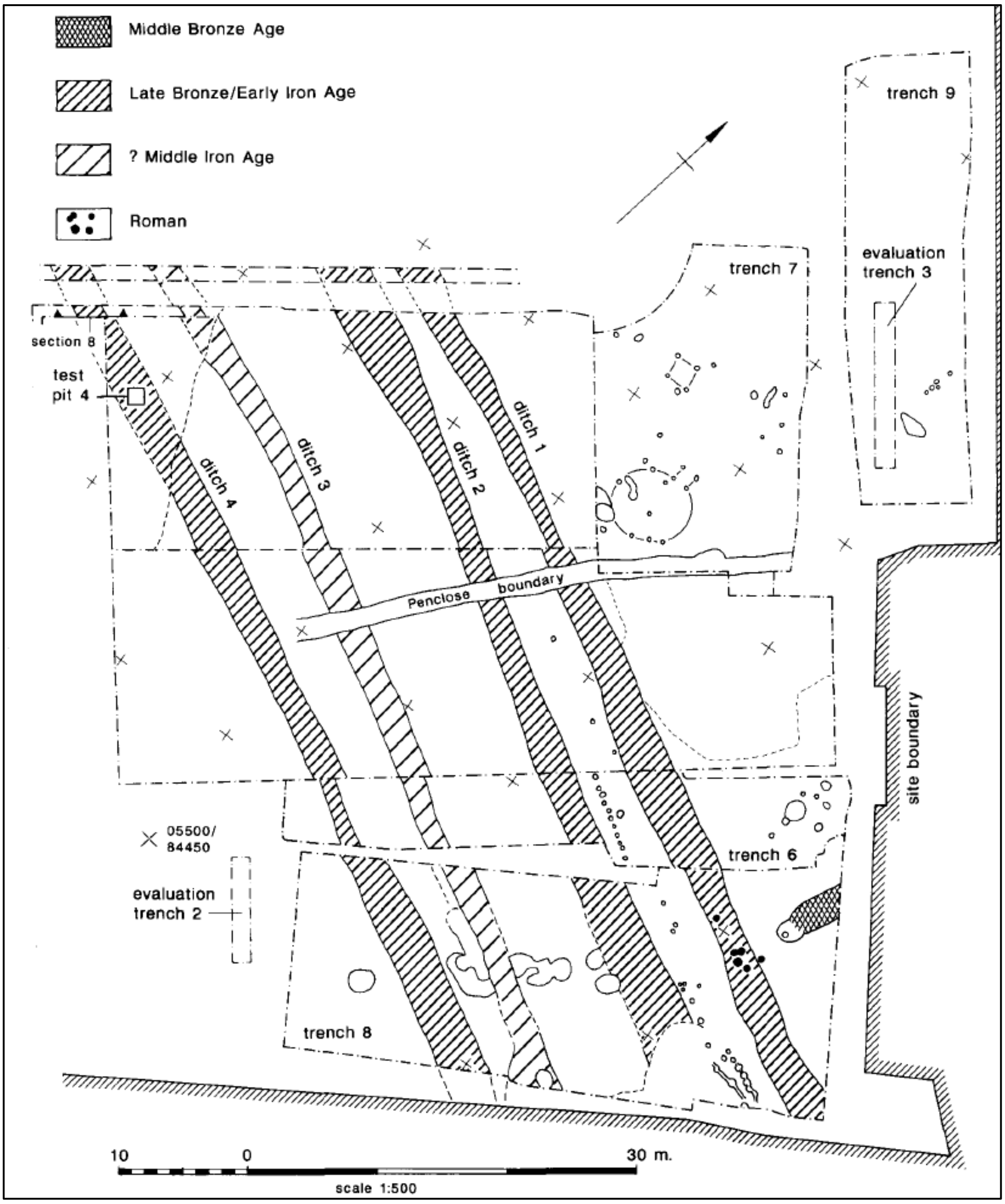


Figure 5.20: Plan of trench 6 at Former Jewson's Yard site (Barclay et al; 1995: figure 3)

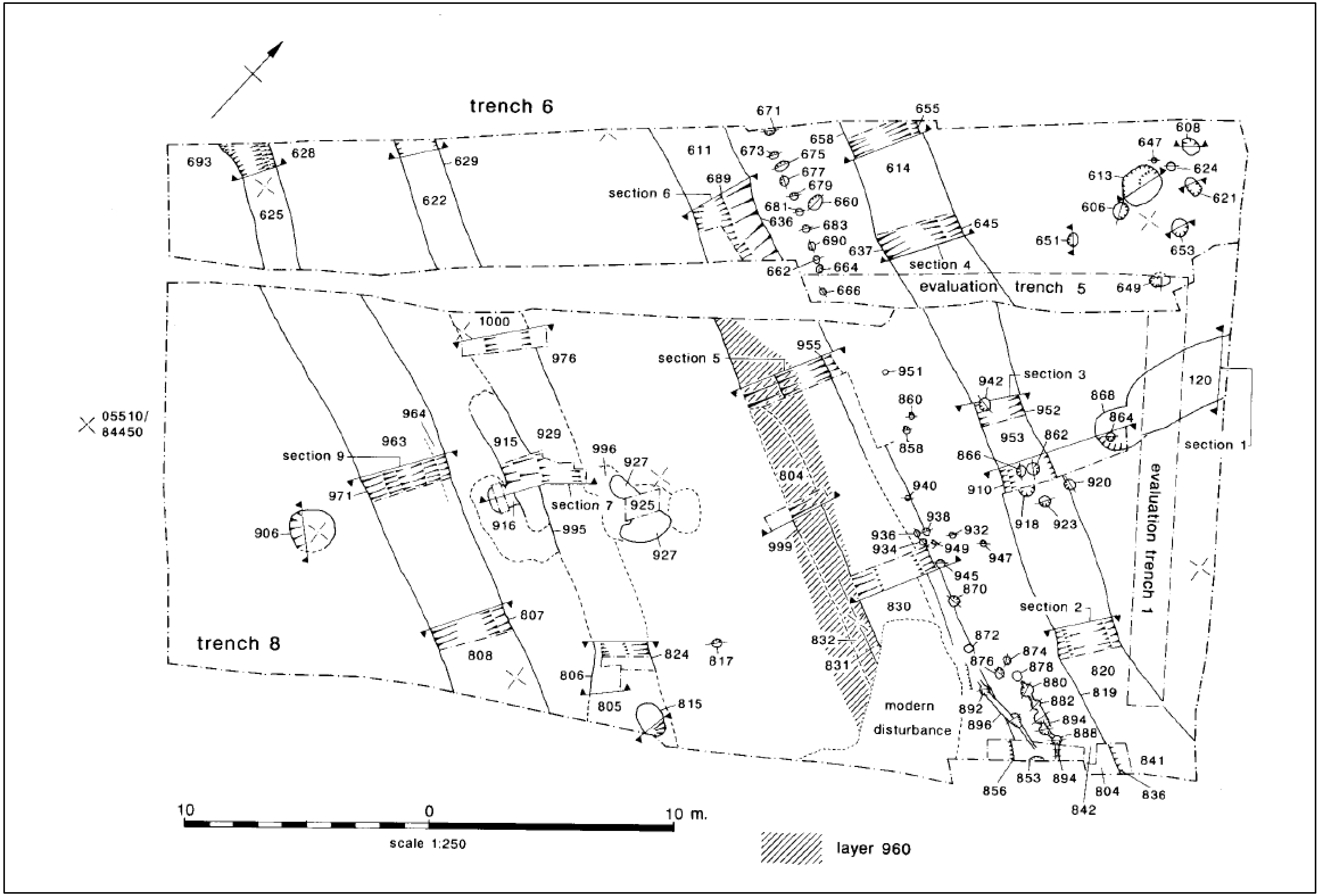


Figure 5.21: Distribution of microliths in scatter C at 3WW (Lewis & Rackham, 2011: 73, Fig 78)

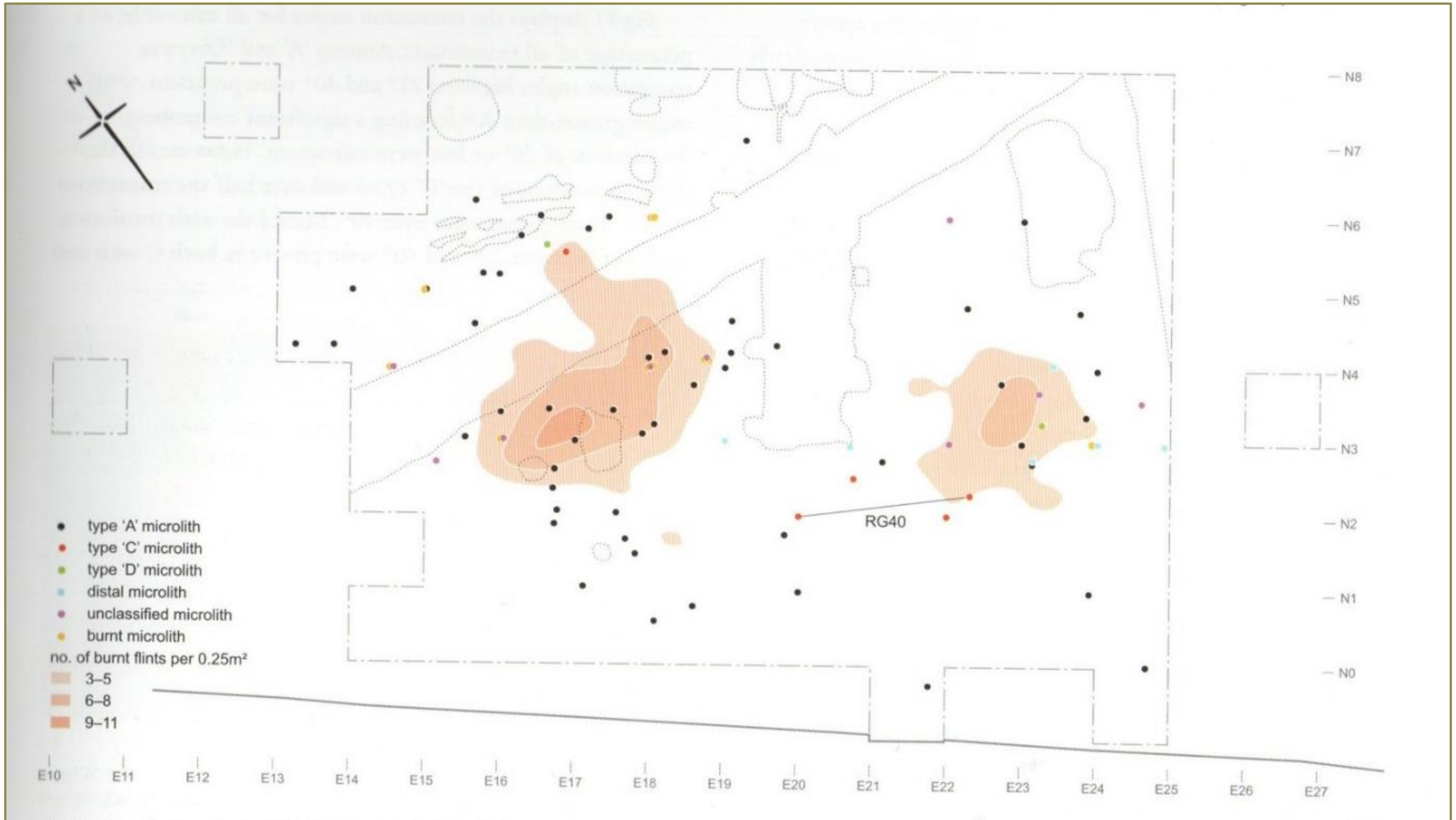


Fig 78 Distribution of microliths in scatter C (scale 1:100)

Figure 5.22: Distribution of microburin in scatter C at 3WW (Lewis & Rackham, 2011: 74, Fig 79)

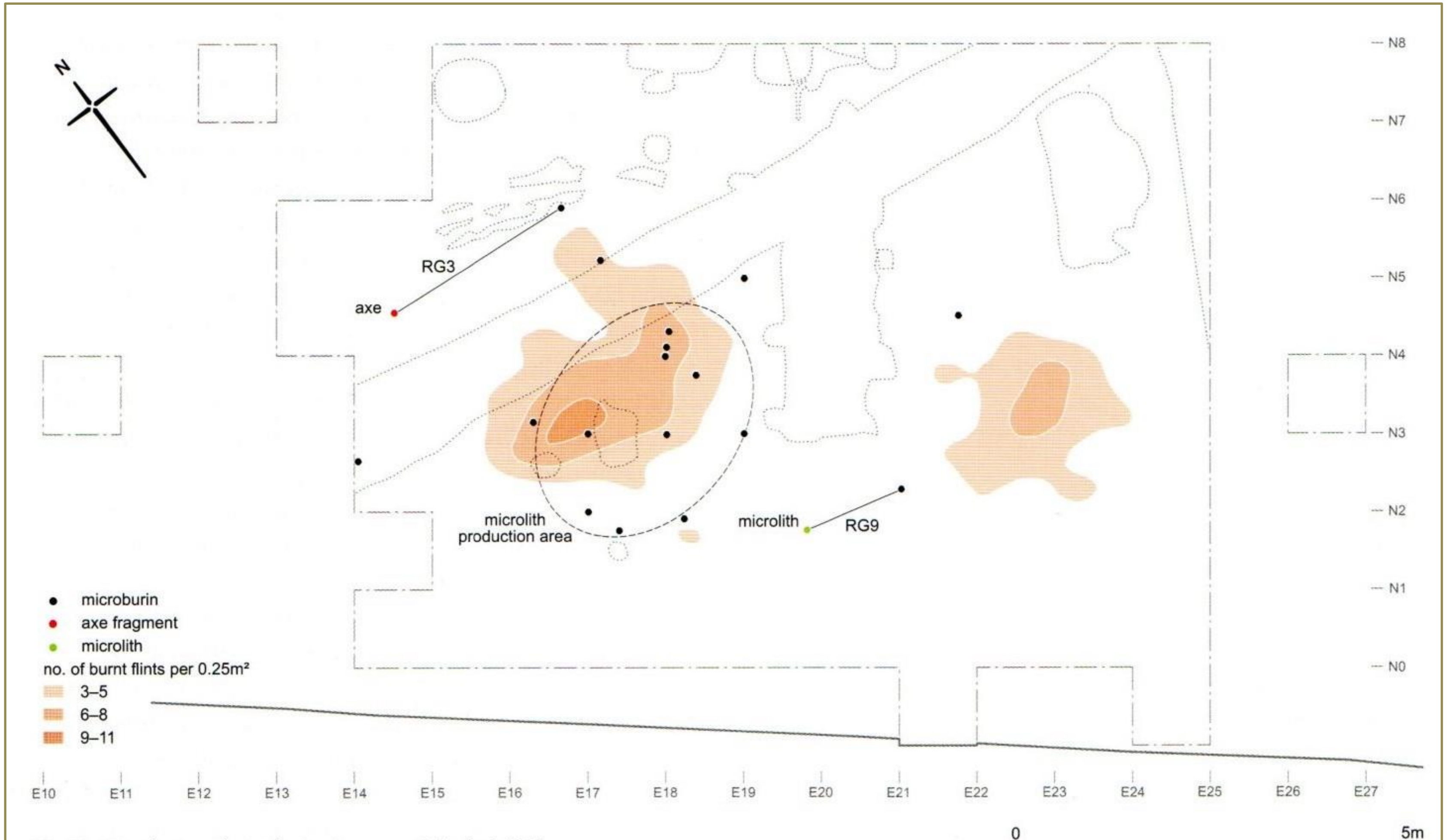


Fig 79 Distribution of microburins in scatter C (scale 1:100)

Figure 5.23: Distribution of burin in scatter C at 3WW (Lewis & Rackham, 2011: 77, Fig 85)

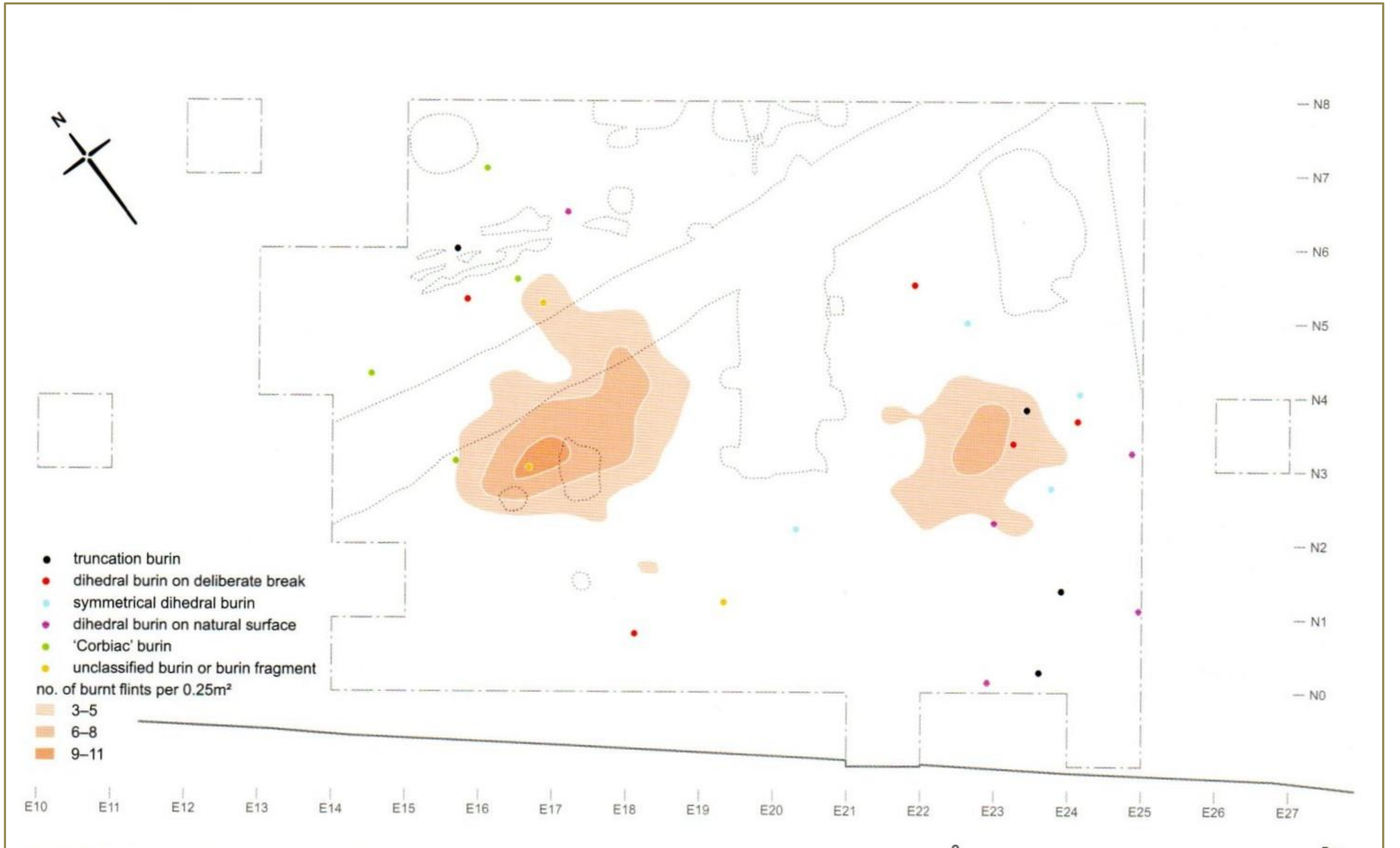


Fig 85 Distribution of burins in scatter C (scale 1:100)

Figure 5.24: Distribution of burin spall in scatter C at 3WW (Lewis & Rackham, 2011: 78, Fig 86)

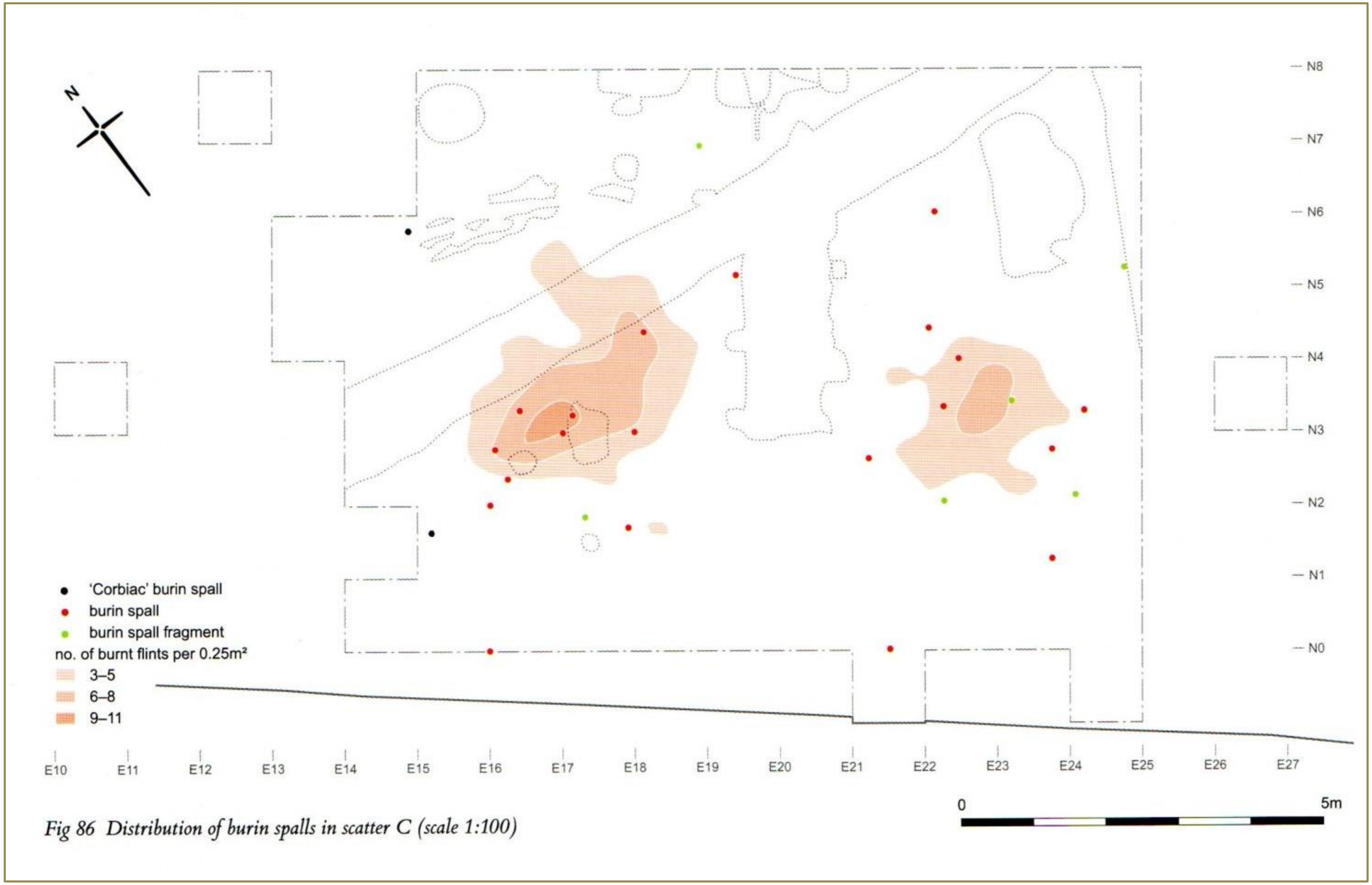


Fig 86 Distribution of burin spalls in scatter C (scale 1:100)

Figure 5.25: Distribution and density of burnt flint and deer bone in Scatter C at 3WW (Lewis et al; 2011)

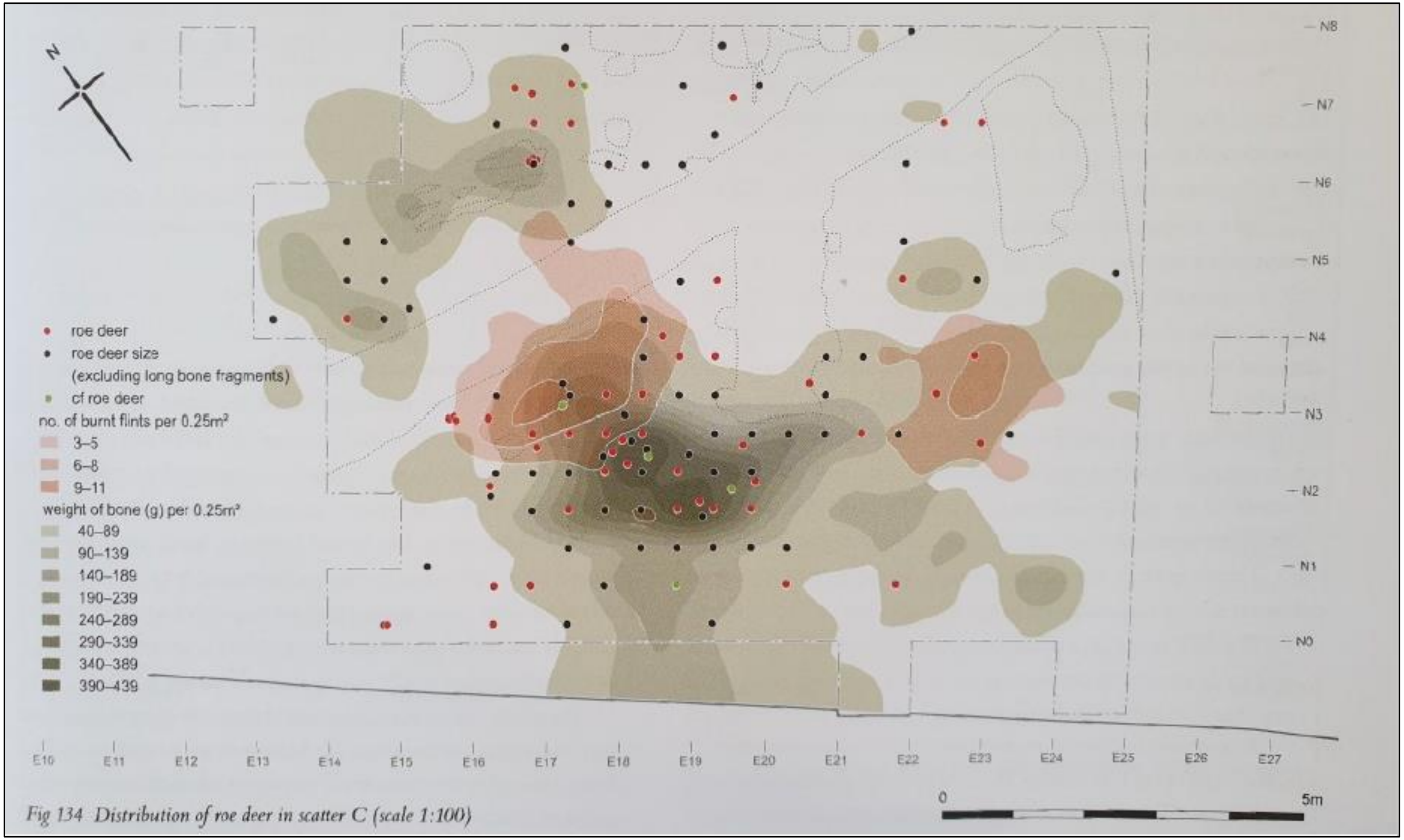


Figure 5.26: Possible hearth (shades of red) and shelter location at 3WW (Lewis et al; 2011: figure 217)

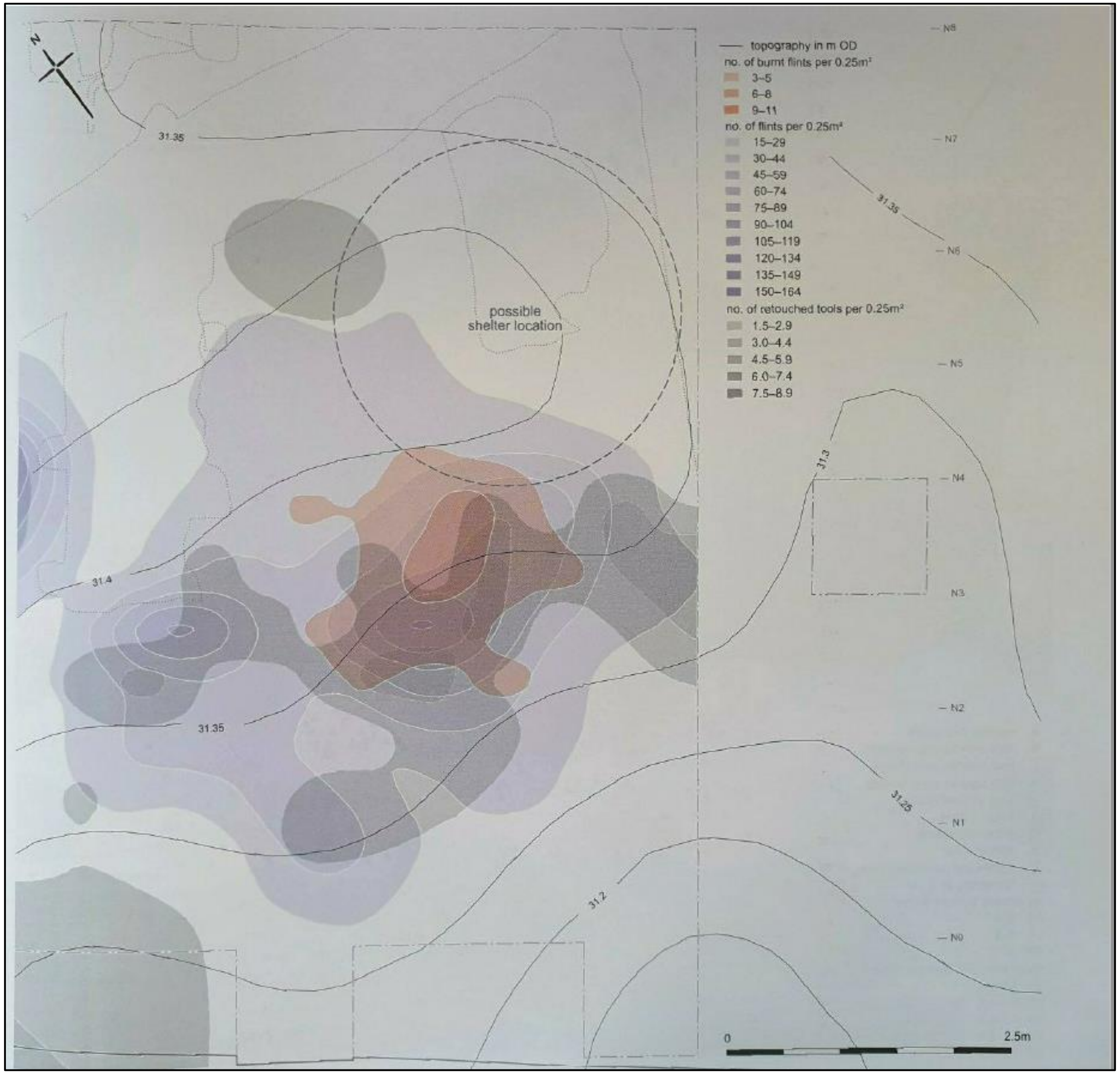


Figure 5.27: Distribution of birds in scatter C at 3WW (Lewis & Rackham, 2011: 129, Fig 143)

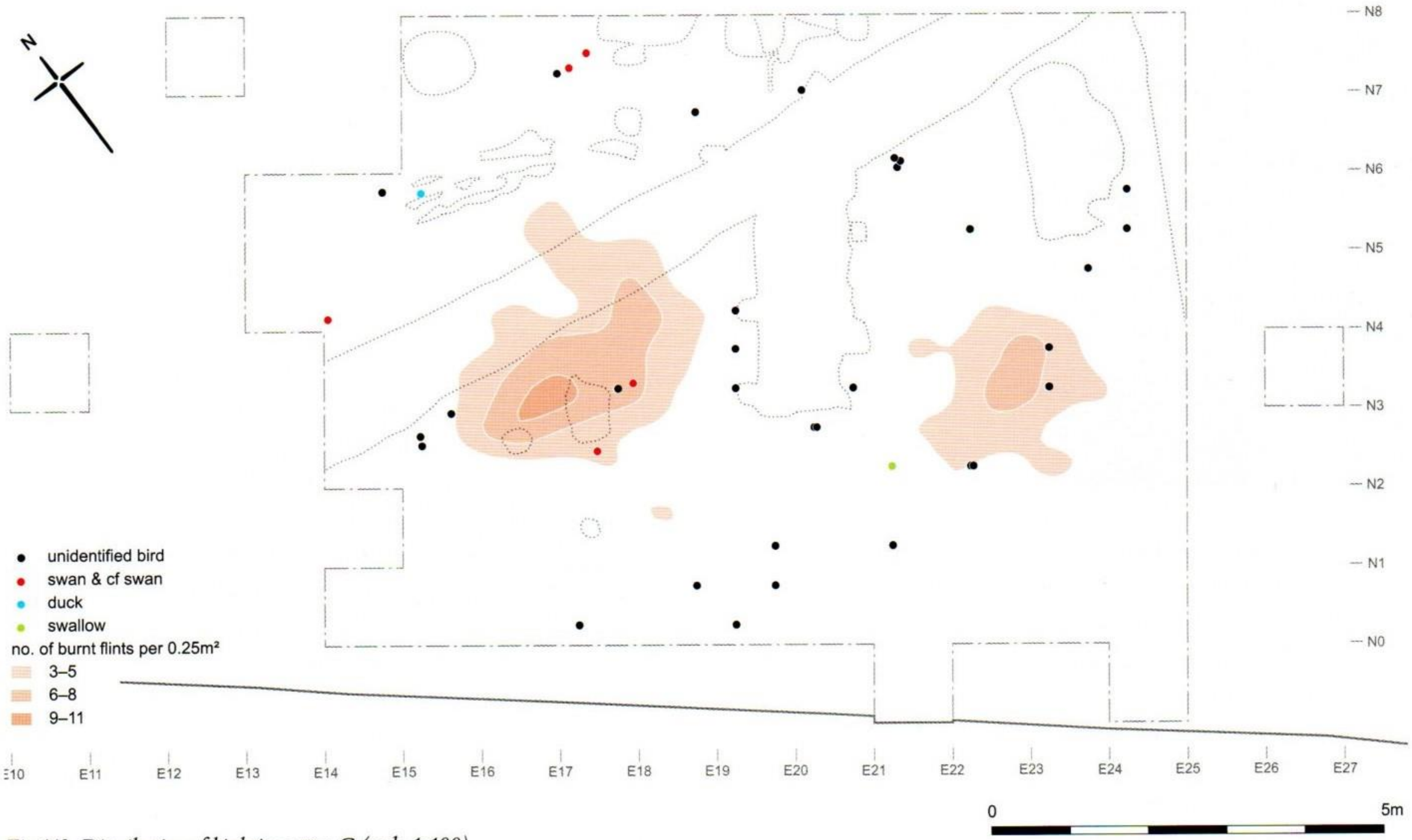


Fig 143 Distribution of birds in scatter C (scale 1:100)

Figure 5.28: PA4 site plan showing phases of excavation (Wessex Arch, 2009: Figure 1)

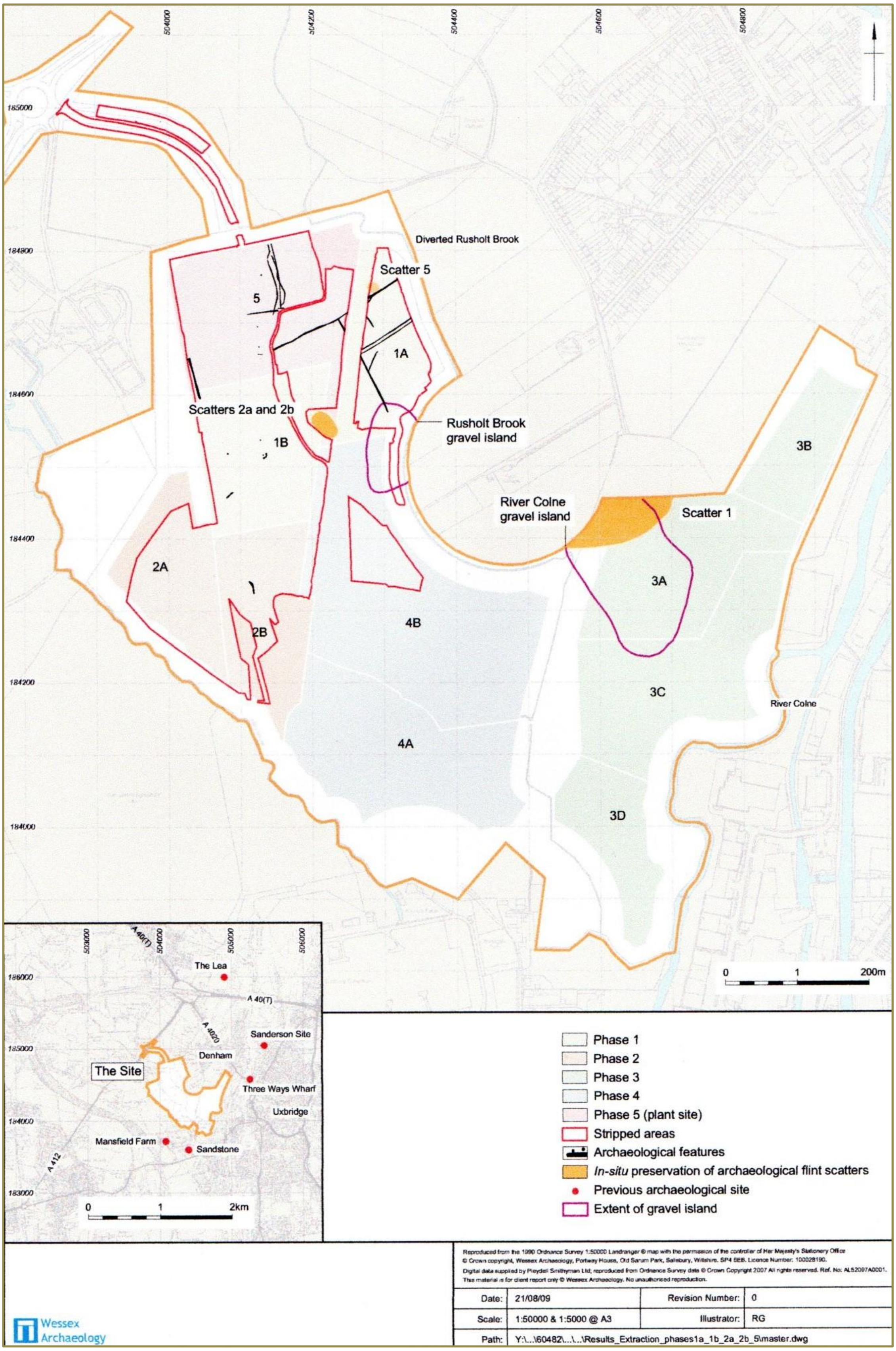


Figure 5.29: PA4 site plan showing scatters and boreholes (Wessex Arch, 2009: Figure 2)

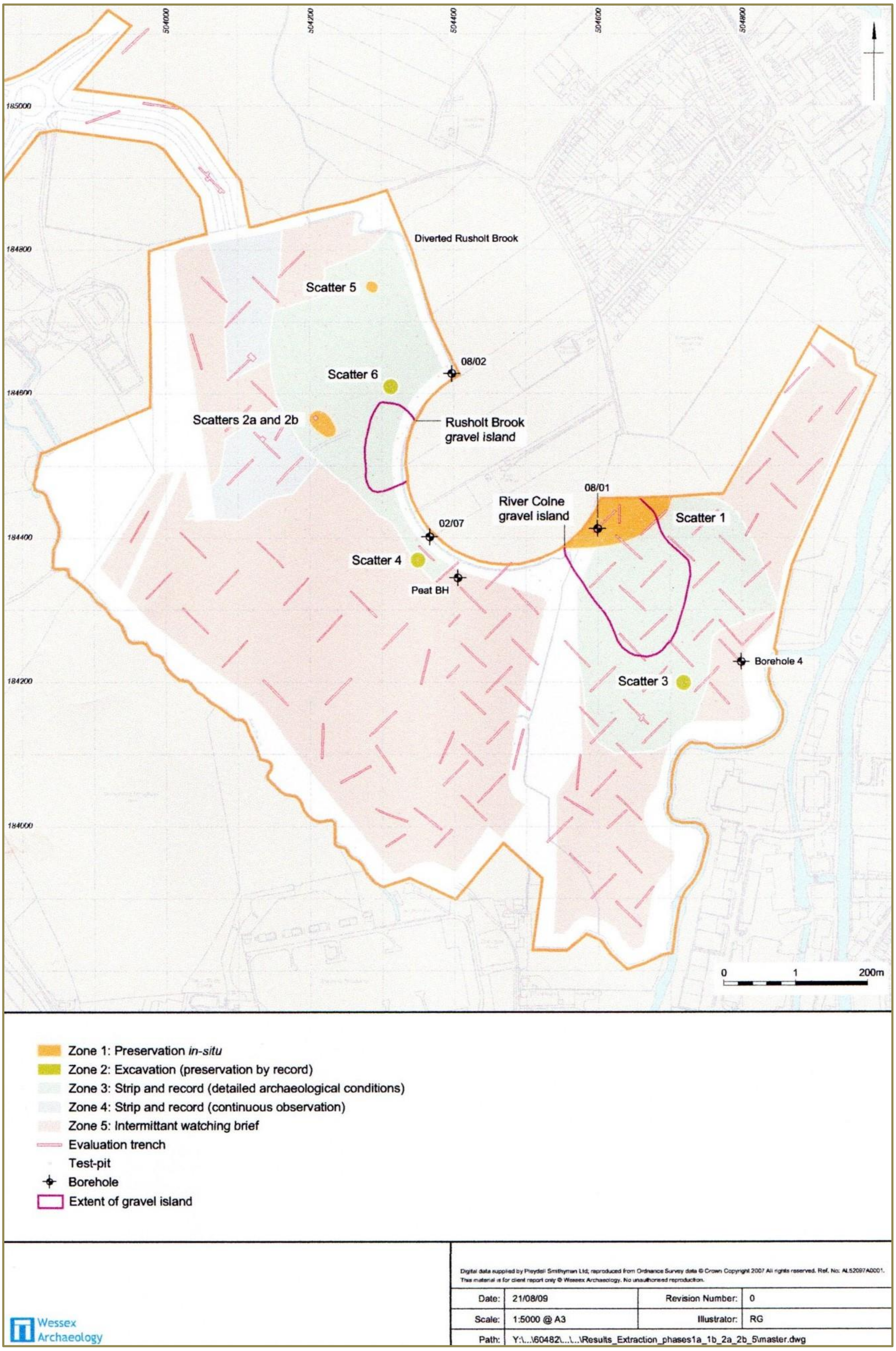


Figure 5.30: Section of stratigraphy at Sandstone site (Roger Jacobi archive, Franks House, British Museum)

Figure 5.31: Sandstone stratigraphy and palynology (Roger Jacobi archive, Franks House, British Museum)

	Stratum	Alnus	Betula	Corylus	Ilex	Pinus	Quercus	Salix	Tilia	Ulmus	Total AP / Total NAP	Artemisia	Compositae ?	Cyperaceae	Ericaceae	Galium	Gramineae	Ranunculus ?	Sparganium ?	Umbelliferae ?	Various NAP
	Made Ground																				
11	Clayey soil, made up	Not examined																			
10	Peaty clay	No pollen seen																			
9	Open-water mud with shells	-	-	10	-	-	-	-	-	-	10/3	-	-	-	-	-	2	-	-	-	1
8		2	3	61	1	8	18	-	-	7	100/45	1	3	5	-	-	31	-	-	-	5
7		Not examined																			
6		-	-	17	1	1	2	-	-	3	24/29	-	-	13	-	1	8	1	-	1	5
5	Peat	Not examined																			
4		-	-	24	-	73	-	-	-	3	100/12	-	3	2	1	-	-	-	1	-	5
3		Not examined																			
2		-	10	11	-	70	-	9	-	-	100/126	-	-	113	-	-	4	-	-	-	9
1		Not examined																			
	Gravel																				

Figure 5.32: Red deer bone from Sandstone site 9 (Franks House, British Museum; authors photograph)

Figure 5.33: Red deer bone from Sandstone site 9 (Franks House, British Museum; authors photograph)

Figure 5.34: Piece of hazel from Sandstone site 9 (Franks House, British Museum; authors photograph)

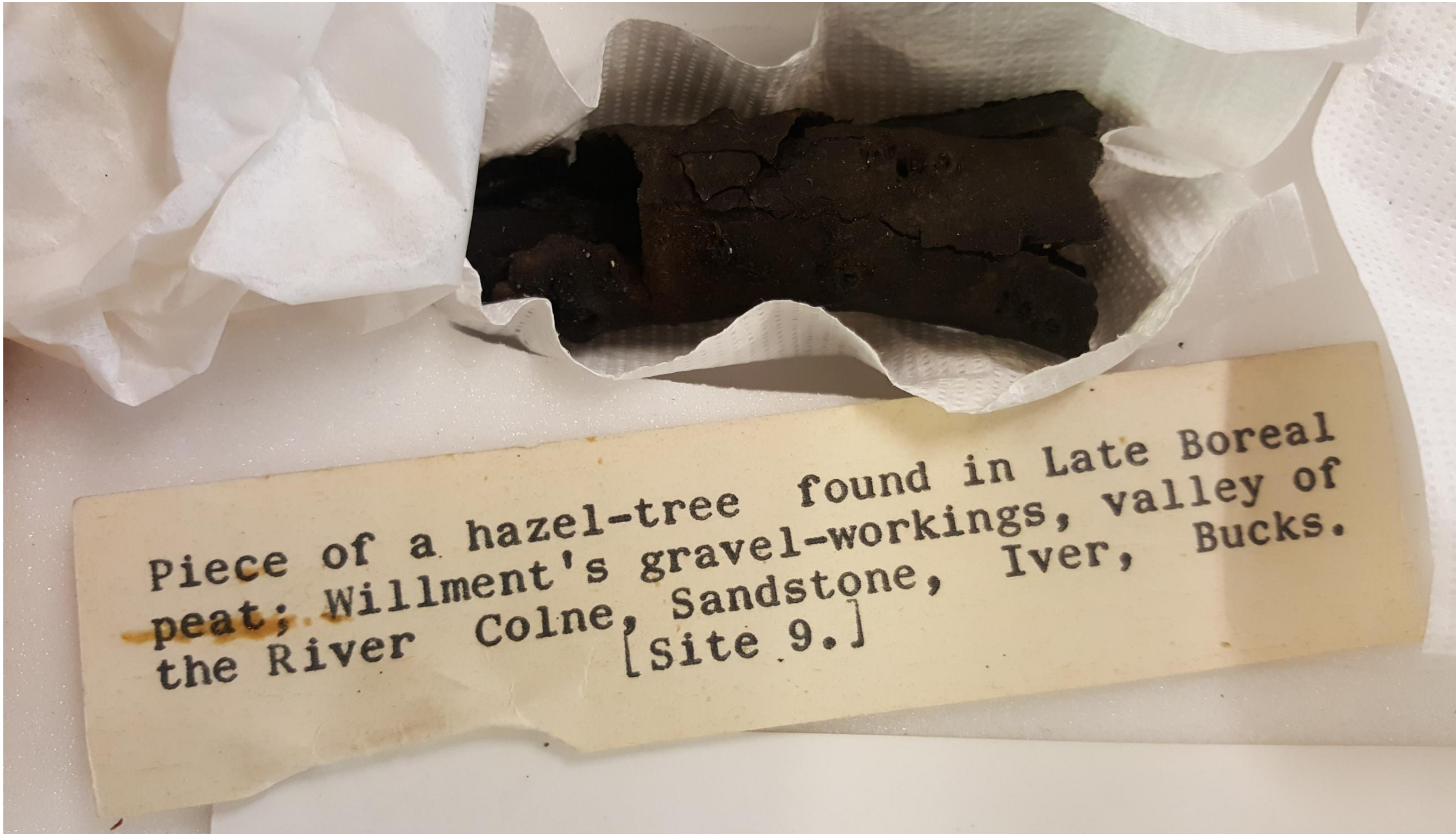


Figure 5.35: Backed blades from Sandstone south pit (Franks House, British Museum; authors photograph)

Figure 5.36: Blades from Sandstone south pit (Franks House, British Museum; authors photograph)

Figure 5.37: Illustration of scrapers and a pebble hammerstone (Lacaille, 1963: 163)

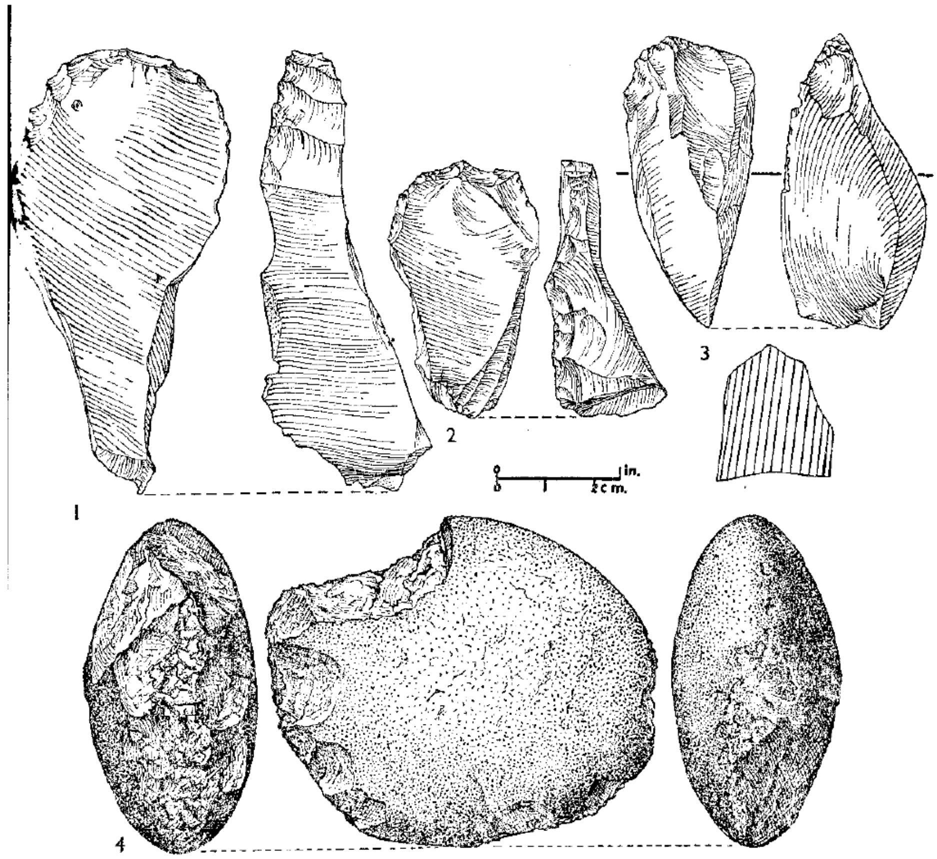


FIG. 7. Sandstone, Iver: 1–3, scrapers made on core-trimmings, all of flint;
4, hammer-stone of quartzite.

Figure 5.38: Illustration of scrapers and gravers (Lacaille, 1963: 159)

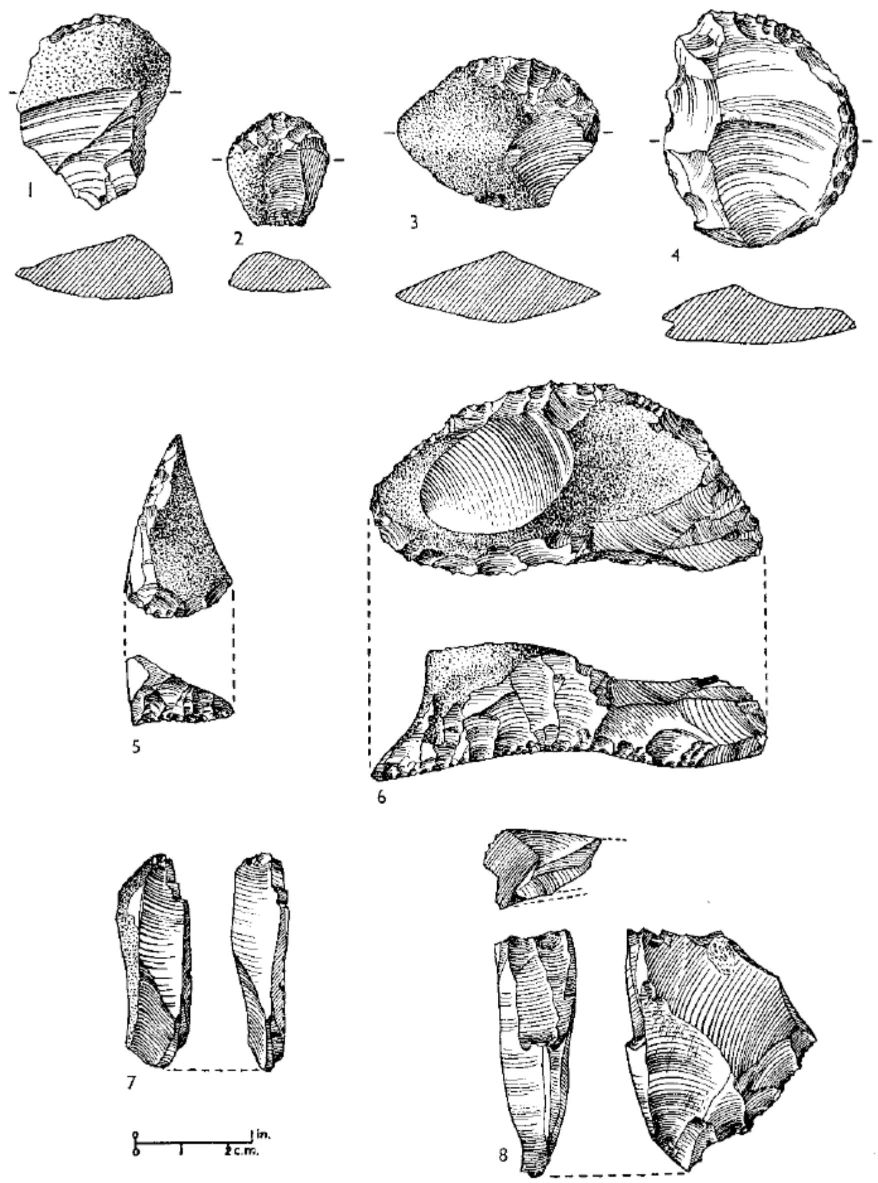


FIG. 4. Sandstone, Iver: 1–6, scrapers; 7–8, gravers. All of flint.

Figure 5.39: Burin from south pit at Sandstone (artefact 793, Frank's House collection, British Museum; authors photograph)

Figure 5.40: Dihedral burin from Sandstone south pit (Frank's House collection, British Museum; authors photograph)

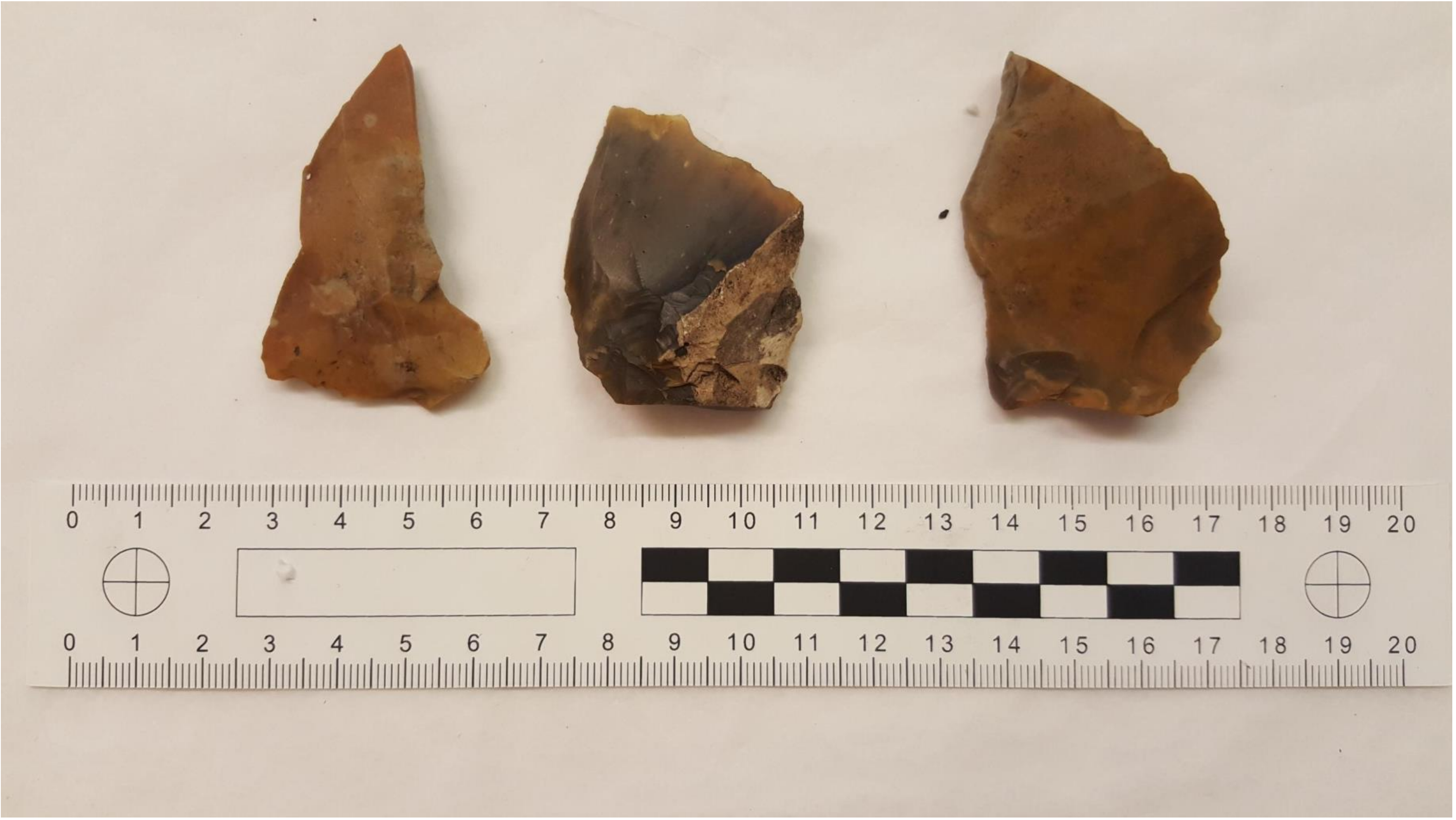


Figure 5.41: Notched burin from Sandstone south pit (artefact 567, Frank's House collection, British Museum; authors photograph)

Figure 5.42: Microliths from Sandstone south pit (Franks House, British Museum; authors photograph)

Figure 5.43: Long Lane site plan (MoLAS, 1995)

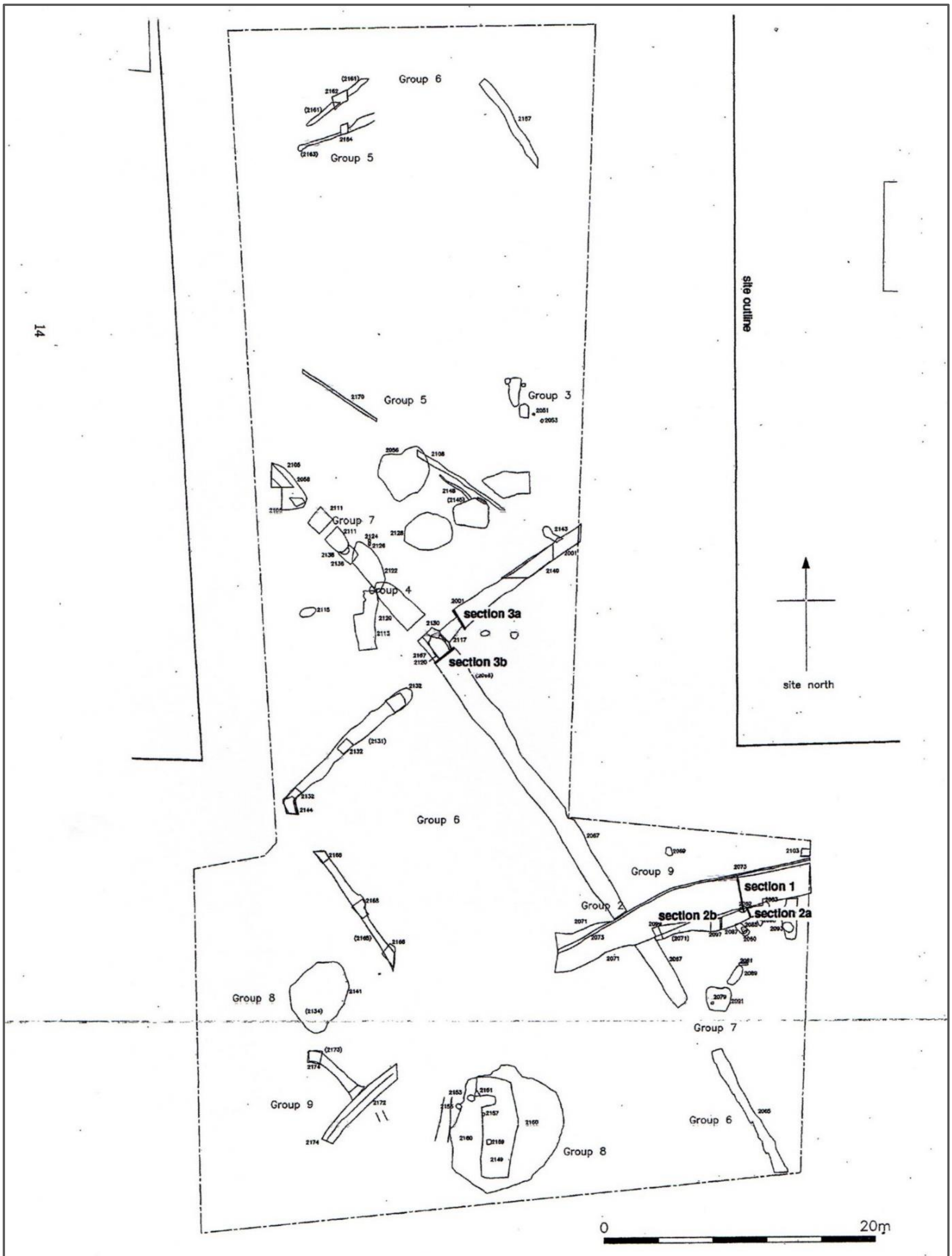


Fig.4 Composite plan showing all cut features Unnumbered features were revealed during the evaluation phase.

Figure 5.44: Long Lane site plan showing plan of Group 9 features (MoLAS, 1995)

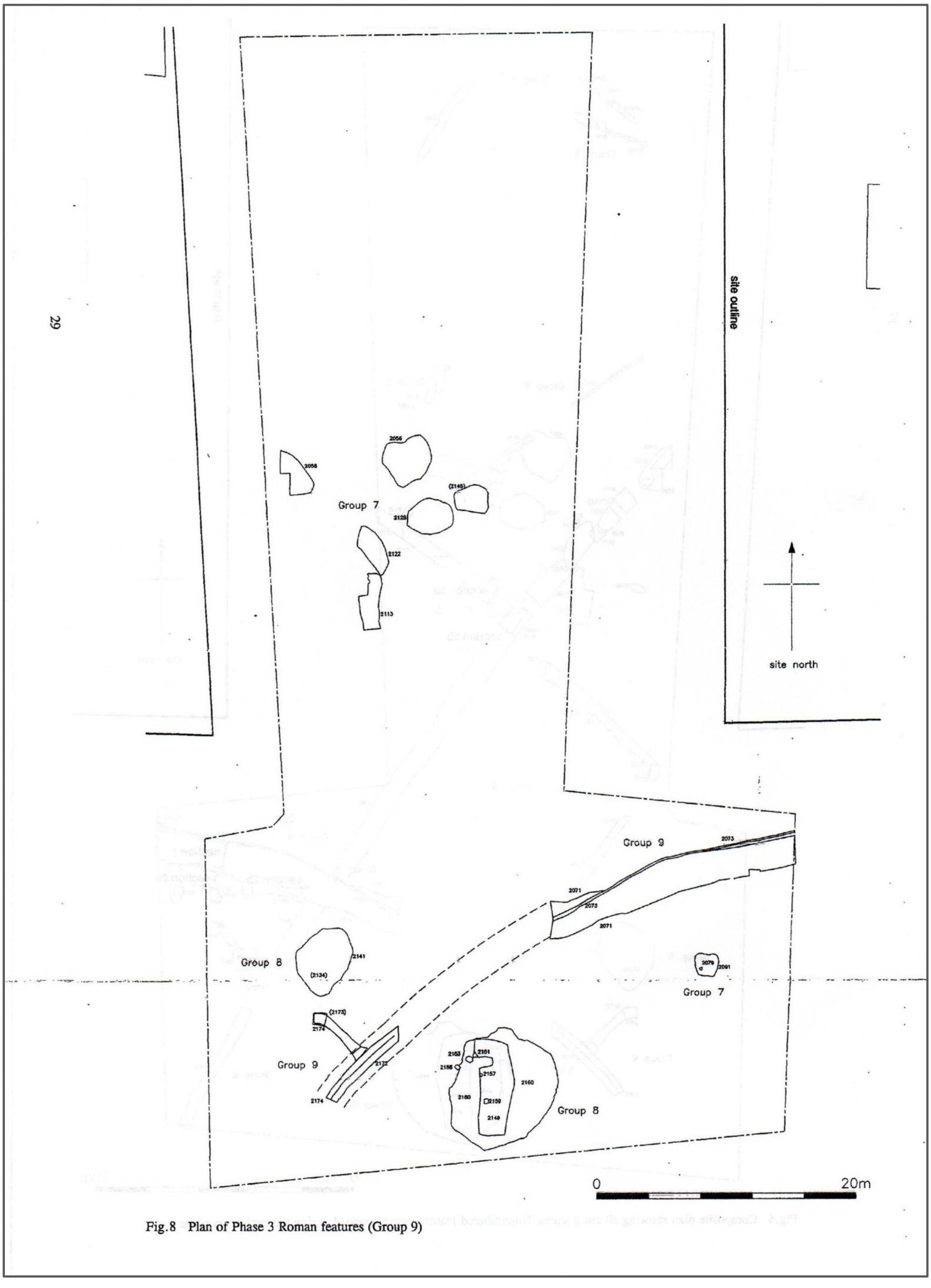


Fig.8 Plan of Phase 3 Roman features (Group 9)

Figure 5.45: Cores (6, 7, 8) and scrapers from Dewe's Pit (Lacaille, 1961: Figure 2)

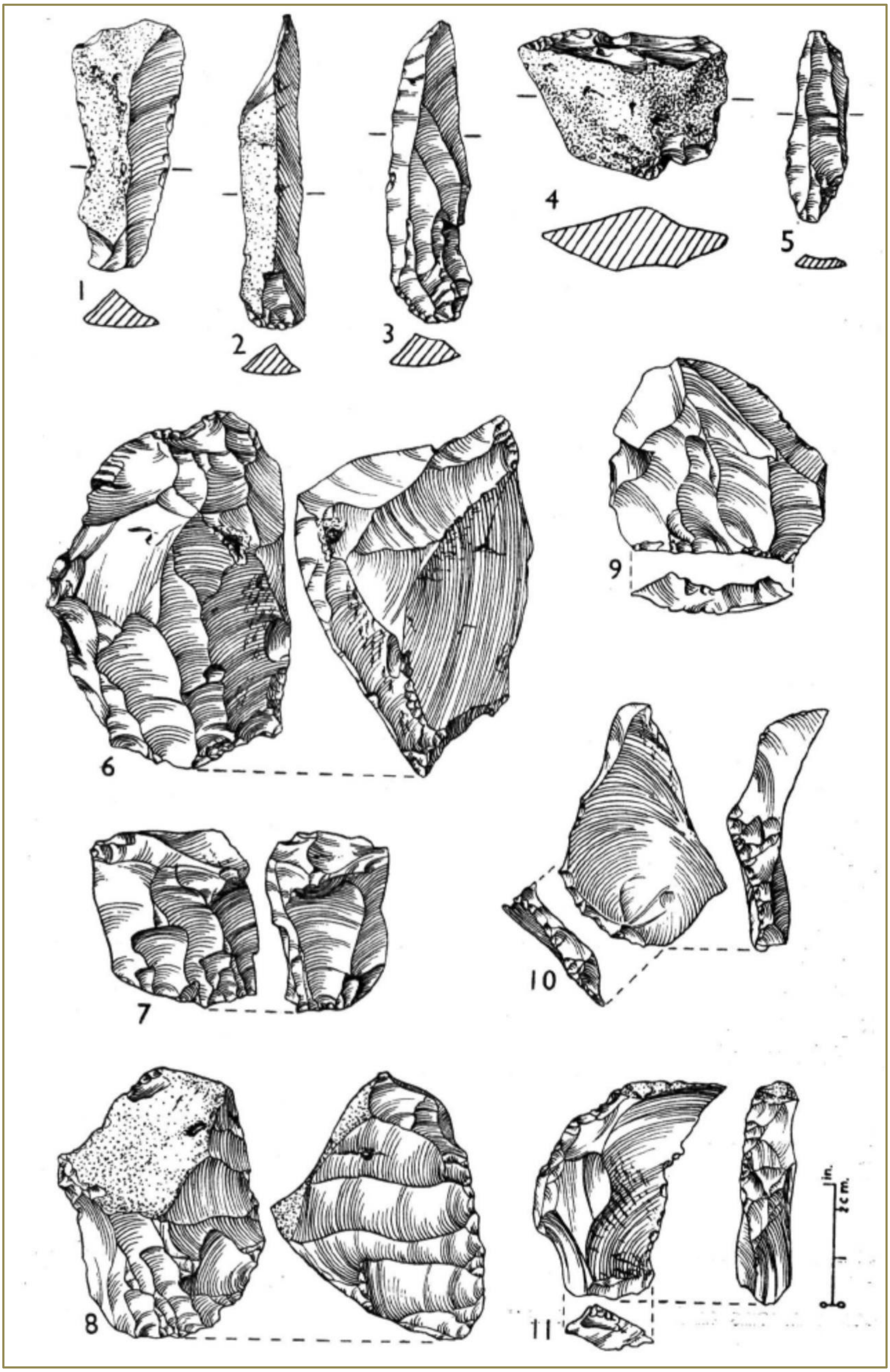


Figure 5.46: London Road site plan showing features 148, 149, 172 & 185 (SCAU, 2001: Figure 2)

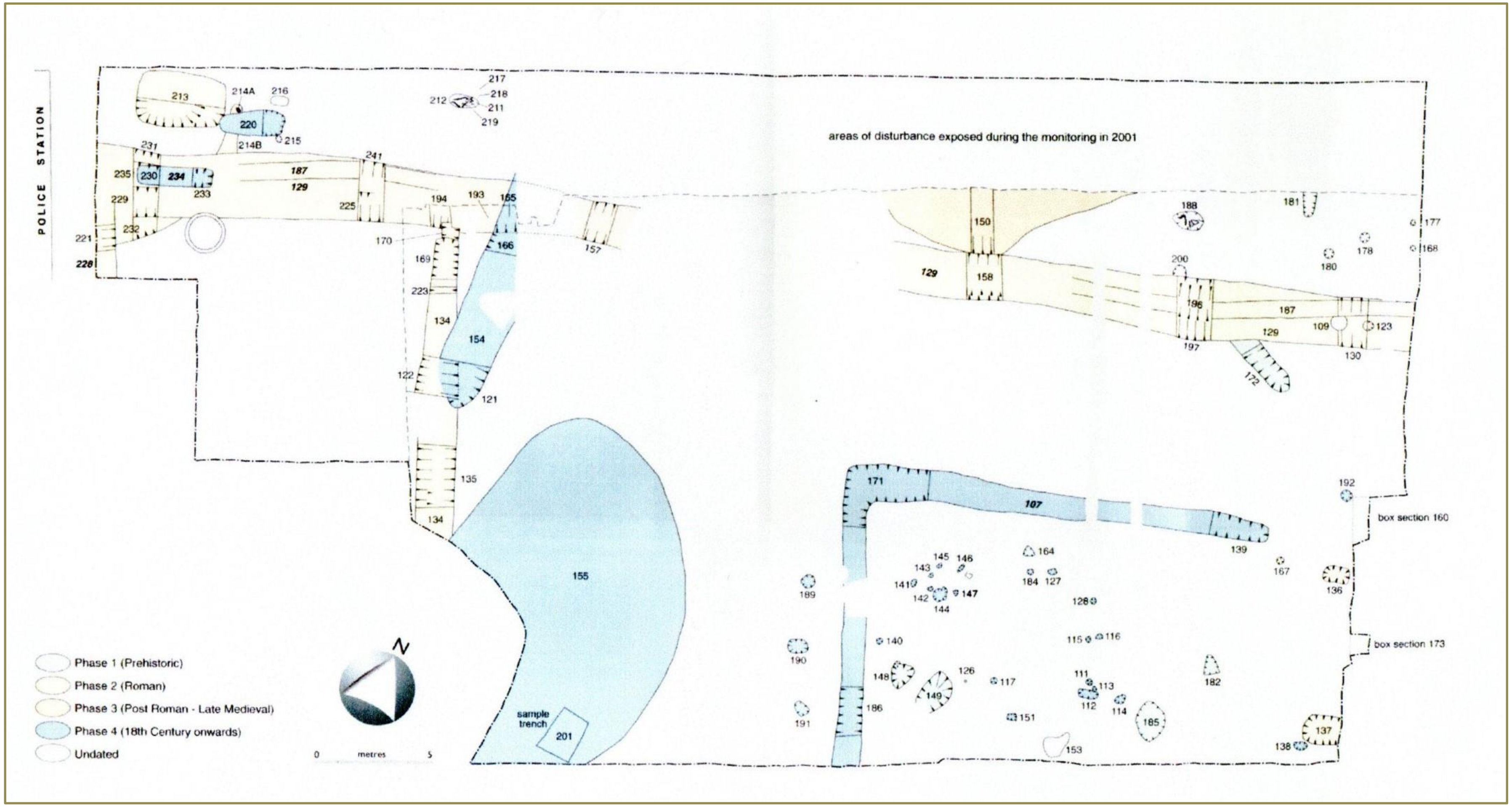


Figure 5.47: Majestic House site location (Cotswold Archaeology, 2014)

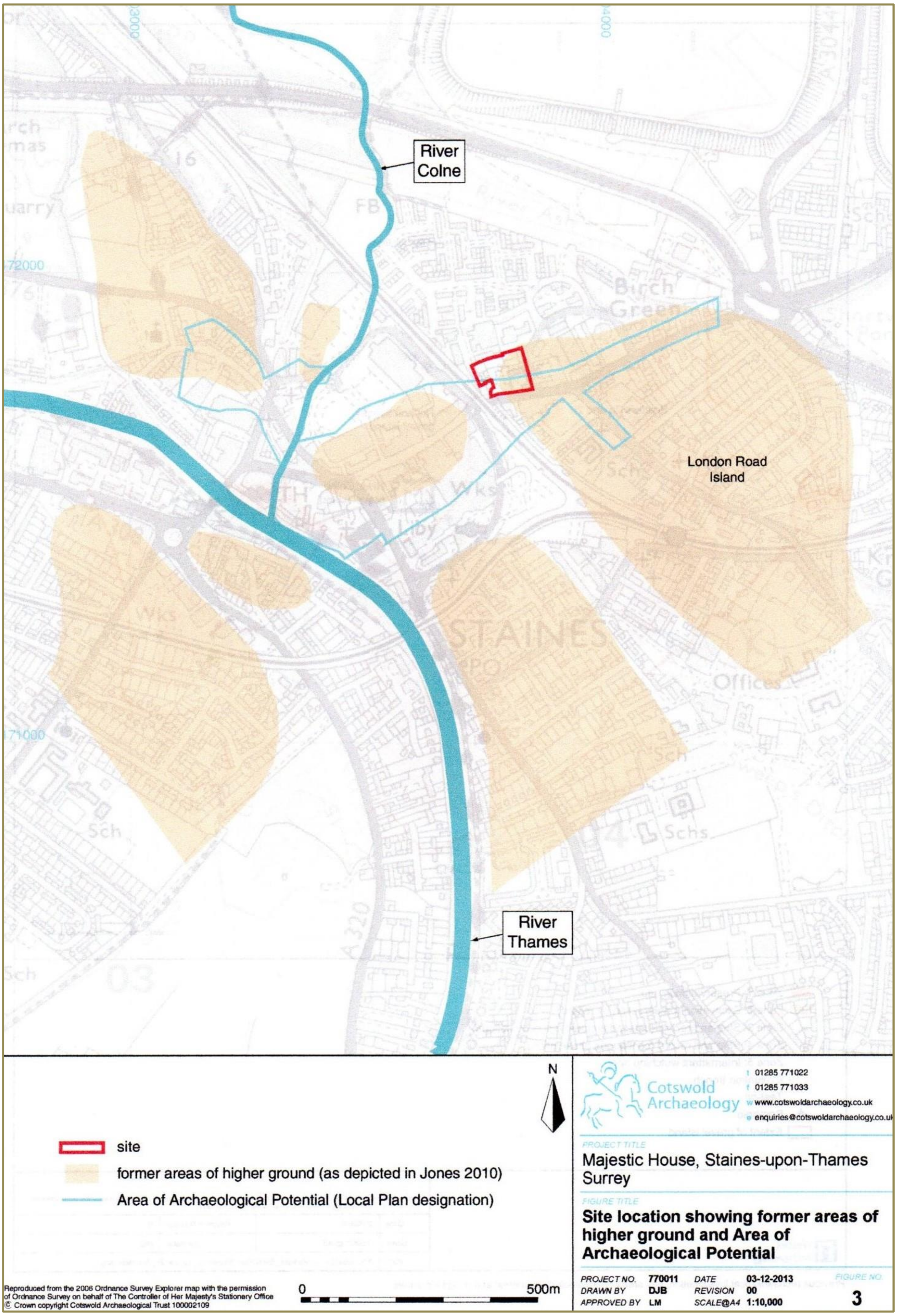


Figure 5.48: Majestic House site plan showing pit features 906, 1166 & 1285 (Cotswold Archaeology, 2014)

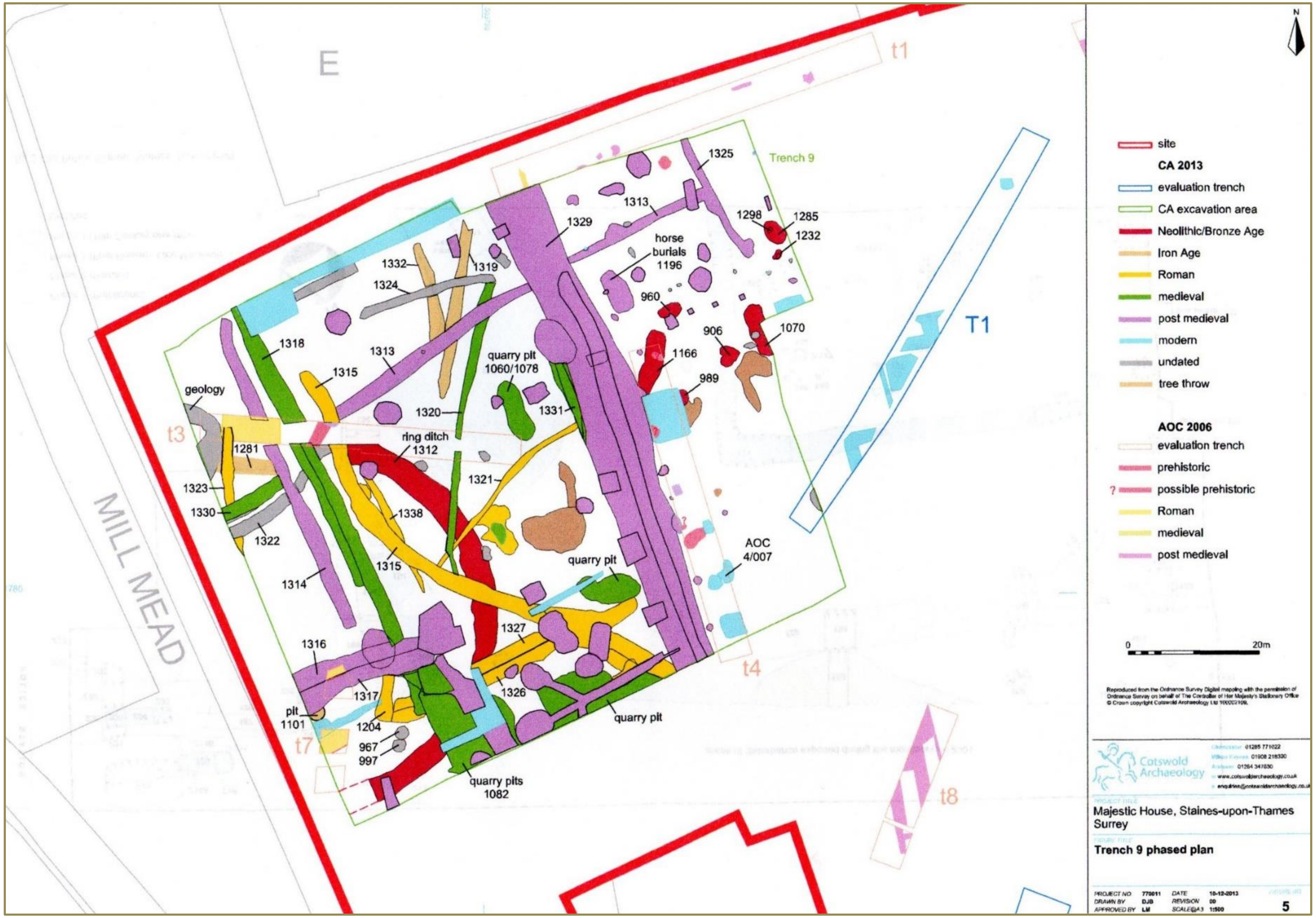


Figure 5.49: Plan showing location of hollow 1 and 2, and scatter 1 at Church Lammas (Jones et al; 2013)

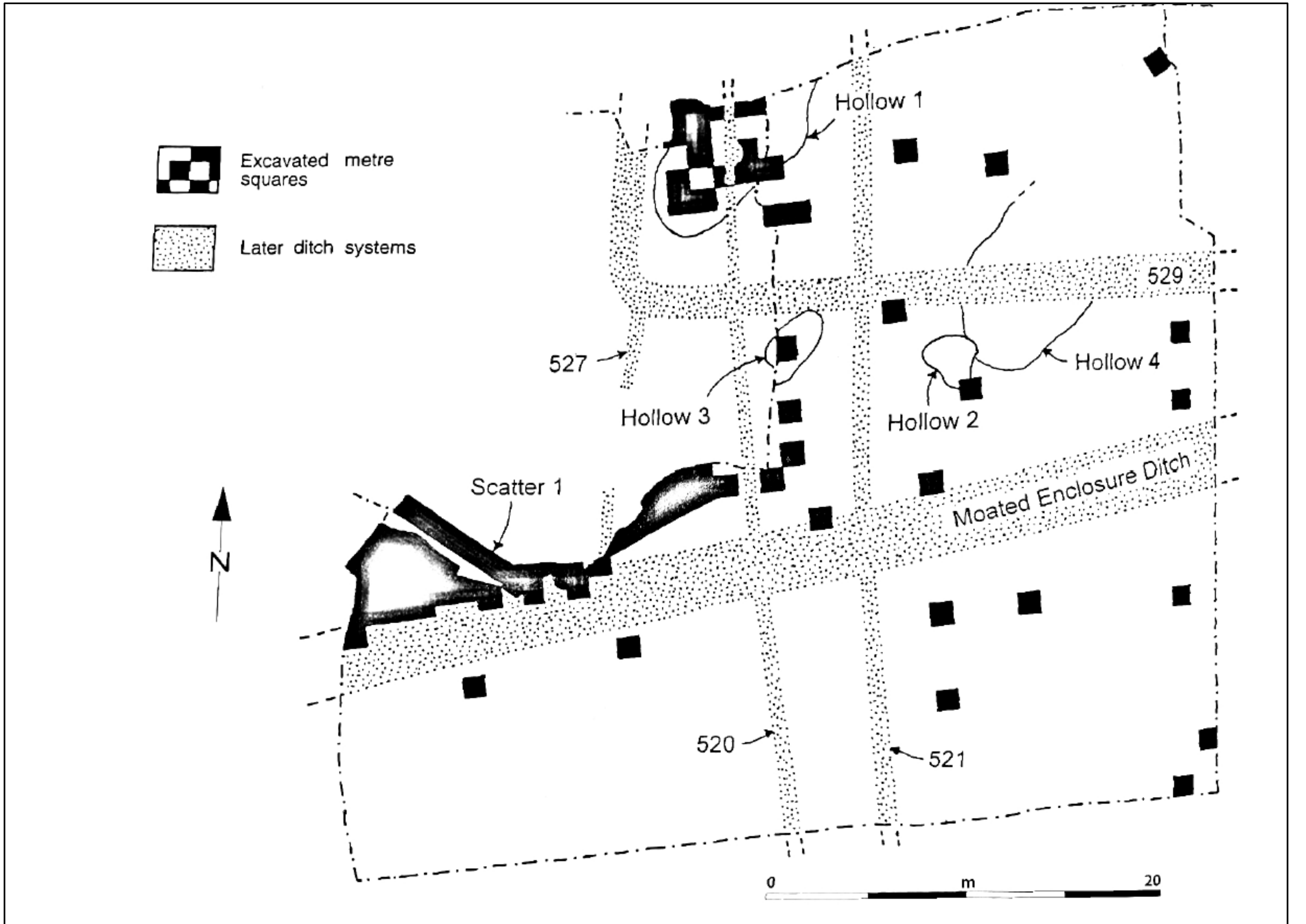


Fig 3.5 Plan of excavated squares across Scatter I and the principal adjacent hollows and ditches

Figure 5.50: Church Lammas site plan showing hollow 1, scatter 1, and distribution of Early Mesolithic fauna (Jones, 2013)

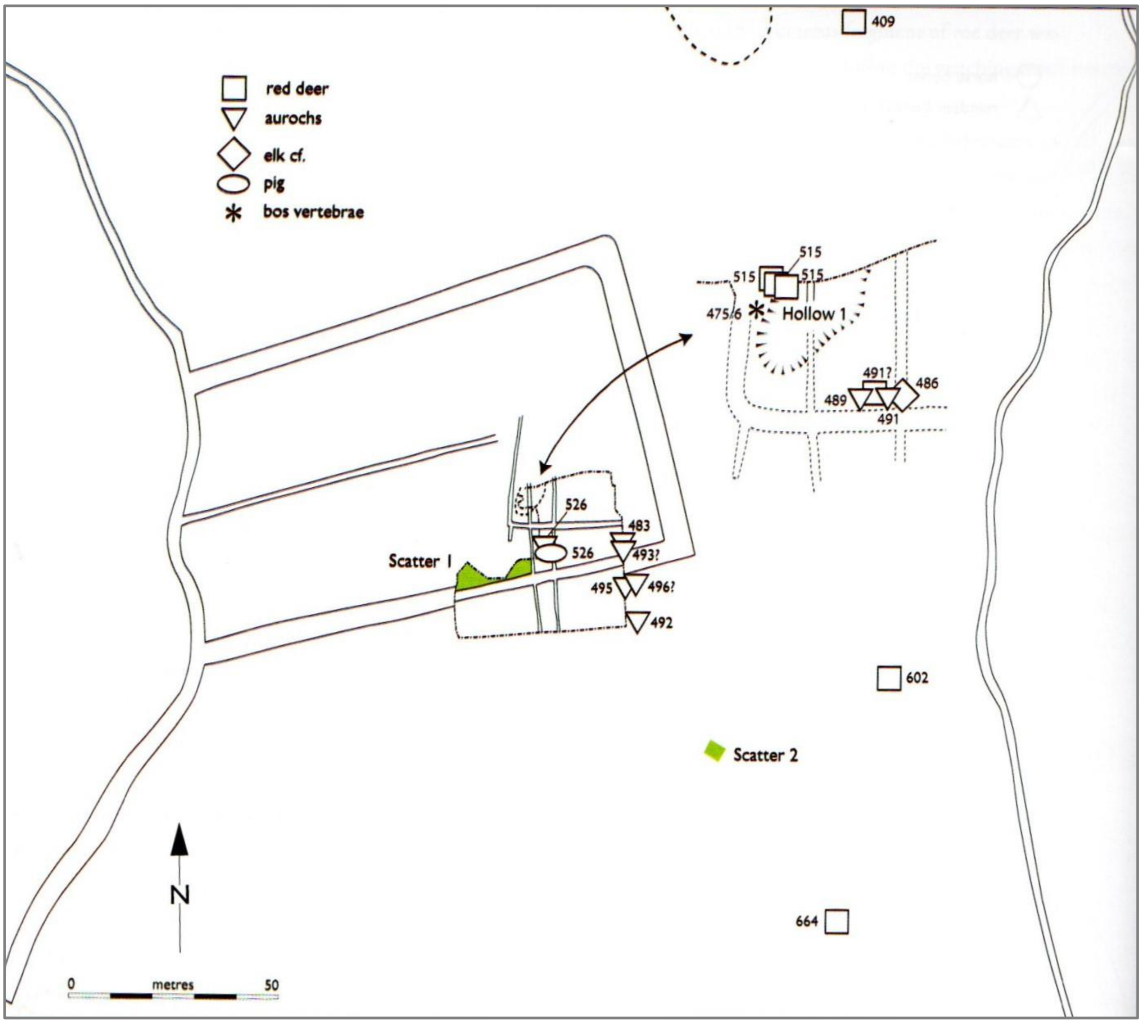


Figure 5.51: Late Mesolithic sites and spot finds (ArcMap 10.7.1)

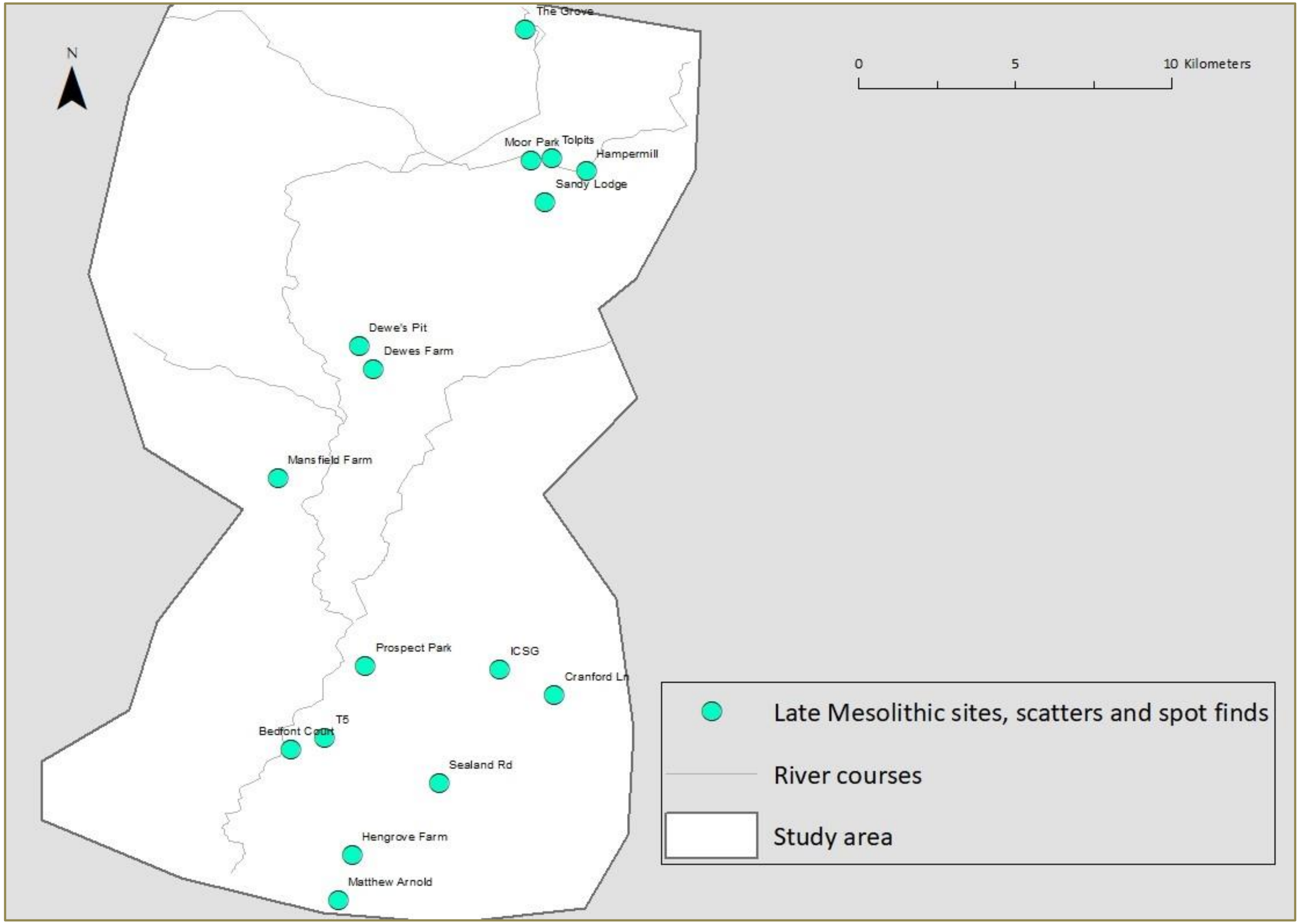


Figure 5.52: Late Mesolithic sites by density (ArcMap 10.7.1)

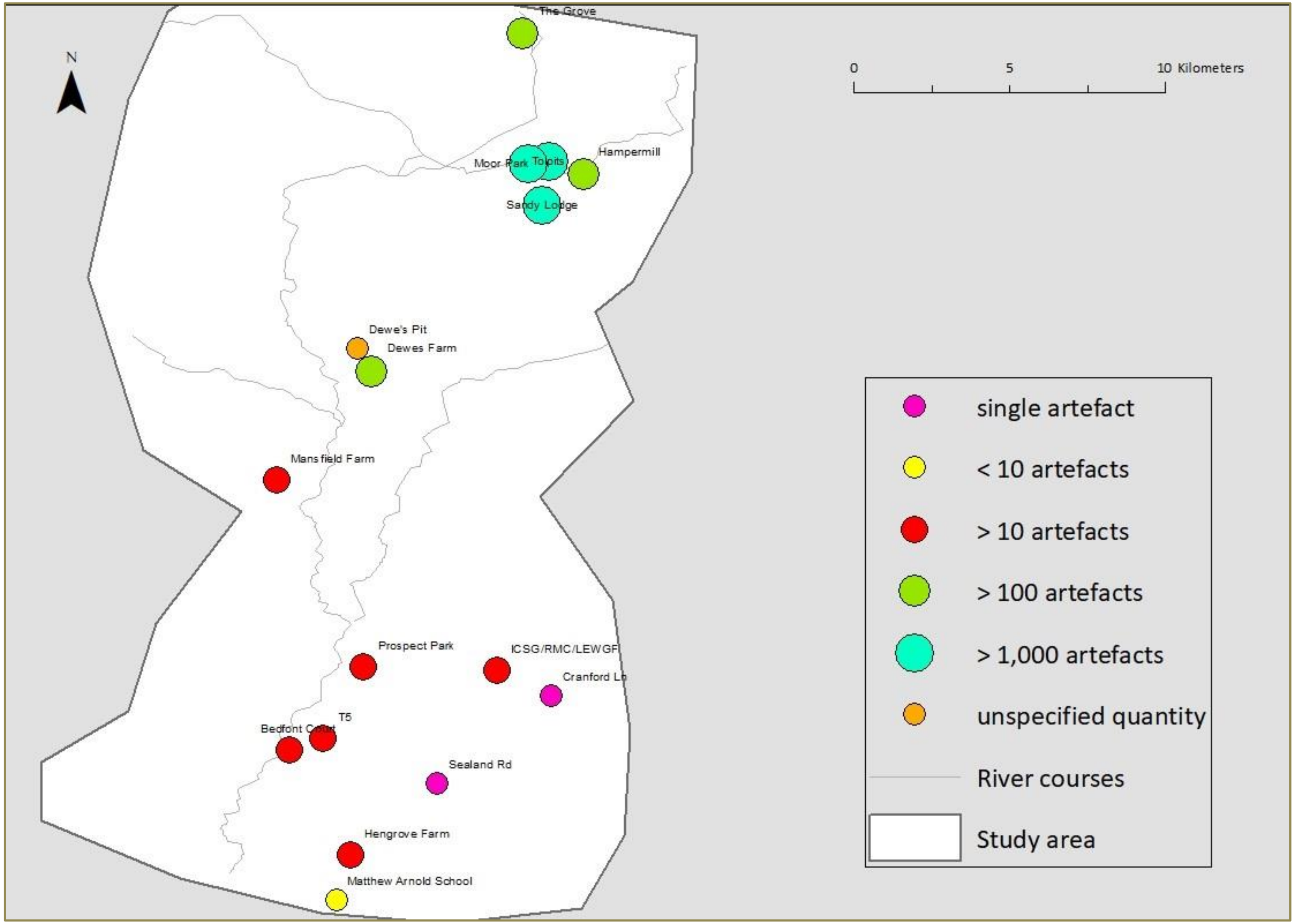


Figure 5.53: Moor Park site stratigraphy and pollen sampling (Roger Jacobi archive, Franks House, British Museum)

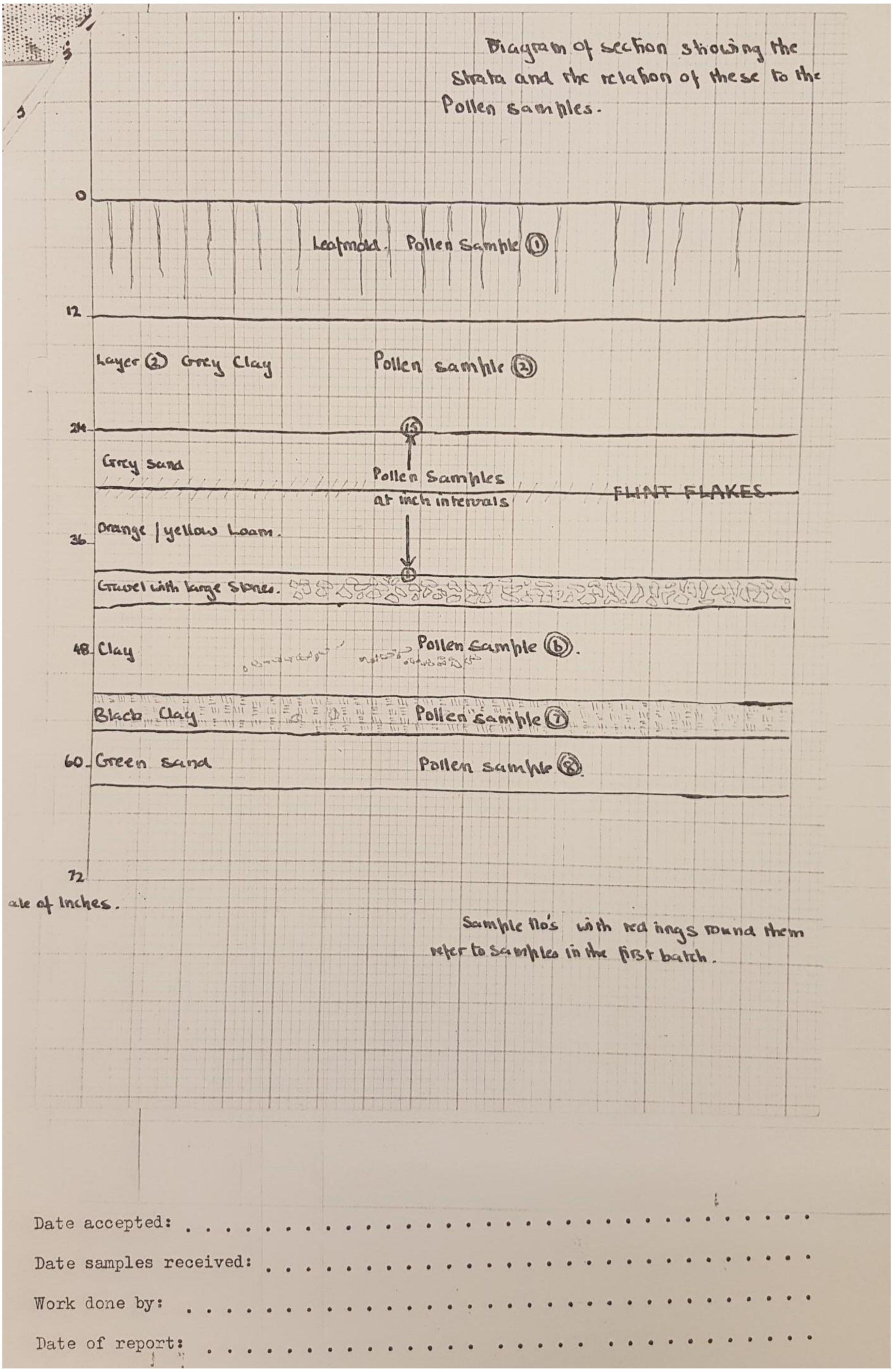


Figure 5.54: Moor Park site stratigraphy (Roger Jacobi archive, Franks House, British Museum)

Stratification

			Number
Layer 1	0 → 12"	leafmold, black loam with roots.	1
Layer 2	12" → 24"	Pale grey clay, no shells with few stones ? at the base, inc derived flints.	2
Layer 3	24" → 27"	Large grained, grey sand with much chalk, occasional flints.	3
Layer 4	27" → 35"	Grey/Brown loam with few stones.	4.
Layer 5	35" → 47"	Mesolithic, Green/yellow coarse-grained sand.	5
Layer 6	47" → 52"	Red/Brown clay with numerous small pebbles.	6
Layer 7	52" → 56"	Dark ? Peaty clay	7
Layer 8	56" → 62"	Pale orange sand, large grained.	8

Figure 5.55: Tolpit's Lane stratigraphy (Watford Museum)

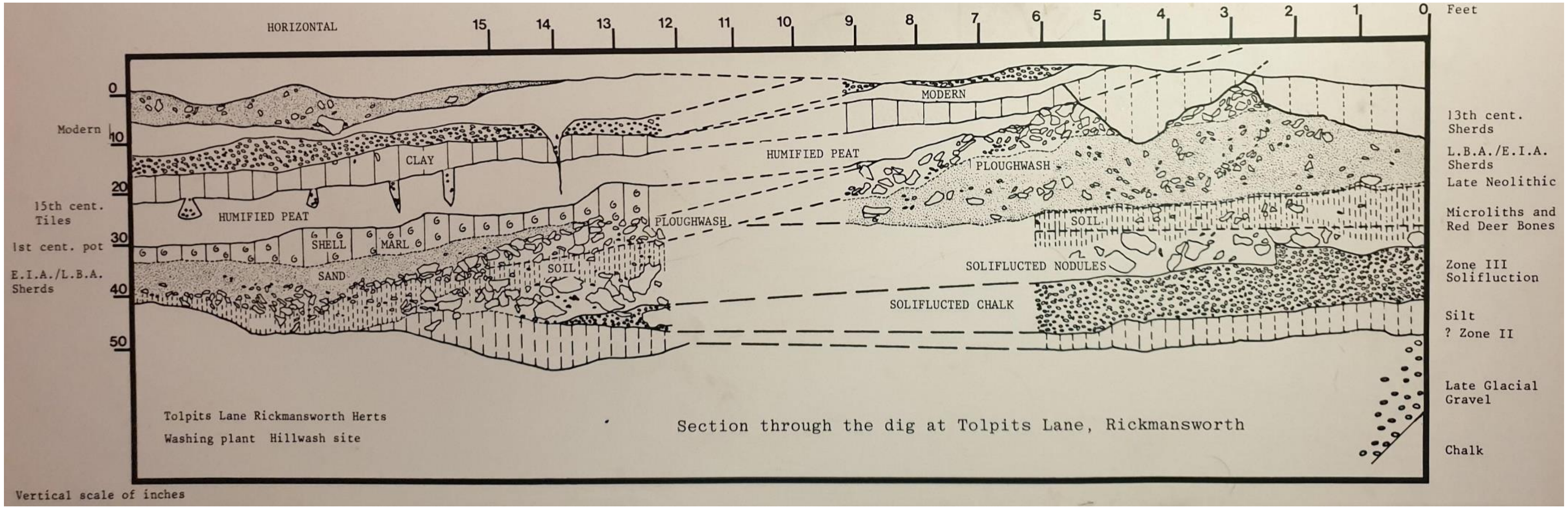


Figure 5.56: Tolpit's Lane excavations 1965 to 1972 (Roger Jacobi archive, Franks House, British Museum)

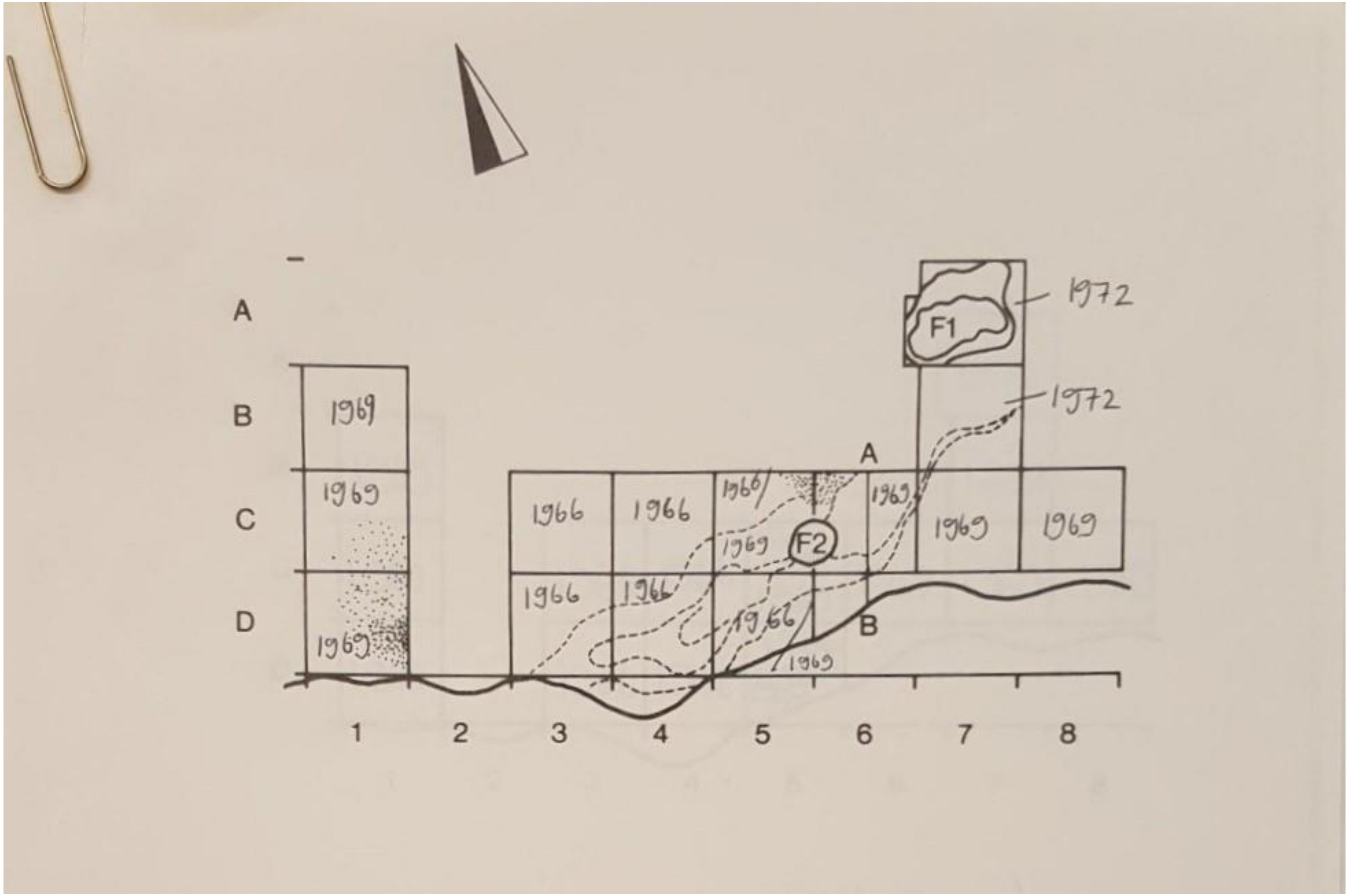


Figure 5.57: Tolpit's Lane area B101 (Roger Jacobi archive, Franks House, British Museum)

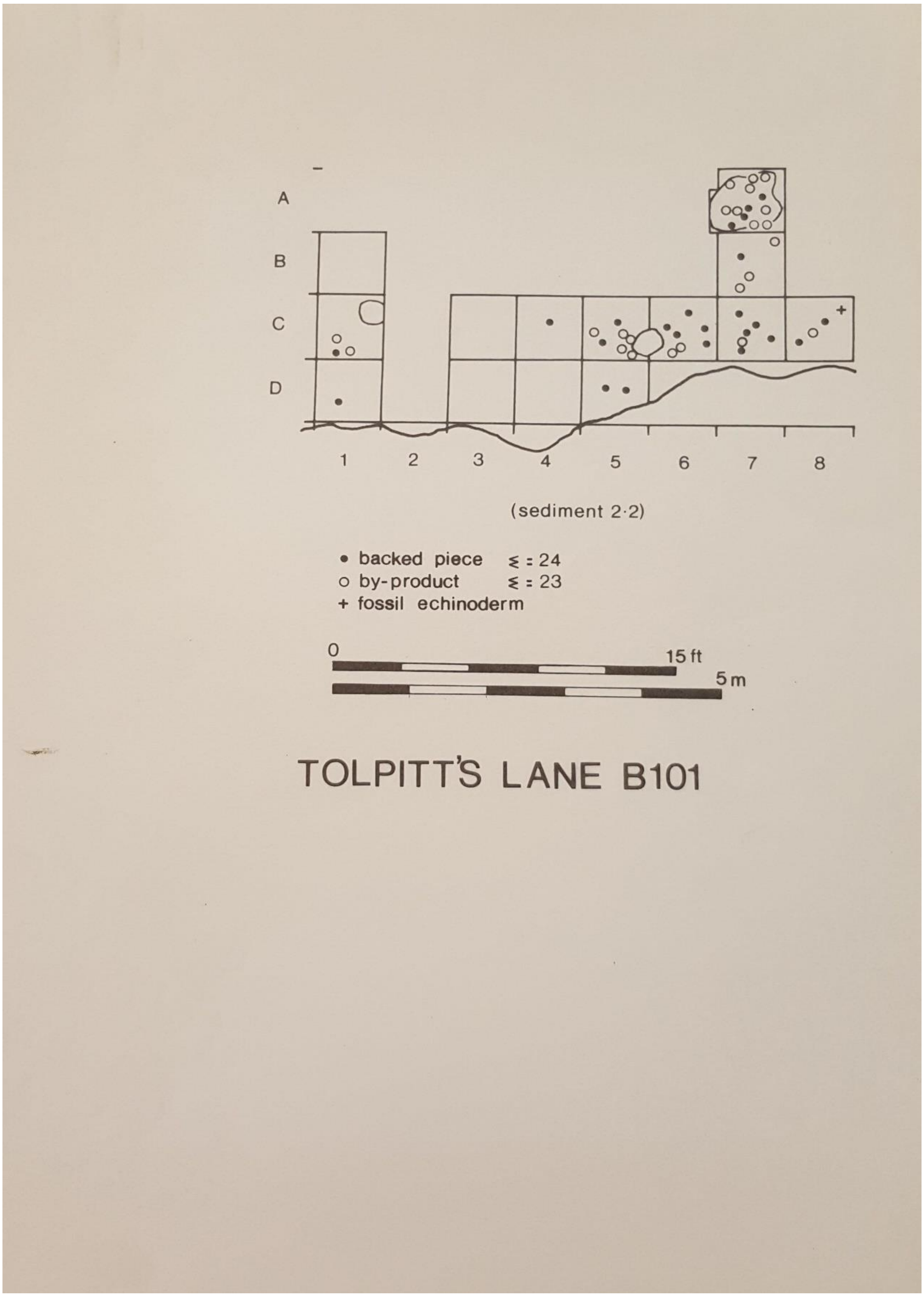


Figure 5.58: Tolpit's Lane flint distribution (Roger Jacobi archive, Franks House, British Museum)

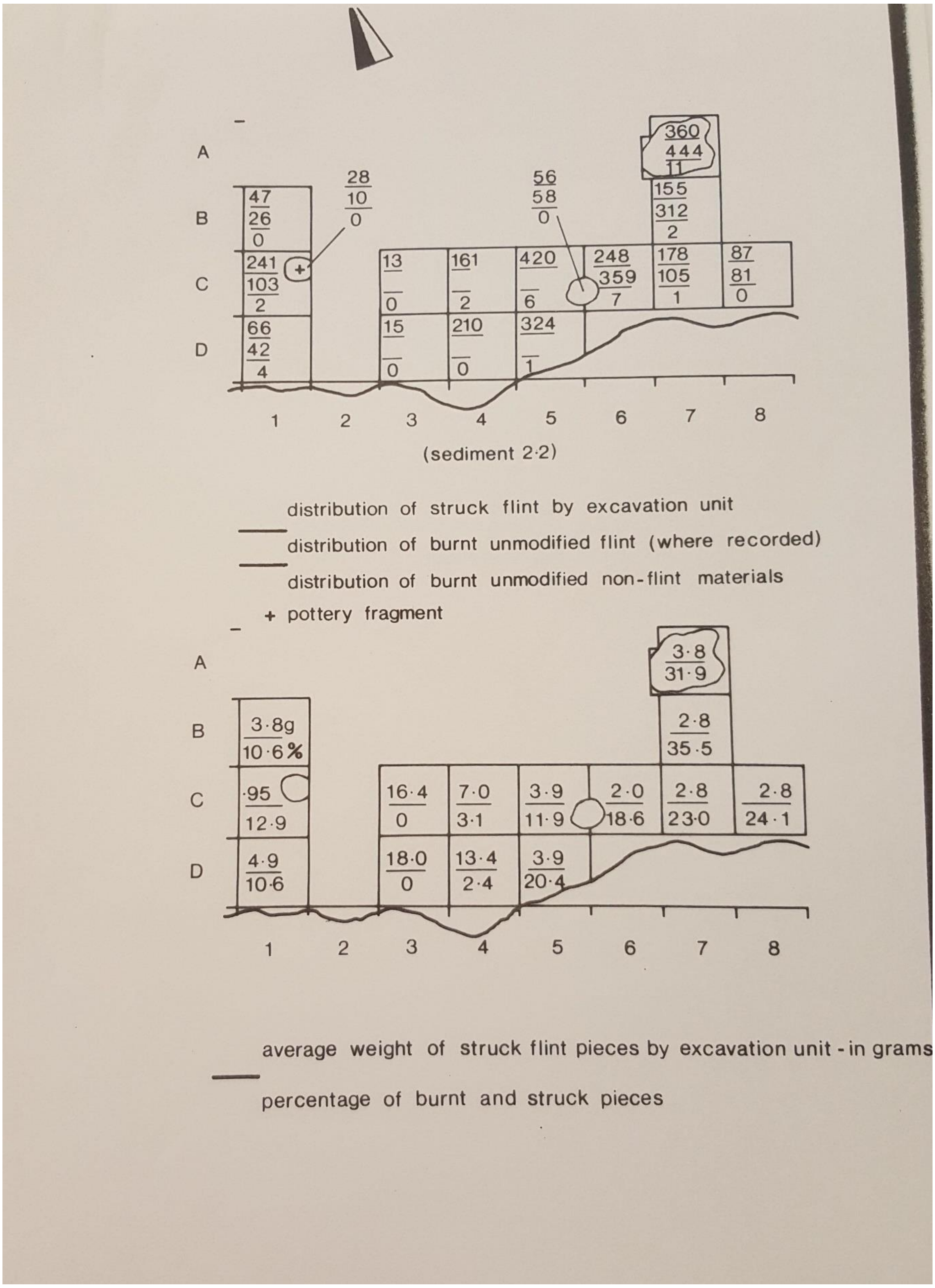


Figure 5.59: Tolpit's Lane grid showing hollow F1 and gully F2 (Roger Jacobi archive, Franks House, British Museum)

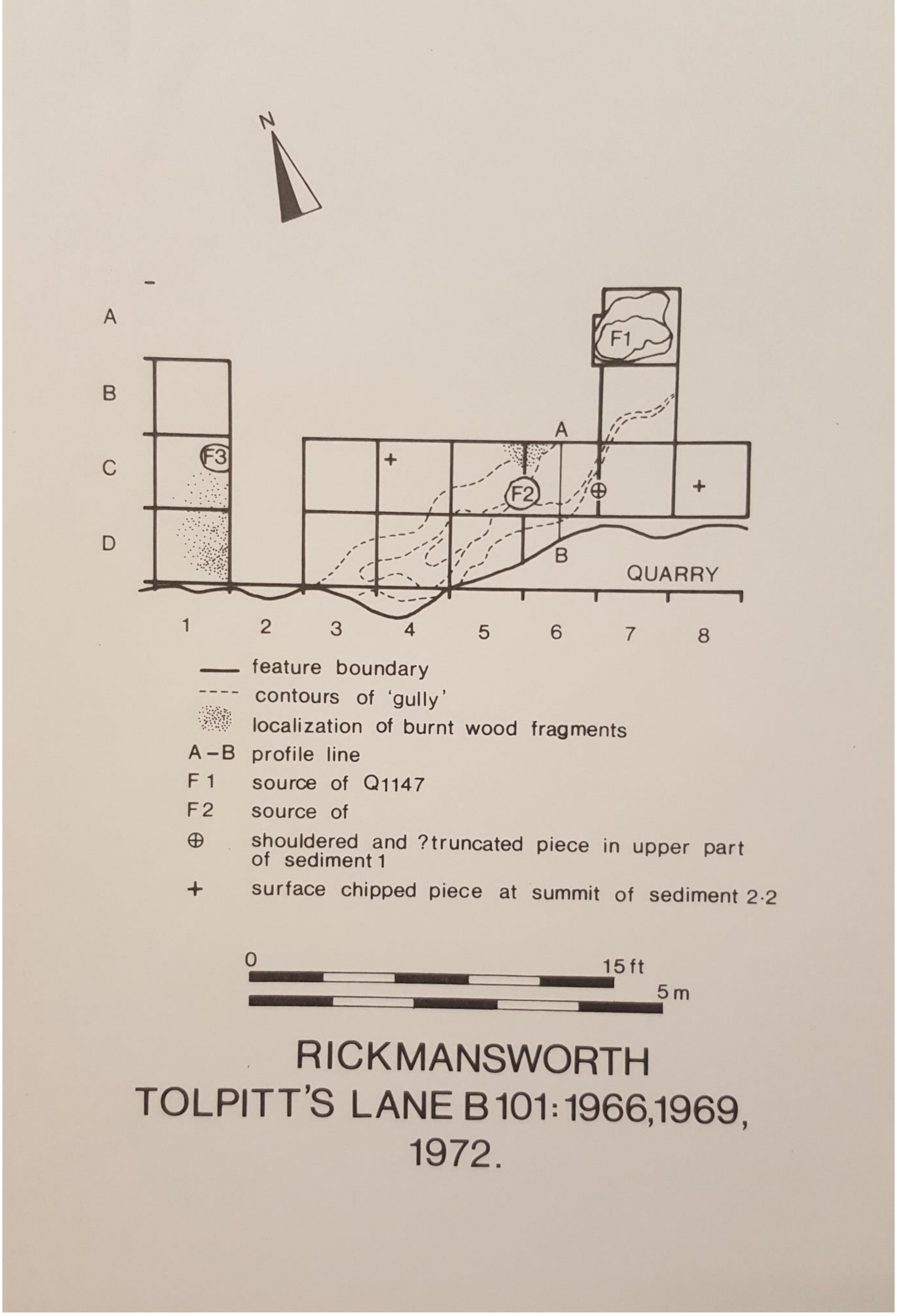


Figure 5.60: Distribution of sites across Sandy Lodge Golf Course (ArcMap 10.7.1)

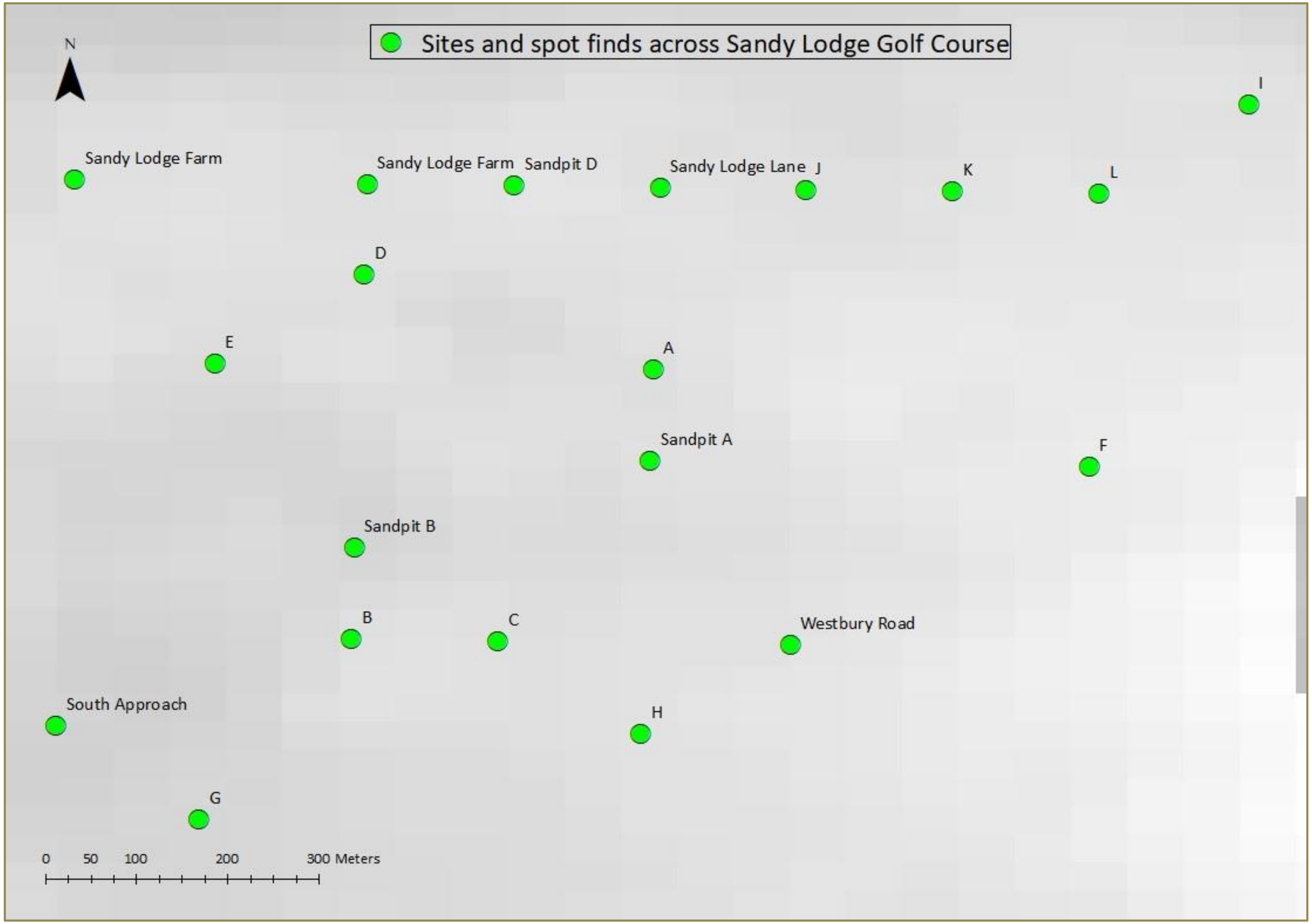


Figure 5.61: Sandy Lodge Golf Course Sandpit A, Trench II, solution pit (1962, Roger Jacobi archive, Franks House, British Museum)

Figure 5.62: Sandy Lodge Golf Course Sandpit A (1963, Roger Jacobi archive, Franks House, British Museum)

Figure 5.63: Flint pick from Sandy Lodge (Watford Museum, authors photograph)

Figure 5.64: Hampermill site plan showing trenches J, M, N (Humphrey, 1997)

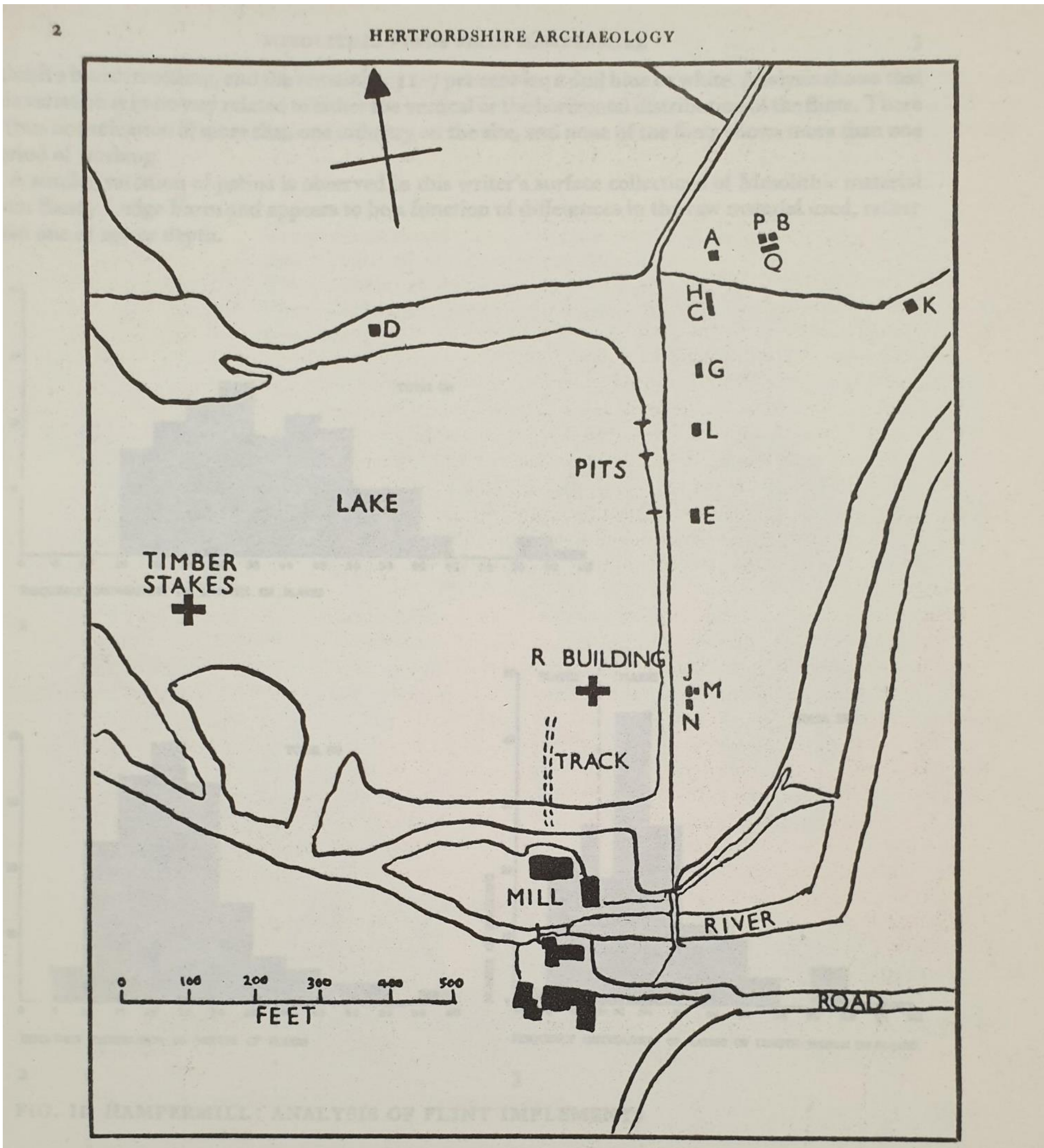


FIG. I. HAMPERMILL: PLAN OF THE SITE

Figure 5.65: Dewe's Farm site plan showing trench TT084, TT065 and TT070 (Scott, 2018)

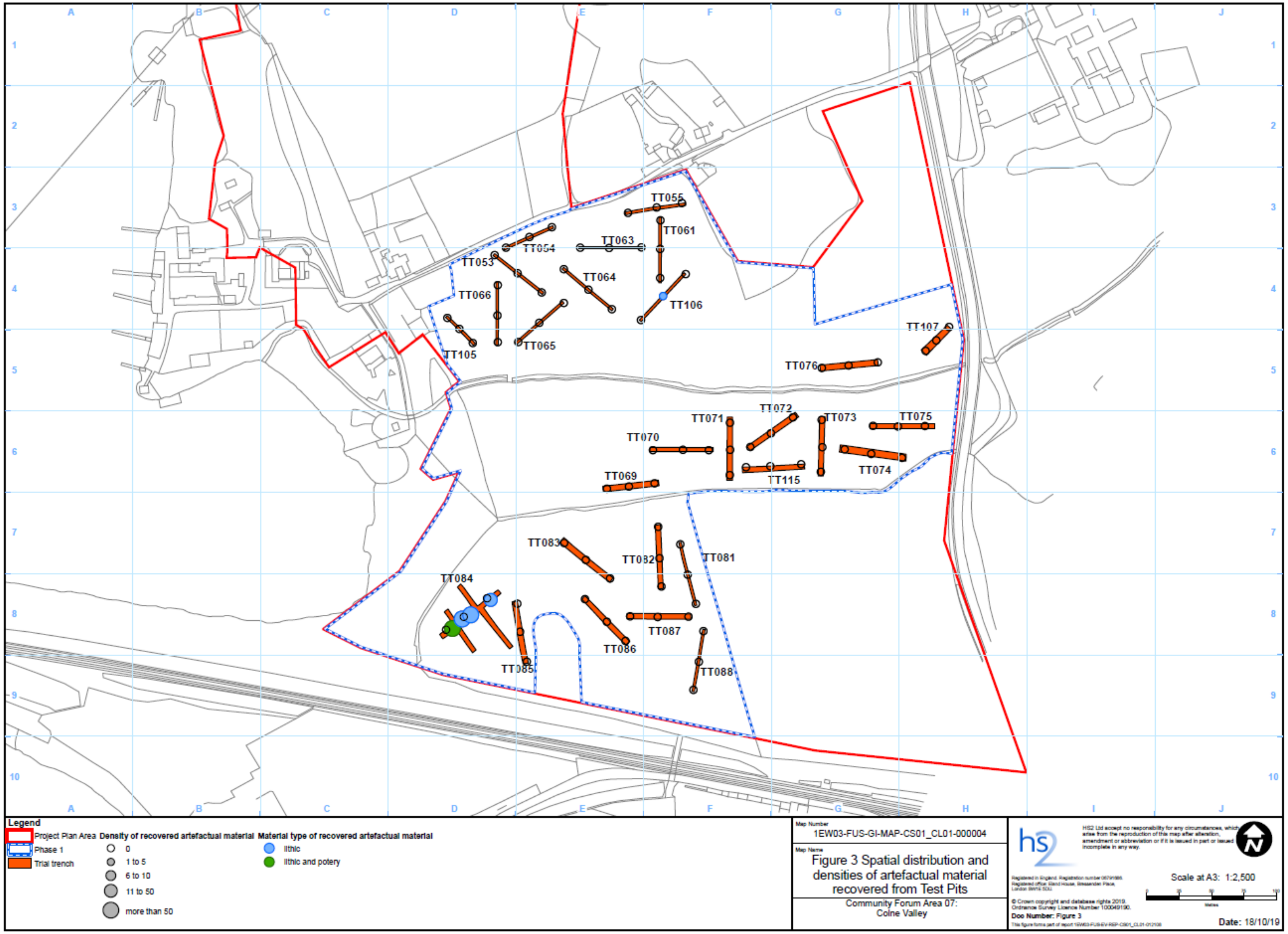


Figure 5.66: Trench TT084 at Dewe's Farm showing distribution of worked flint (Scott, 2018)

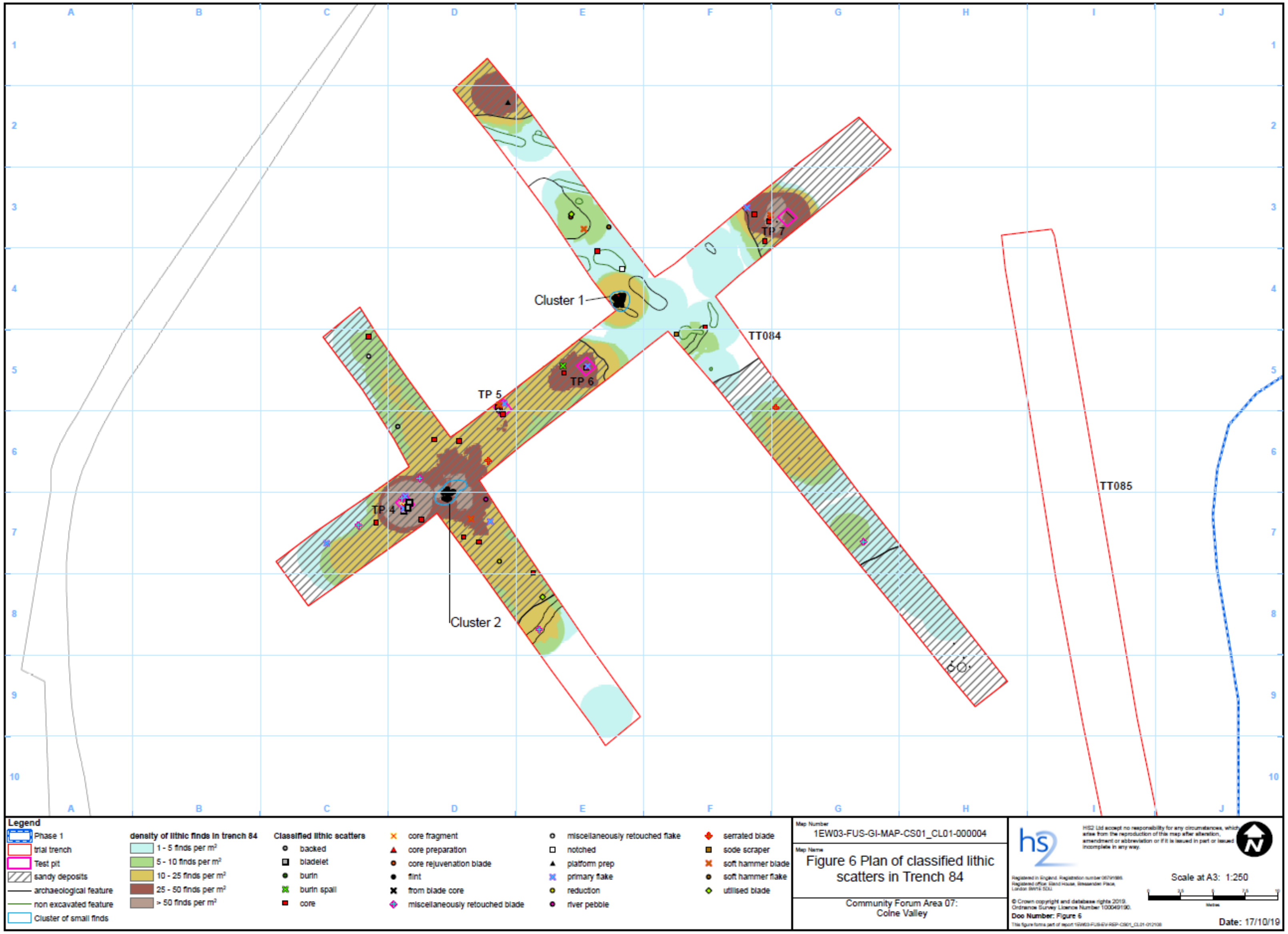


Figure 5.67: Dewe's Farm flintwork (Lacaille, 1961: figure 3)

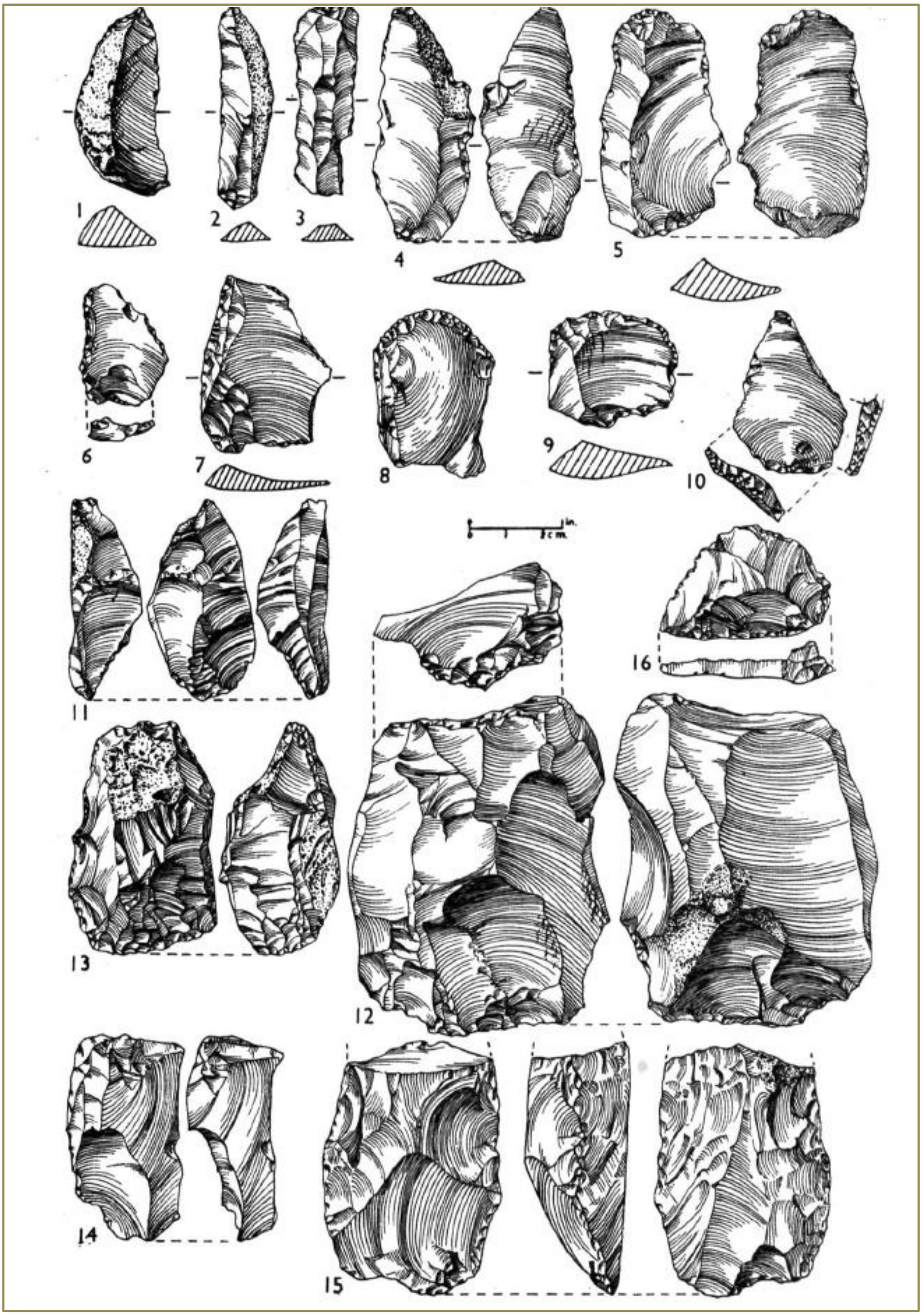


Figure 5.68: Site plan for Imperial College Sports Ground, Ready Mixed Concrete & Land East of Wall Garden Farm (Powell et al, 2015: figure 1.2A)

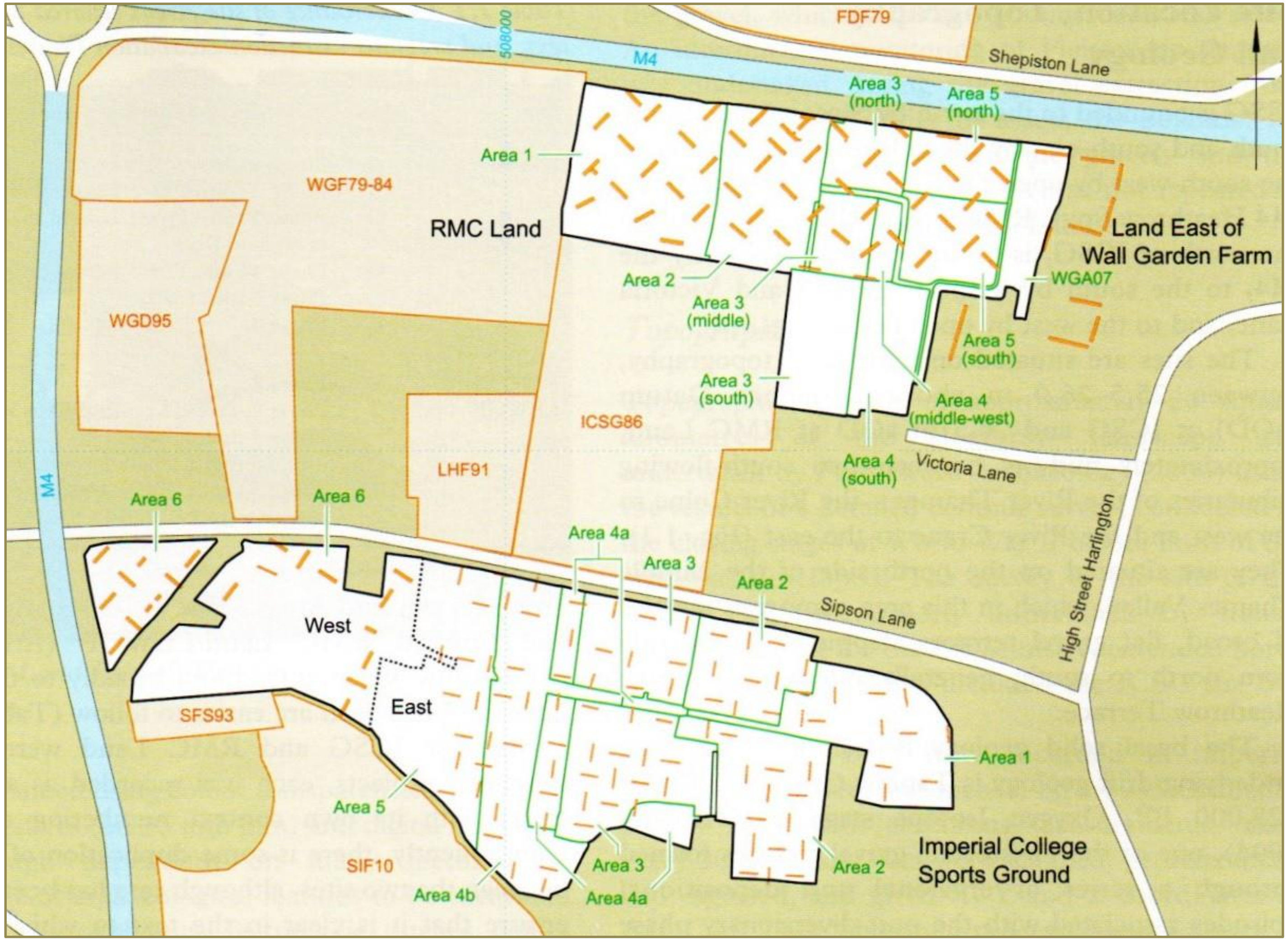


Figure 5.69: T5 and Bedfont Court areas of excavation (Framework Archaeology, 2010: figure 1.2)

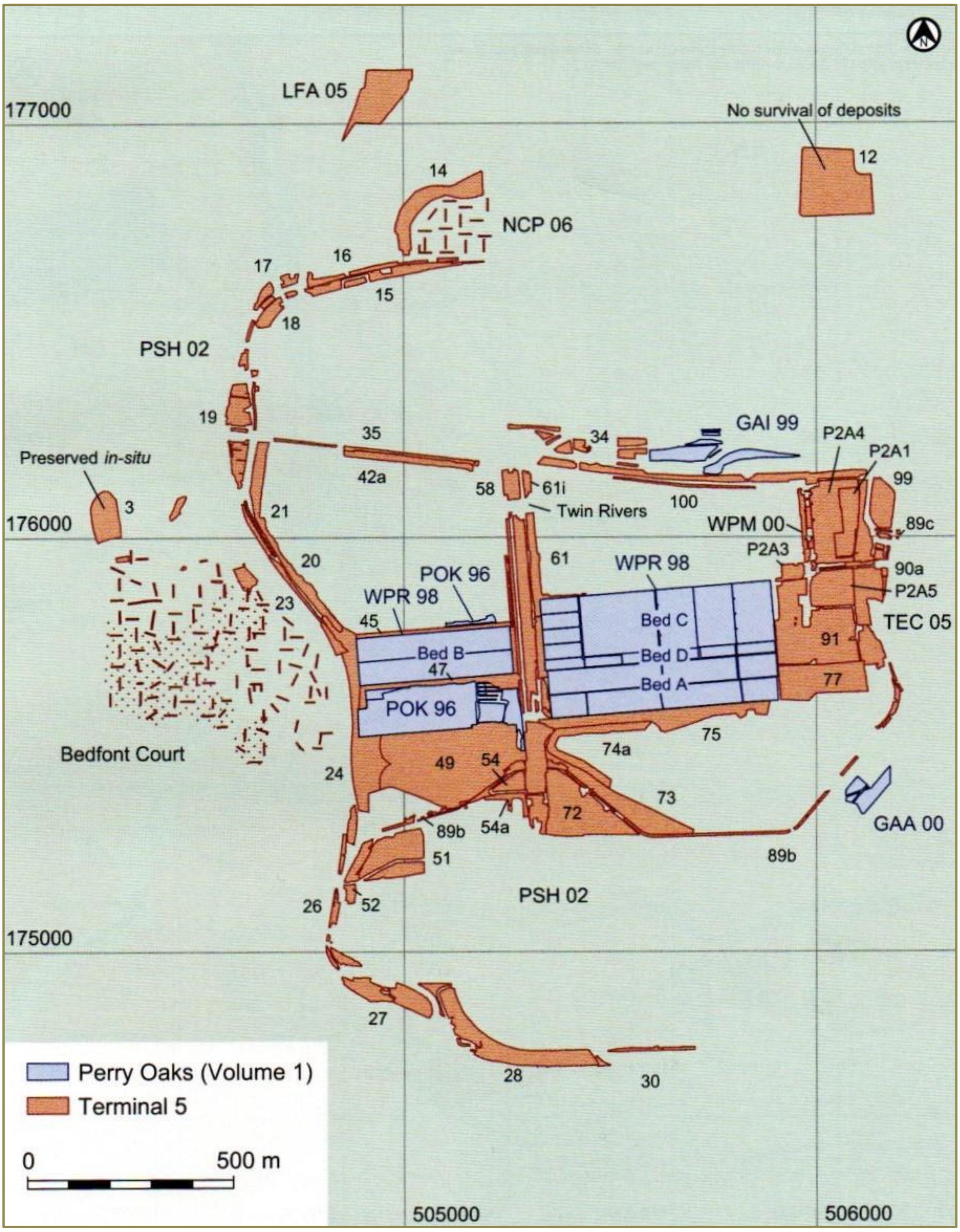


Figure 5.70: Location of Late Mesolithic pit and tree throw complex (FA, 2010: Figure 2.8)

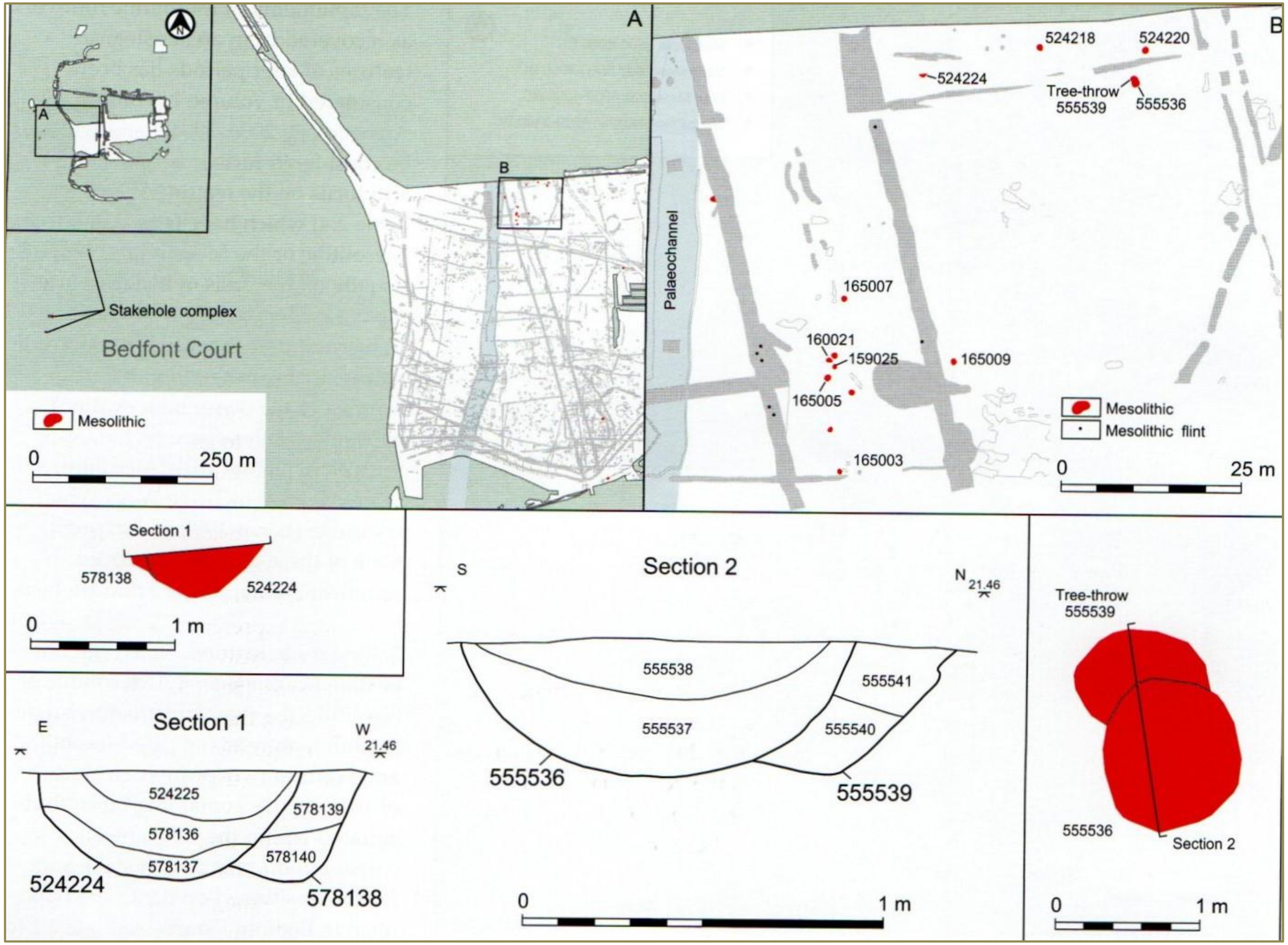


Figure 5.71: Distribution of Mesolithic axe or adzes in the study area (ArcMap 10.7.1)

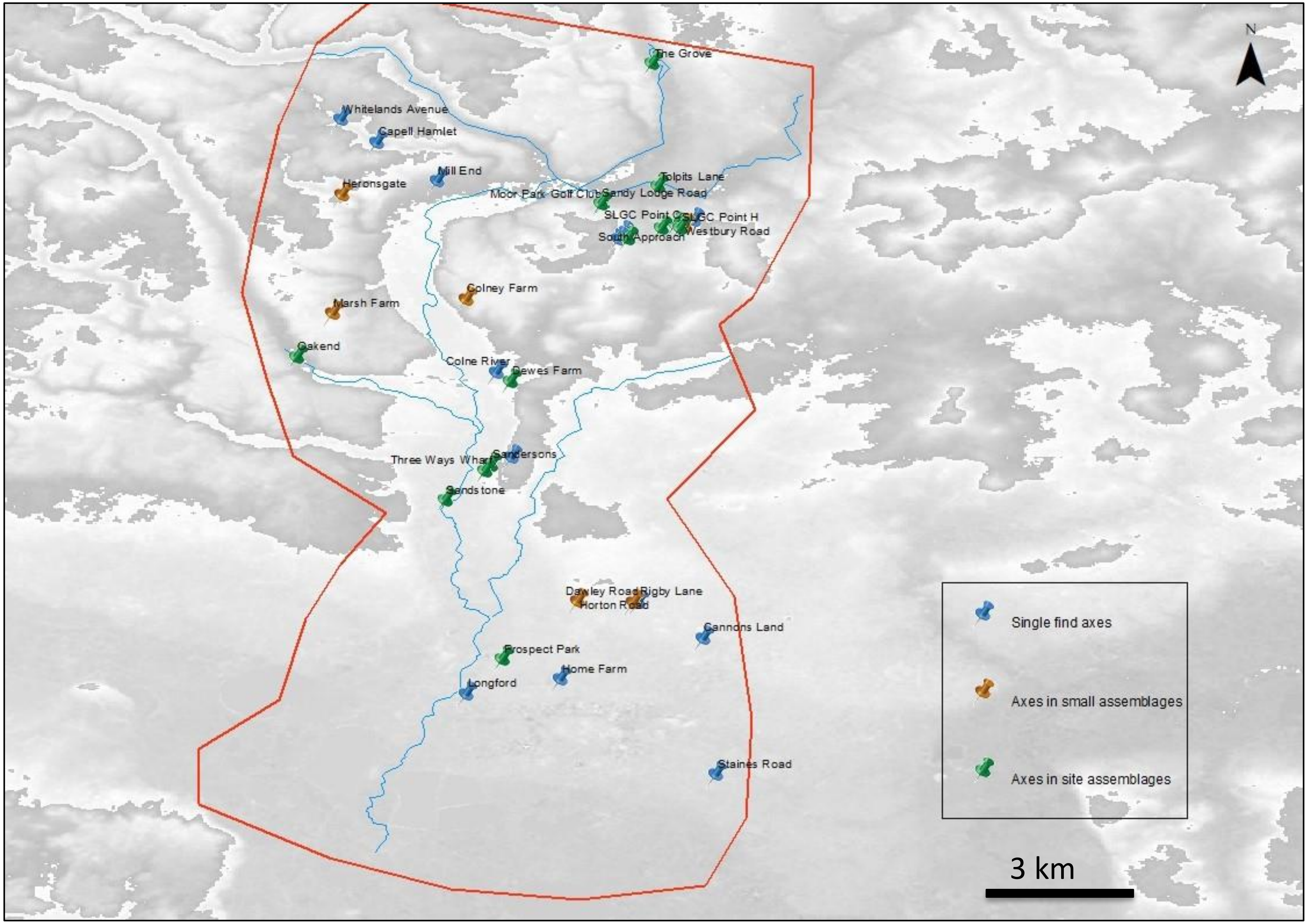


Figure 5.72: Colney Farm flintwork including pyramidal core (bottom left) (Hillingdon Local Studies, Archives and Museum Service, authors photograph)

Chapter 6: figures

Figure 6.1: Sites with Palaeoenvironmental data (ArcMap 10.7.1)

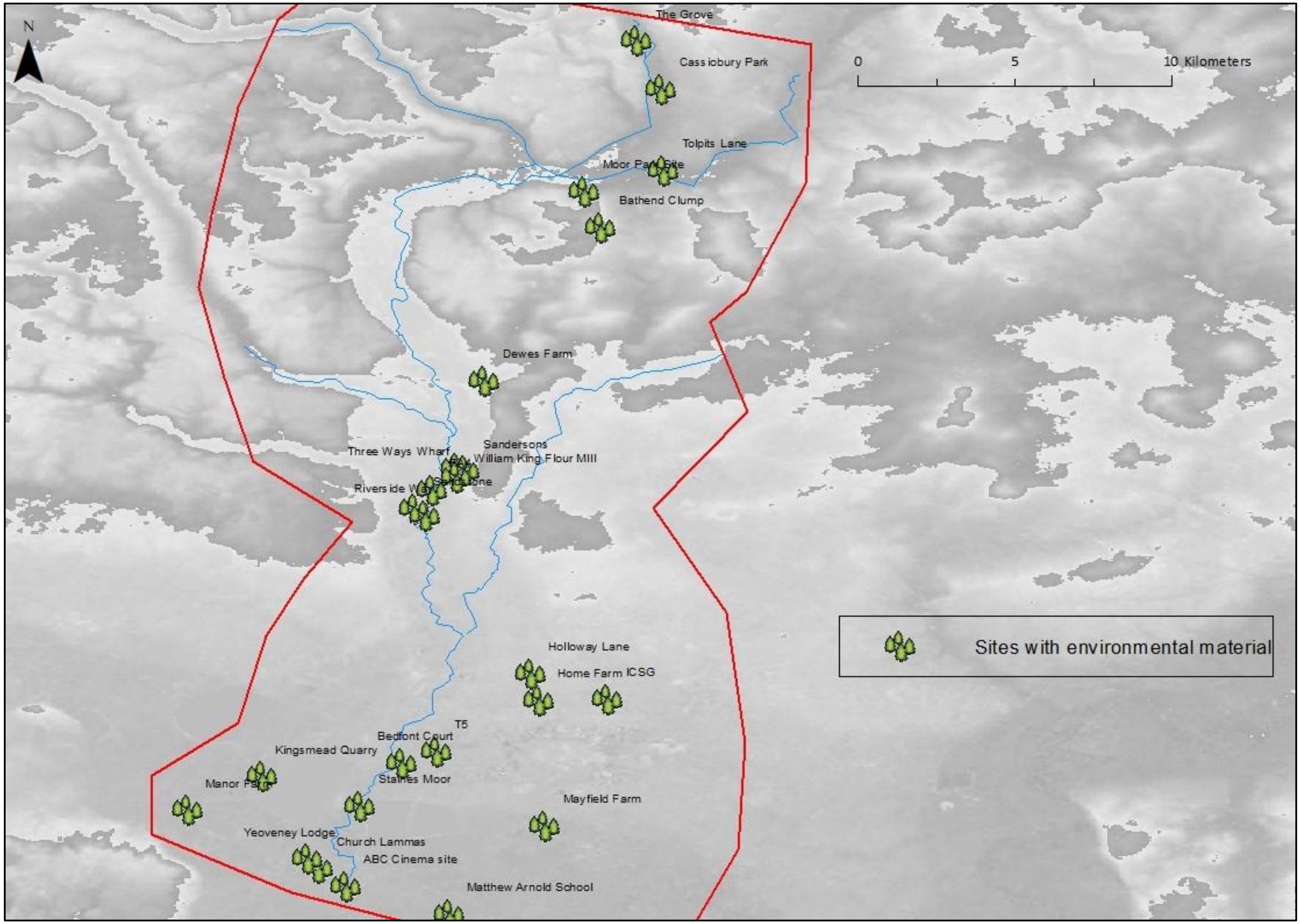


Figure 6.2: Excavation area at Sanderson's showing flint knapping debris (MoLAS; 2006: figure 8)

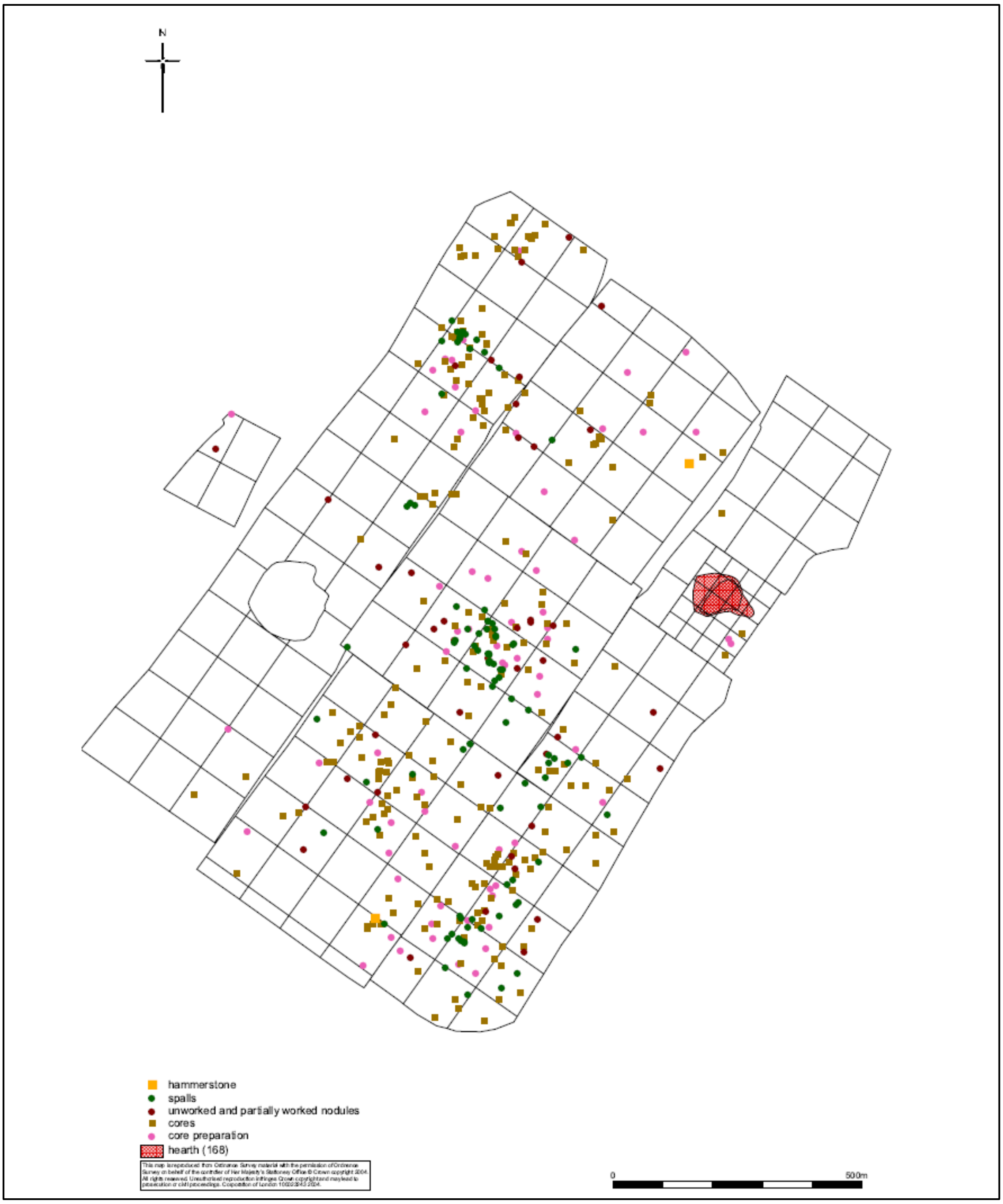


Figure 6.3: Excavation area at Sanderson's showing density distribution of flint knapping debris (MoLAS; 2006: figure 13)

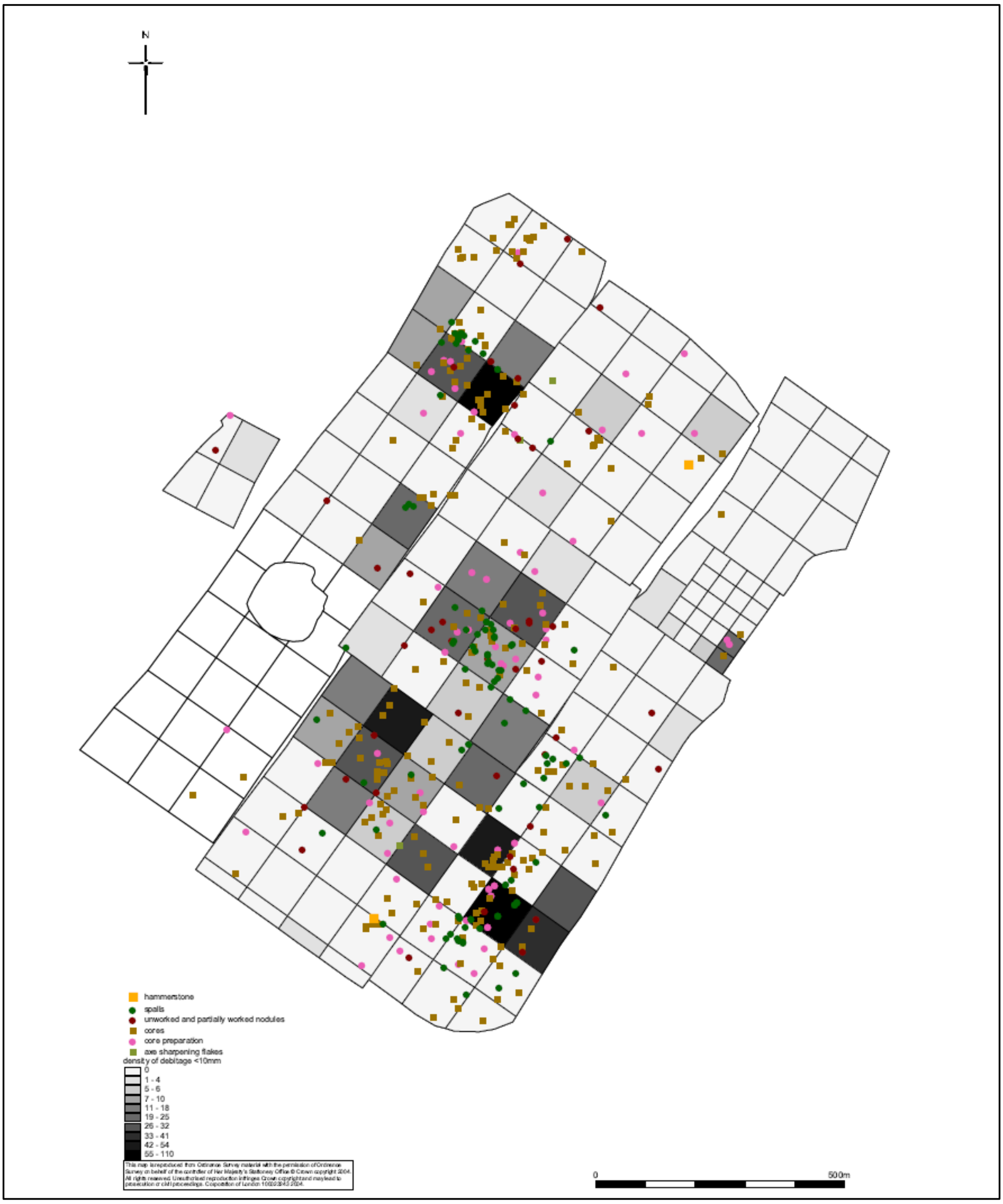


Figure 6.4: Density of flint knapping debris across the site at 3WW (Lewis et al; 2011)

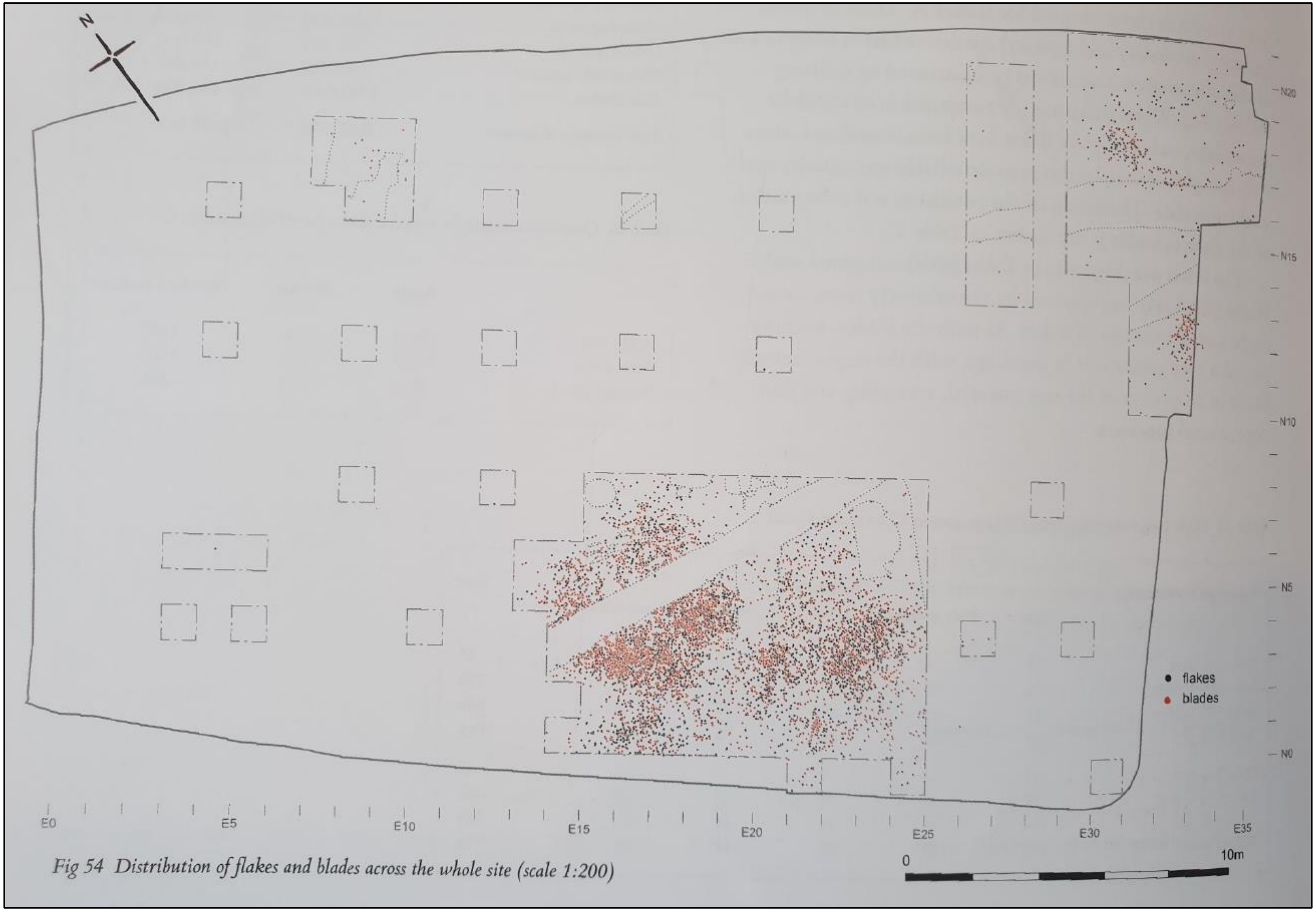


Fig 54 Distribution of flakes and blades across the whole site (scale 1:200)

Figure 6.5: Density of flintwork in scatter C, also showing distribution of core preparation and rejuvenation pieces (Lewis et al; 2011)

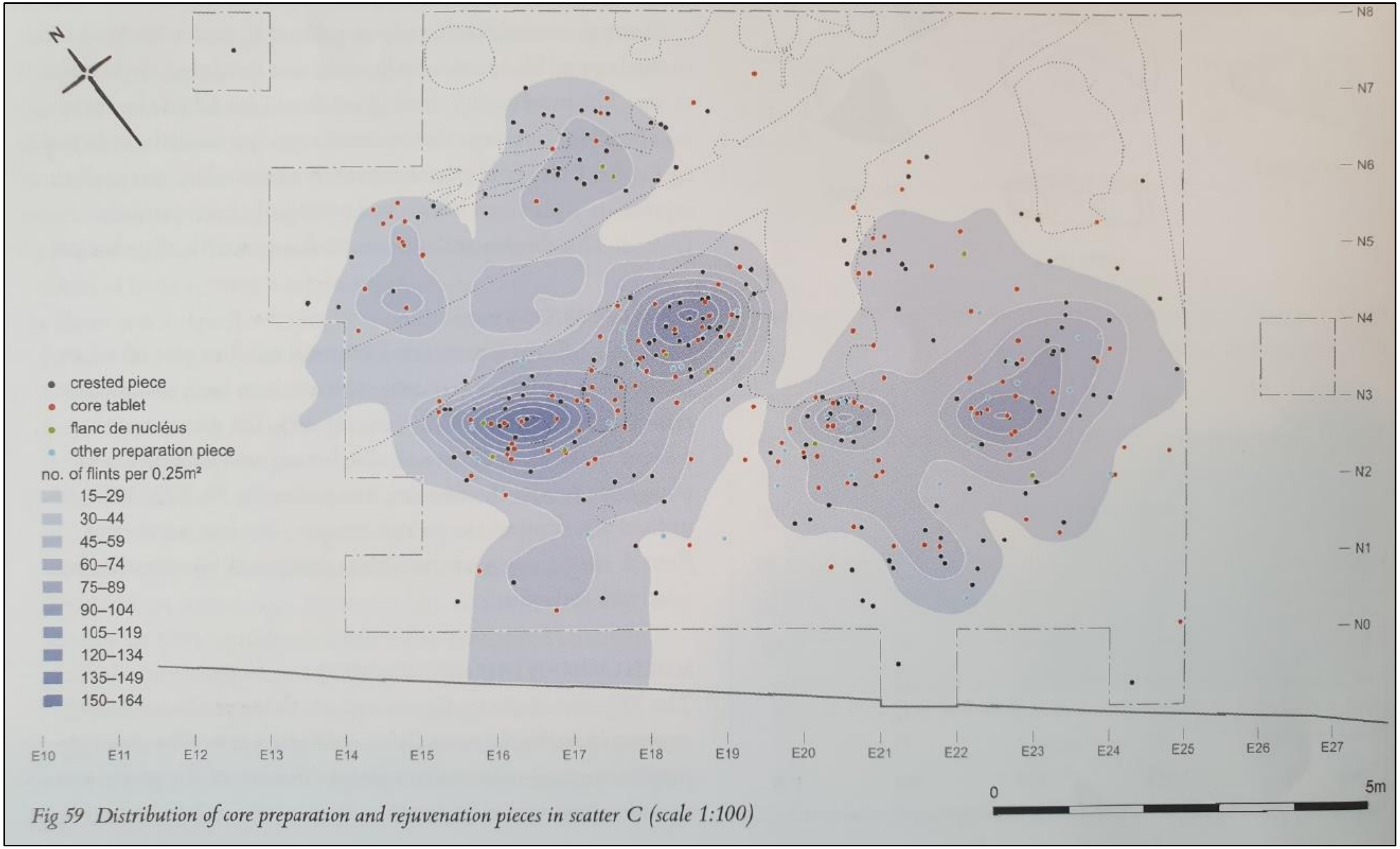


Fig 59 Distribution of core preparation and rejuvenation pieces in scatter C (scale 1:100)

Figure 6.6: Excavation area at Sanderson's showing animal bone distribution and density (MoLAS; 2006: figure 12)

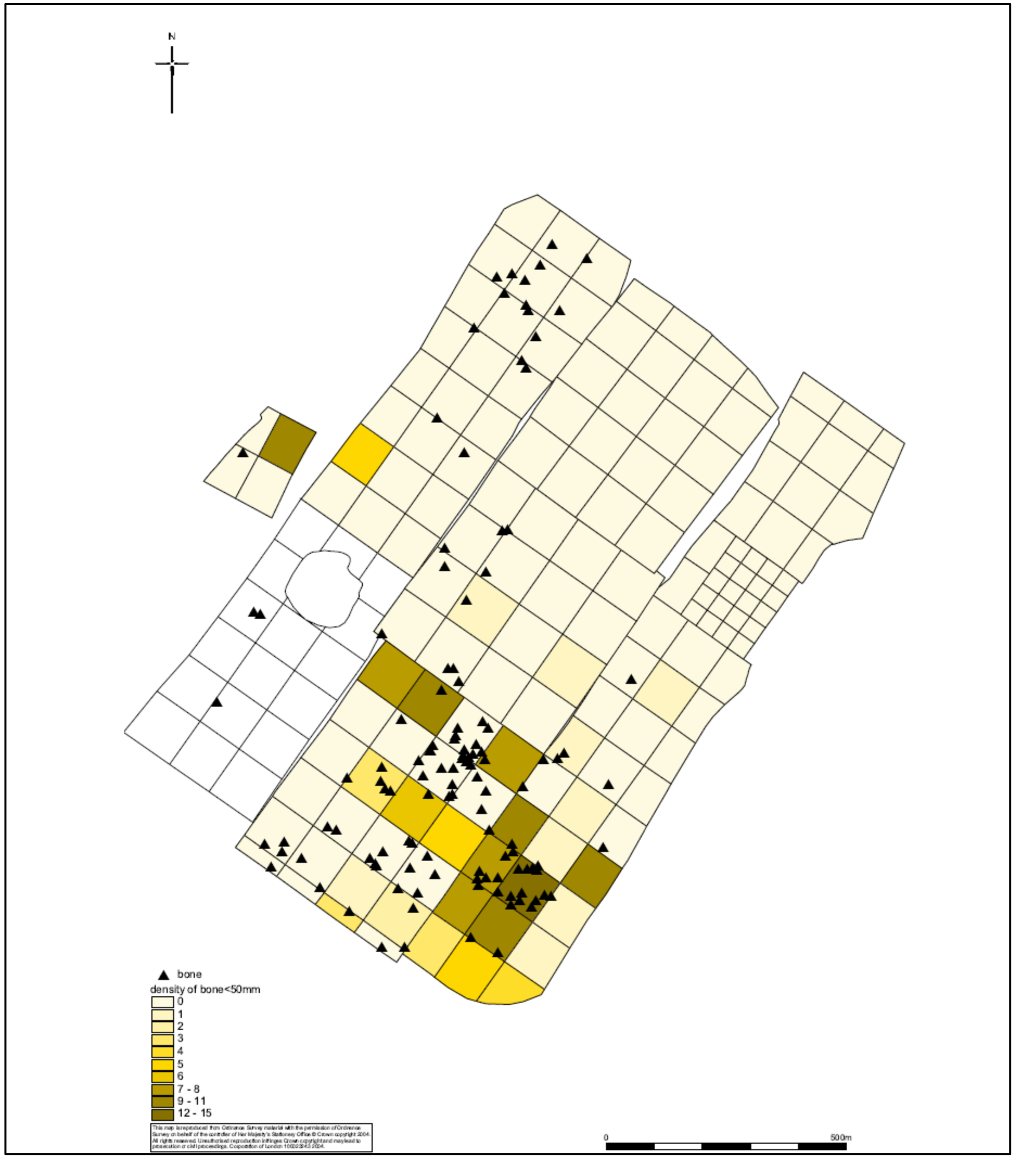


Figure 6.7: Illustration of tanning process at Sanderson's (M-Sorgo, 2021)

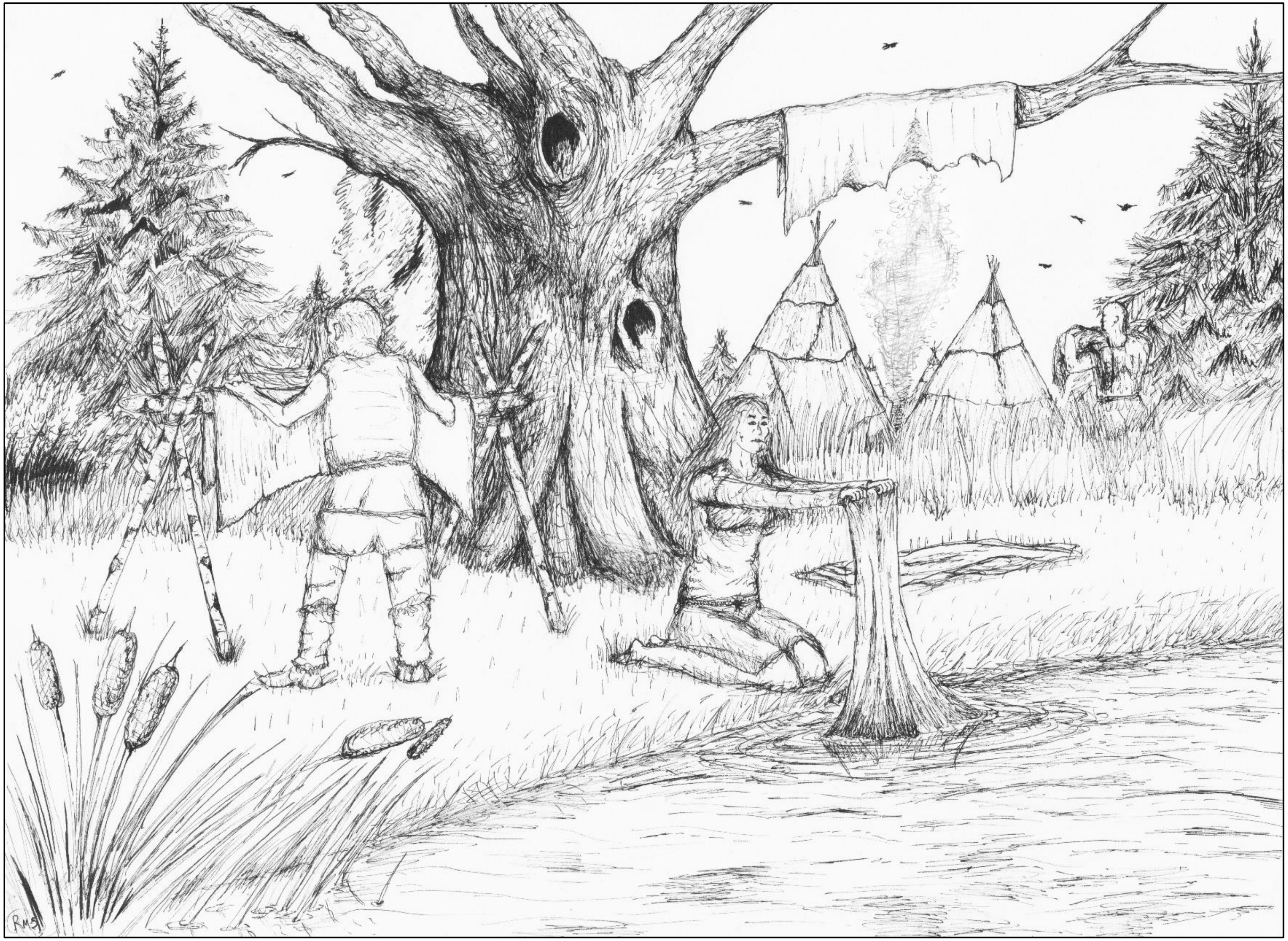
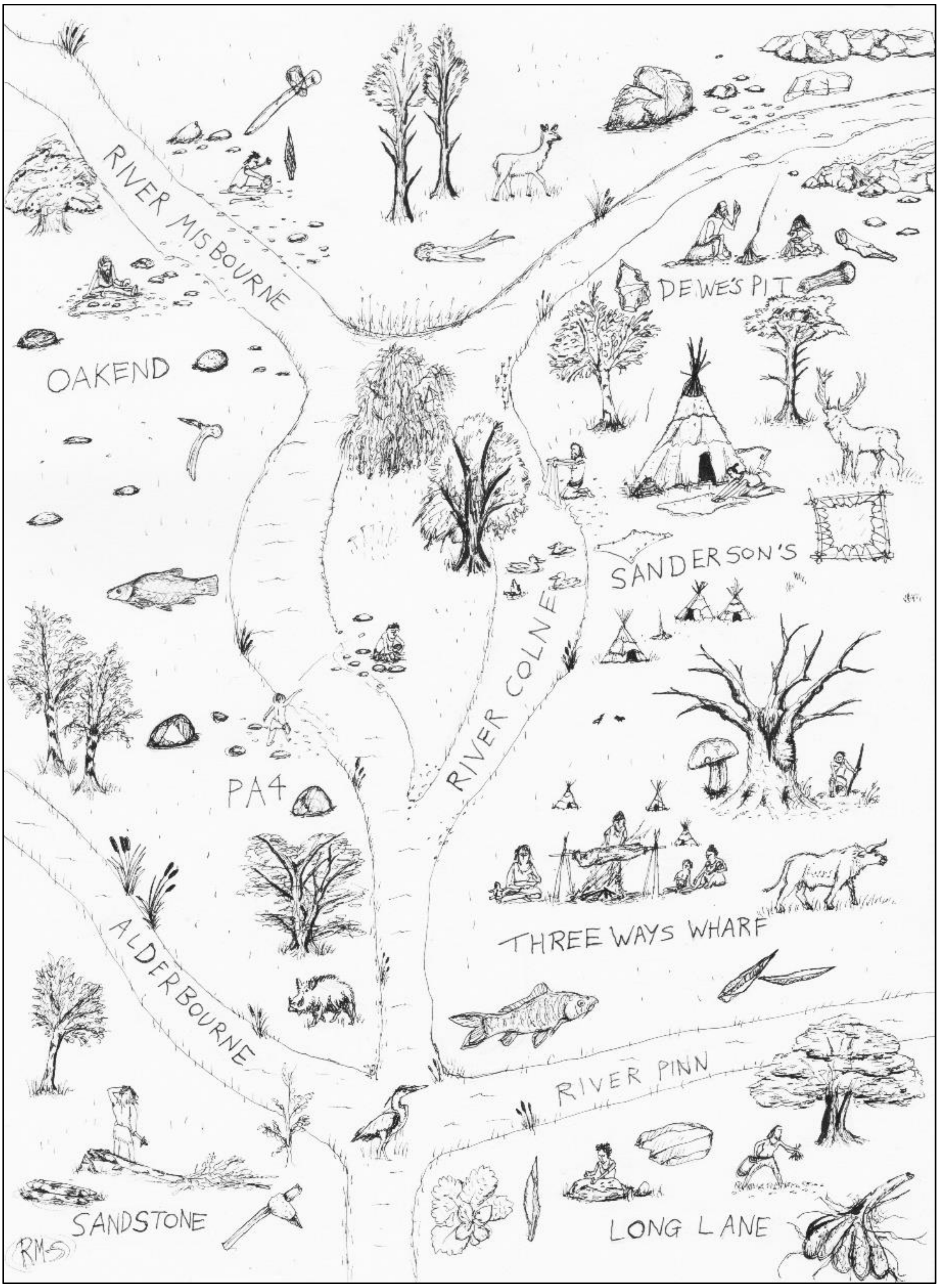


Figure 6.8: Early Mesolithic taskscape in the Middle Colne Valley (M-Sorgo, 2021)



Chapter 7: figures

Figure 7.1: Early Neolithic sites and find spots by density (ArcMap 10.7.1)

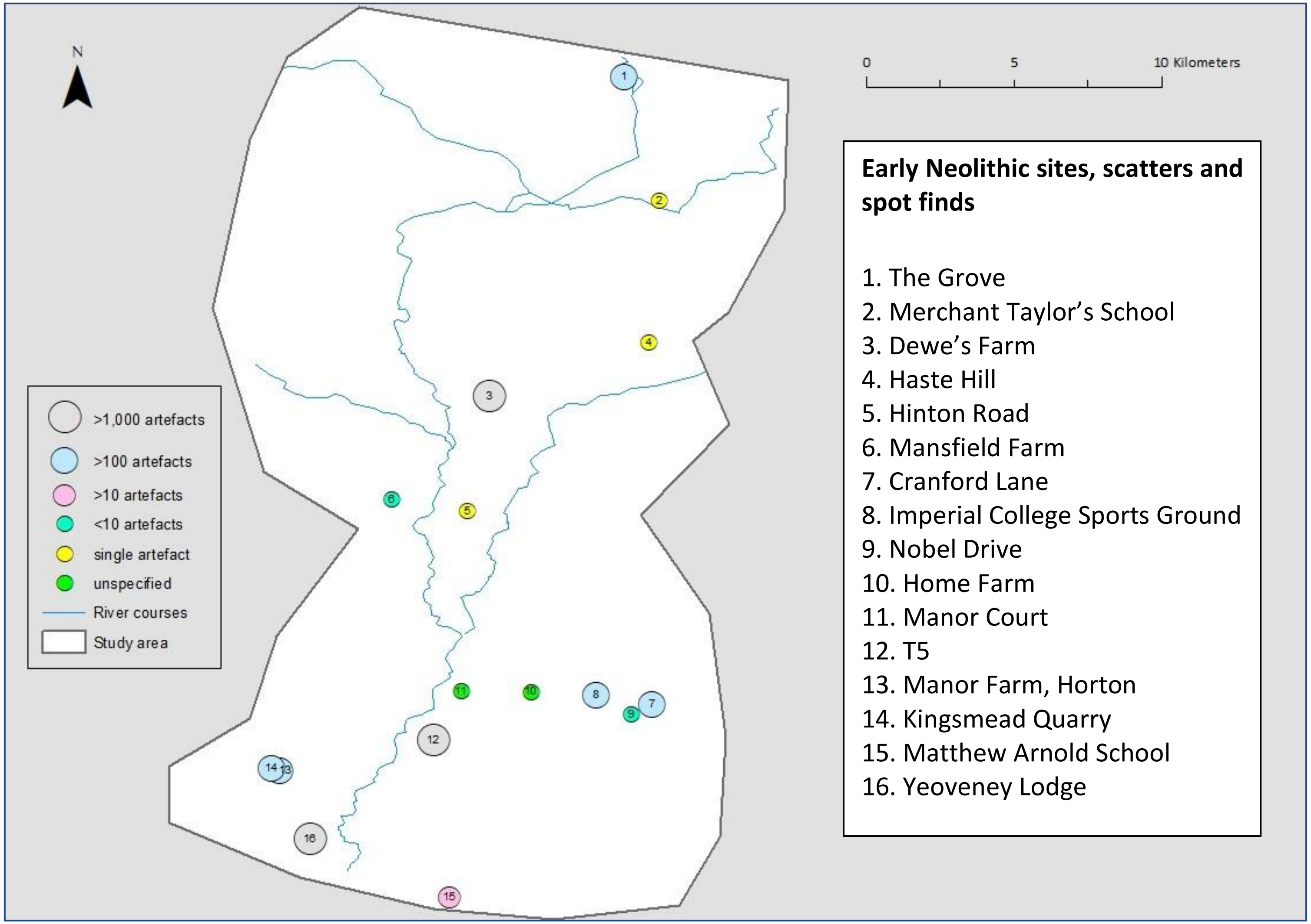
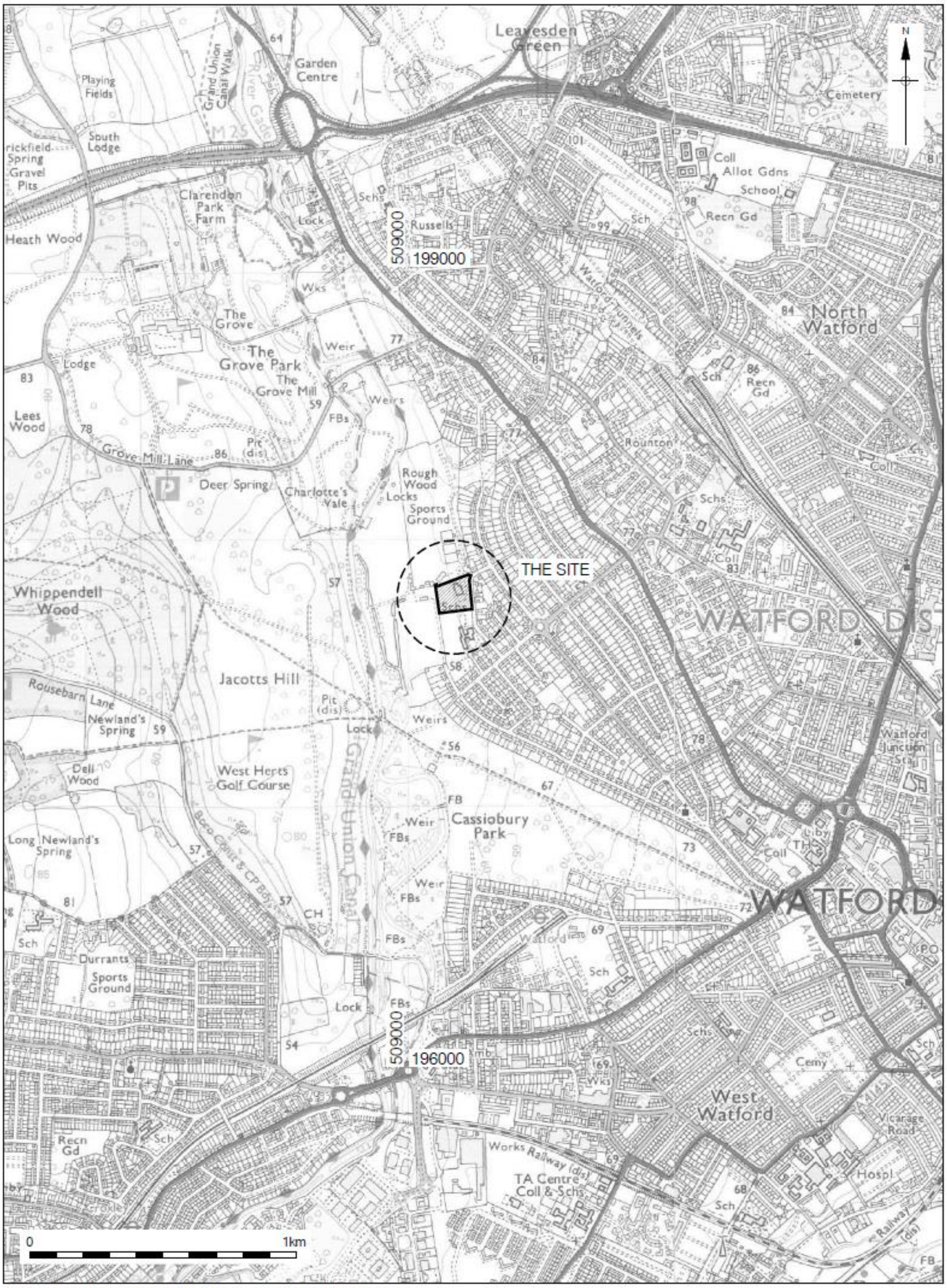


Figure 7.2: Location of Cassiobury School (Haslam; 2012: figure 1)



HB 16/05/12

Figure 7.3: Dewe's Farm TT084 features and test pits (Scott, 2018)

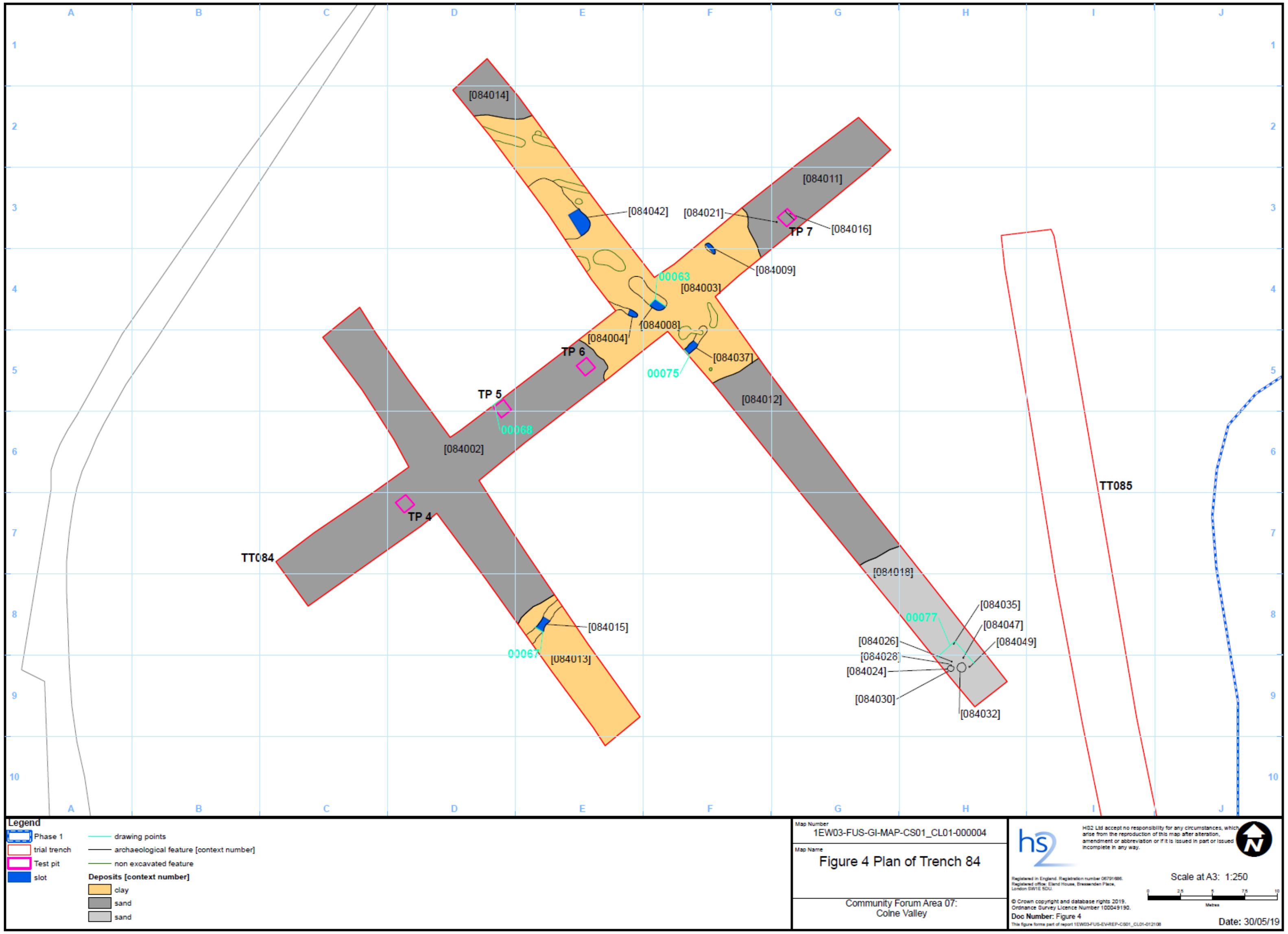


Figure 7.4: Dewe's Farm TT084 showing artefact scatters and clusters in relation to features (Scott, 2018)

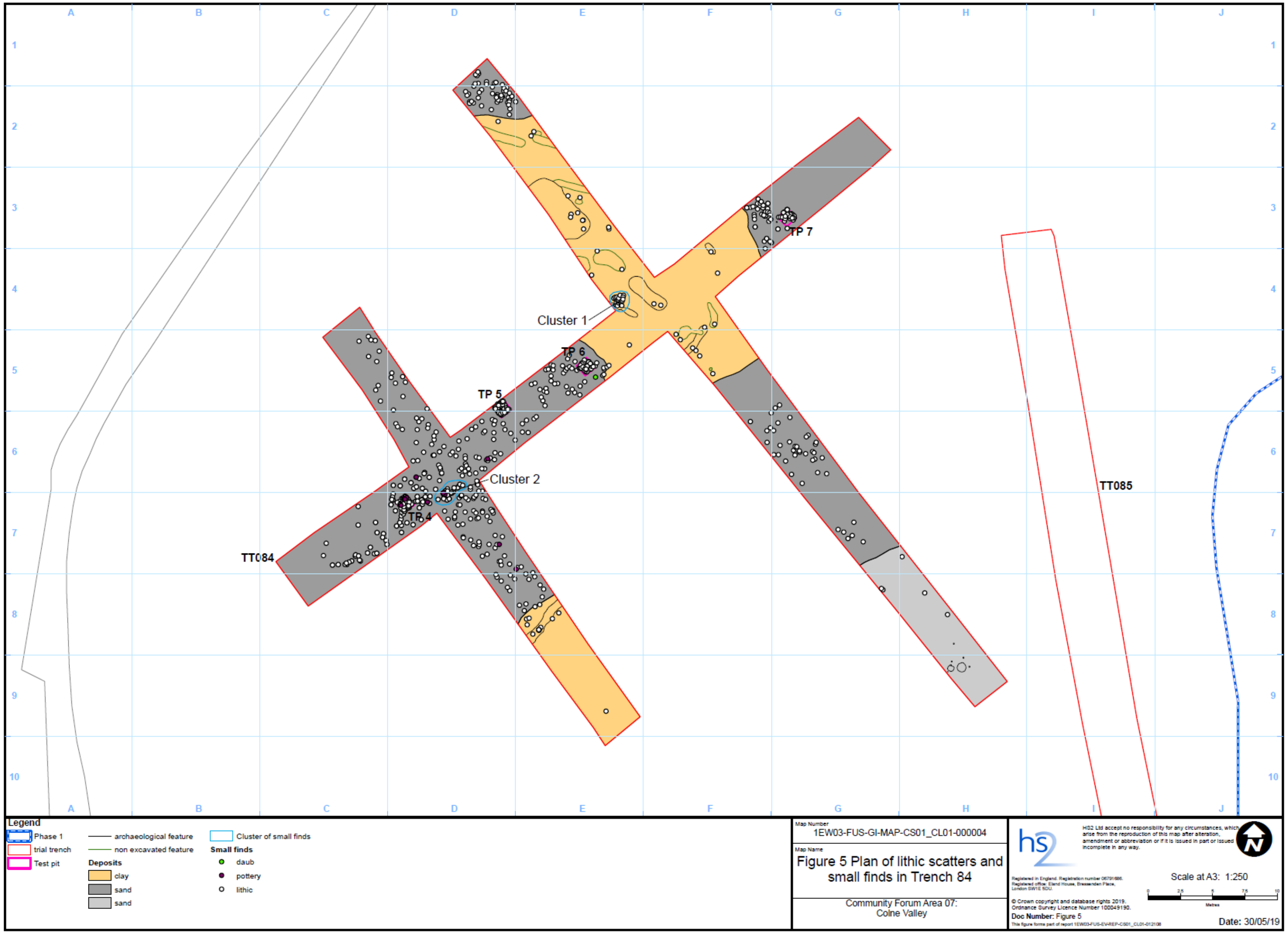


Figure 7.5: Early Neolithic Y-shaped piece from Colney Farm (Hillingdon Local Studies, Archives and Museum Service, authors photograph)

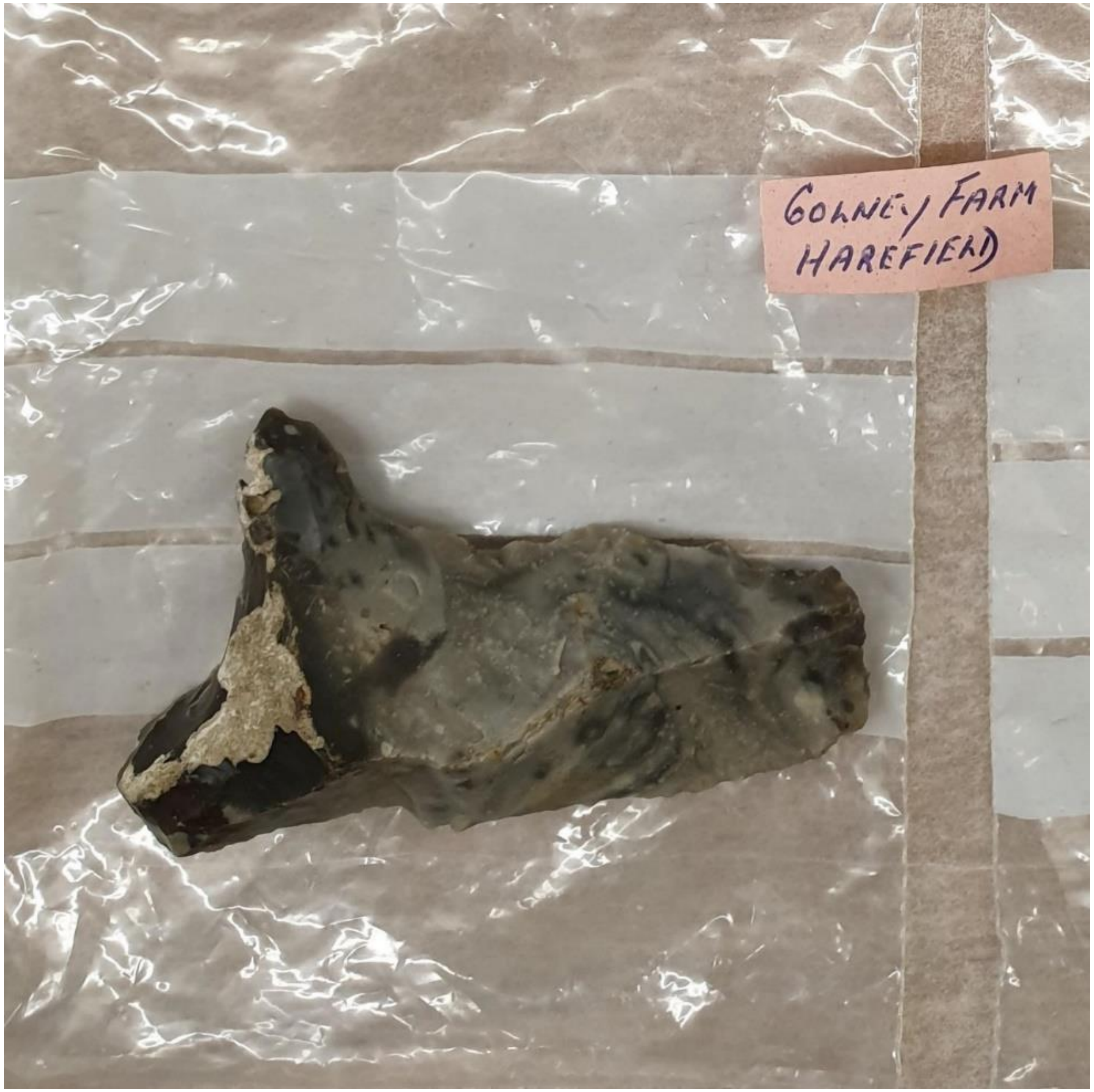


Figure 7.6: Southeast view of large pit [084032] (Scott, 2018: plate 7)

Figure 7.7: Distribution of Early Neolithic features (FA, 2010: Figure 2.12)

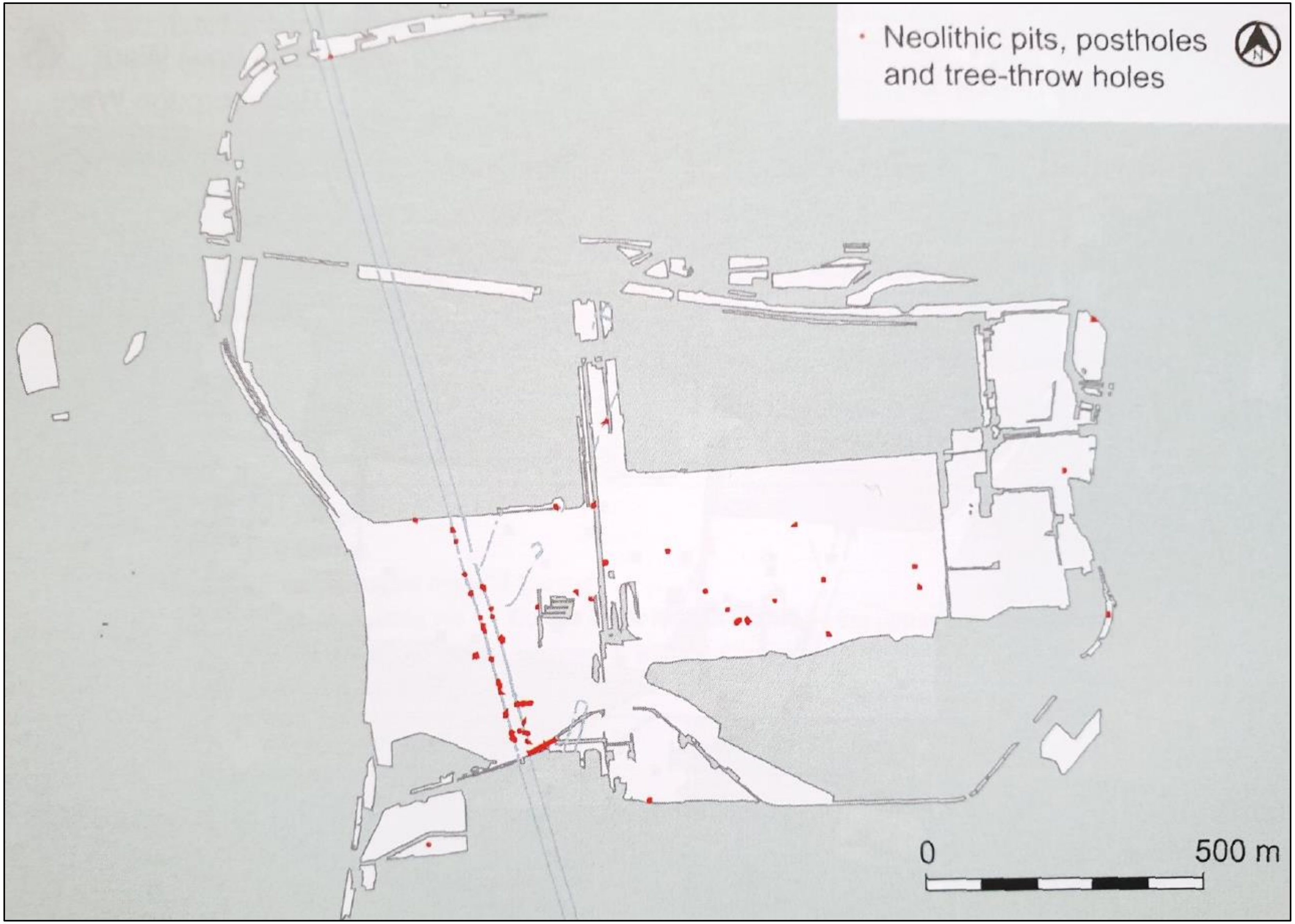


Figure 7.8: Distribution of Plain Bowl Ware at T5 (FA, 2010: Figure 2.13)

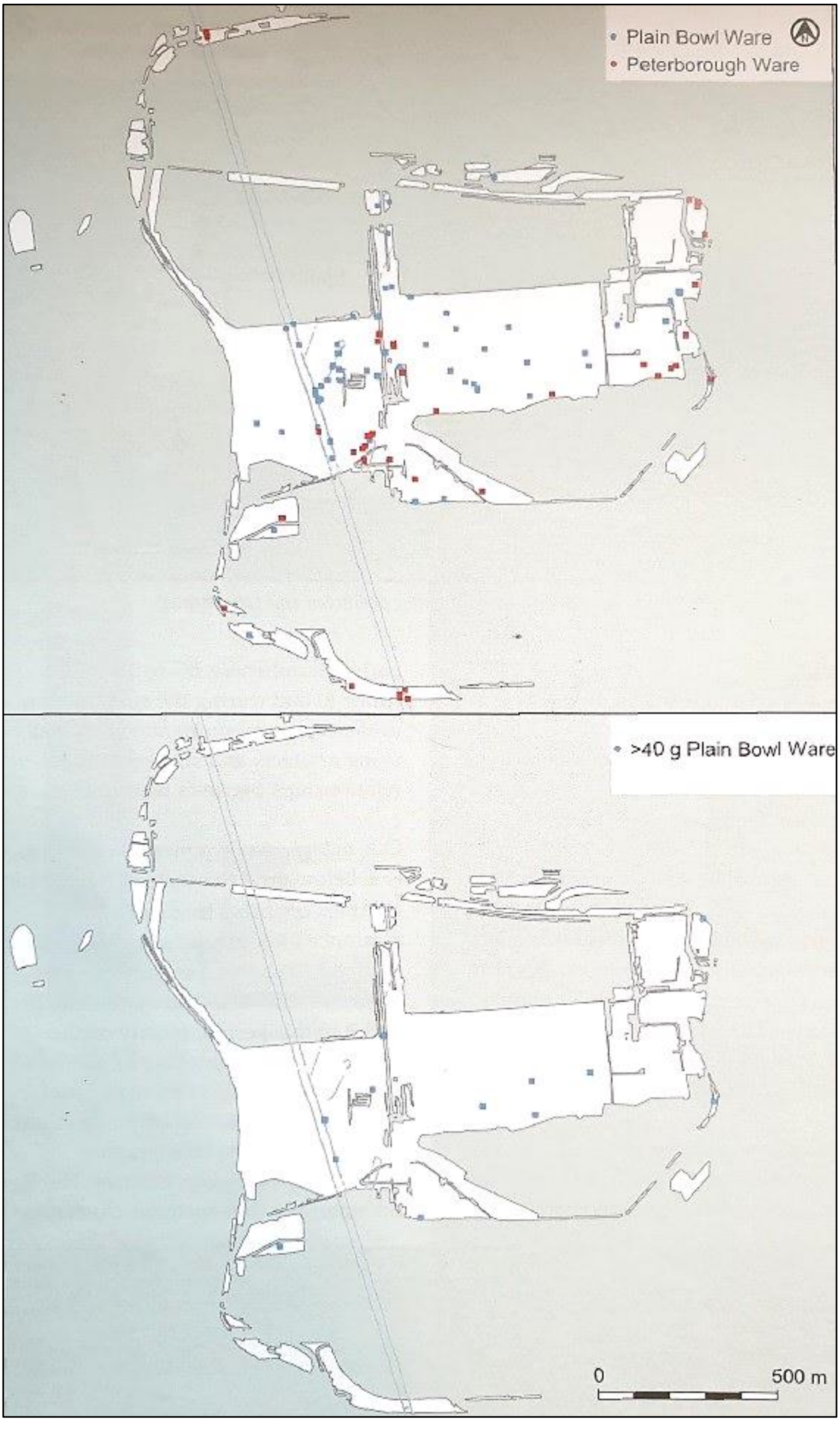


Figure 7.9: Pit group 964 (FA, 2010: Figure 2.53)

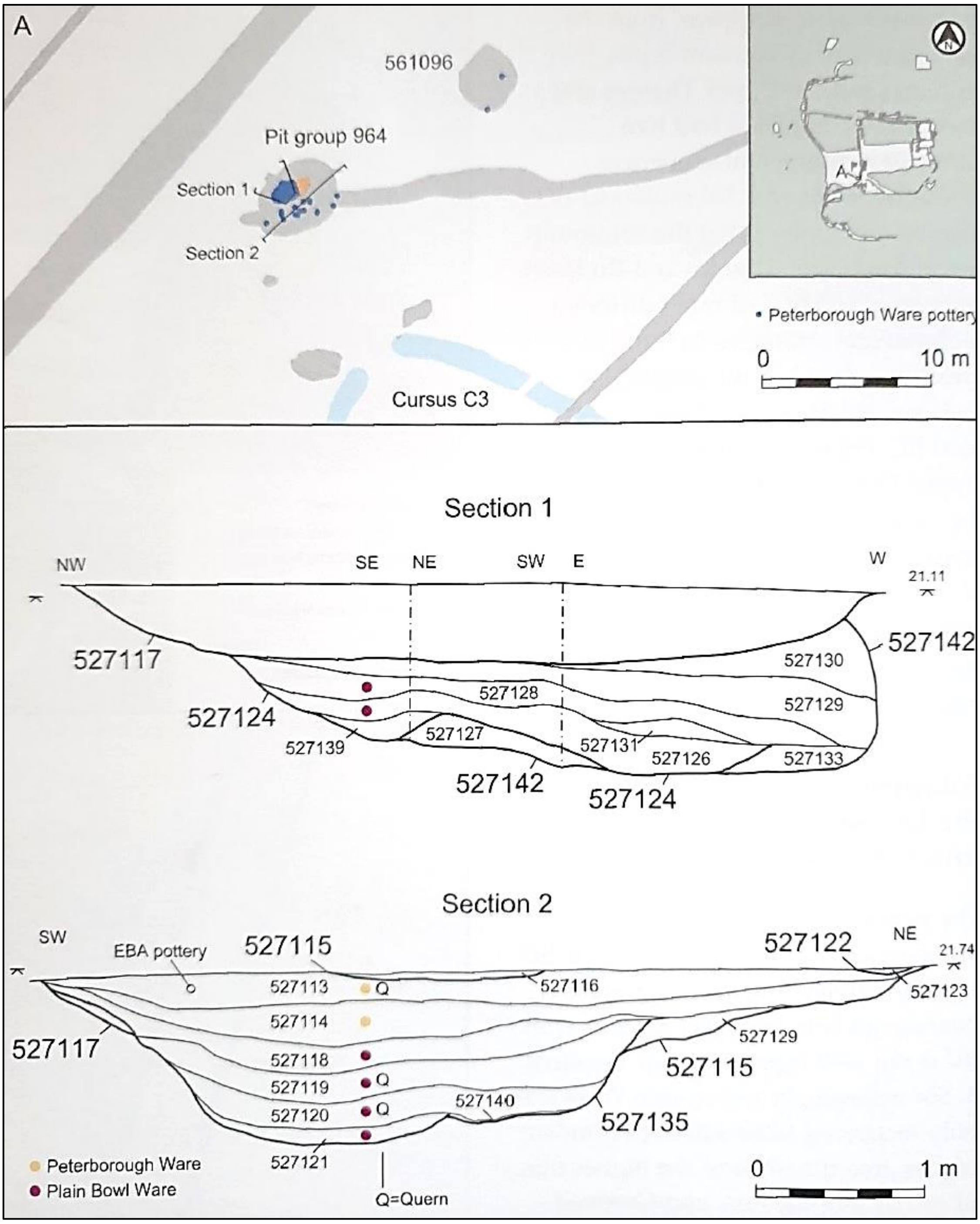


Figure 7.10: Location of Yeoveney Lodge, Yeoveney Lodge Farm and the causewayed enclosure (Robertson-Mackay, 1987: figure 3)

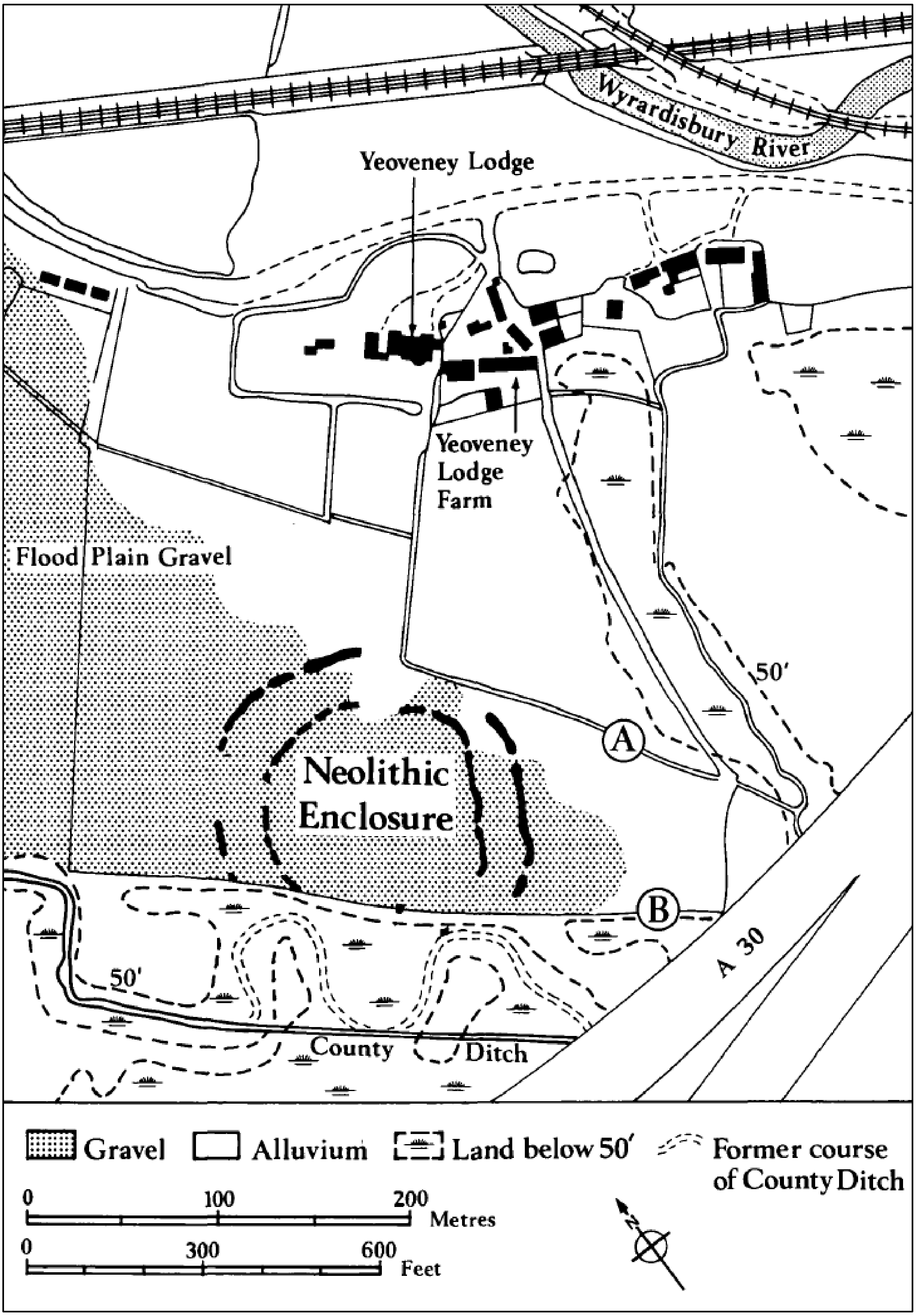


Figure 7.11: Plan of excavated areas at Yeoveney Lodge causewayed enclosure (Robertson-Mackay, 1987: figure 4)

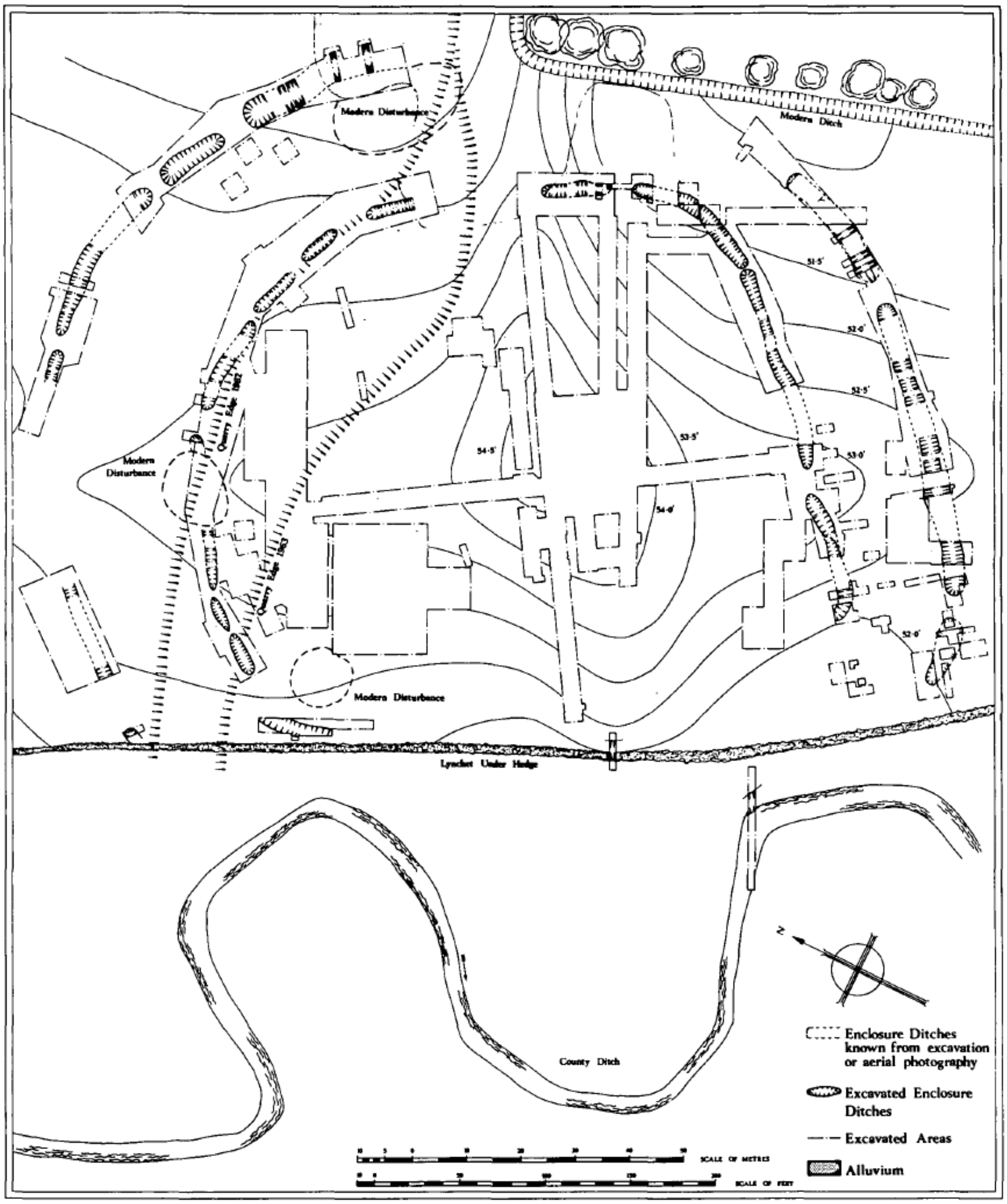


Figure 7.12: Decorated pottery from enclosure ditches (Robertson-Mackay, 1987: figure 48)

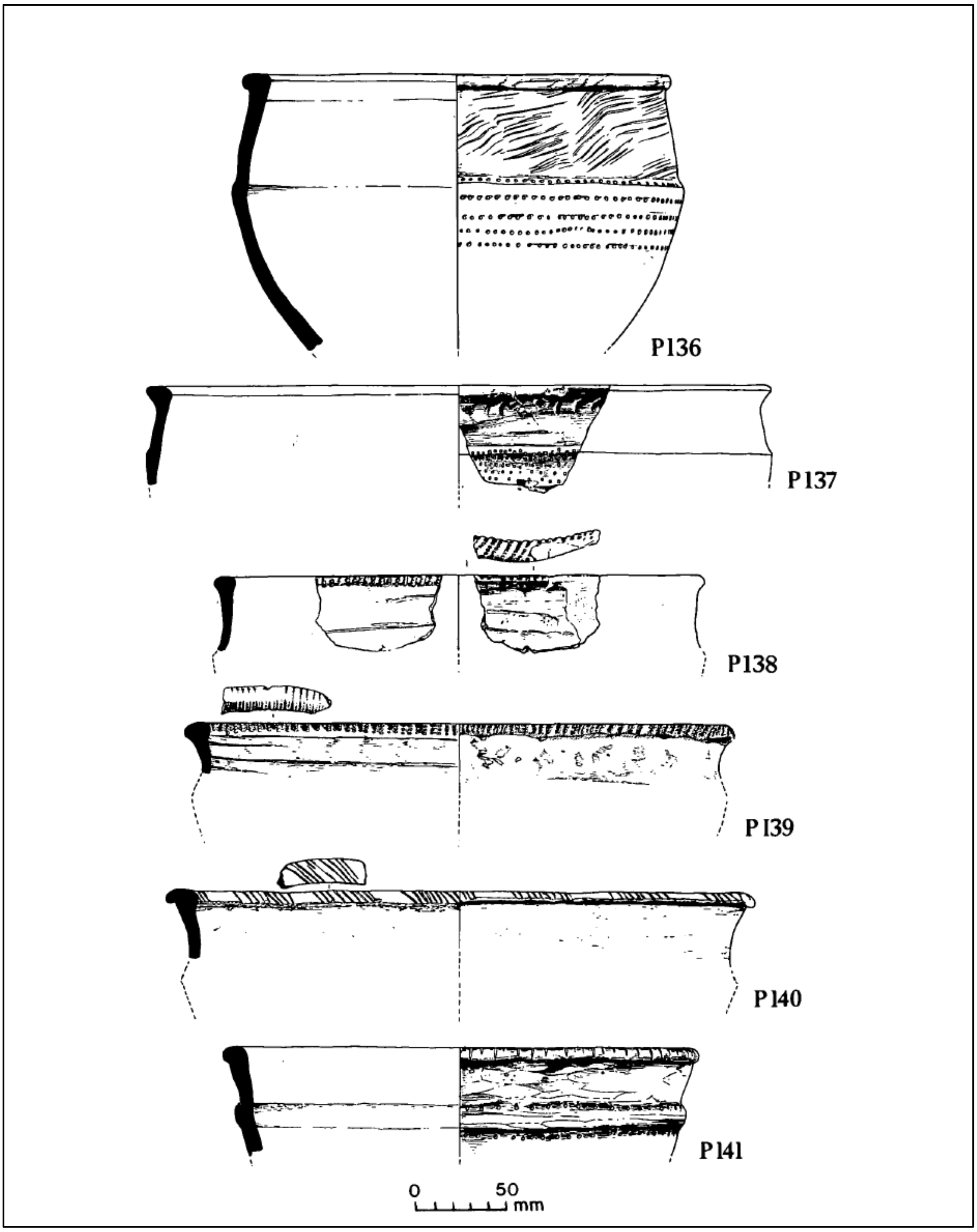


Figure 7.13: Decorated pottery from enclosure ditches (Robertson-Mackay, 1987: figure 49)

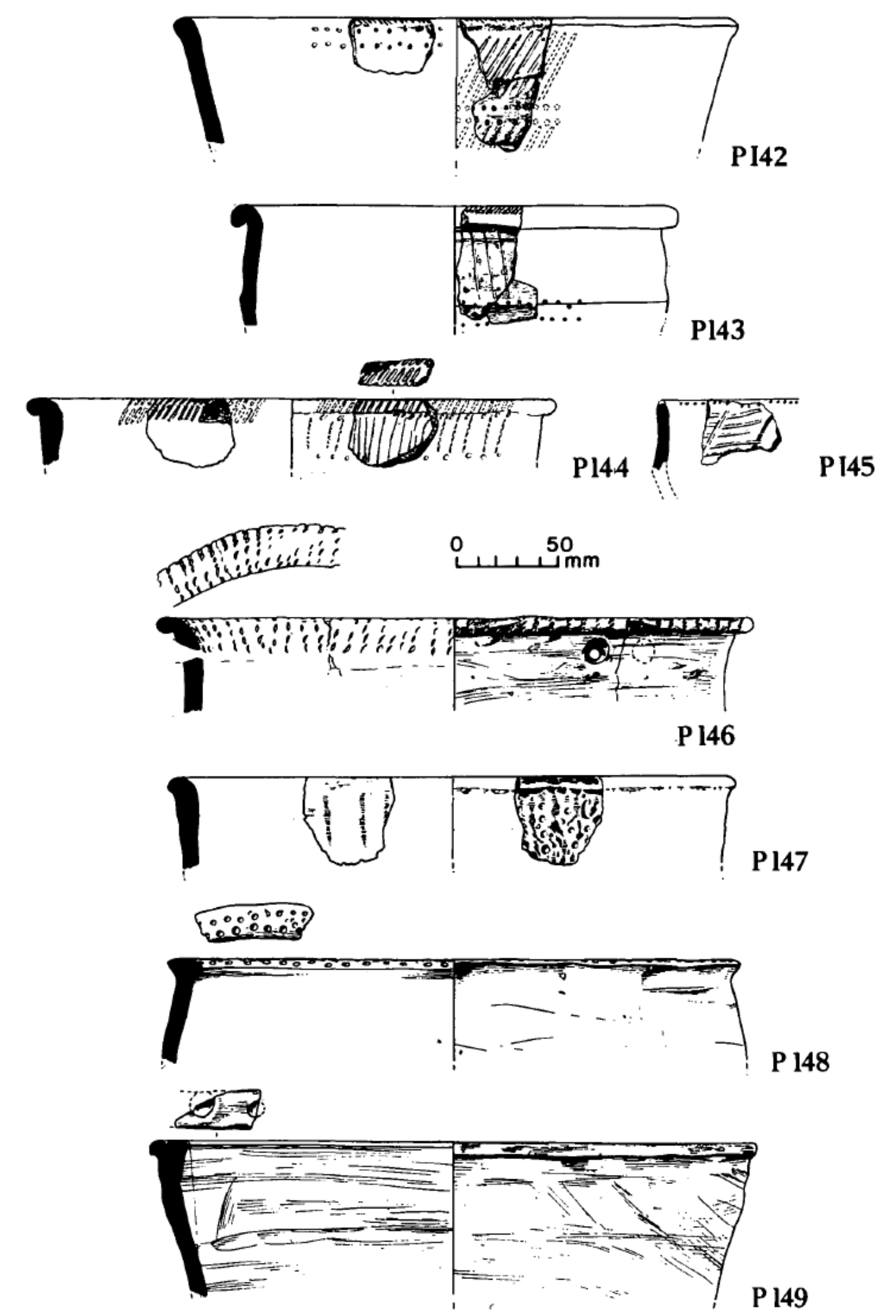


Figure 7.14: Decorated pottery from enclosure ditches (Robertson-Mackay, 1987: figure 50)

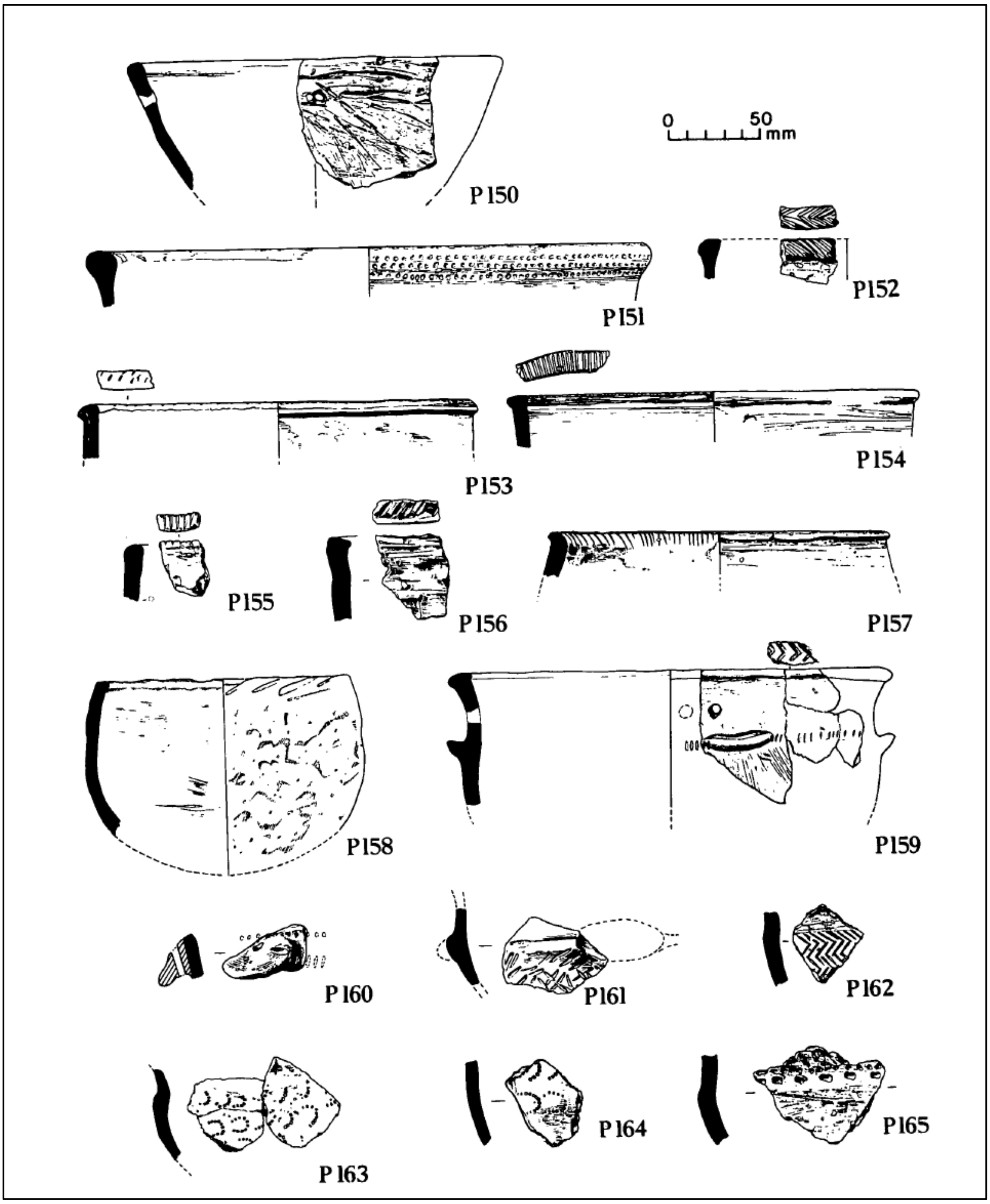


Figure 7.15: Pottery from interior (Robertson-Mackay, 1987)

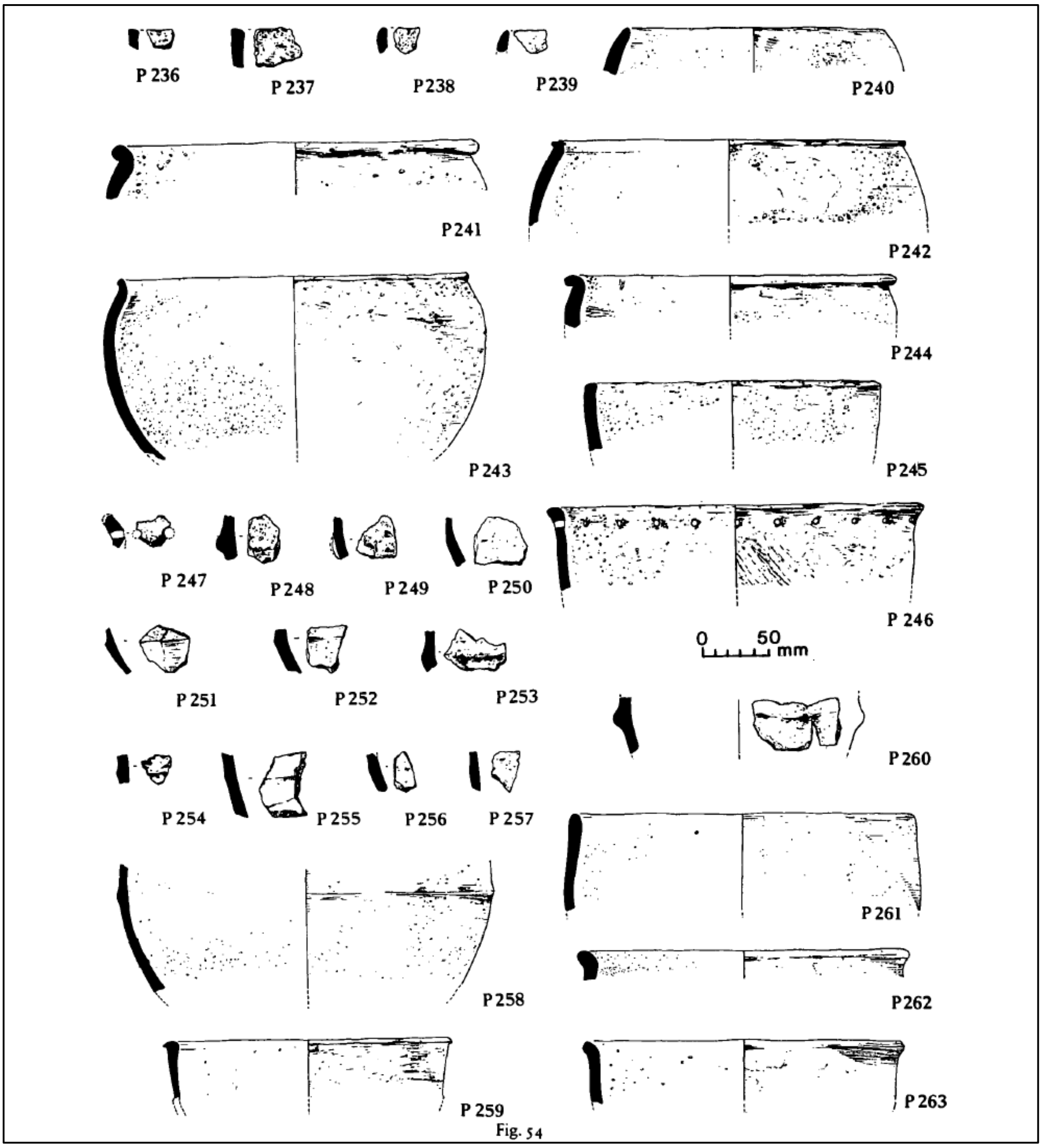


Figure 7.16: Burnishers, polishers and fragments of quern at Yeoveney Lodge (Robertson-Mackay, 1987: figure 73)

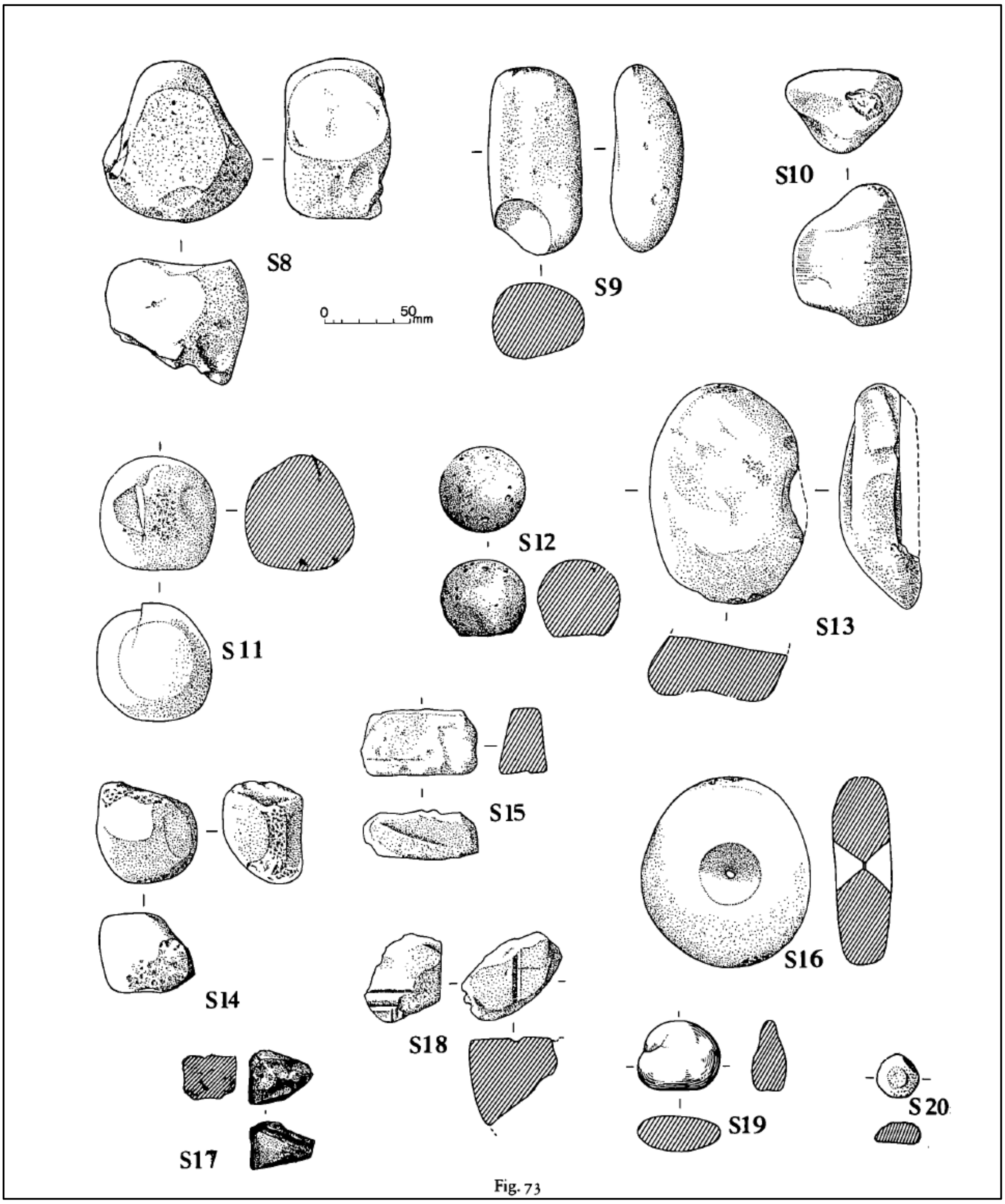


Figure 7.17: Yeoveney Lodge M25 junction 13 (OAU, 1994: figure 16)

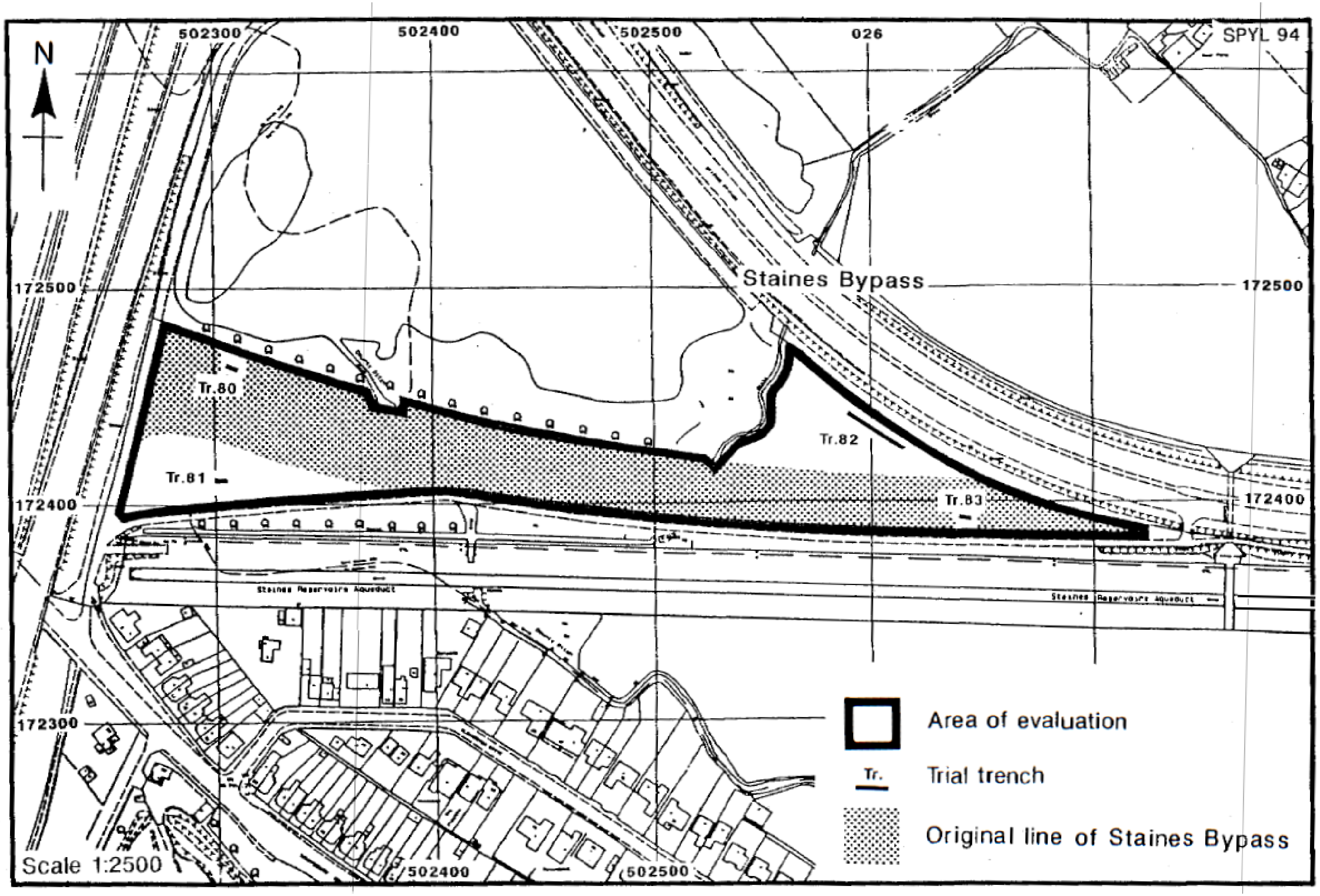


Figure 7.18: Areas A-E at ICSG and areas 1-4 at RMC Land (Powell et al; 2015)

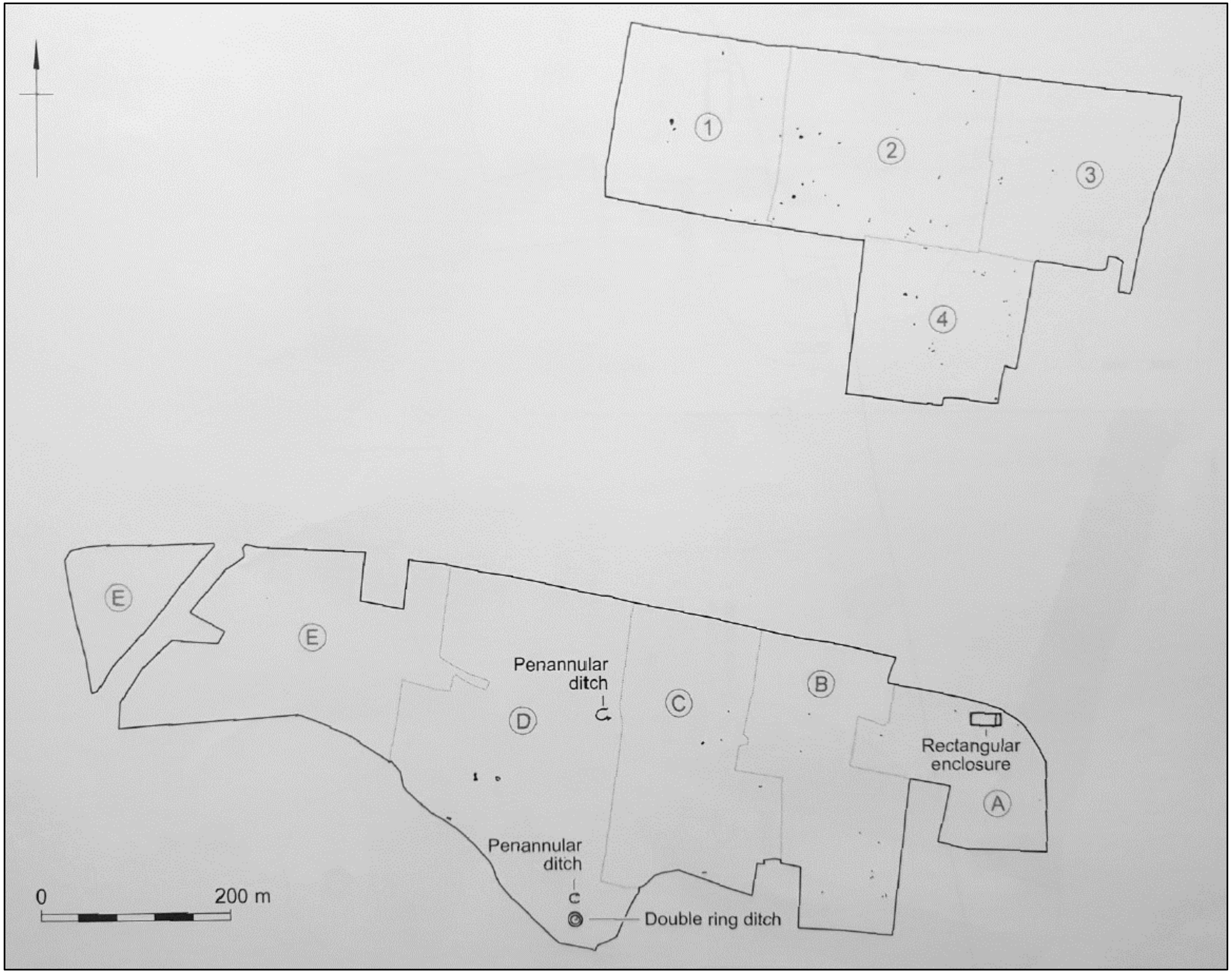


Figure 7.19: Areas A-E at ICSG showing location of G2004 (Powell et al, 2015: Figure 2.3)

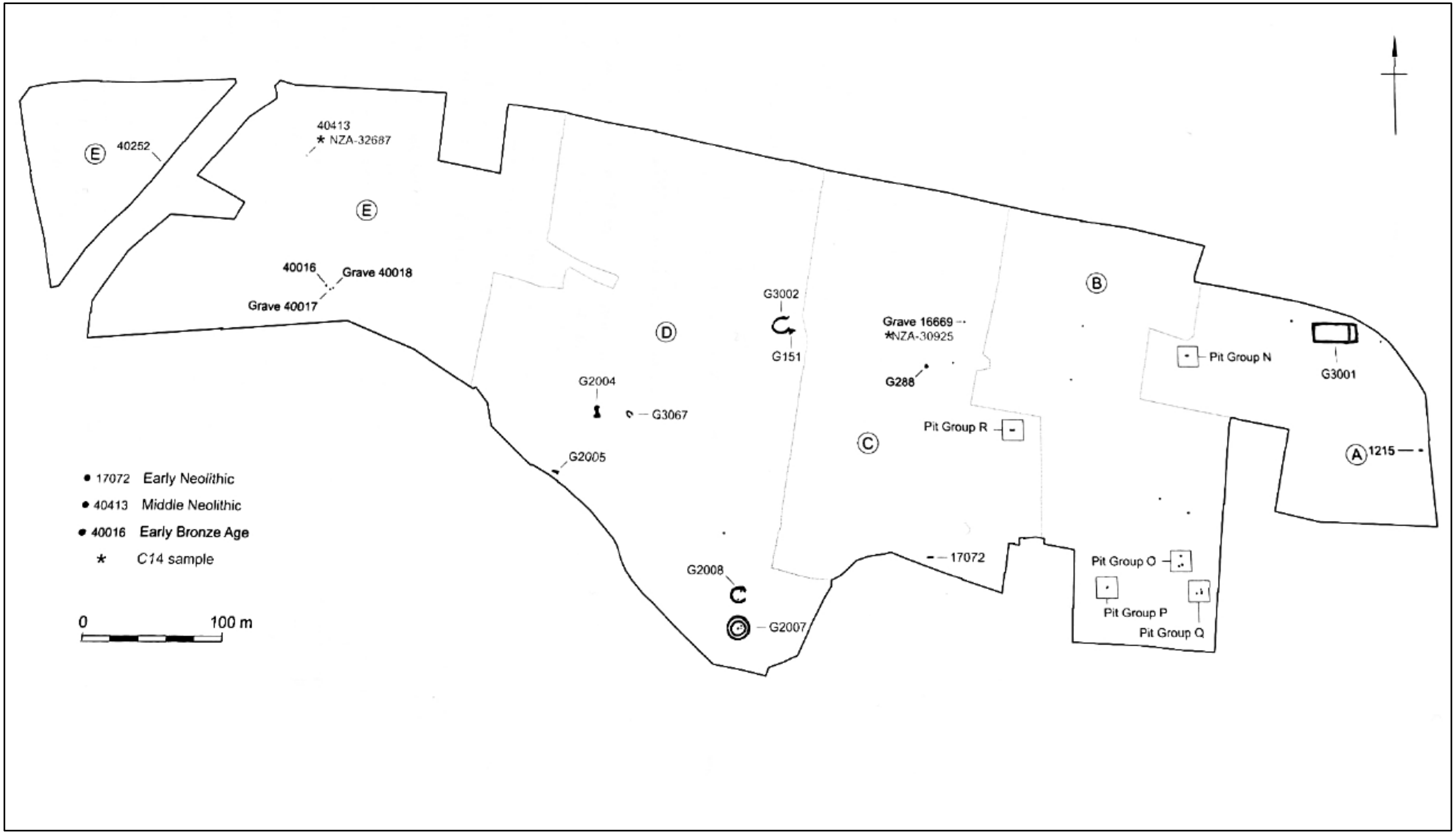


Figure 7.20: 'Quarry' feature G2004, including section of feature 30666 (Powell et al, 2015: Figure 2.4)

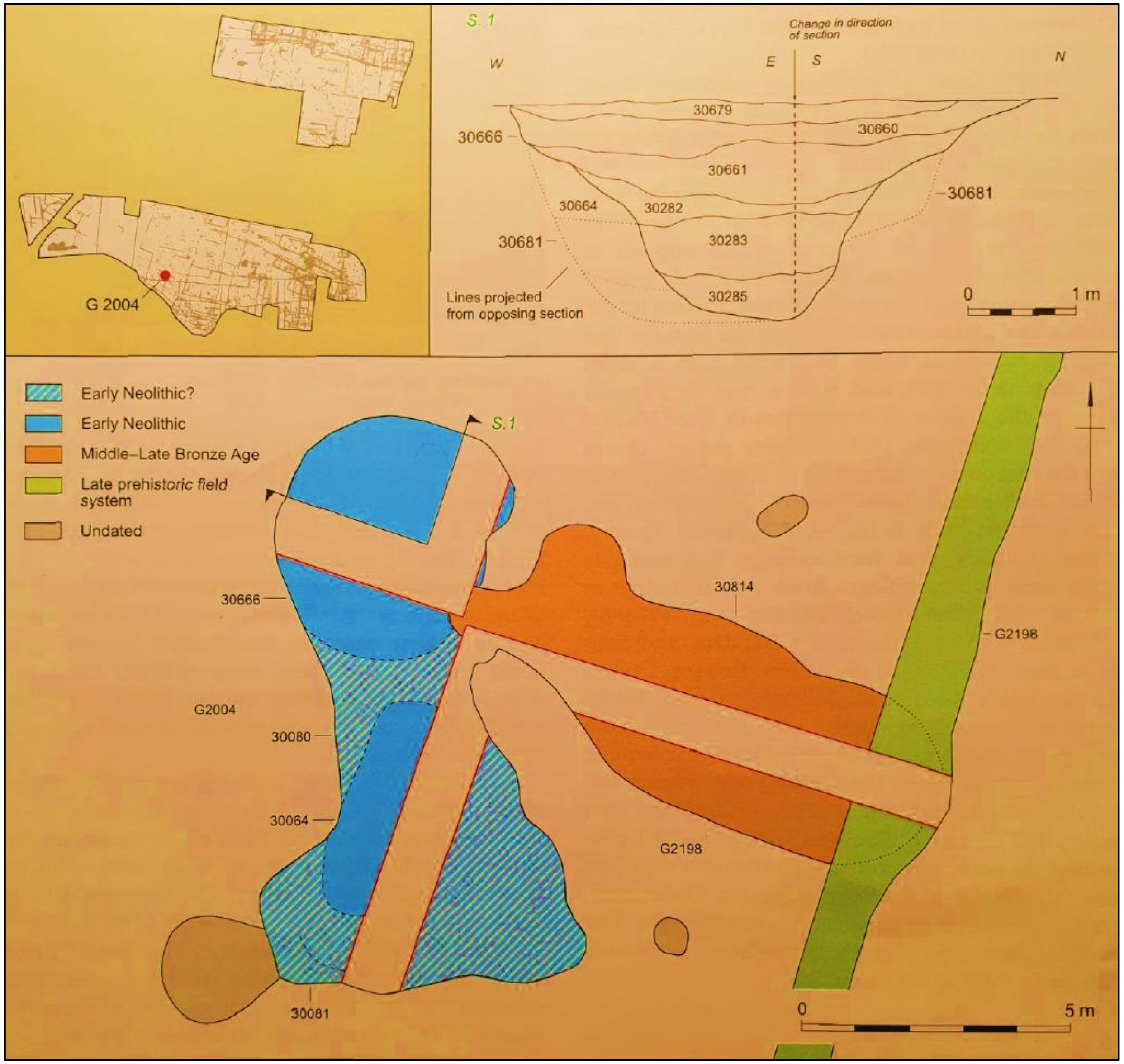


Figure 7.21: Manor Farm, Horton site location (Ford & Pine, 2003: Figure 2.1)

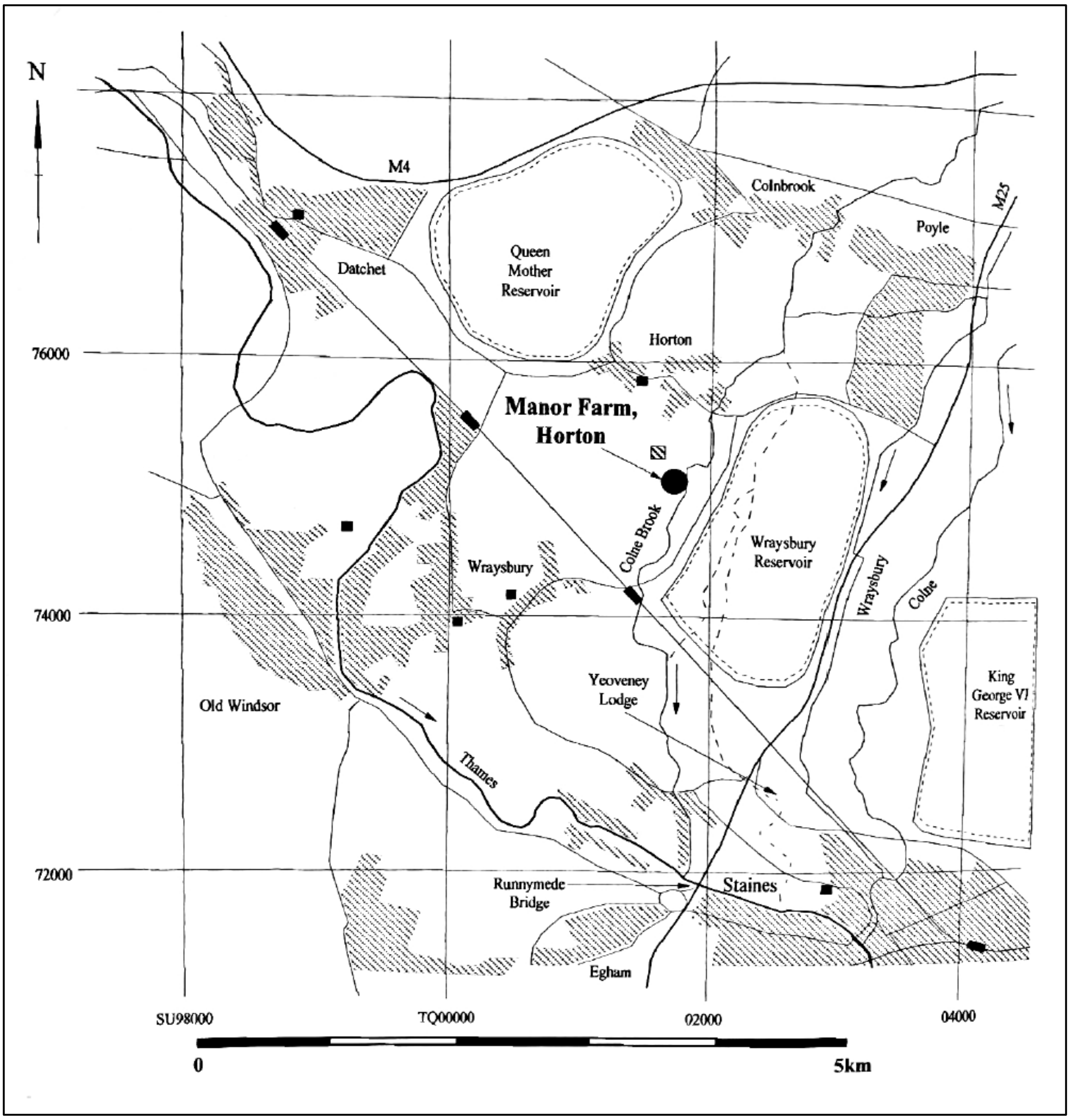


Figure 7.22: Areas of archaeological investigation at Manor Farm, Horton (Ford & Pine, 2003: Figure 2.2)

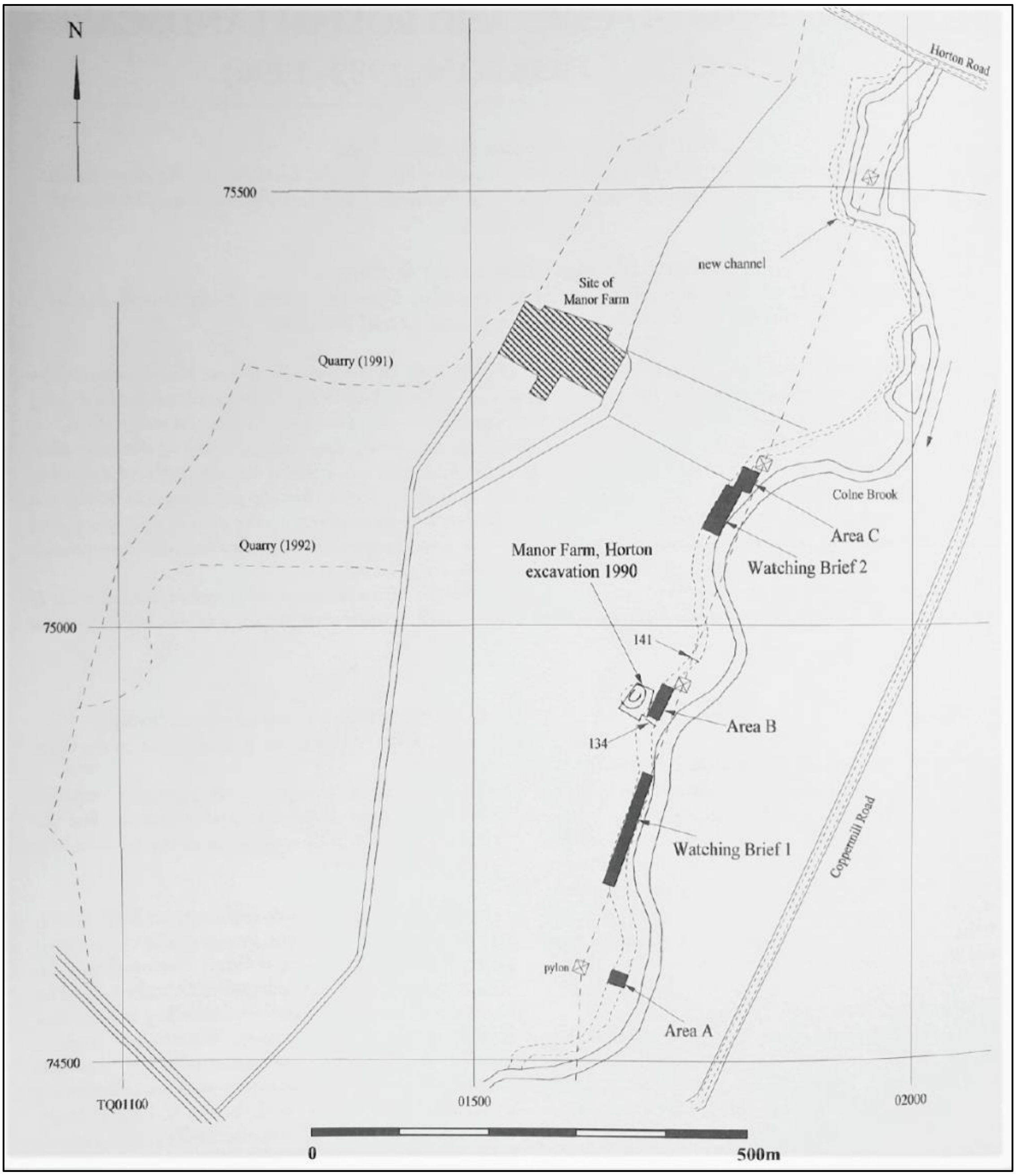


Figure 7.23: Kingsmead Quarry pits and houses in relation to Manor Farm, Horton (Chaffey et al, 2012: Figure 14.2)

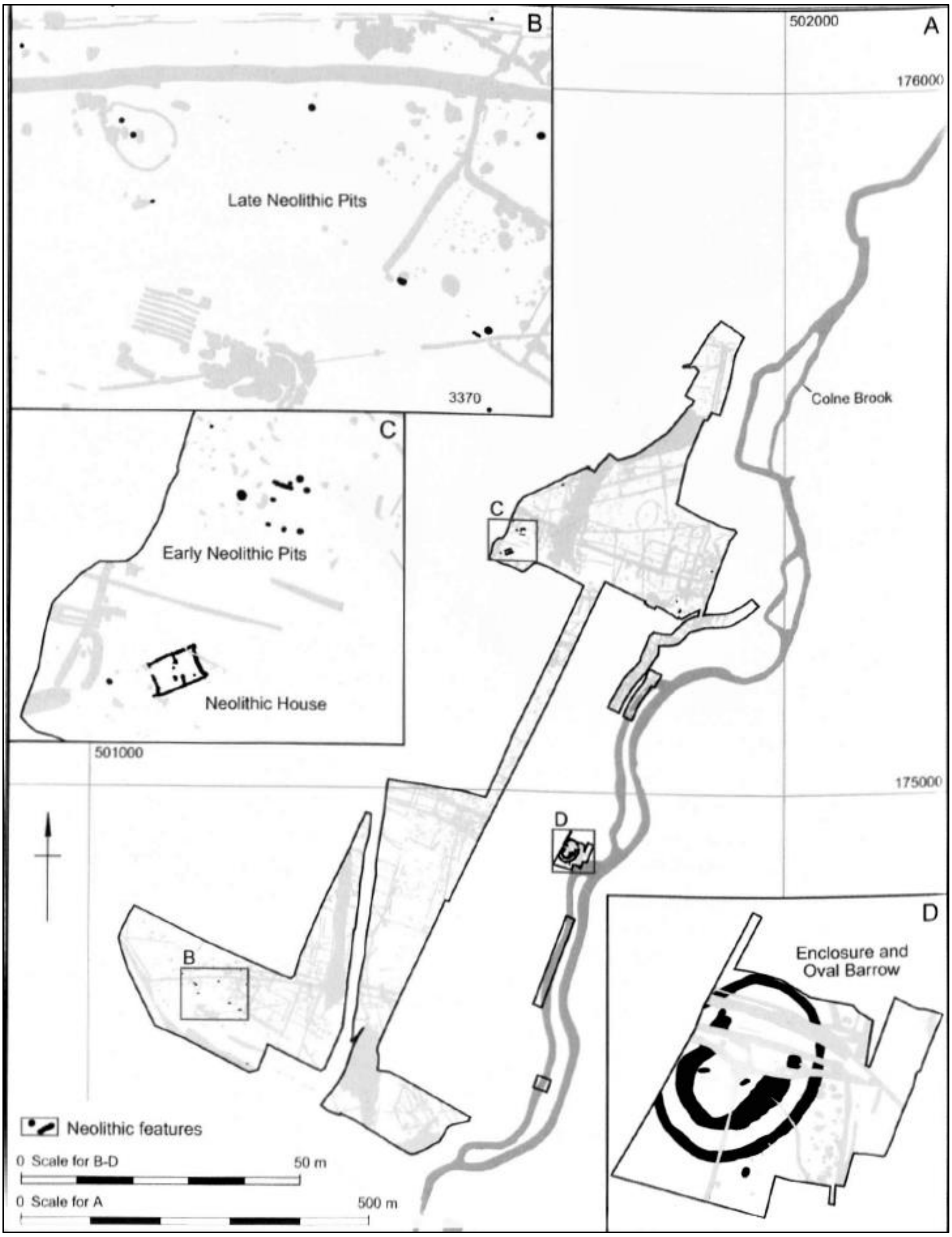


Figure 7.24: Kingsmead Quarry houses 1-4 (Symonds, 2014)

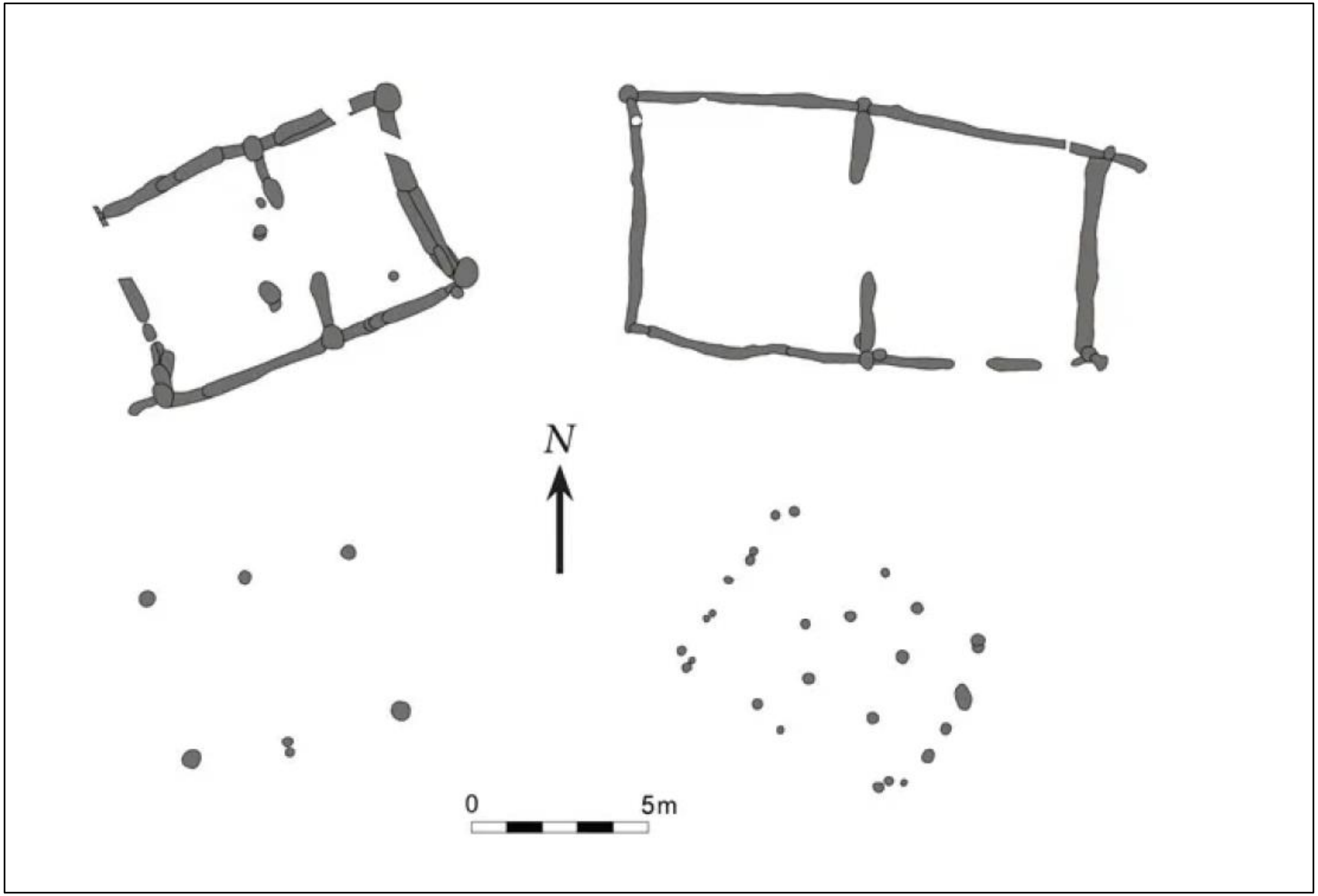


Figure 7.25: Animal bone and flint densities at House 5, Kingsmead Quarry (Chaffey et al, 2012: Figure 14.5)

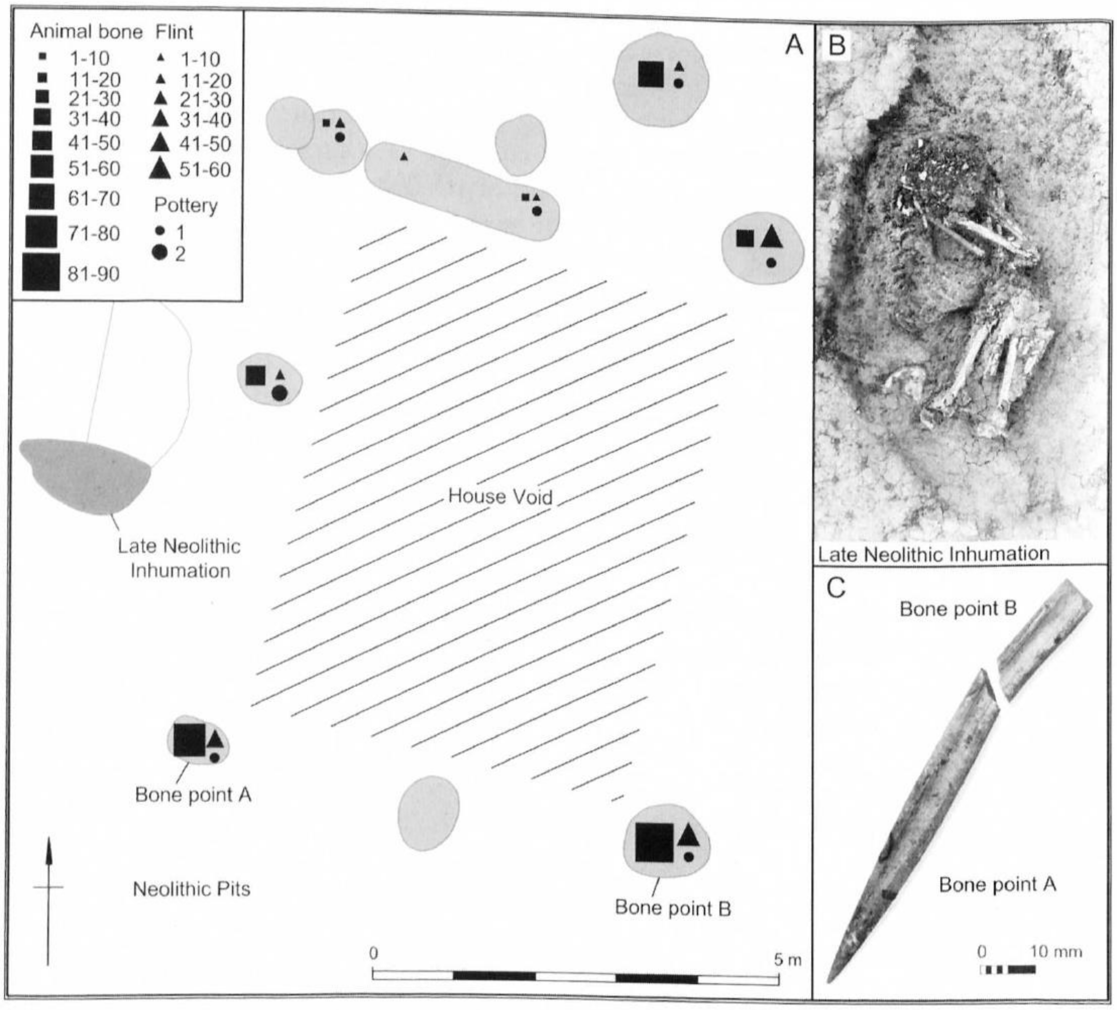


Figure 7.26: Artefact density at Kingsmead Quarry House 1 (Symonds, 2014)

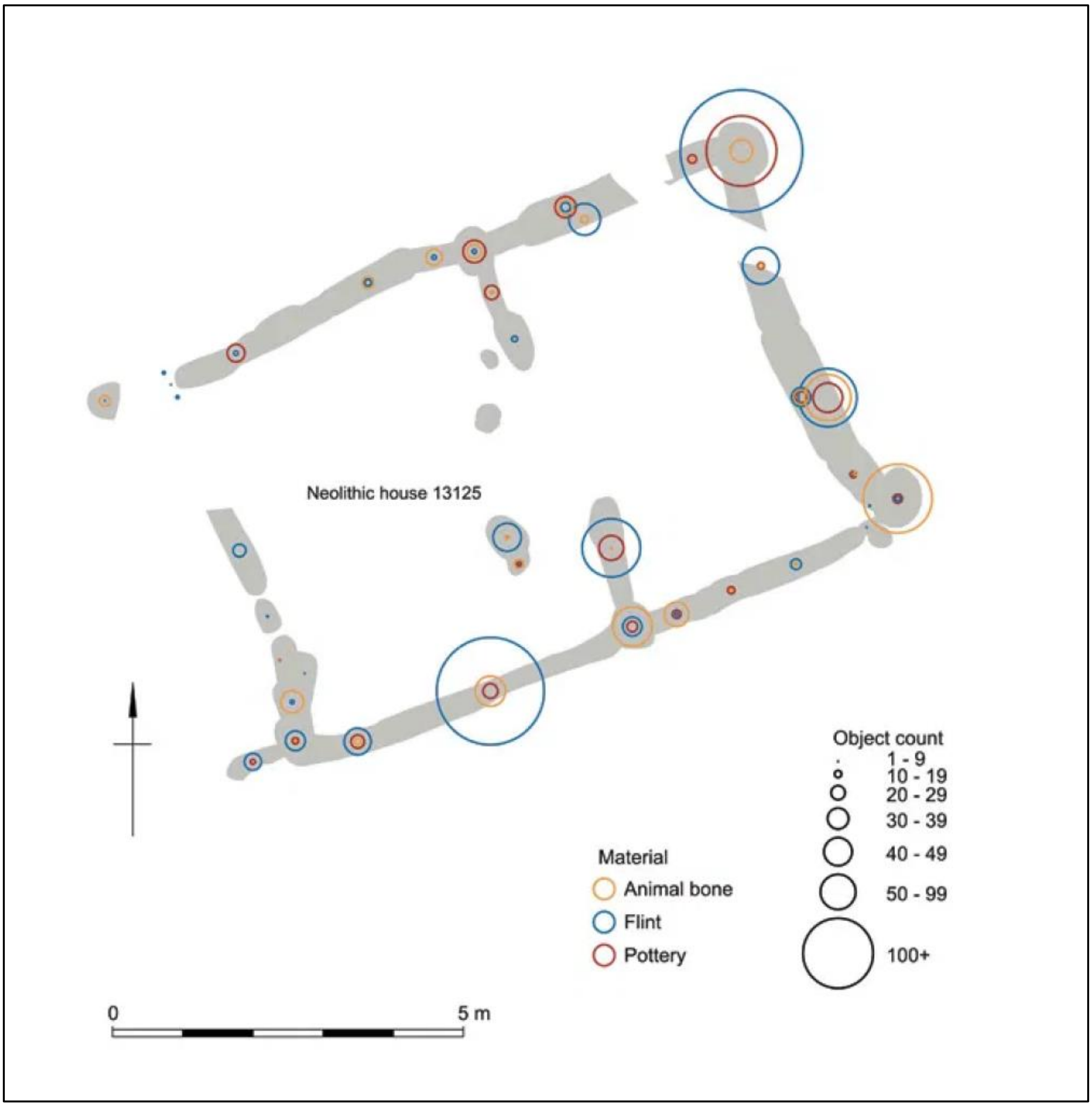


Figure 7.27: Site location of Matthew Arnold School (Munnery, 2010)

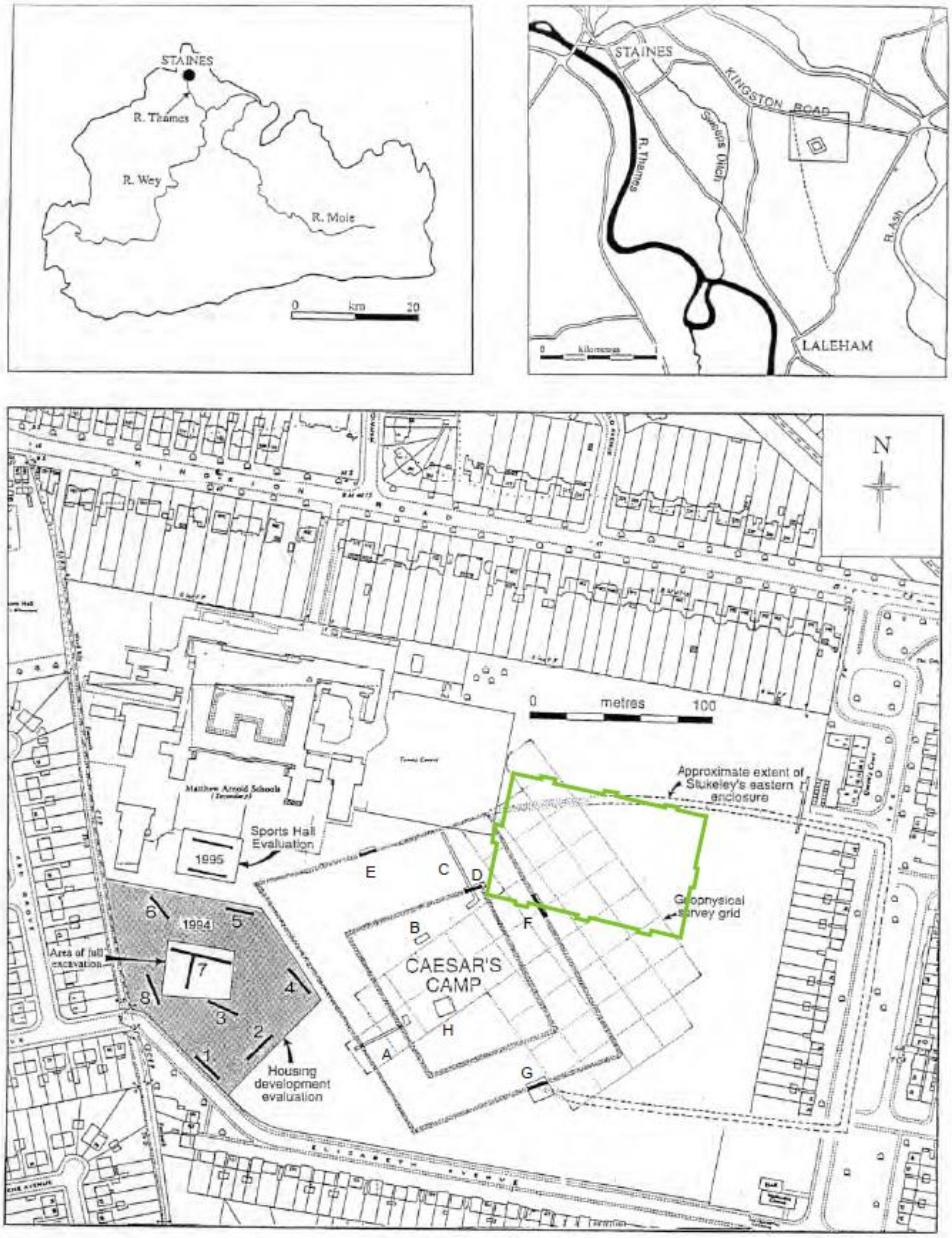


Figure 7.28: Trench 1 and pit 103 at Matthew Arnold School (Munnery, 2010: figures 1a and 3)

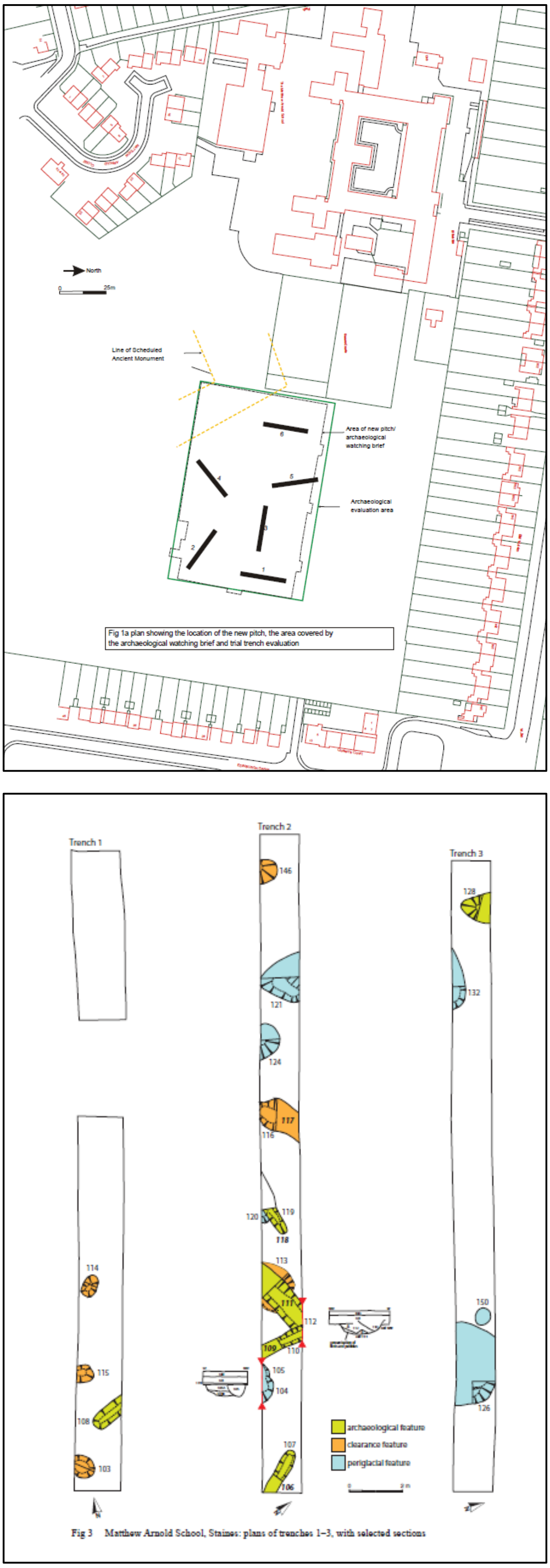


Figure 7.29: Nobel Drive Leaf Arrowhead (Cotton, 1997)

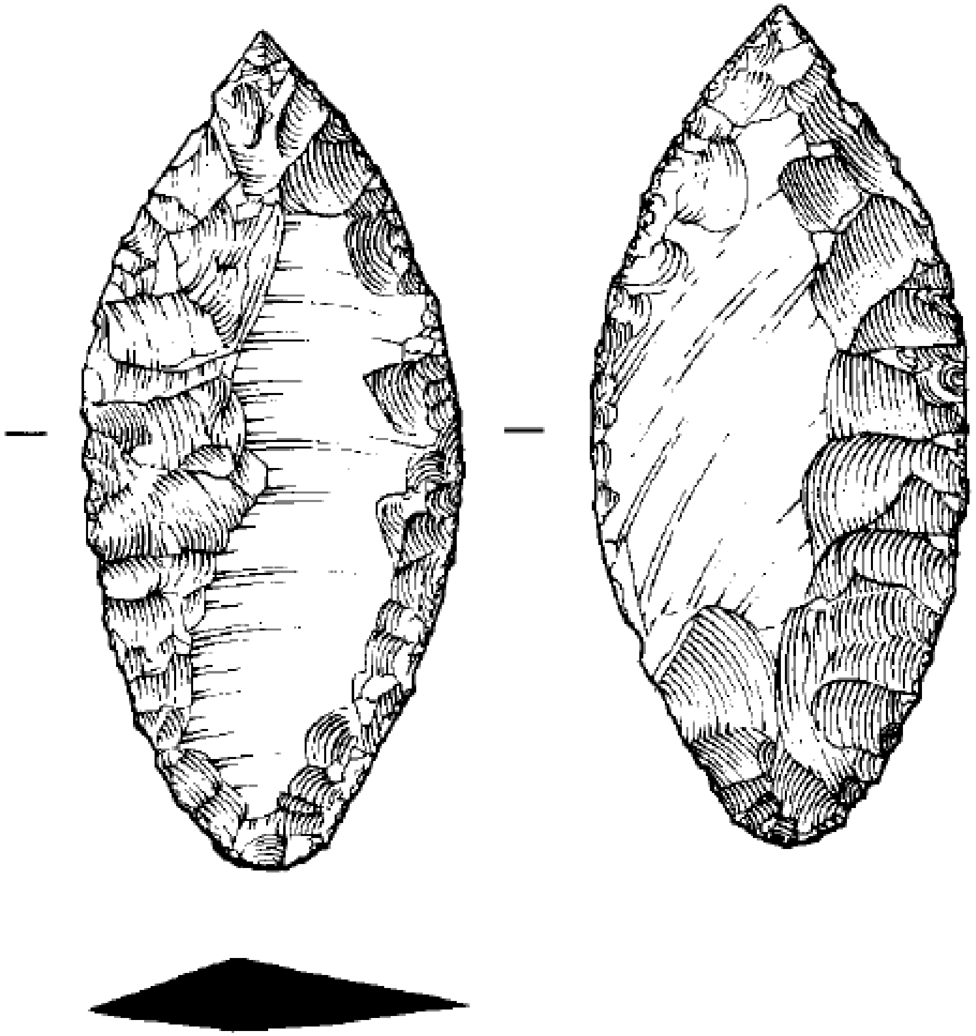


Figure 7.30: Middle Neolithic sites and find spots in the Colne Valley (ArcMap 10.7.1)

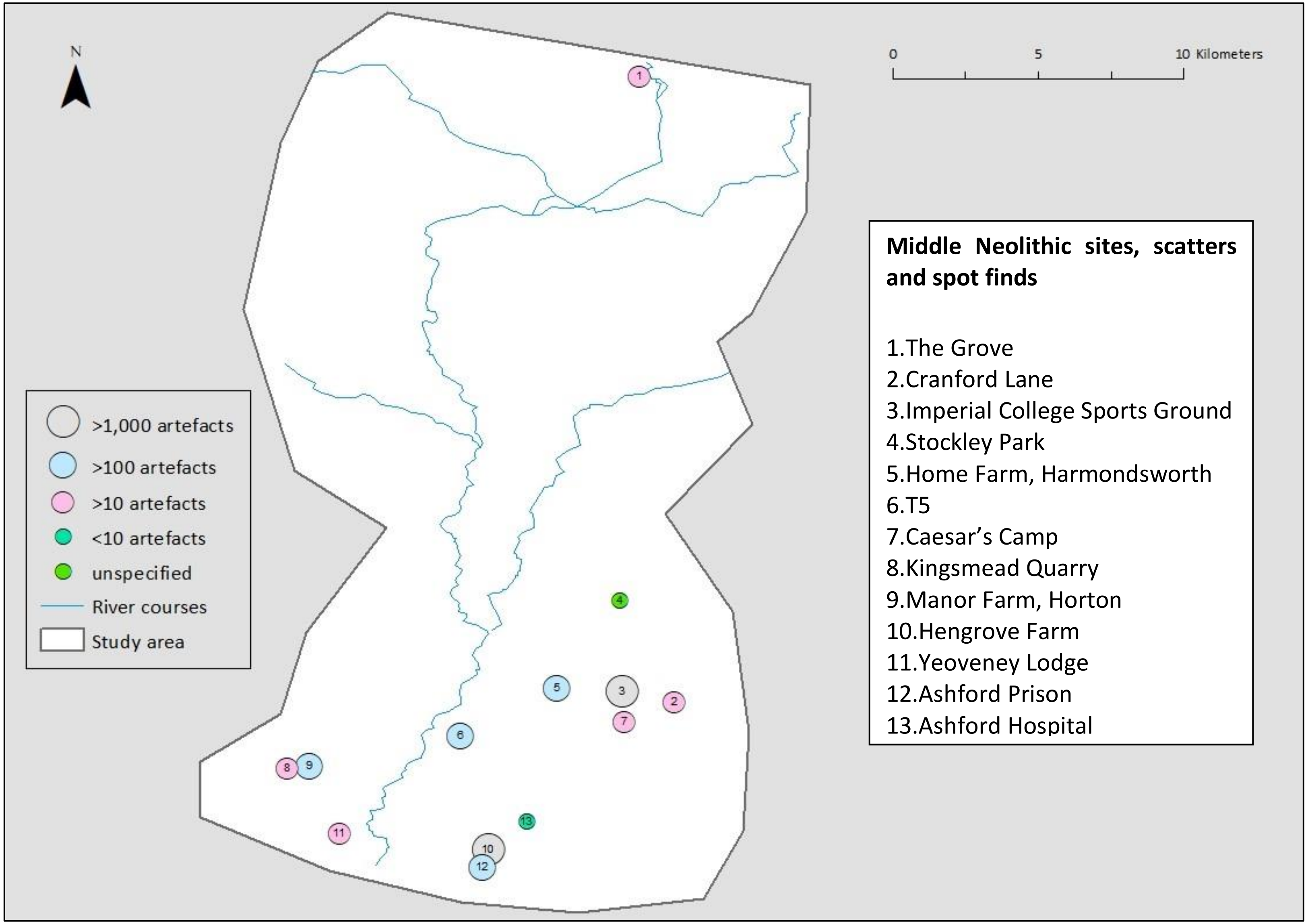


Figure 7.31: Enclosure G3001 in Area A of ICSG (Powell et al, figure 2.5)

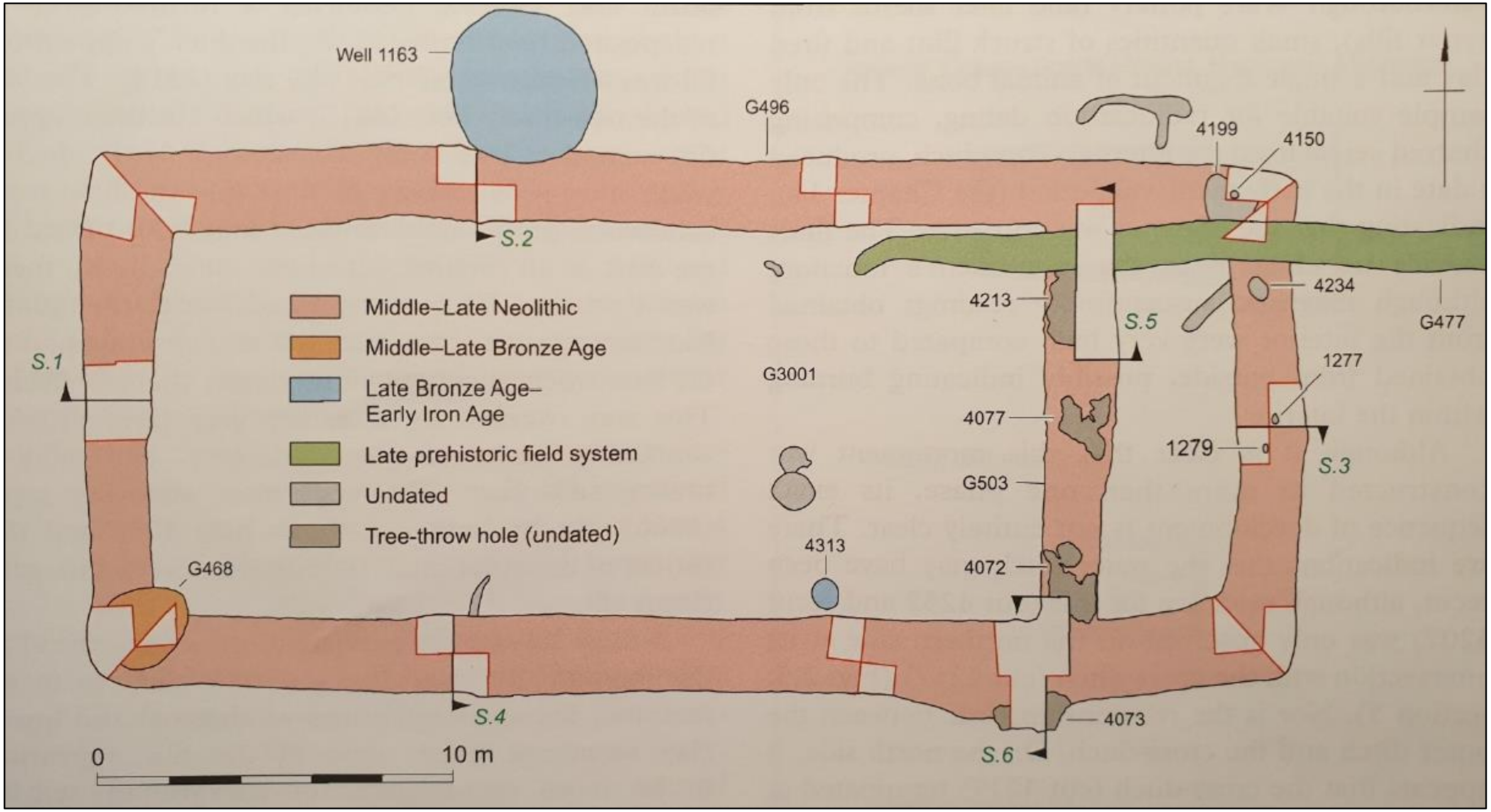


Figure 7.32: Enclosure G3002 in Area D of ICSG (Powell et al, figure 2.8)

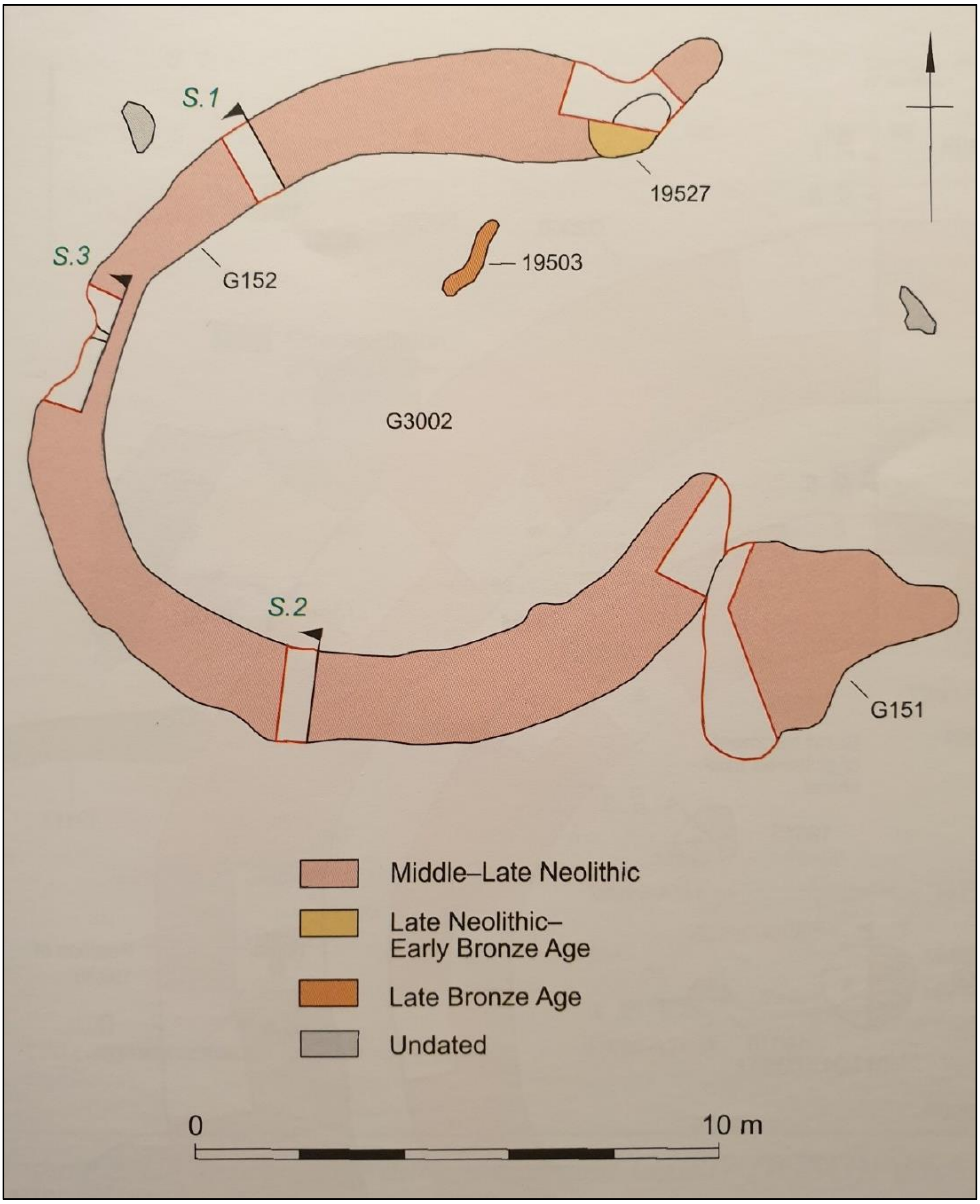


Figure 7.33: Enclosure G2007 and G2008 (Powell et al, figure 2.11)

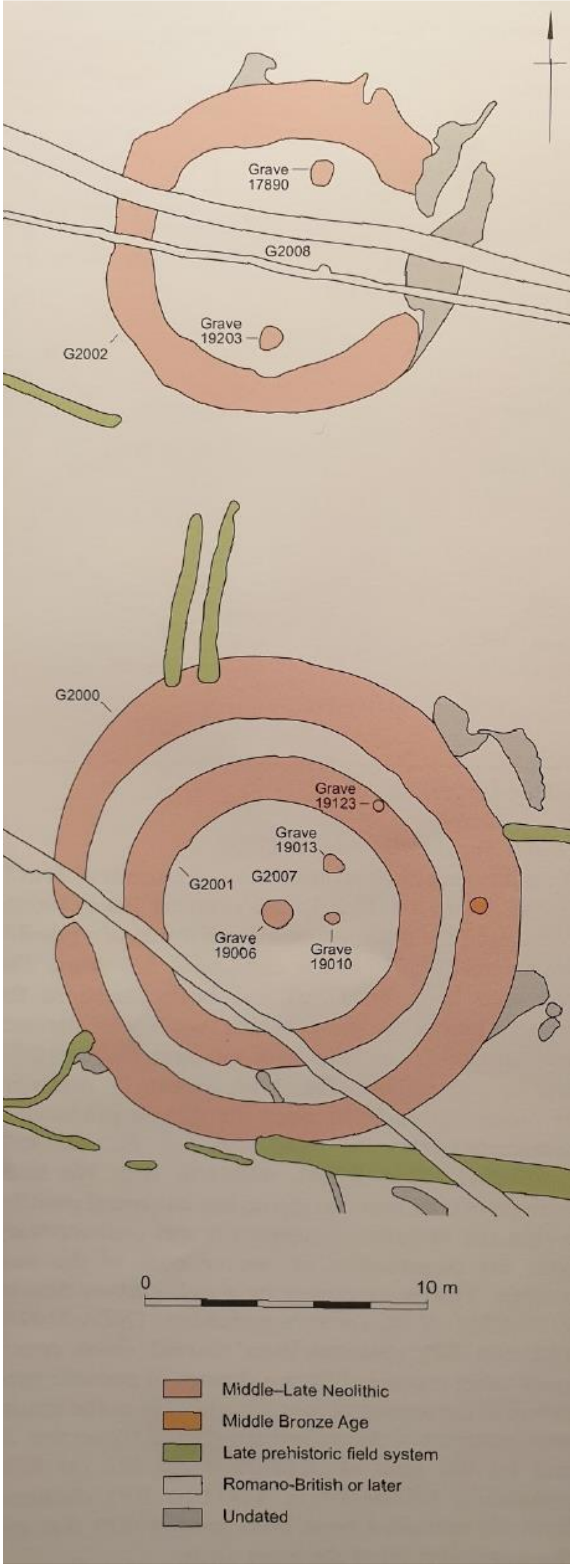


Figure 7.34: Pit groups C, E and F at RMC Land (Powell et al, figure 2.18)

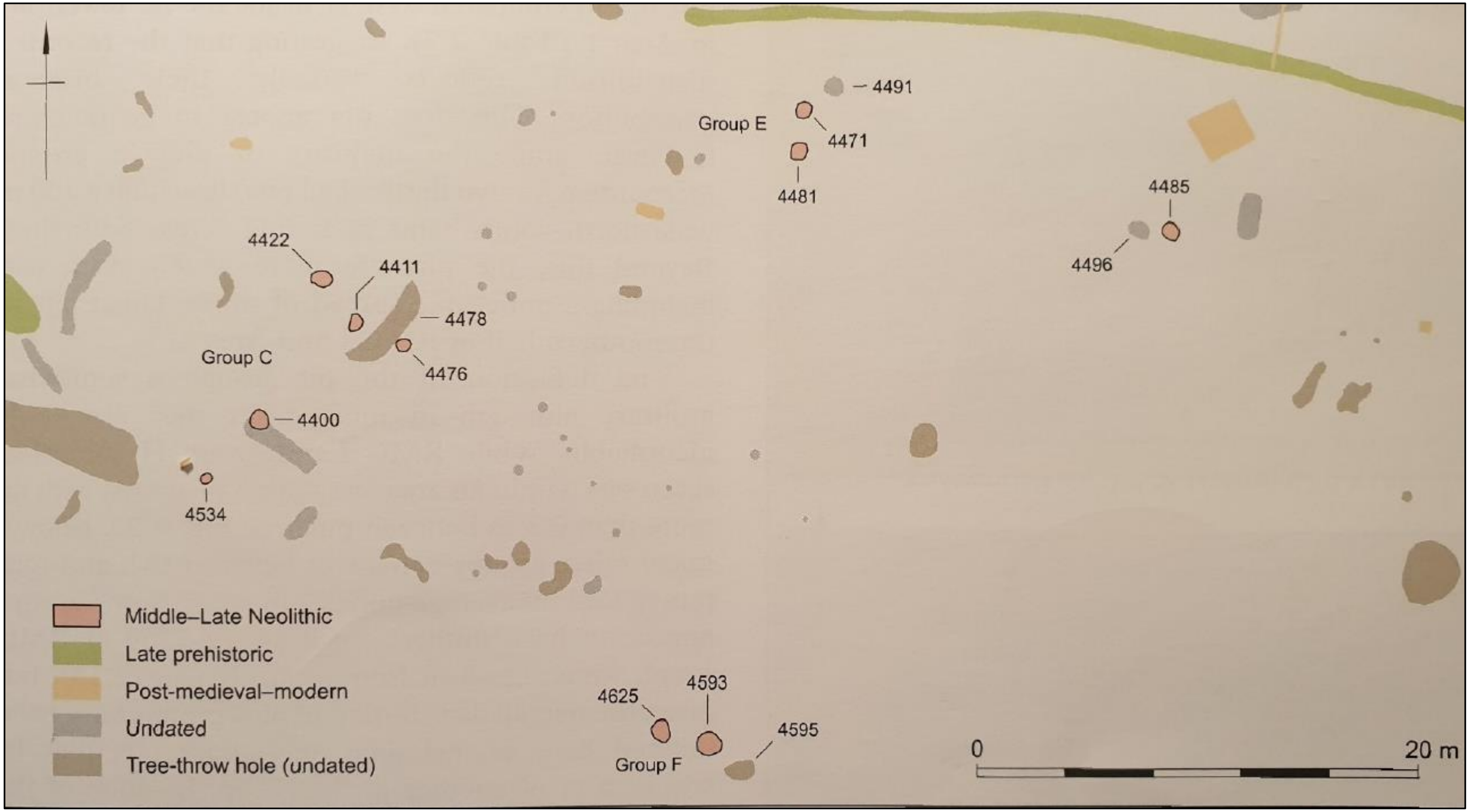


Figure 7.35: Pit group G (RMC Land) and O (ICSG) (Powell et al, 2015)

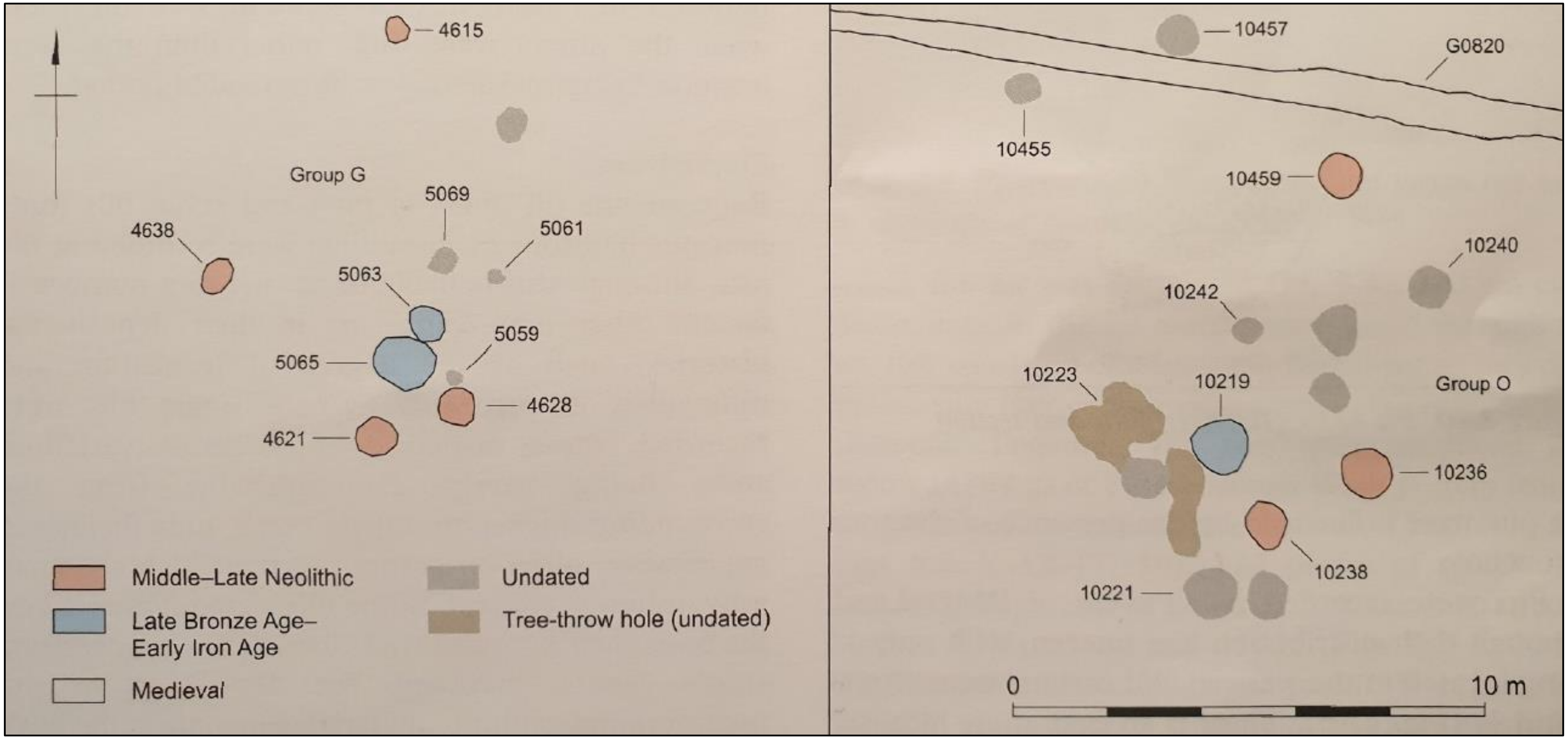


Figure 7.36: Hengrove Farm areas of excavation (SCAU, 2007: figure 2)

Figure 7.37: Hengrove Farm areas A and C (SCAU, 2003: figure 2)

Figure 7.38: Flintwork distribution across pits and tree throws at Hengrove Farm (southern section) (Poulton et al, 2017: Figure 3.2.14)

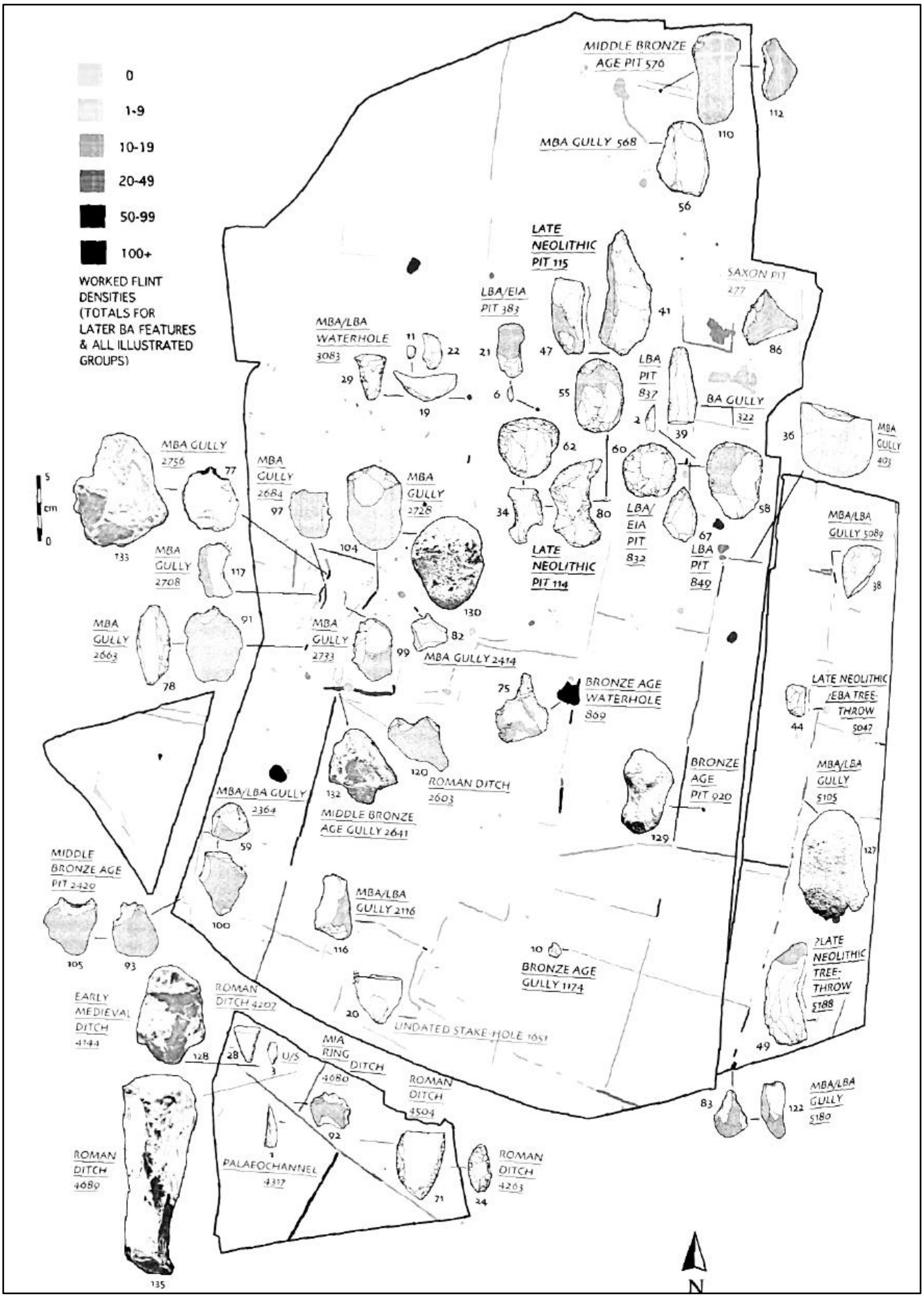


Figure 7.39: Flintwork distribution across pits and tree throws at Hengrove Farm (northern section) (Poulton et al, 2017: Figure 3.2.15)

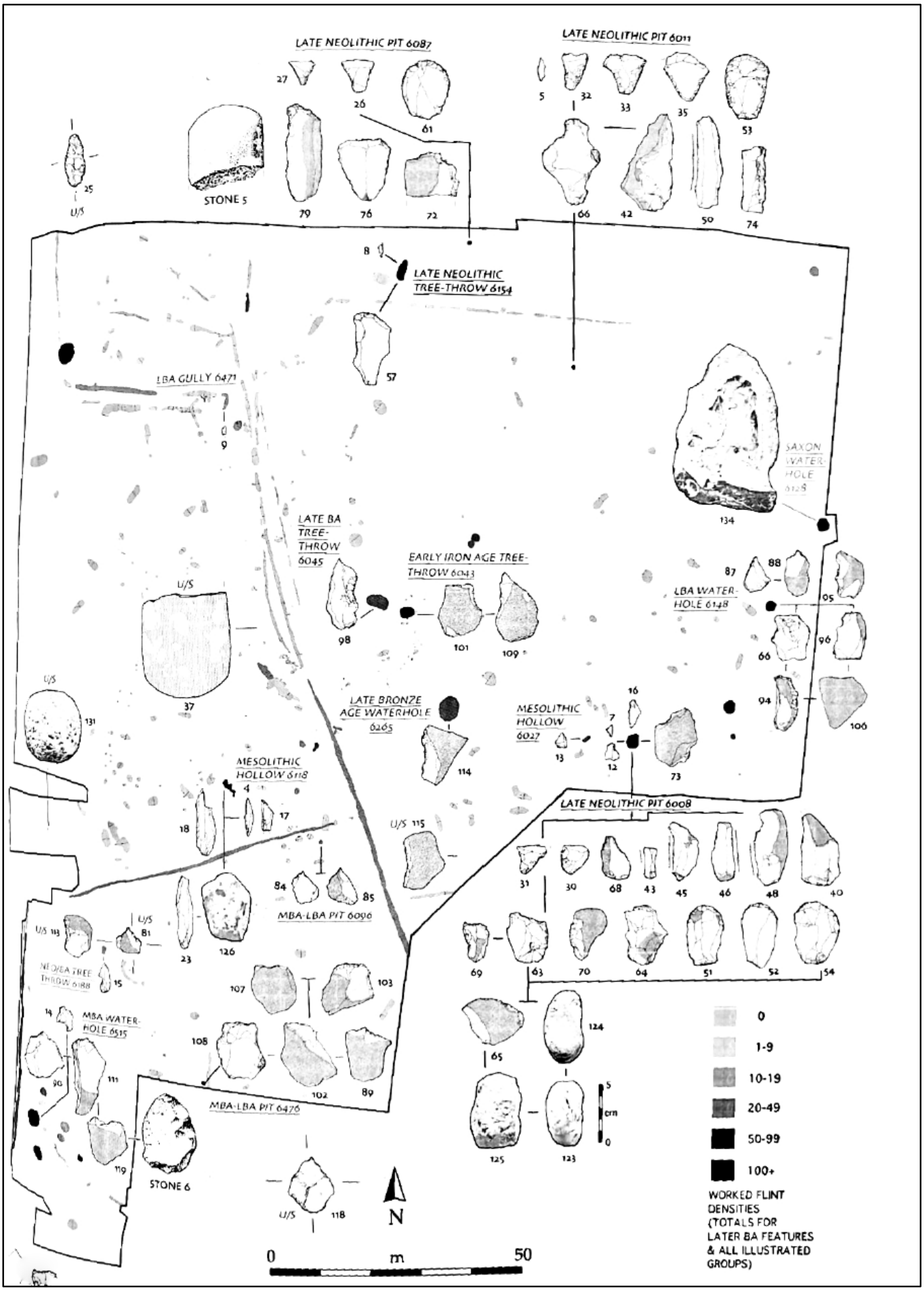


Figure 7.40: Tools at Hengrove Farm (Poulton et al, 2017: Figure 3.3.8)

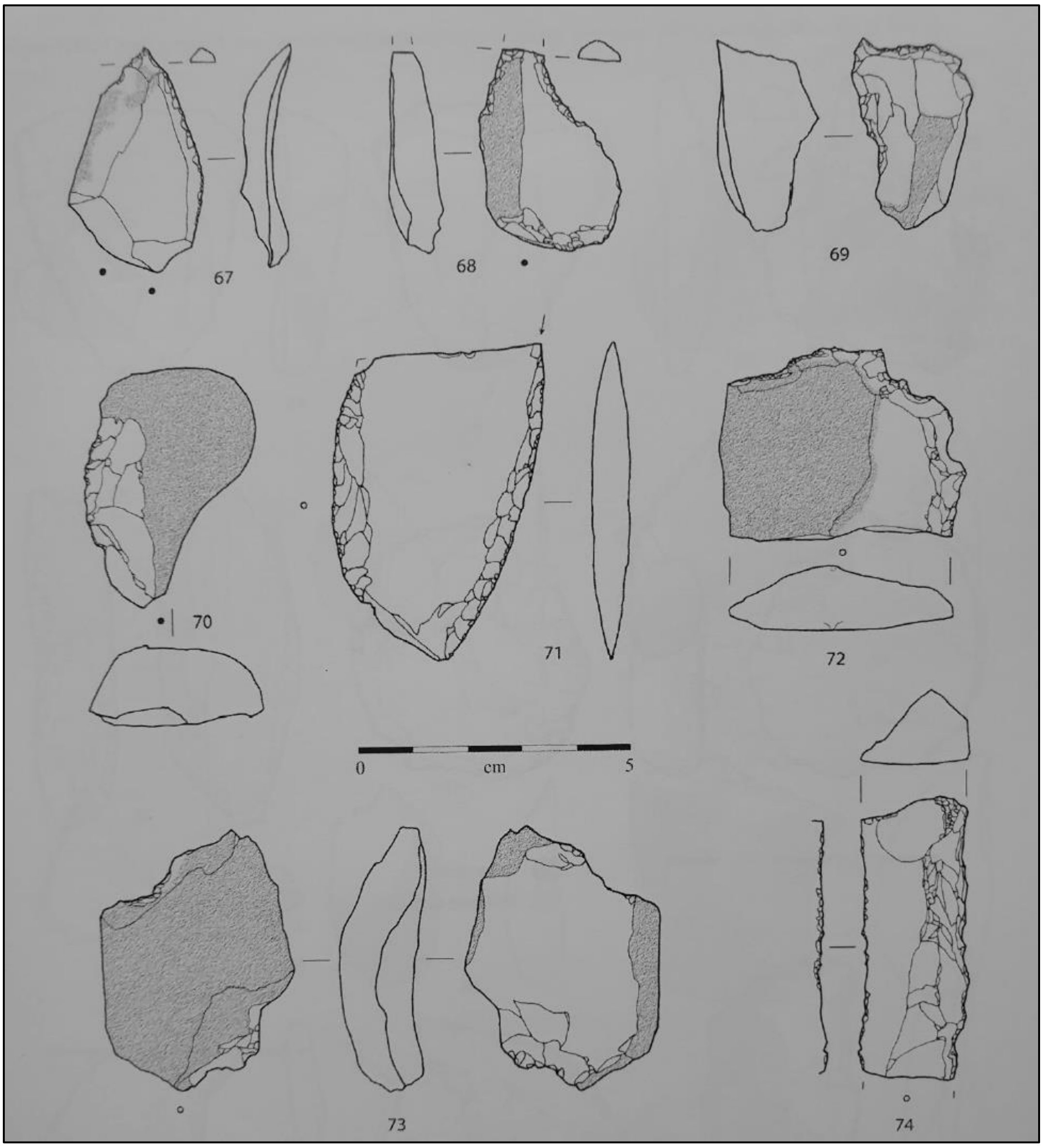


Figure 7.41: Hengrove Farm arrowheads (Poulton et al, 2017: Figure 3.3.2)

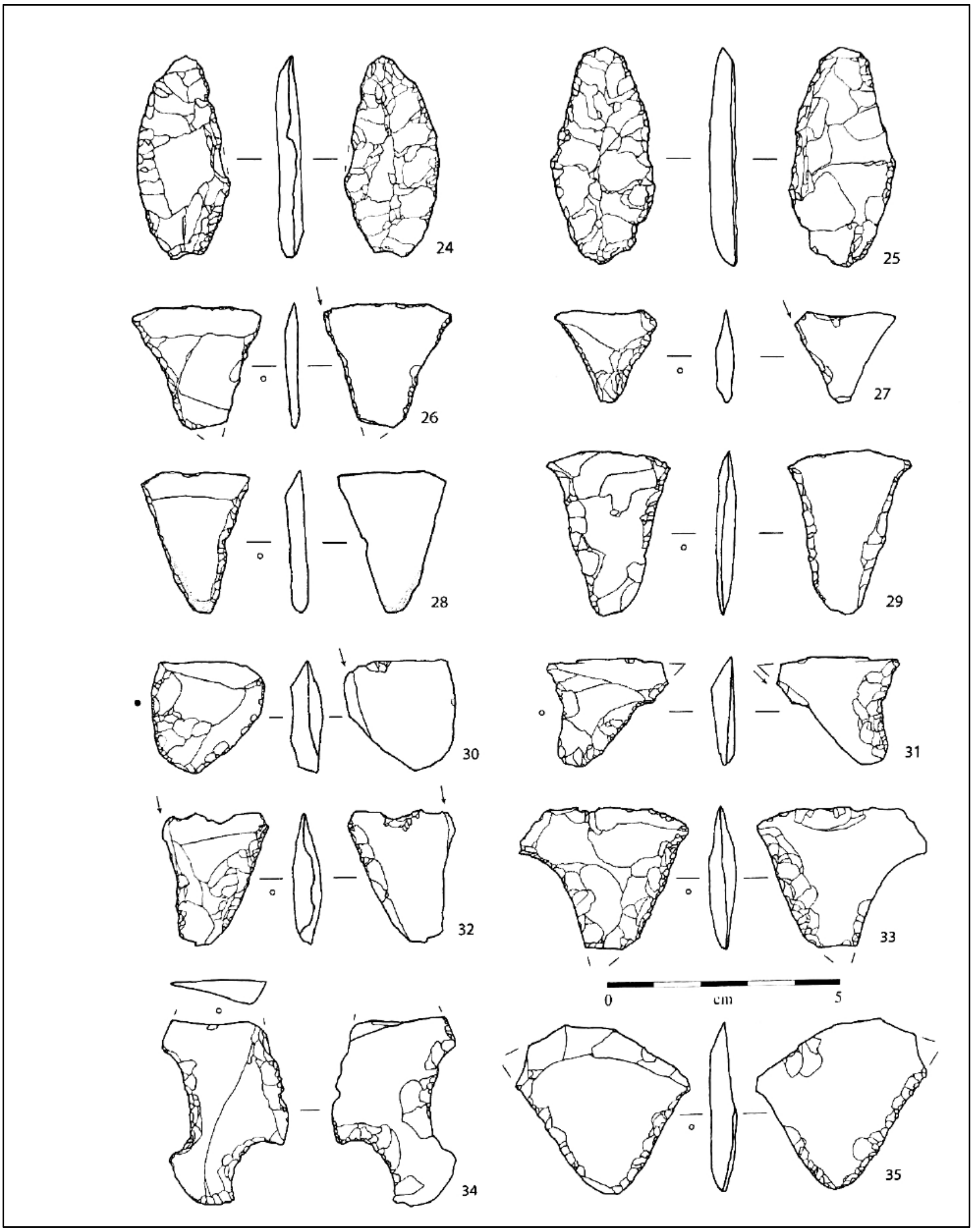


Figure 7.42: Hengrove Farm knives (Poulton et al, 2017)

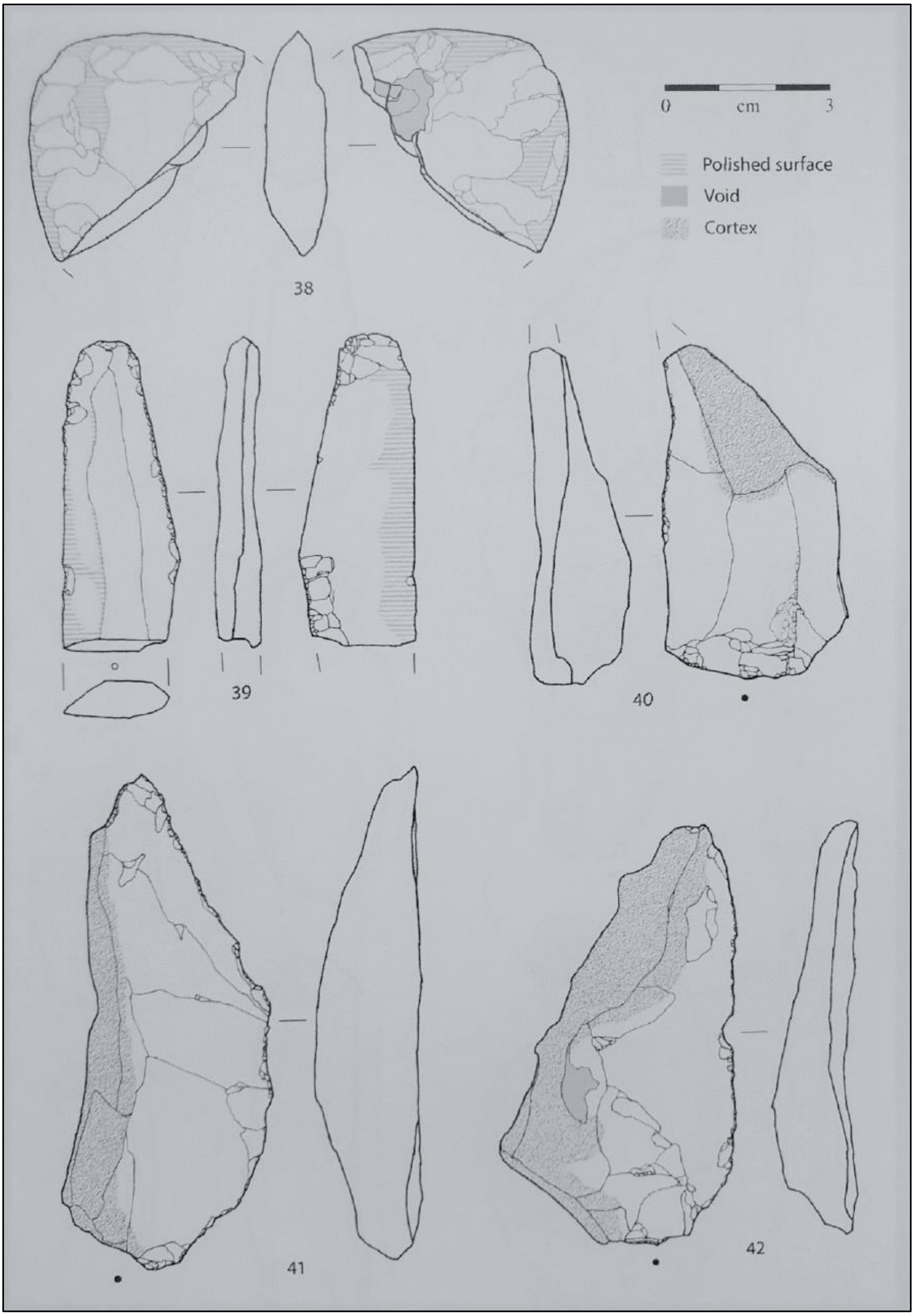


Figure 7.43: Hengrove Farm serrates (Poulton et al, 2017: Figure 3.3.5)

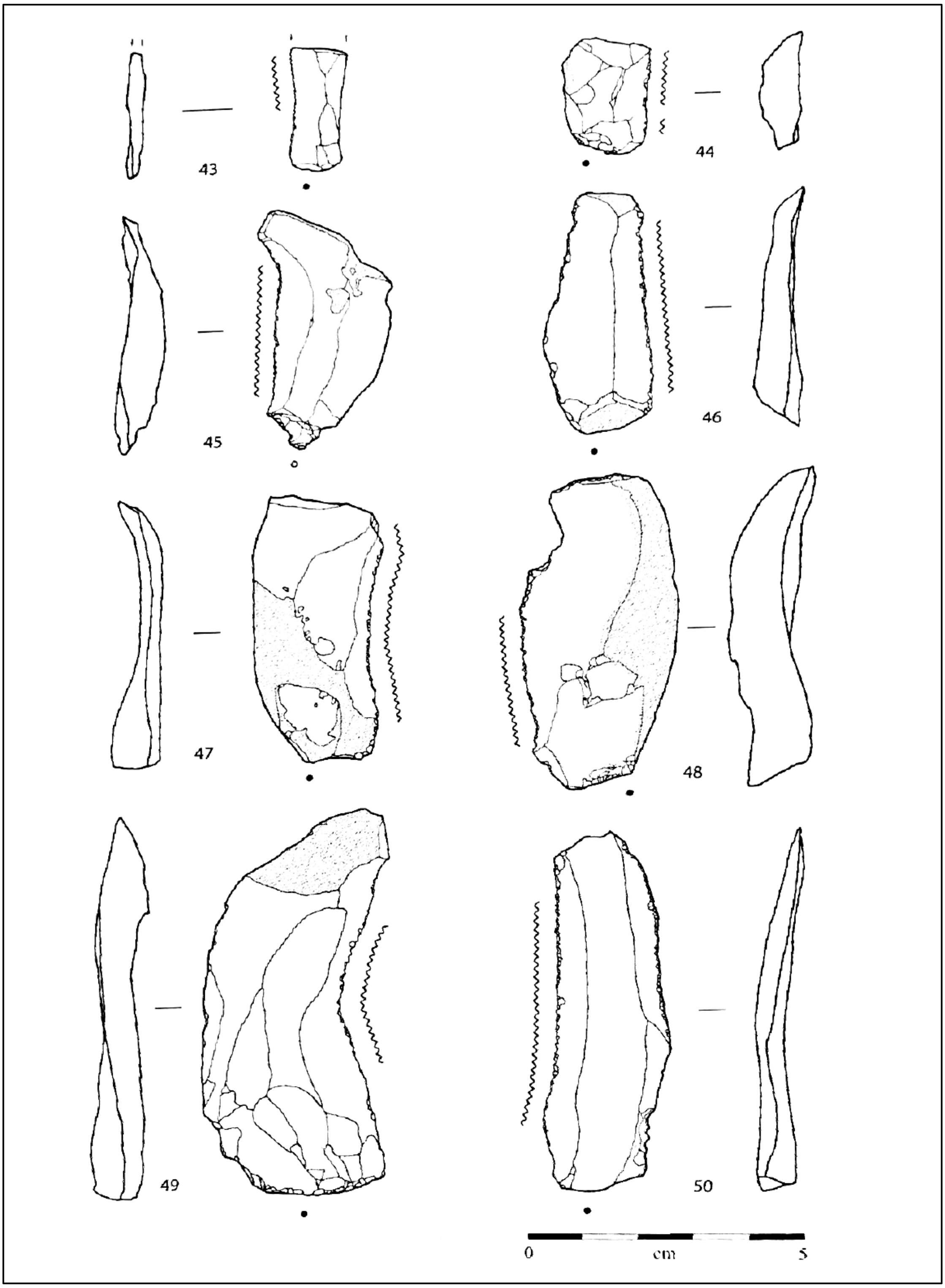


Figure 7.44: Pottery distribution across pits and tree-throws at Hengrove Farm (Poulton et al, Figure 10.3)

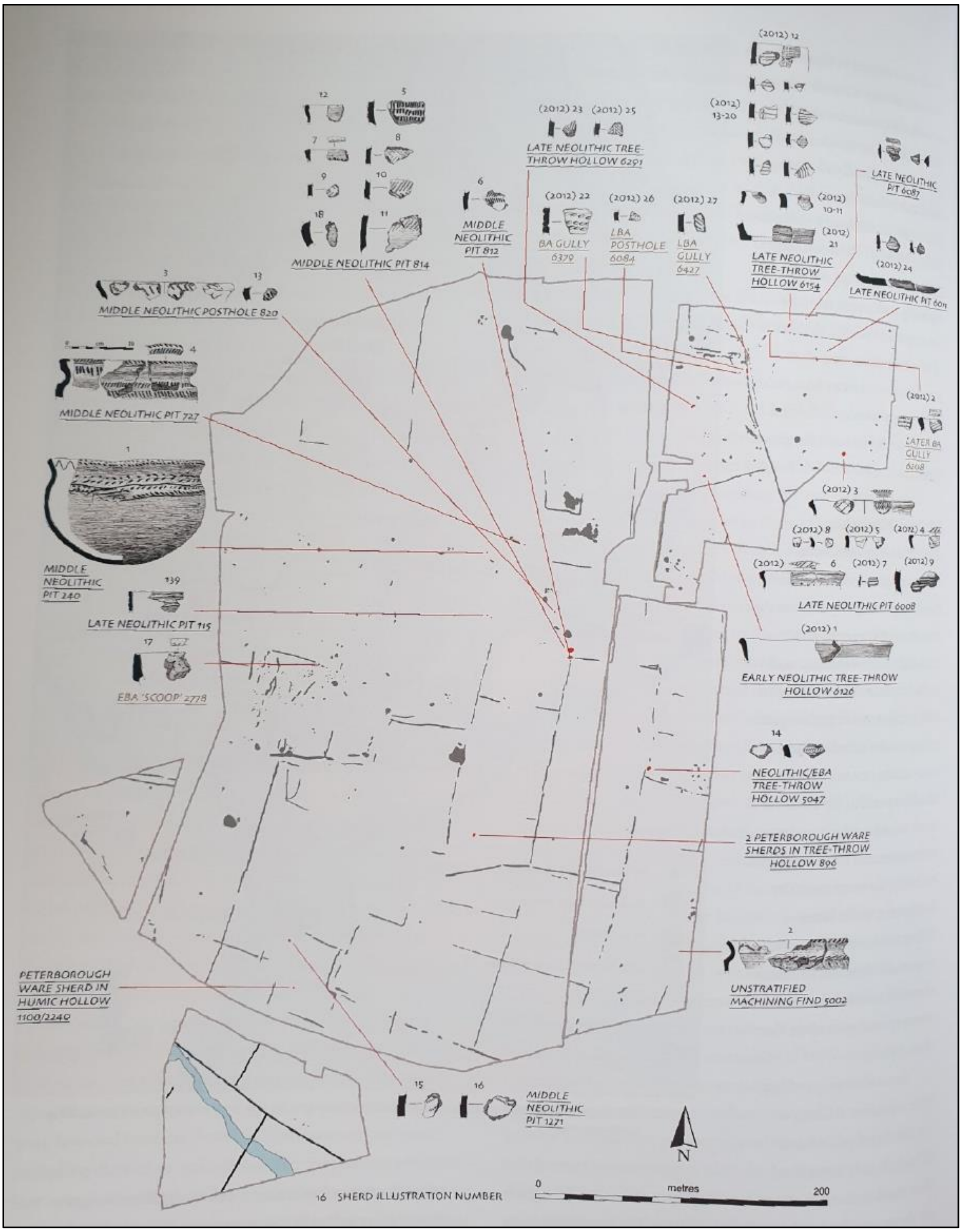


Figure 7.45: Mortlake vessel from pit 727 at Hengrove Farm (Poulton et al, 2017: Plate 2)

Figure 7.46: Location of pit groups 964, 97 & 2889 at T5 (FA, 2010: Figure 2.52)

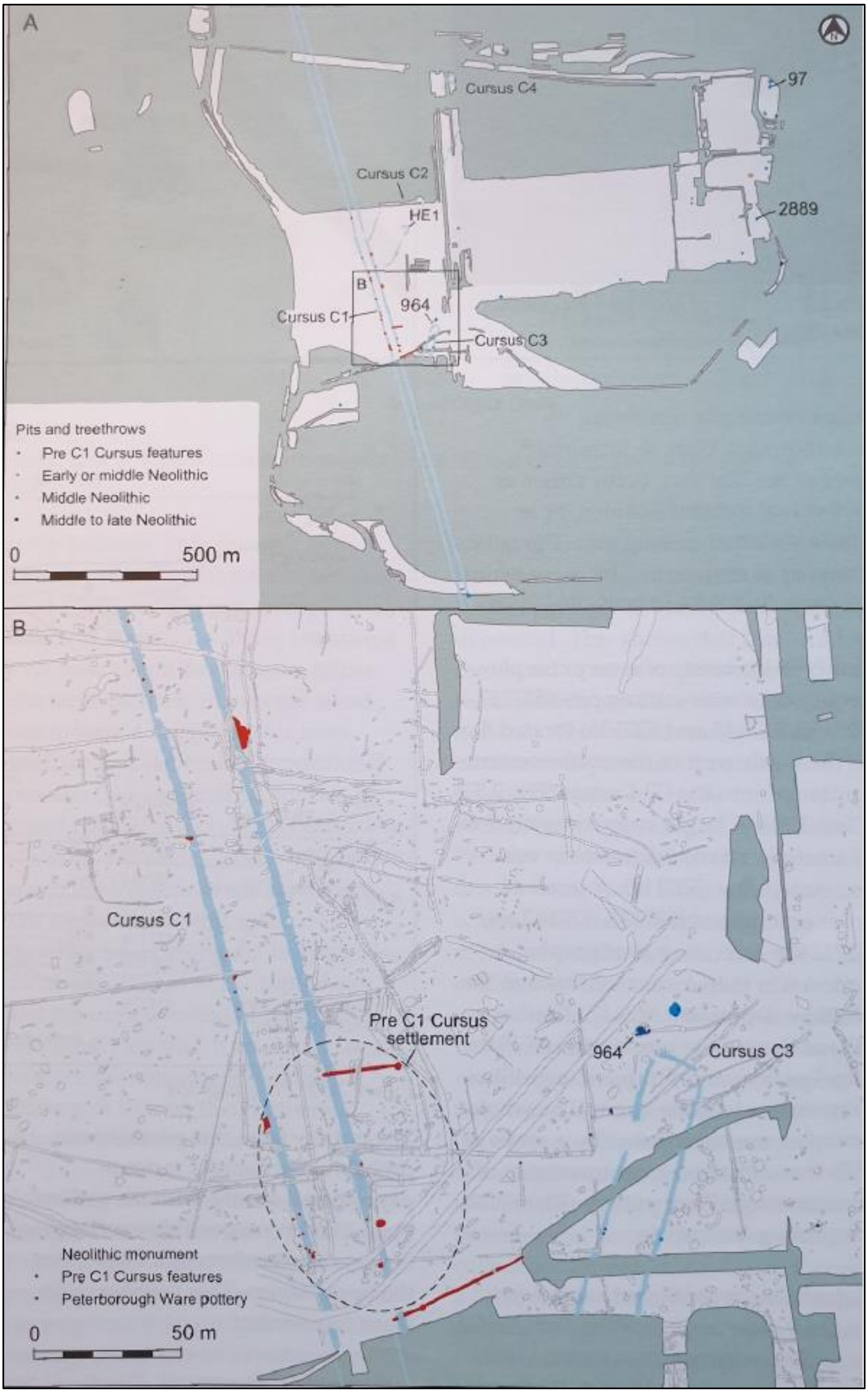


Figure 7.47: Distribution of Peterborough Ware pottery at T5 (no legend or key available) (Leivers et al, 2010)

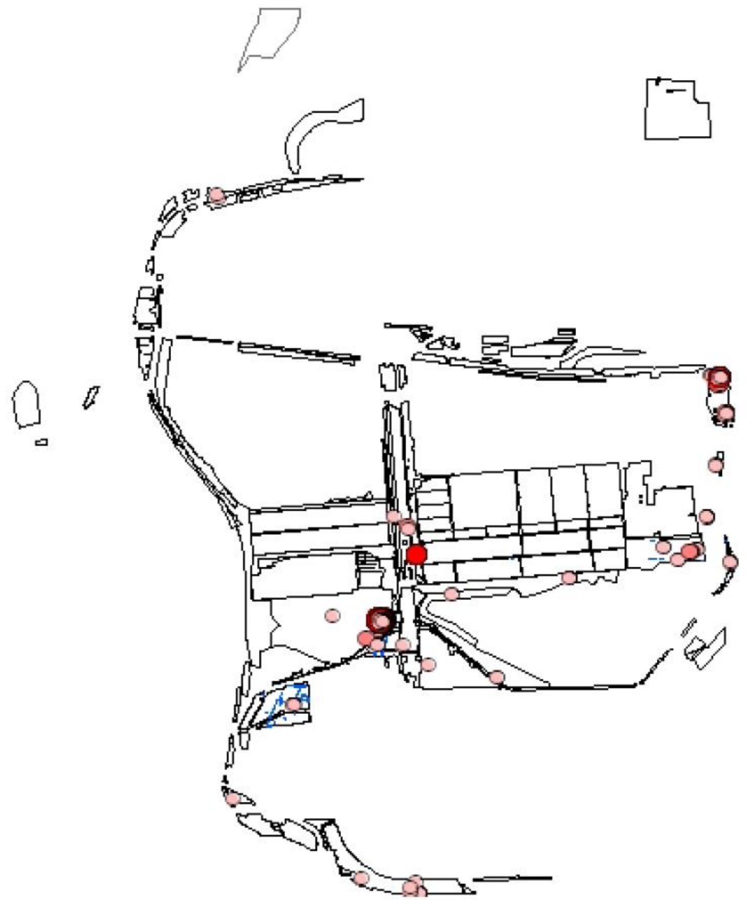


Figure 2: Middle Neolithic ceramic distribution by weight. Contemporary features shown in blue.

Figure 7.48: Location of pit complex 964 (FA, 2010: Figure 2.26)

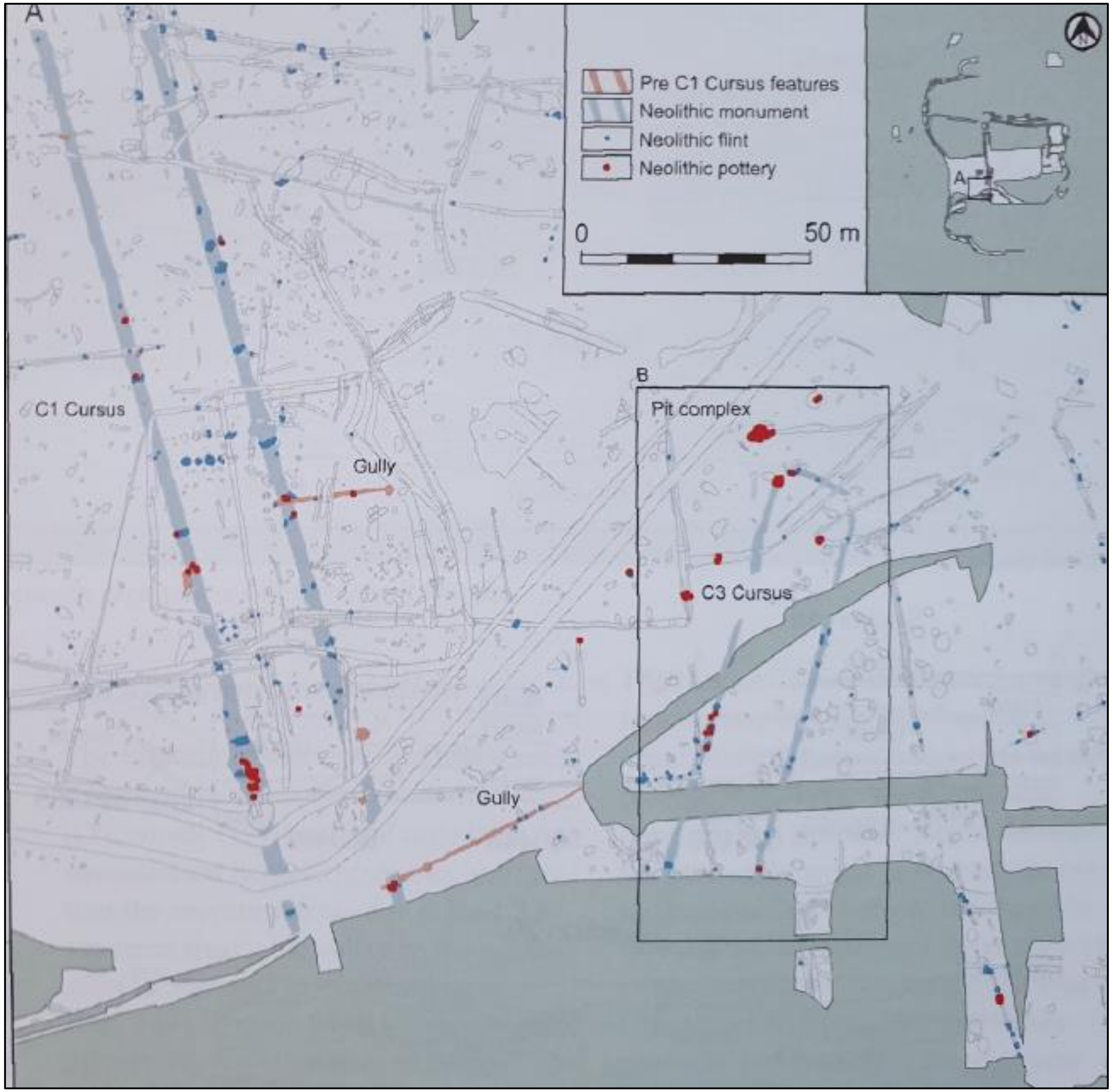


Figure 7.49: Location and sections through pit groups 97 & 2889 (FA, 2010: Figure 2.55)

Figure 7.50: Location of Fengate bowl, birch bark bowls, red deer antler, pike jaw and other artefacts at Manor Farm, Horton (Preston, 2003: Figure 2.6)

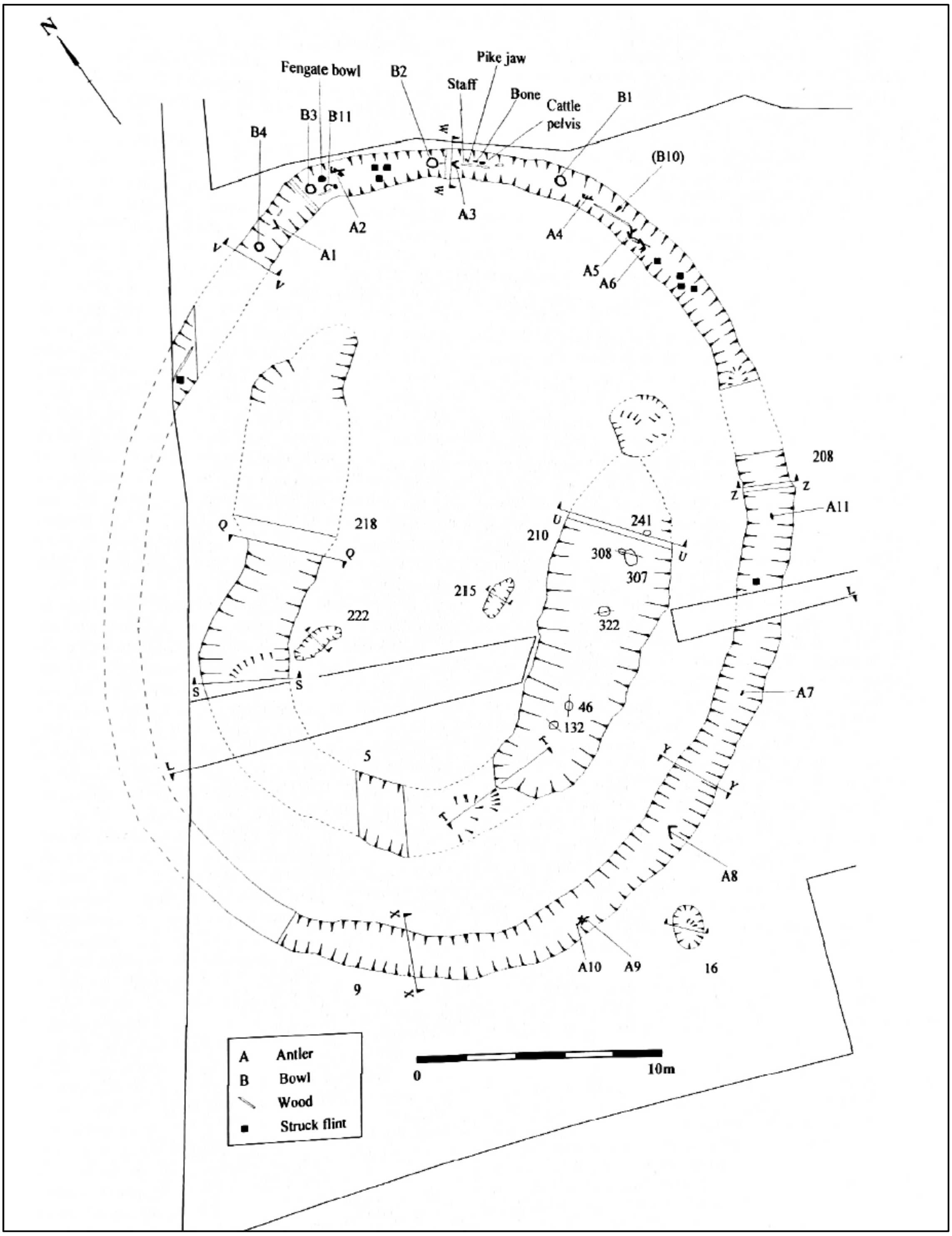


Figure 7.51: Location and topography of site at Ashford Prison (Carew et al, 2006: Figure 6)

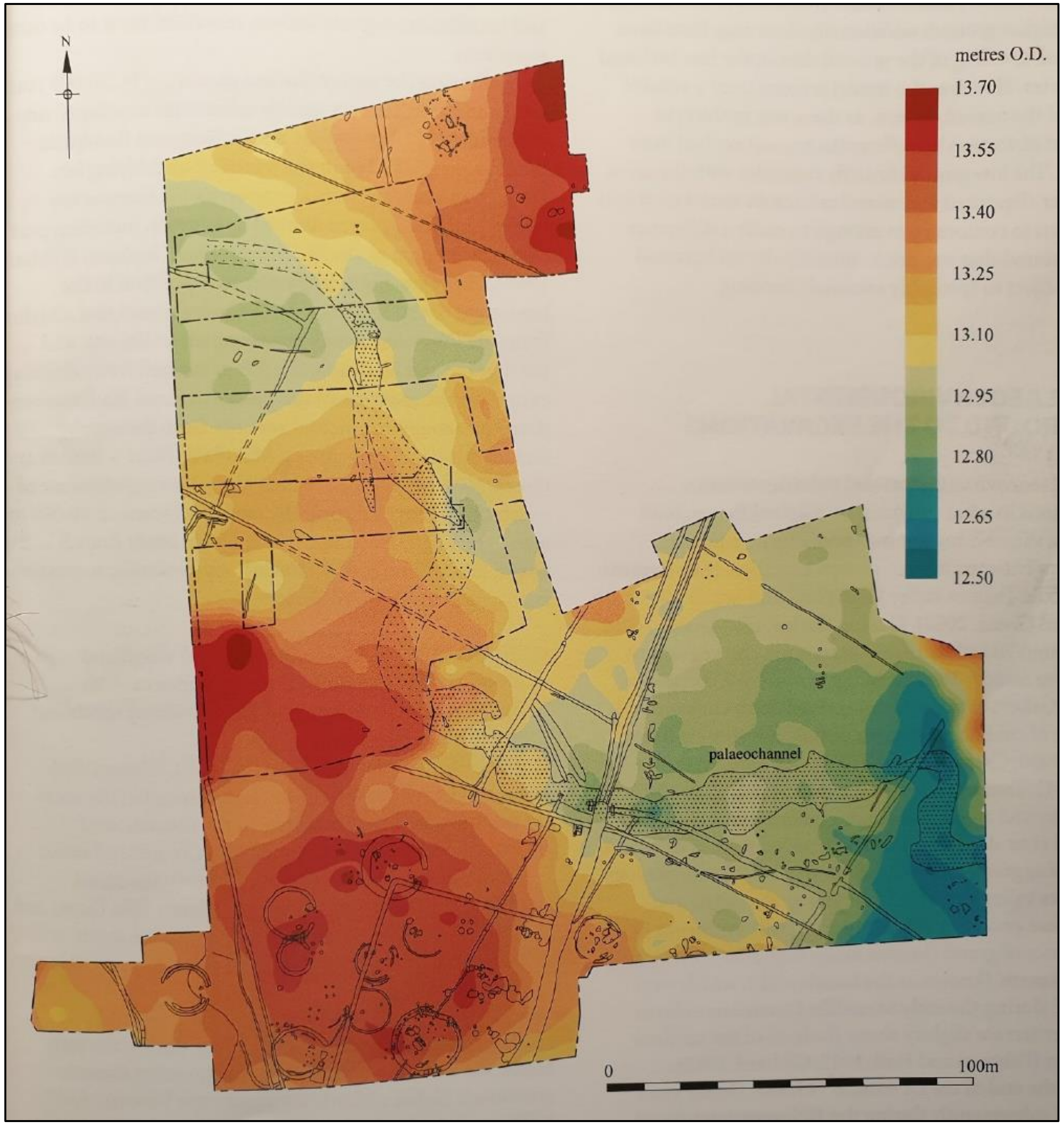


Figure 7.52: Areas of archaeological excavation at Ashford Prison (Carew et al, 2006: Figure 3)

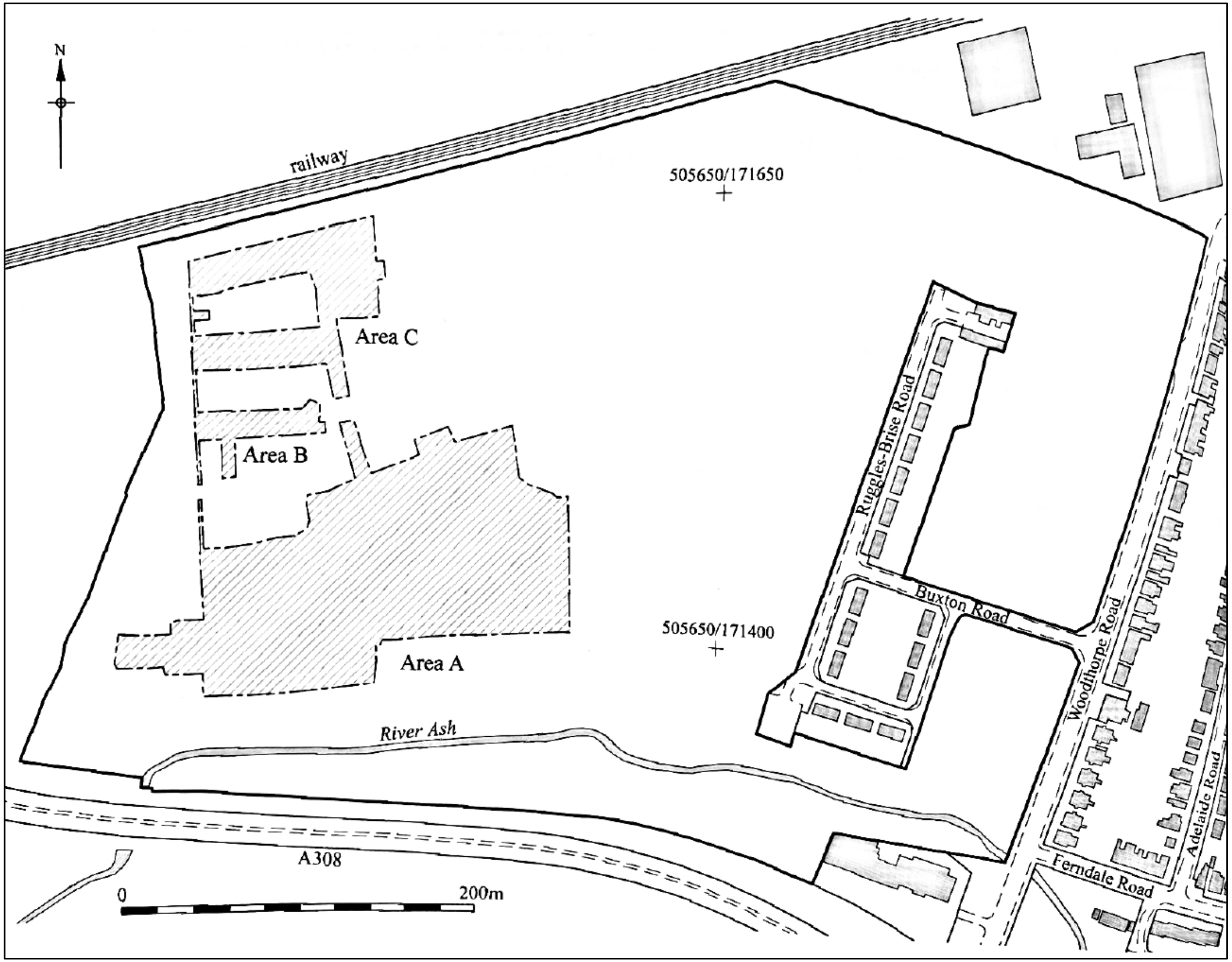


Figure 7.53: Relative density of artefacts from Ashford Prison ring ditch fills in relation to later pits and postholes (Carew et al, 2006: Figure 18)

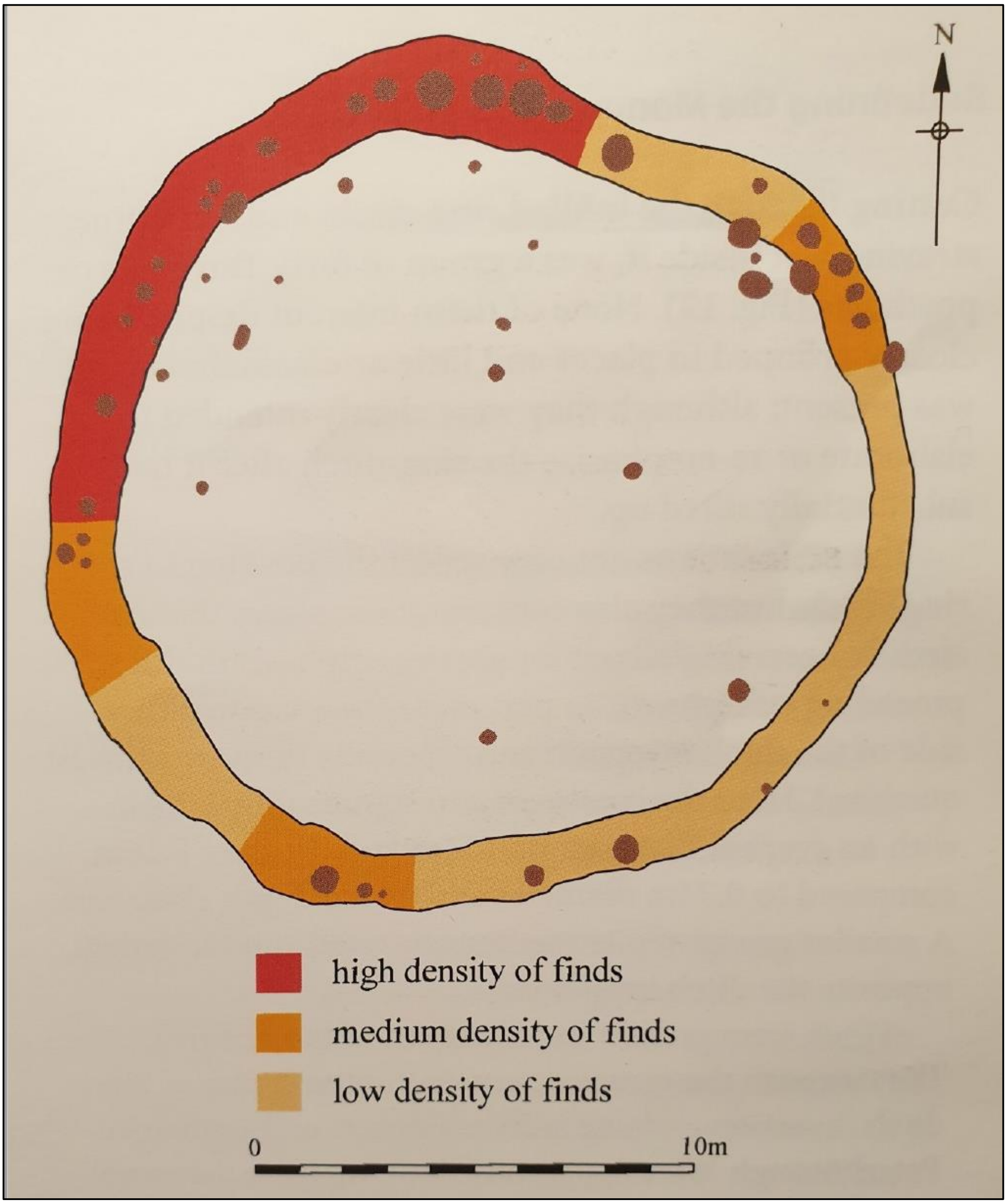


Figure 7.54: Location of pits at Ashford Prison (Carew et al, 2006: Figure 19)

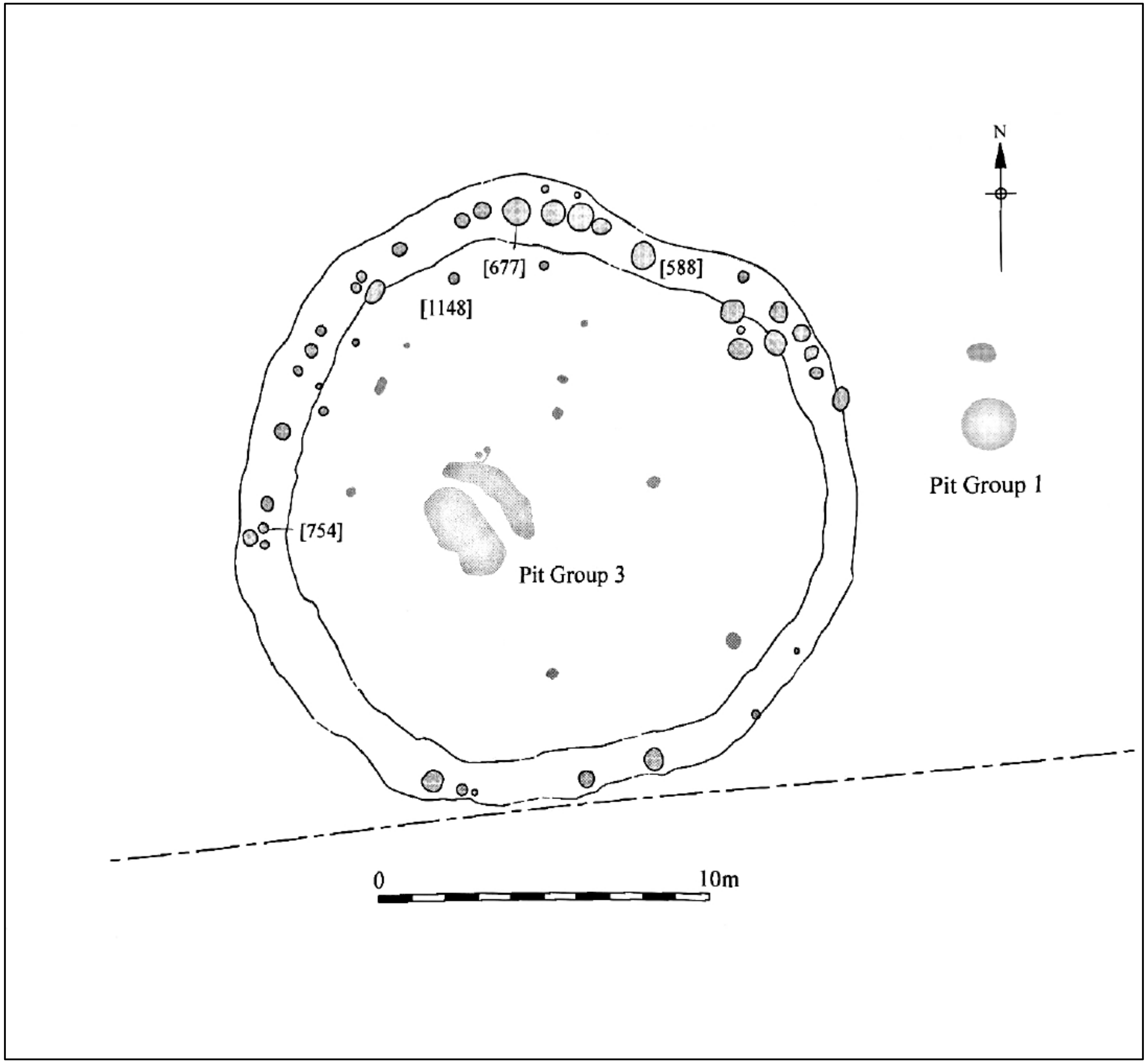


Figure 7.55: Location of tree throw hollow [484] at Ashford Prison (Carew et al, 2006: Figure 9)

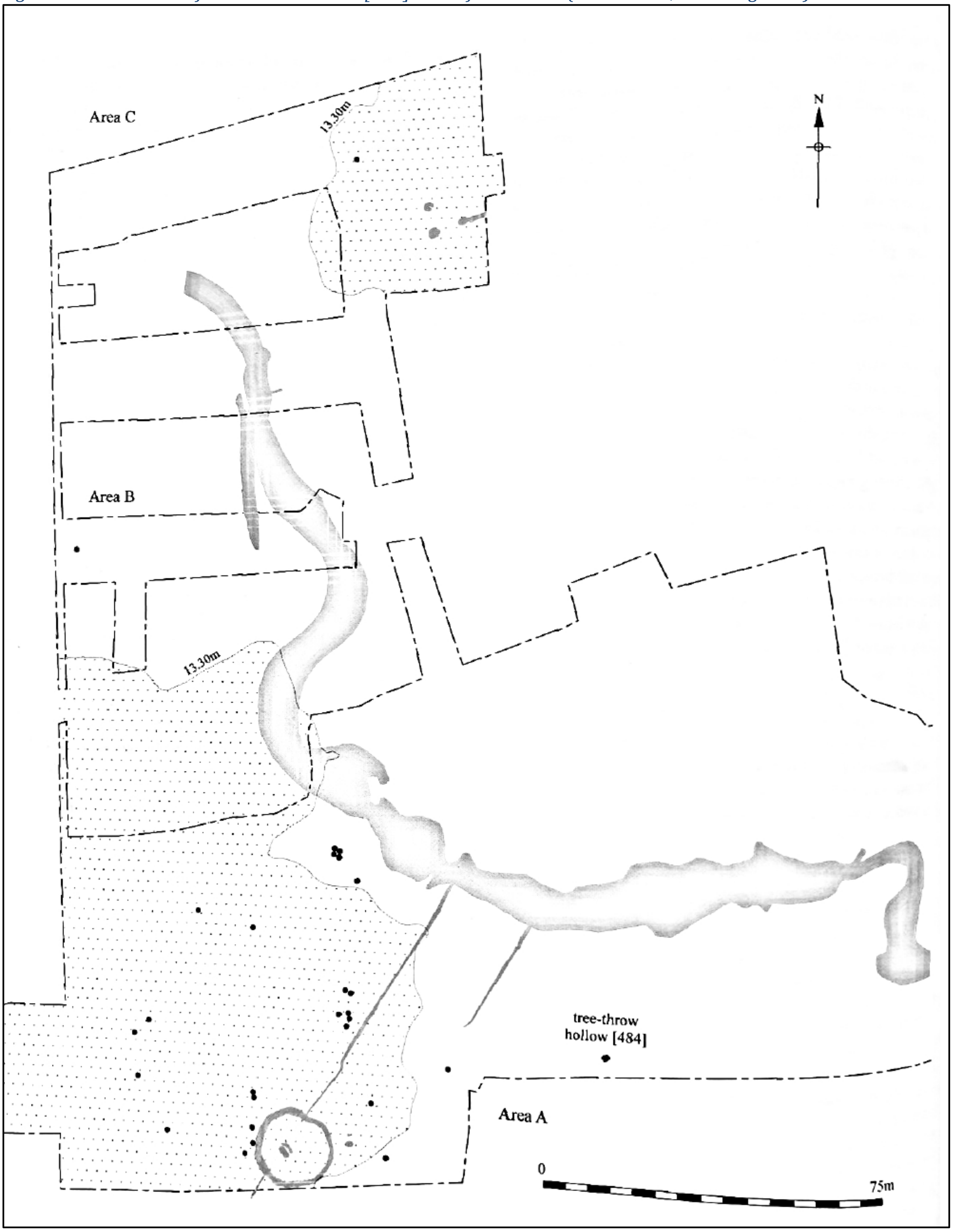


Figure 7.56: Location of ditches at Ashford Prison (Carew et al, 2006: Figure 20)

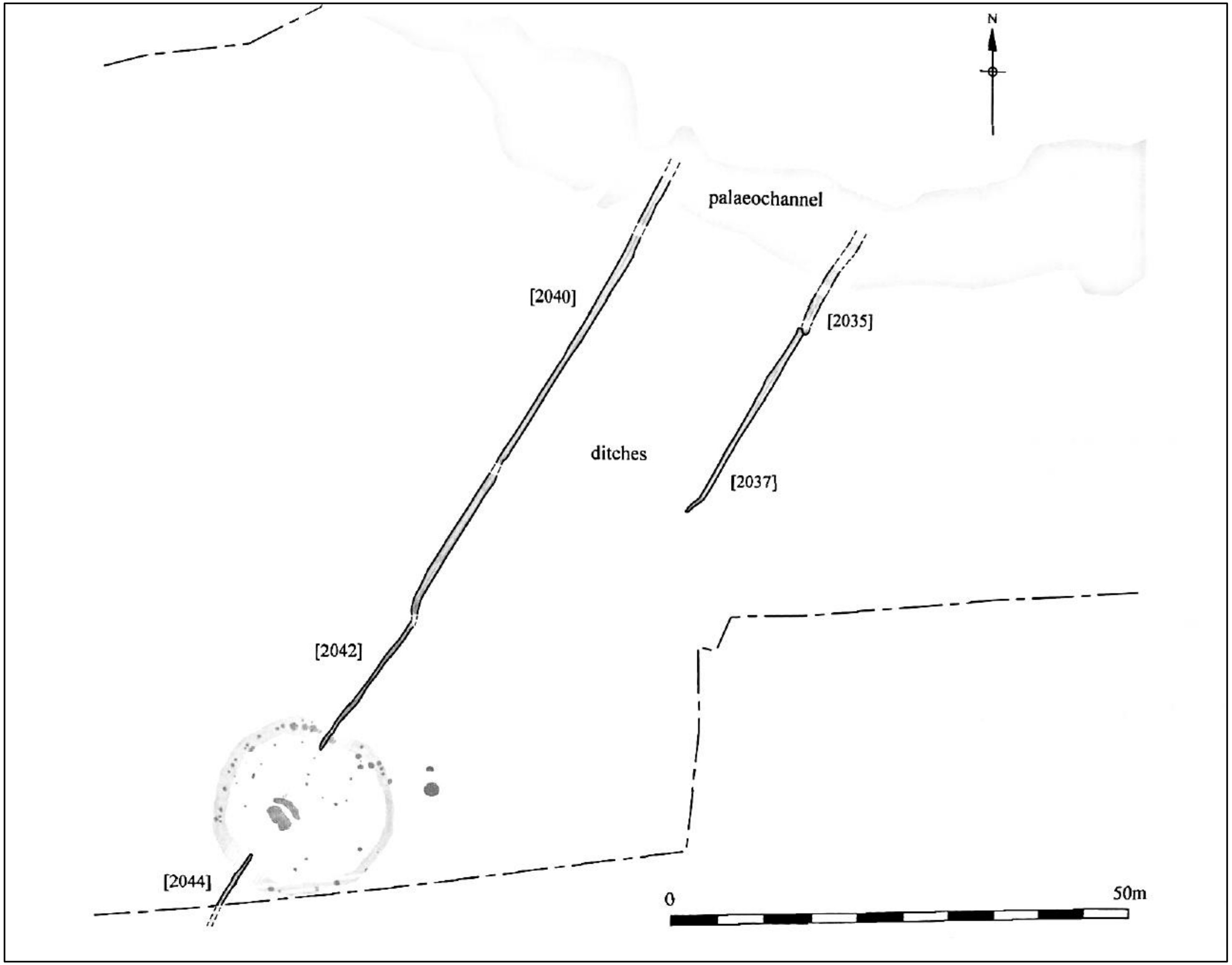


Figure 7.57: Worked flint at Ashford Prison (Carew et al, 2006: Figure 14)

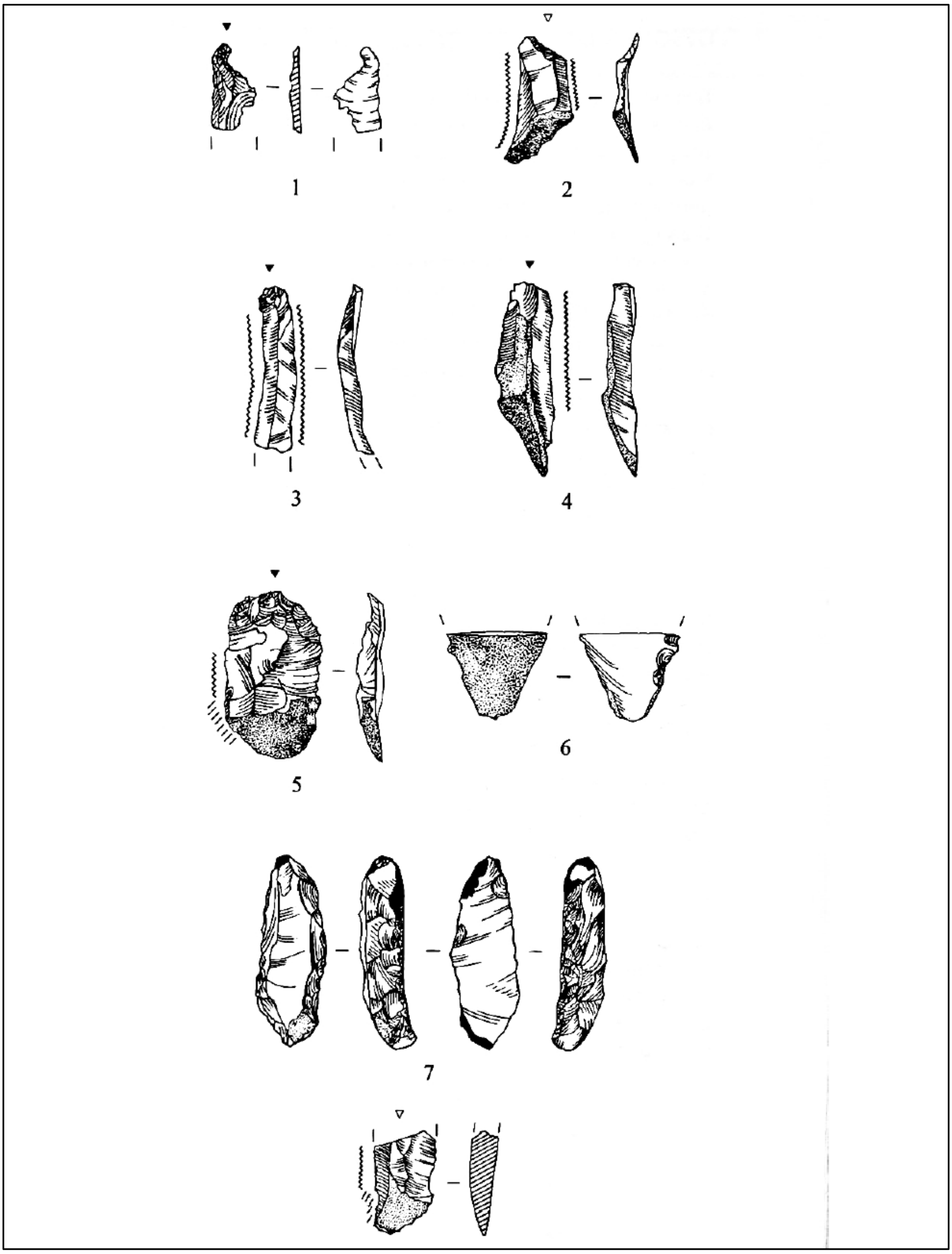


Figure 7.58: Peterborough Ware rim sherd from pit 3370 at Kingsmead Quarry (Chaffey et al, 2012: Figure 14.6)

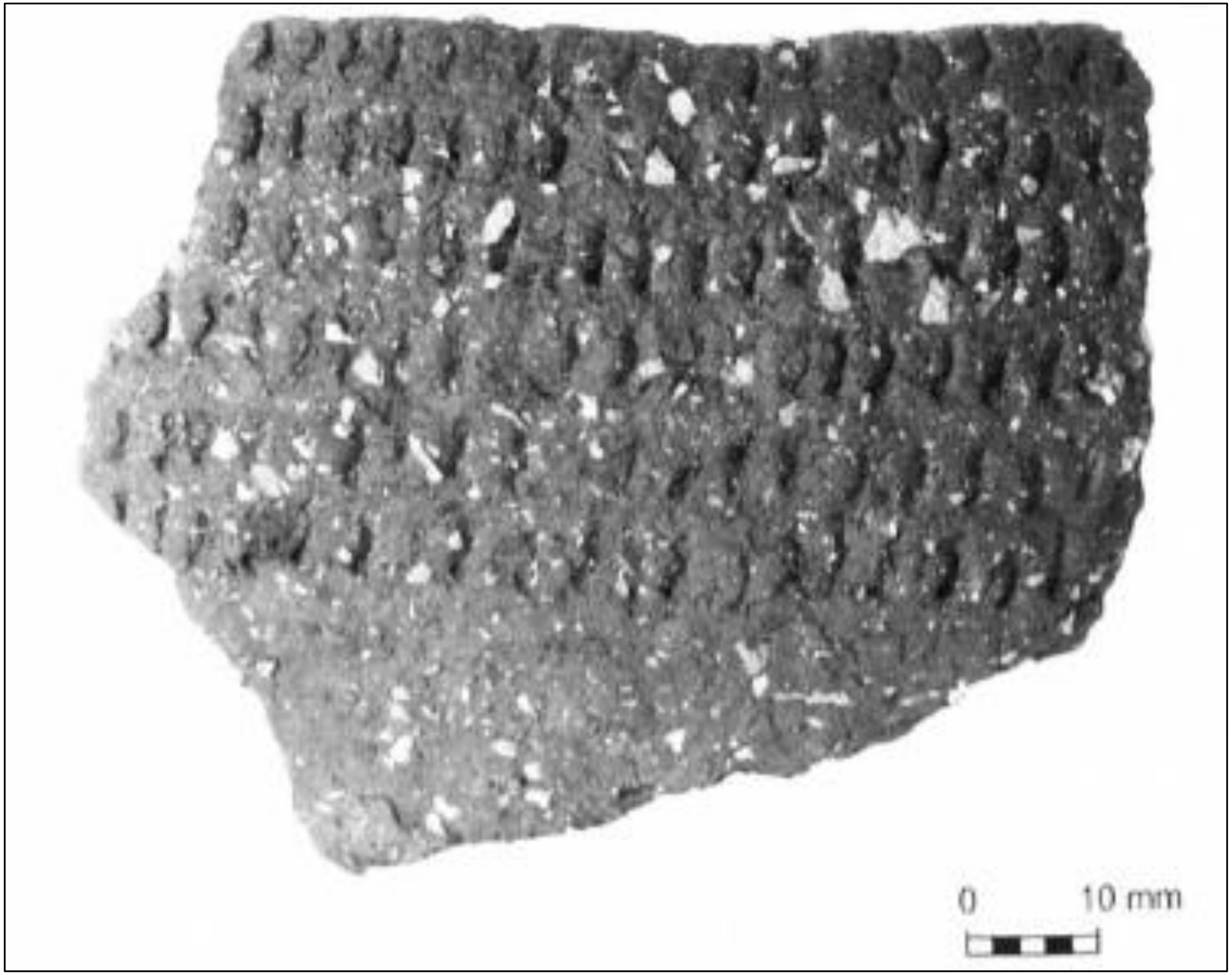


Figure 7.59: Distribution of Ebbsfleet pottery in the outer ditch of Yeoveney Lodge causewayed enclosure (Robertson-Mackay, 1987: Figure 30)

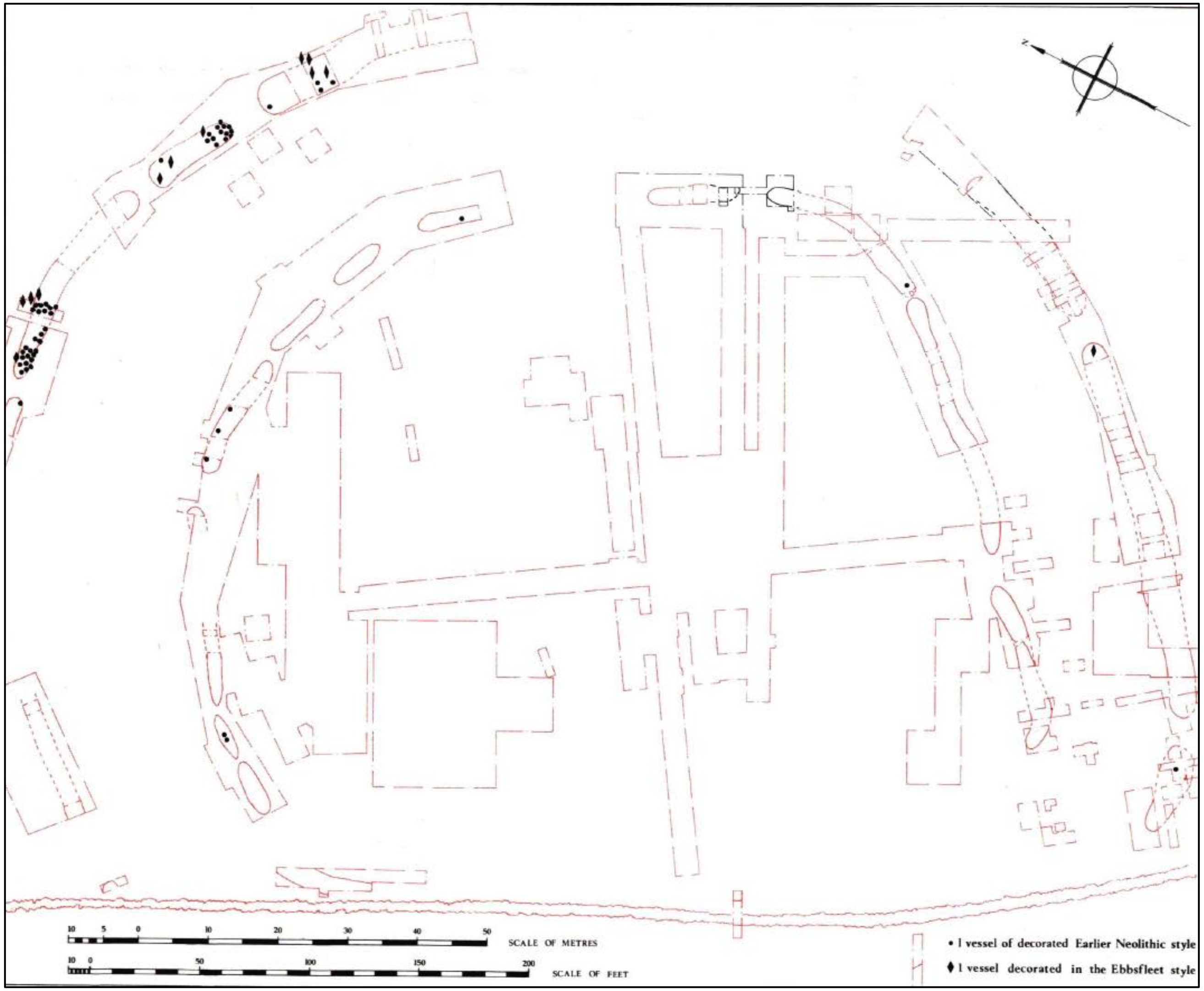


Figure 7.60: Flintwork from Yeoveney Lodge including plano-convex knives F139-F144 (Robertson-Mackay, 1987: Figure 65)

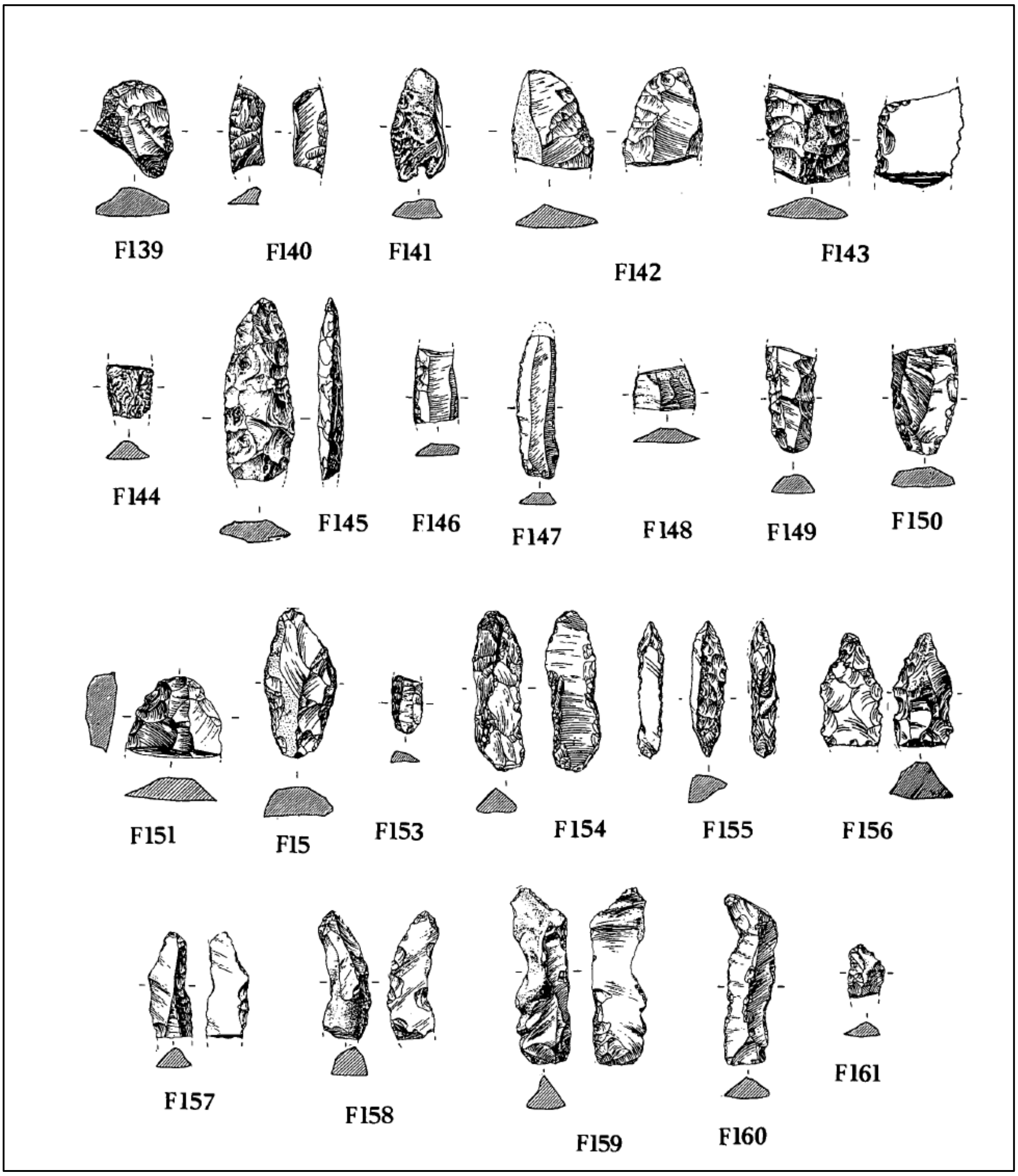


Figure 7.61: Neolithic pits within Iron Age earthwork at Caesar's Camp (Grimes, 1960: Figure 74)

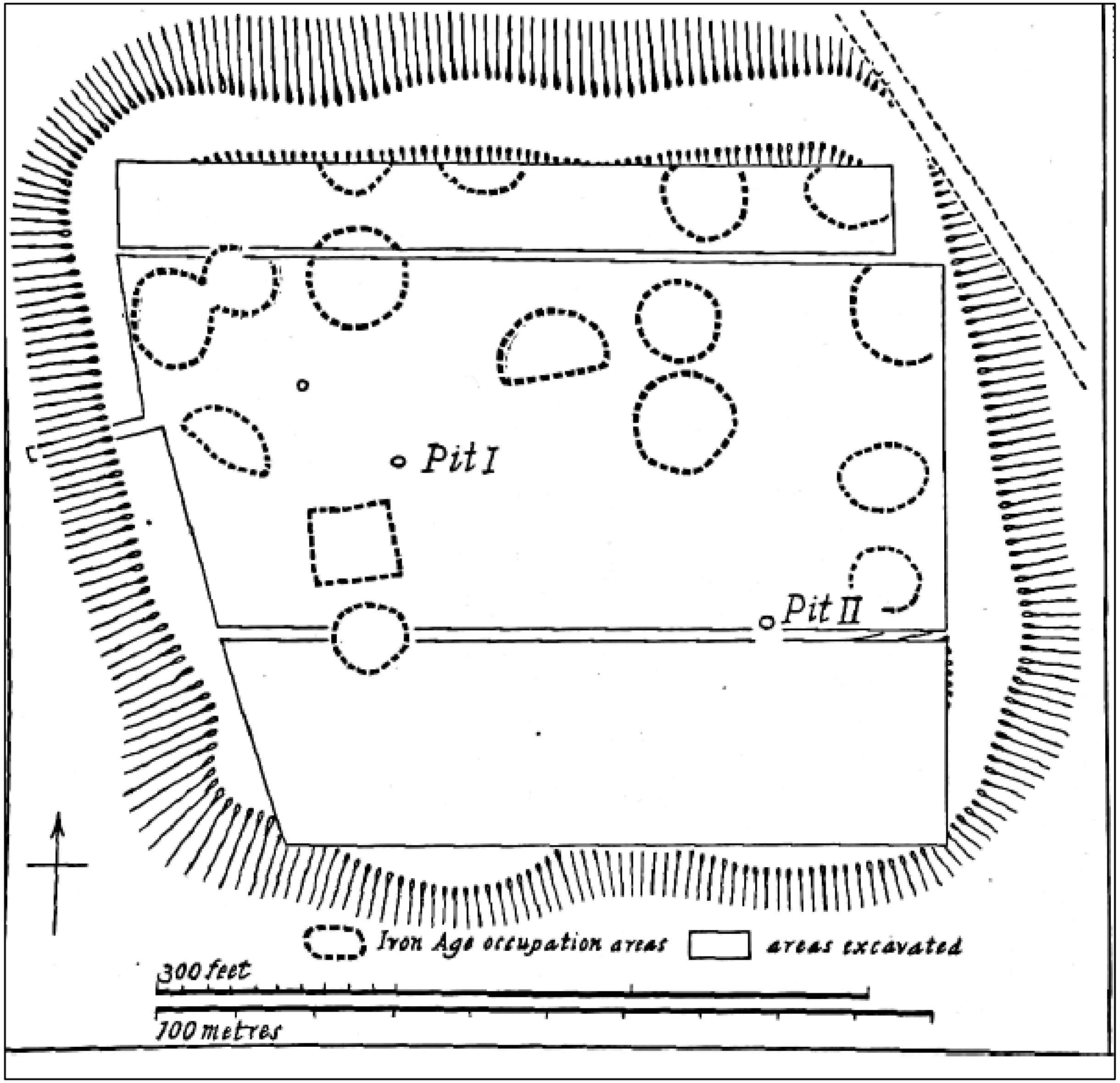


Figure 7.62: Peterborough Ware bowl from Caesar's Camp (Museum of London Collections: ID 49.87/29)

Figure 7.63: Neolithic pottery from pit 1 at Caesar's Camp (Grimes, 1960: Figure 75)

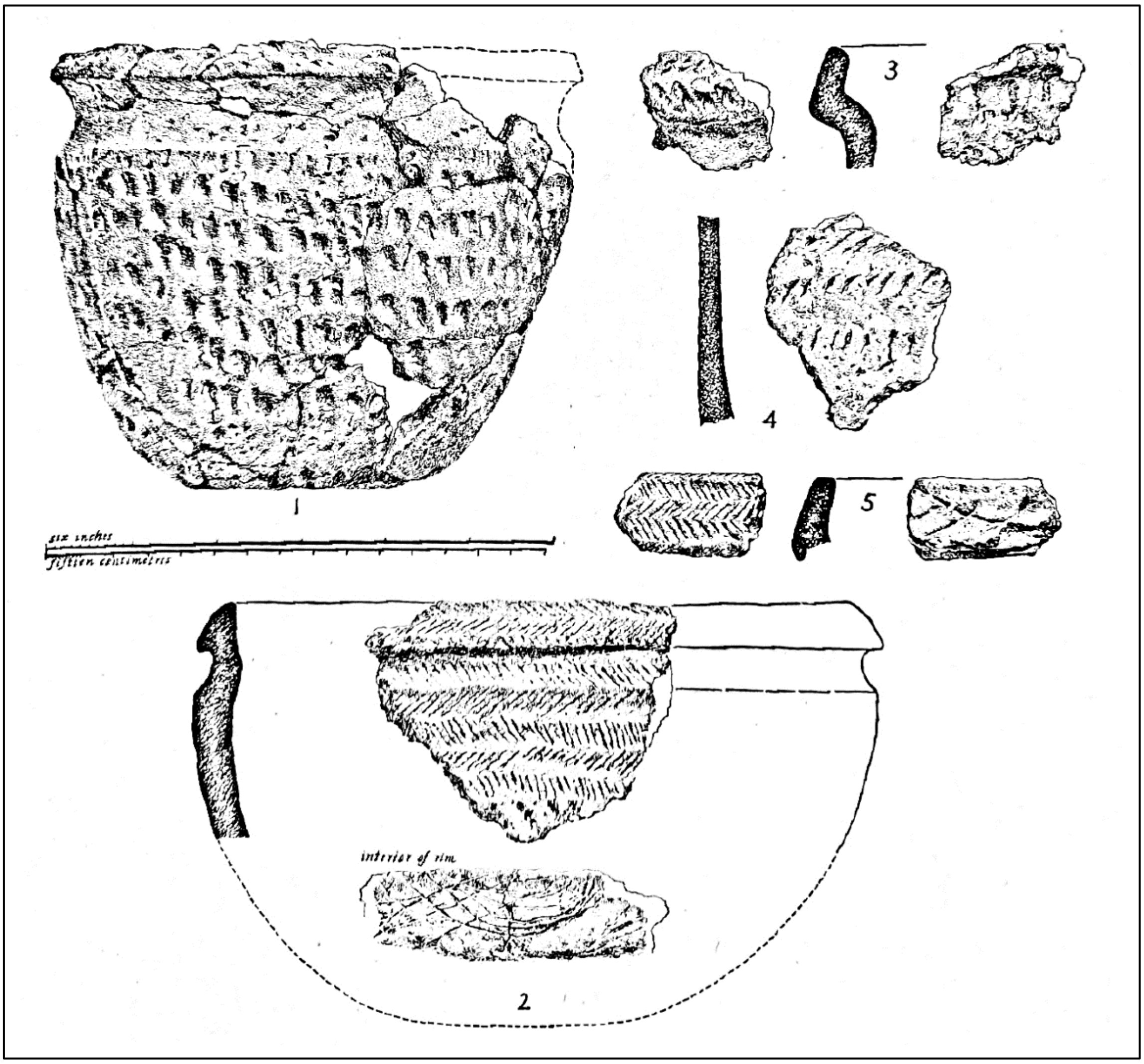


Figure 7.64: Neolithic pottery from pit 2 at Caesar's Camp (Grimes, 1960: Figure 76)

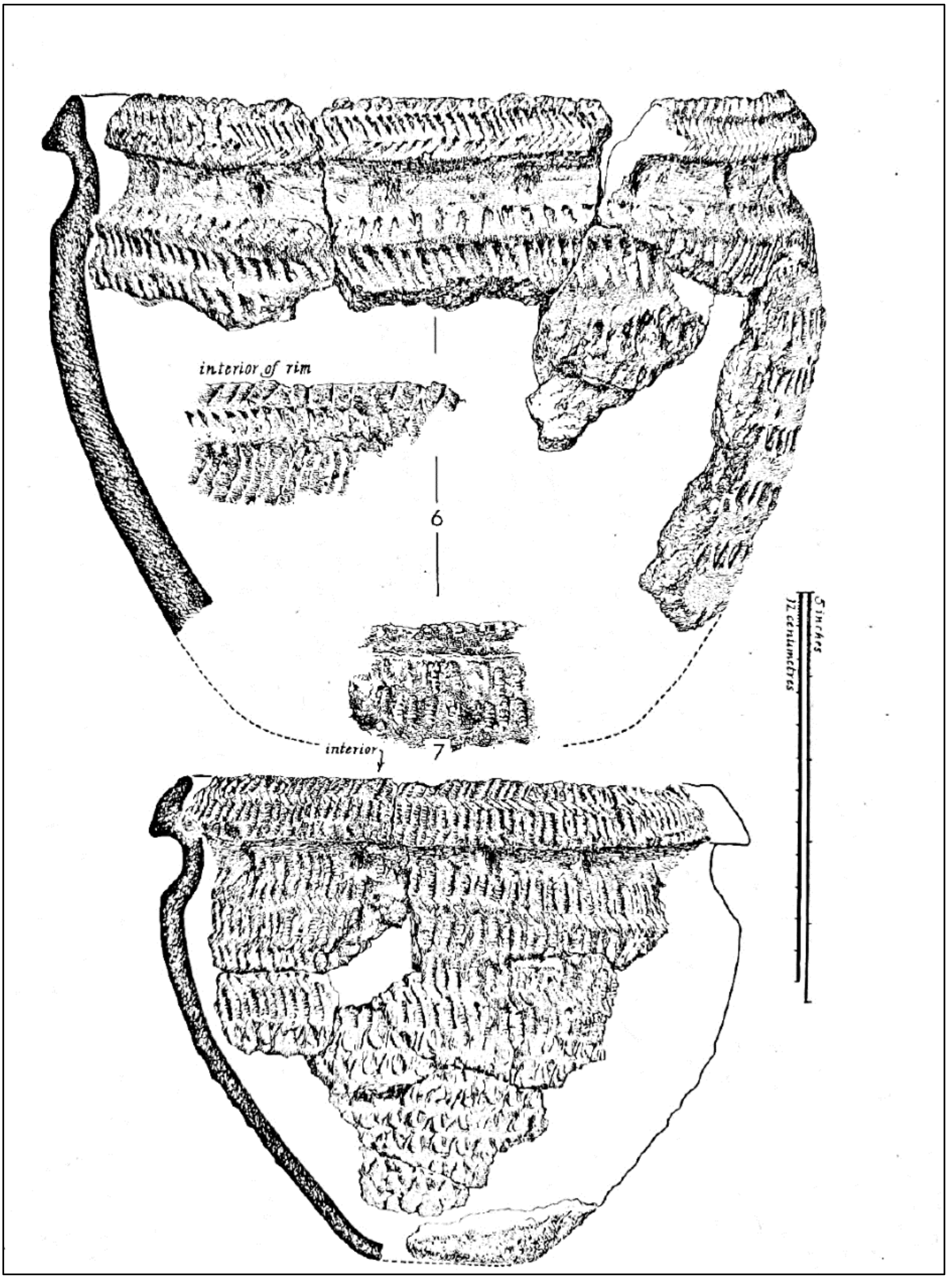


Figure 7.65: Neolithic pottery from pit 2 at Caesar's Camp (Grimes, 1960: Figure 78)

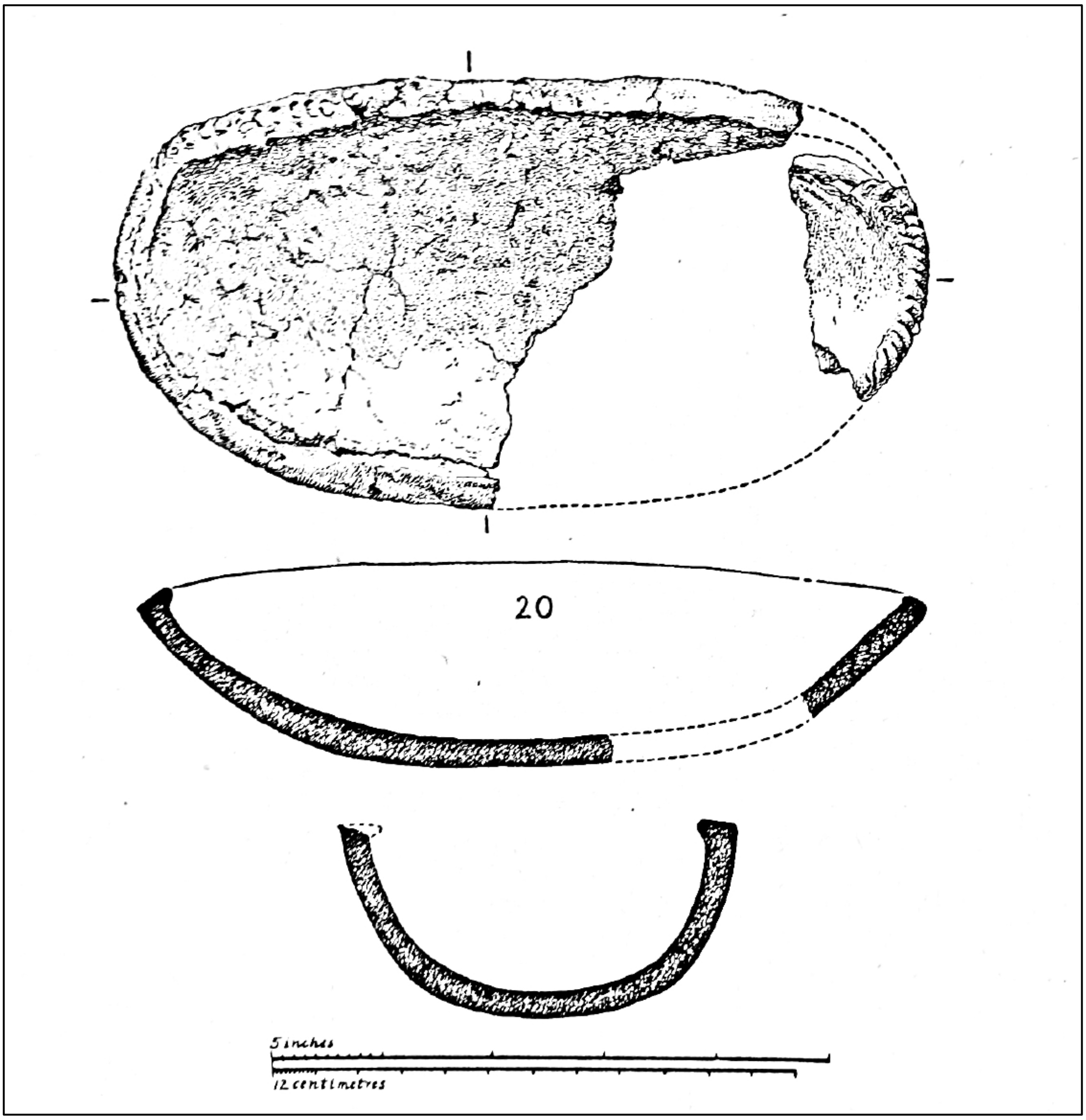


Figure 7.66: Late Neolithic sites and find spots in the Colne Valley (ArcMap 10.7.1)

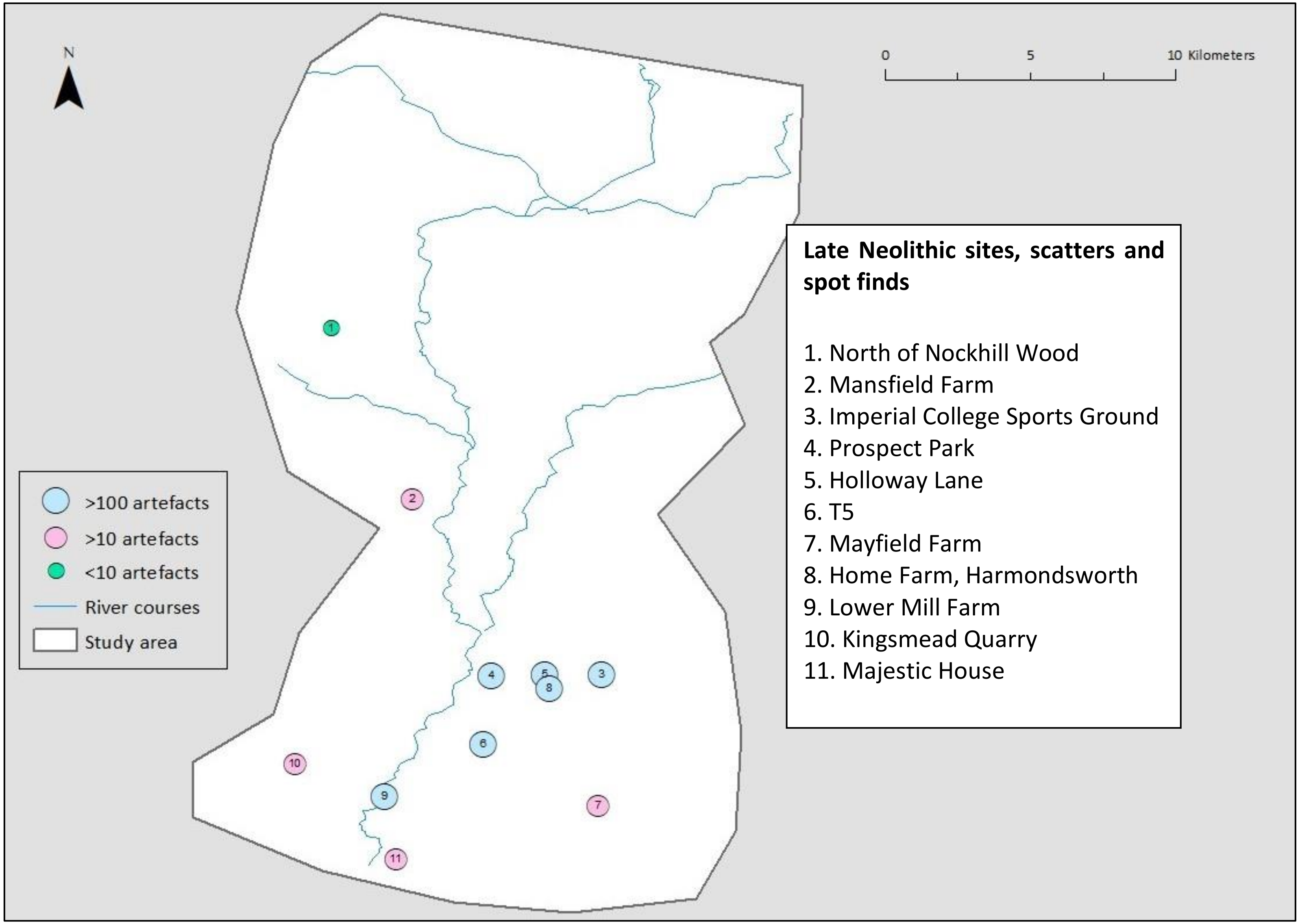


Figure 7.67: Distribution of Grooved Ware pottery at T5 (FA, 2010: Figure 2.56)

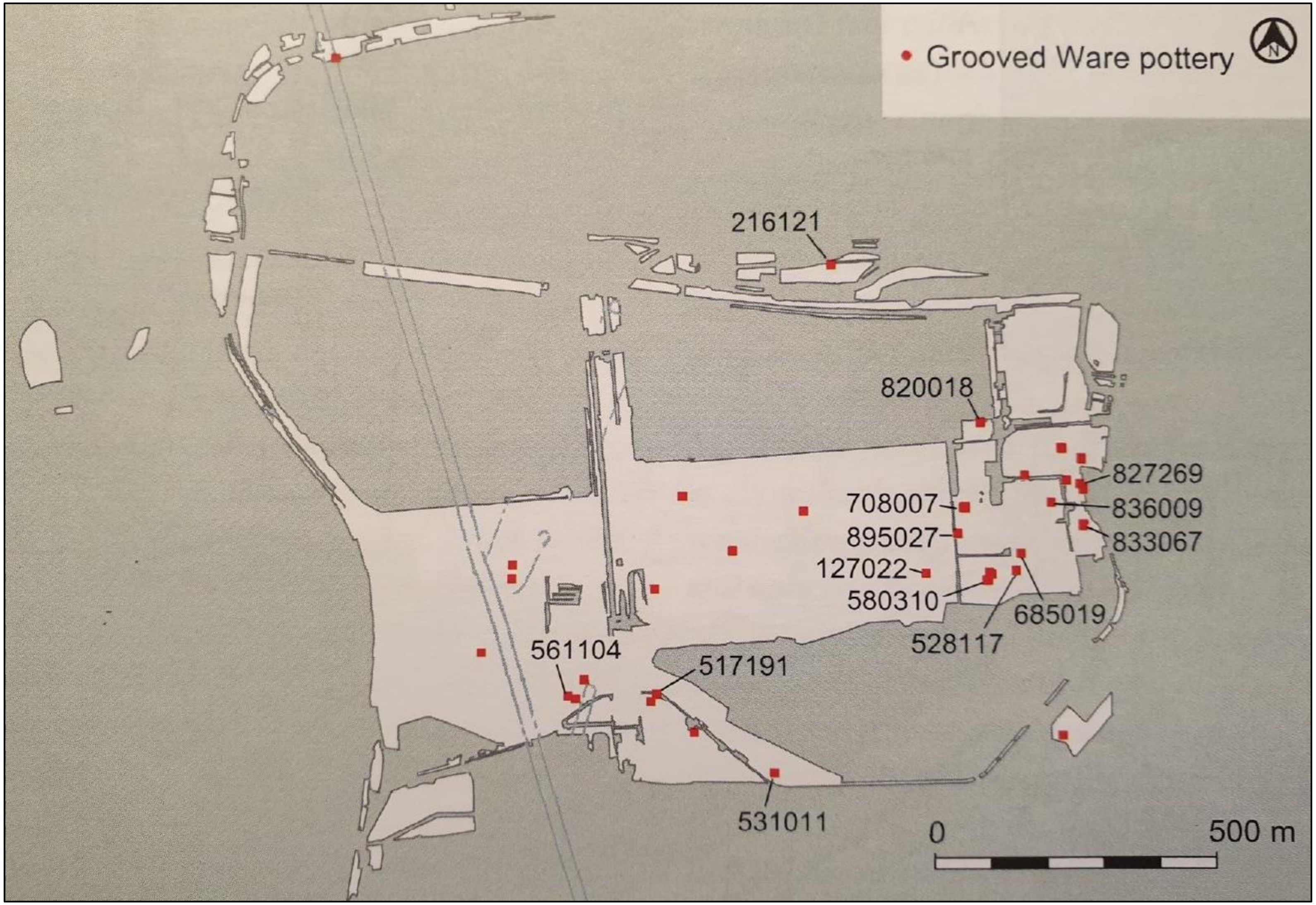


Figure 7.68: Areas and features associated with Grooved Ware pottery (FA, 2010: Figure 2.57)

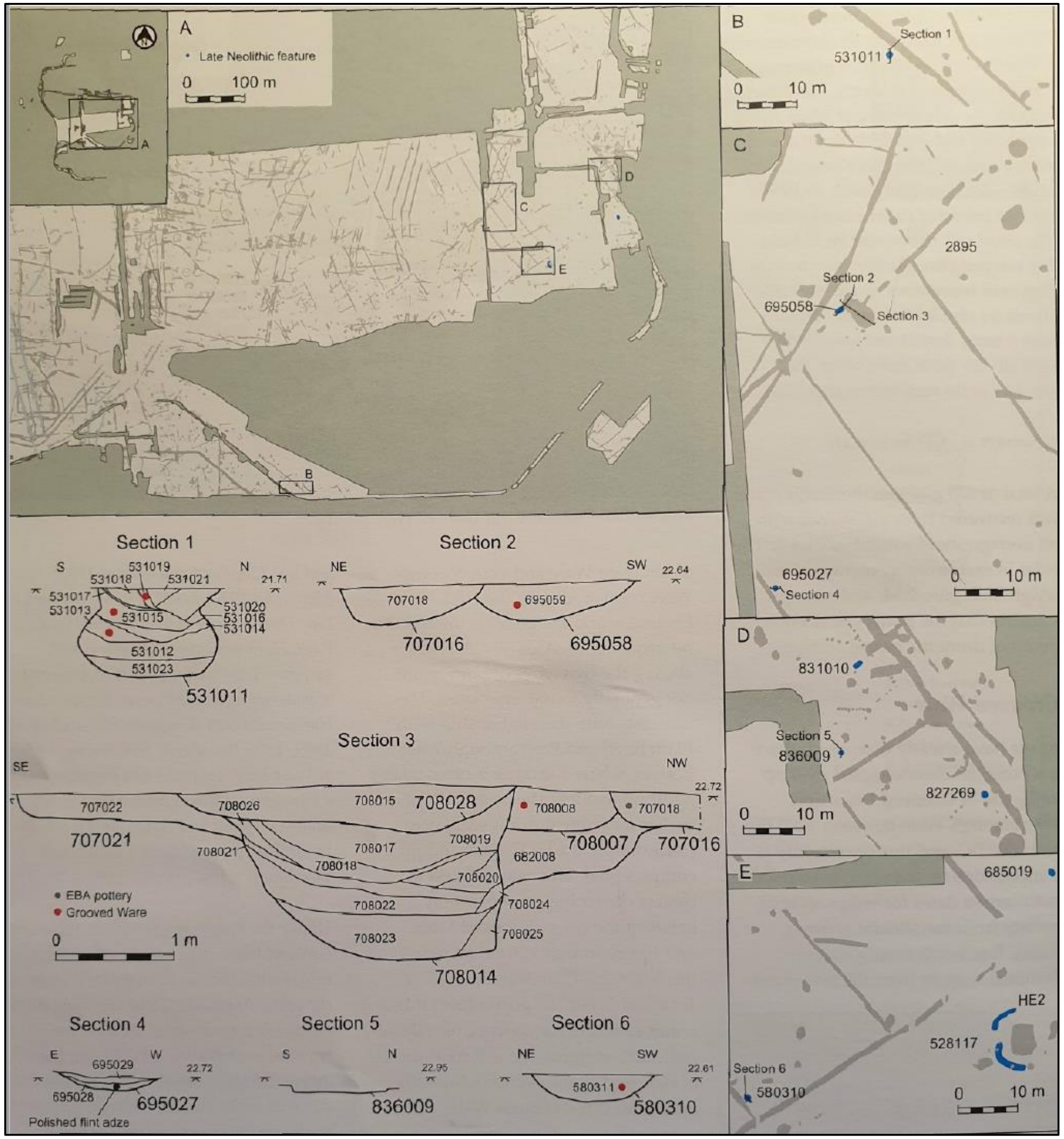


Figure 7.69: Grooved Ware in and around HE2 enclosure (FA, 2010)

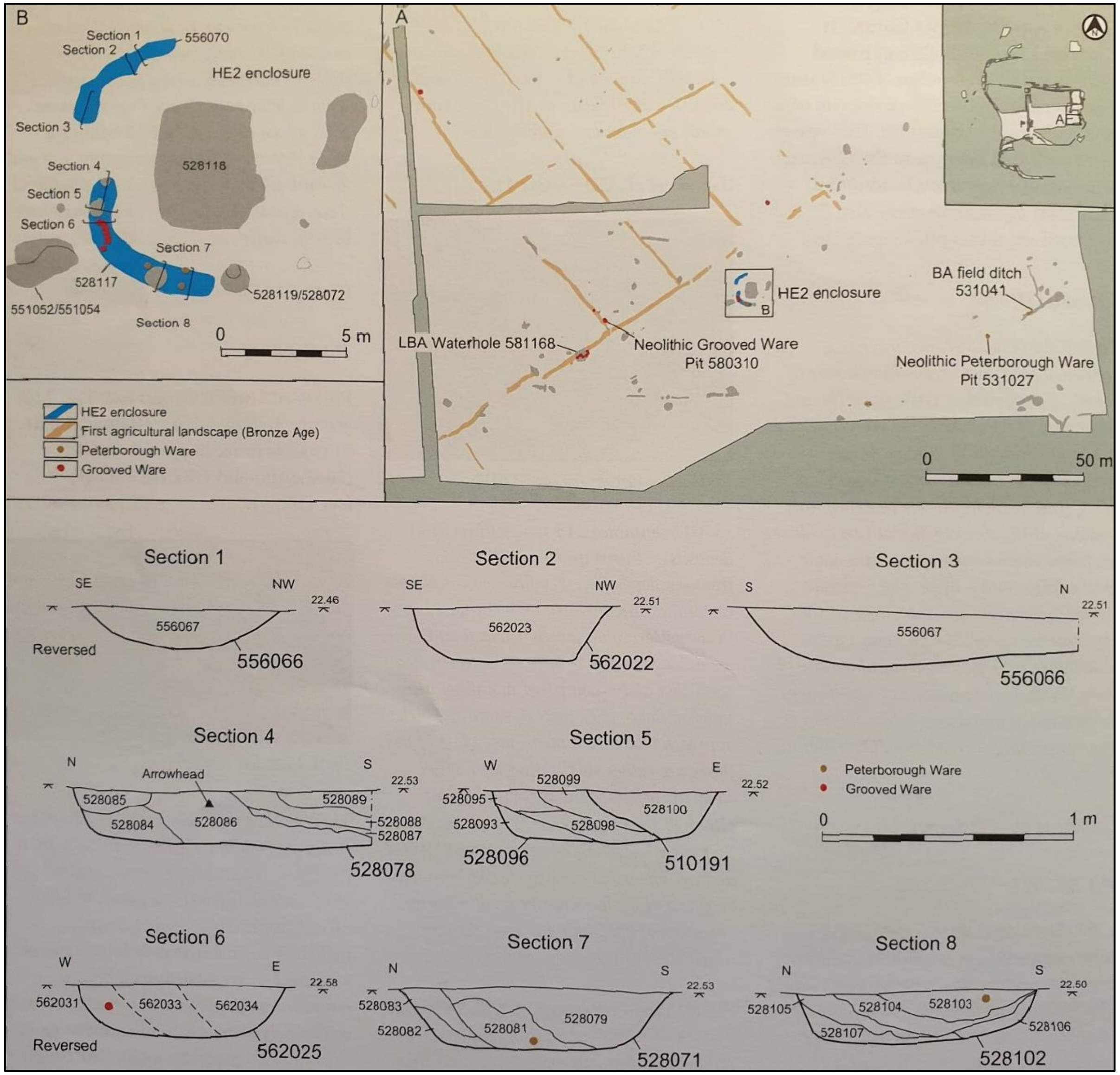


Figure 7.70: Location of Prospect Park site (Farwell et al, 1999)

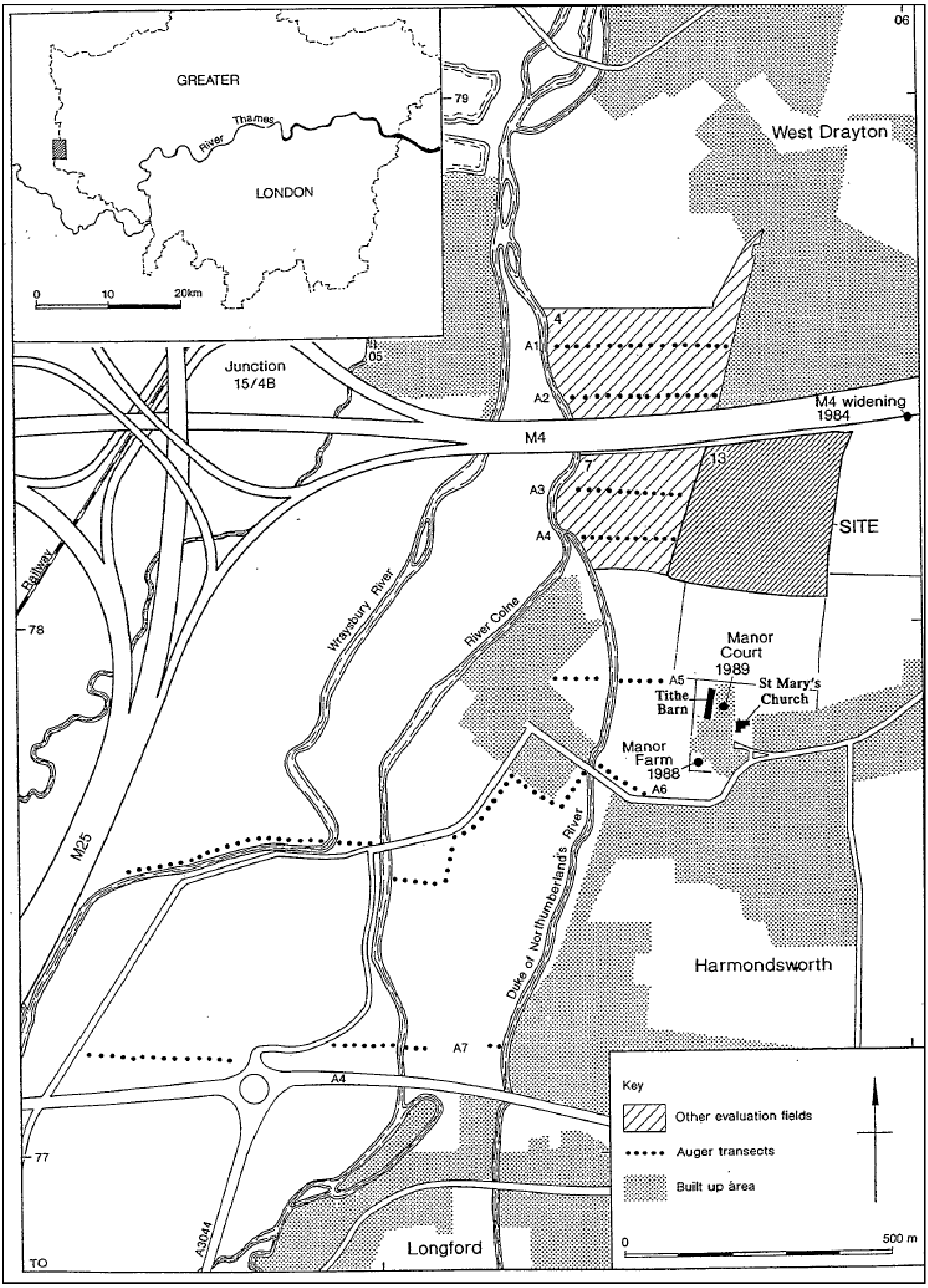


Figure 7.71: Late Neolithic and Bronze Age features at Prospect Park (Farwell et al, 1999: Figure 5)

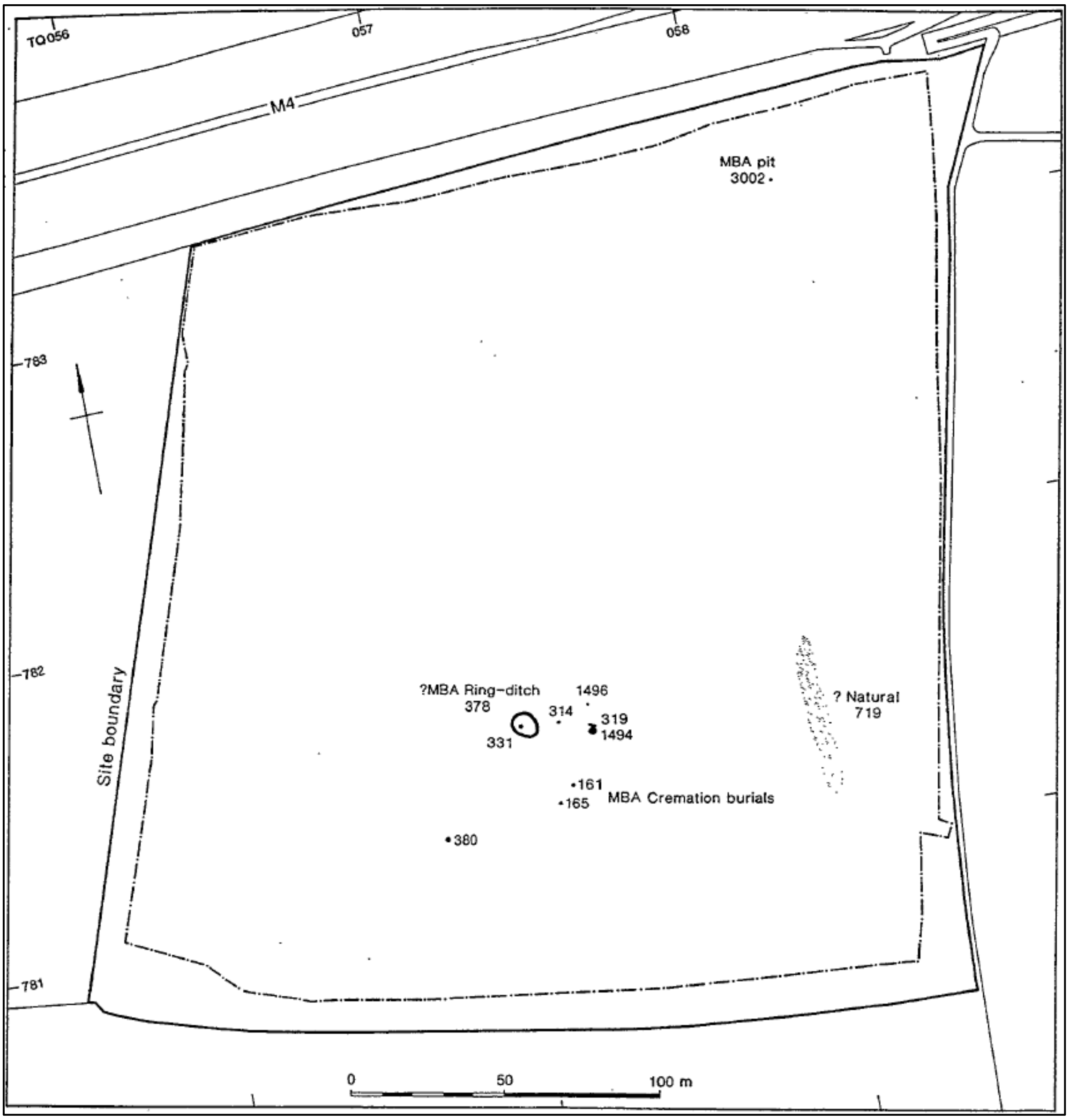


Figure 7.72: Features associated with Grooved Ware (Farwell et al, 1999: Figure 6)

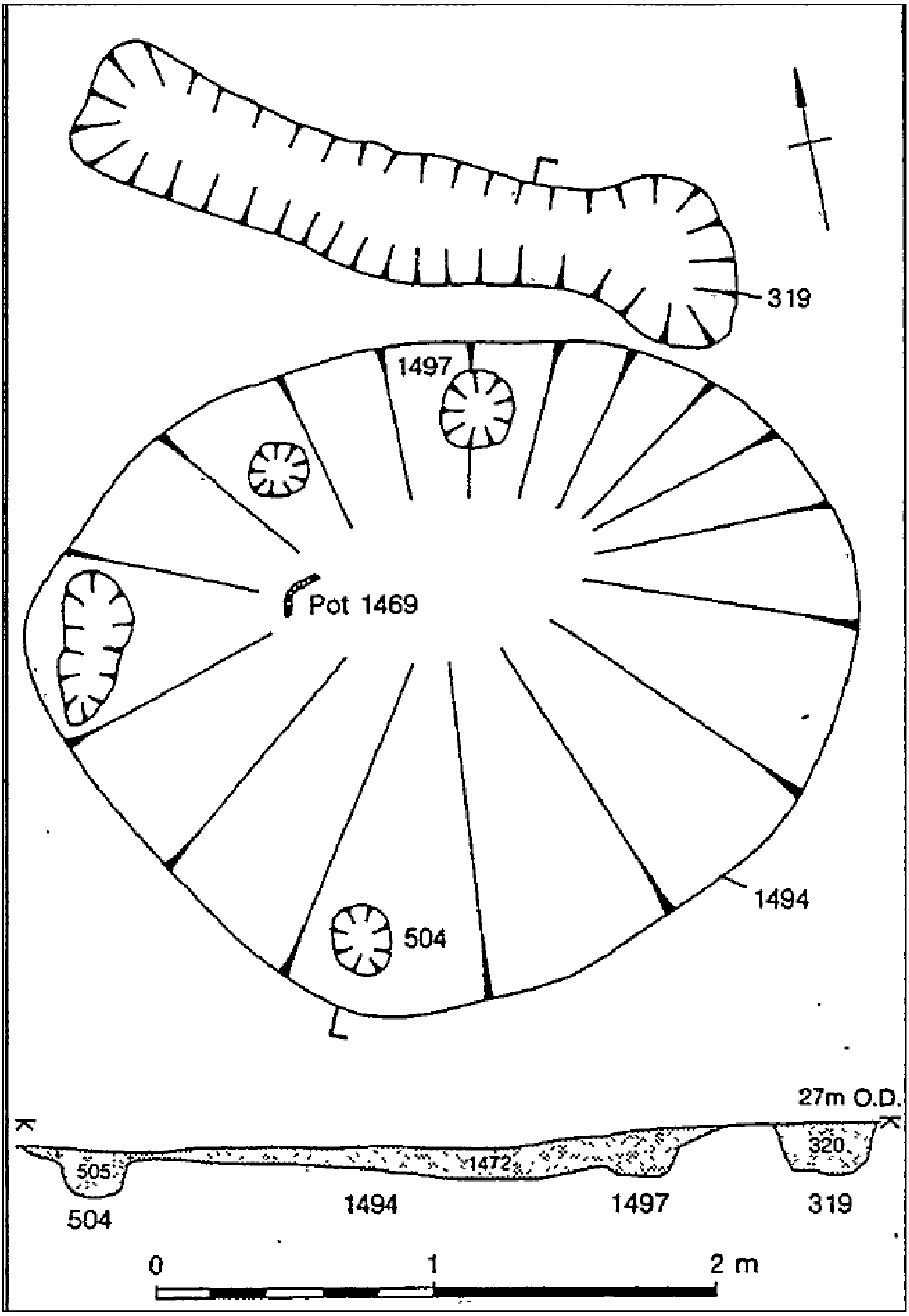


Figure 7.73: Home Farm site plan showing areas R, S & T, showing Grooved Ware cooking pits (Hoad et al: Figure 3)

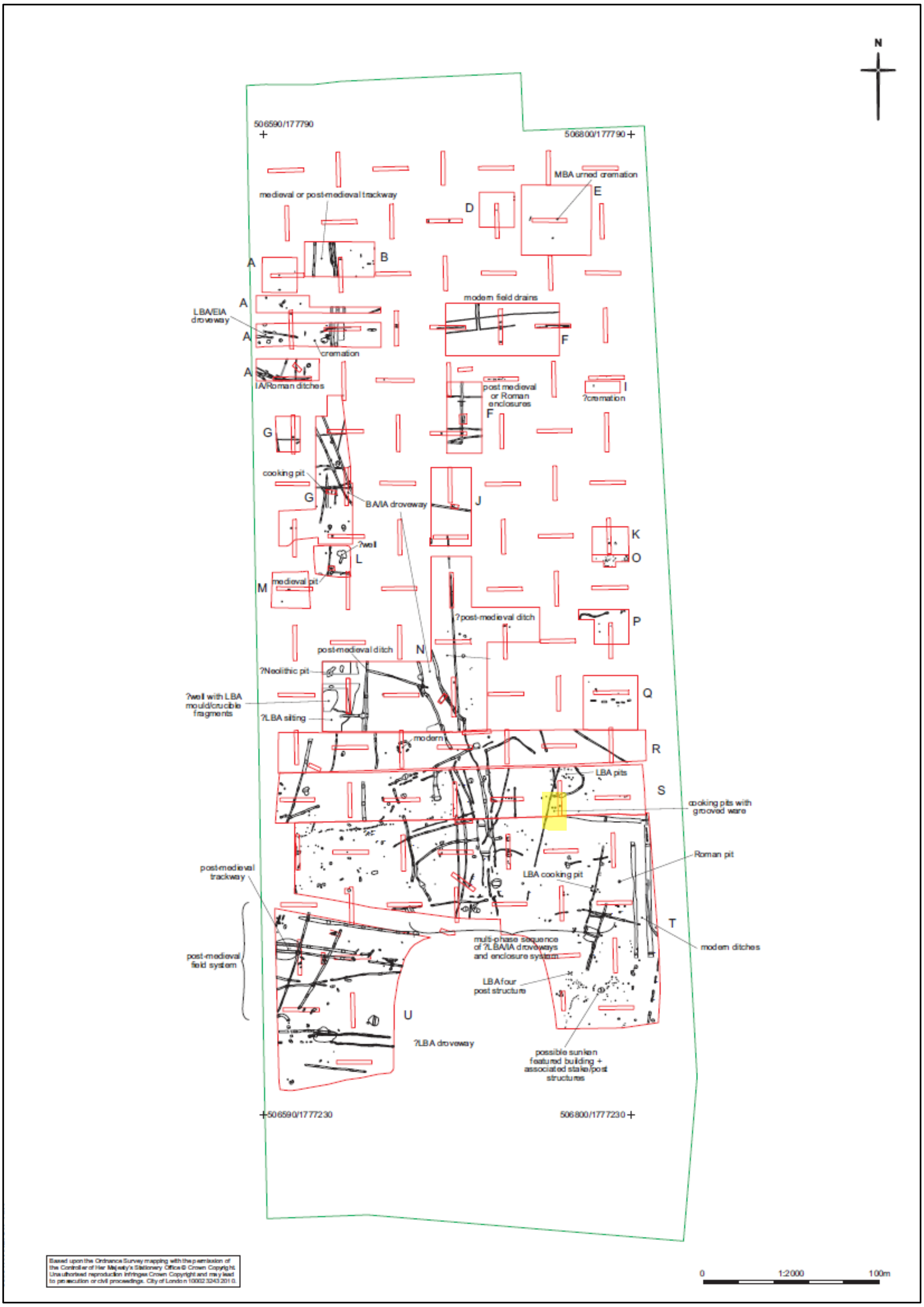


Figure 7.74: RMC Land with Late Neolithic pit 5732 (Powell et al, 2015: Figure 2.23)

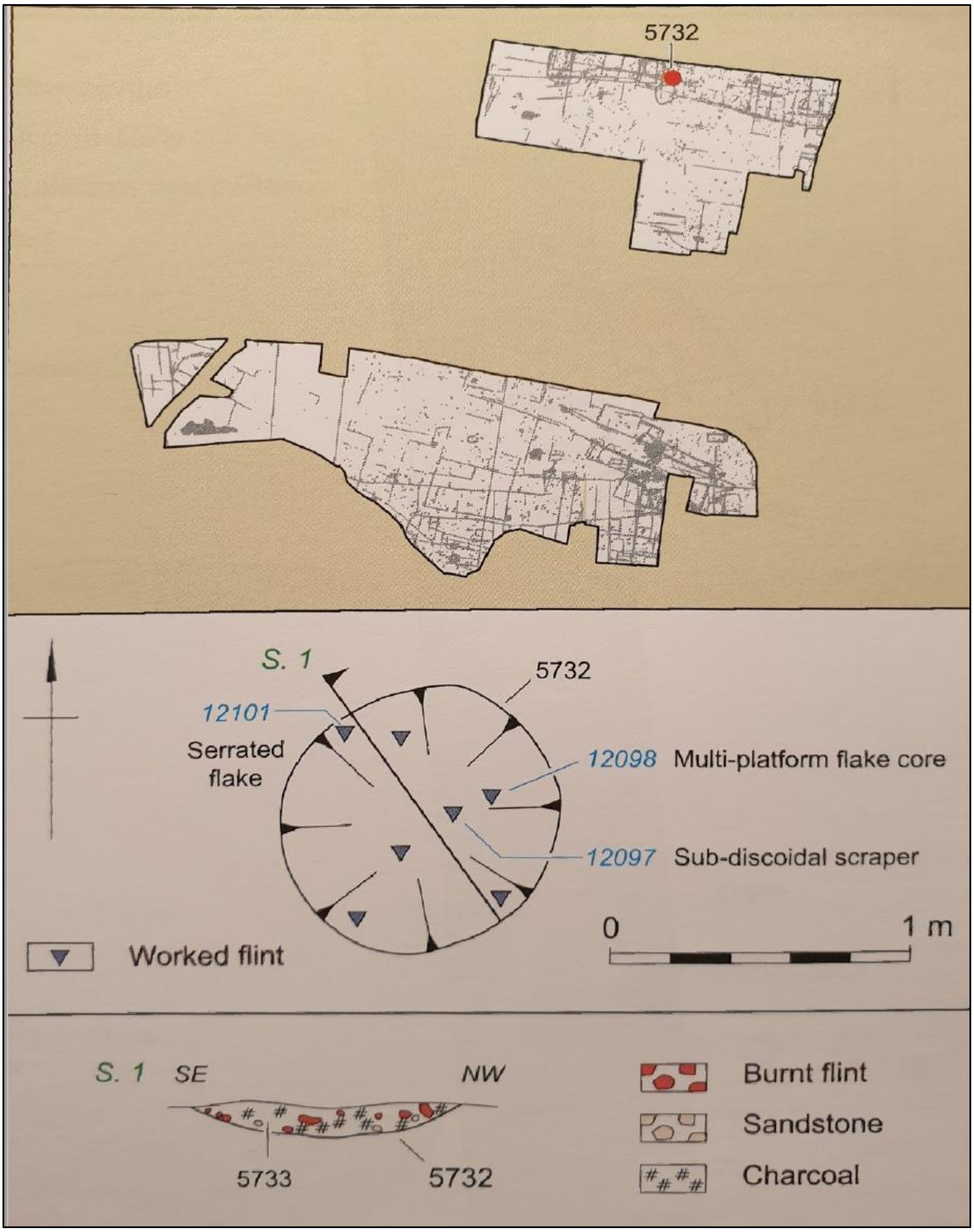


Figure 7.75: Location of Lower Mill Farm, Stanwell (Jones & Ayres, 2004: Figure 16.1)

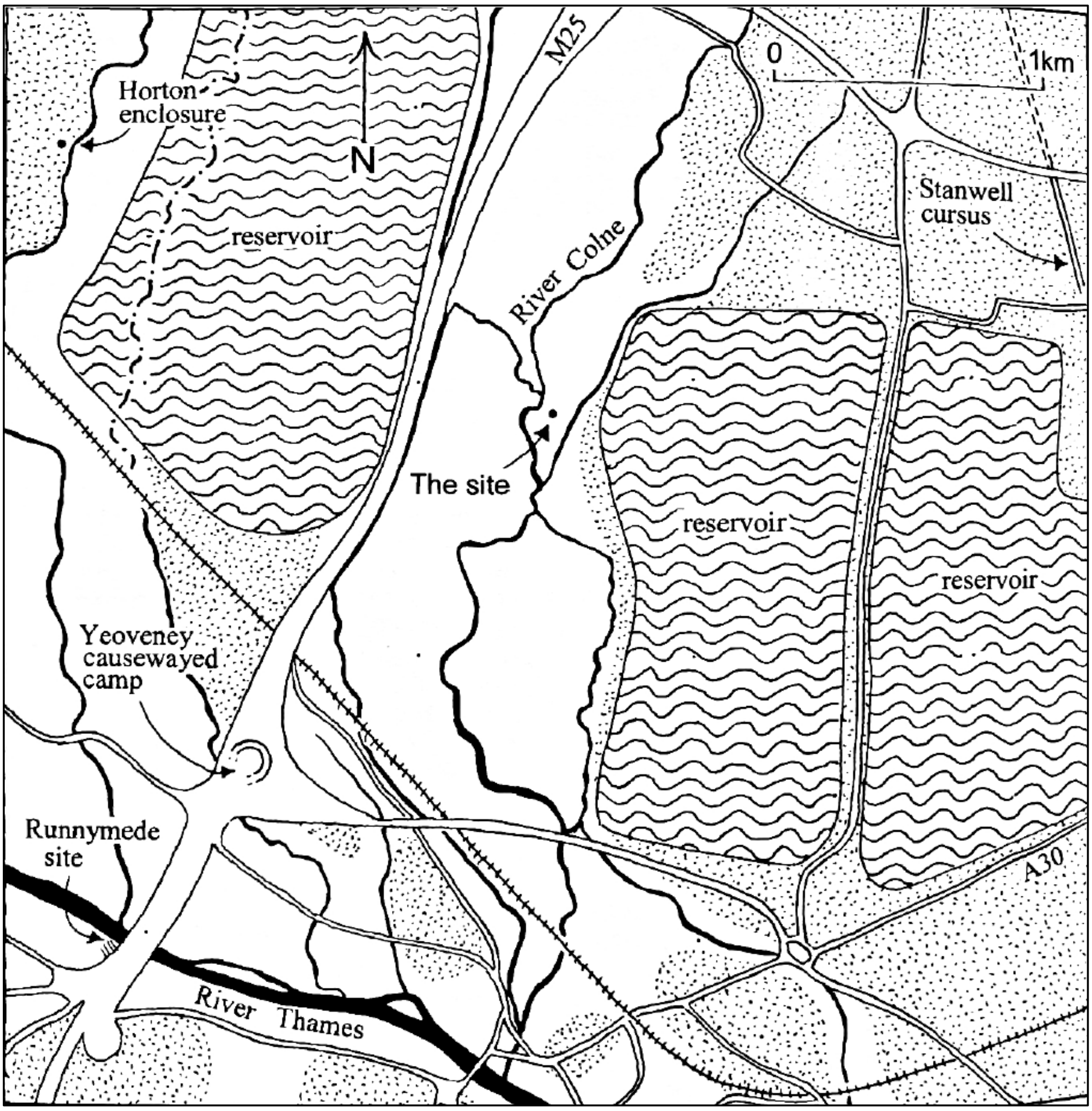


Figure 7.76: Section through Late Neolithic pit 22 (Jones & Ayres, 2004: Figure 16.2)

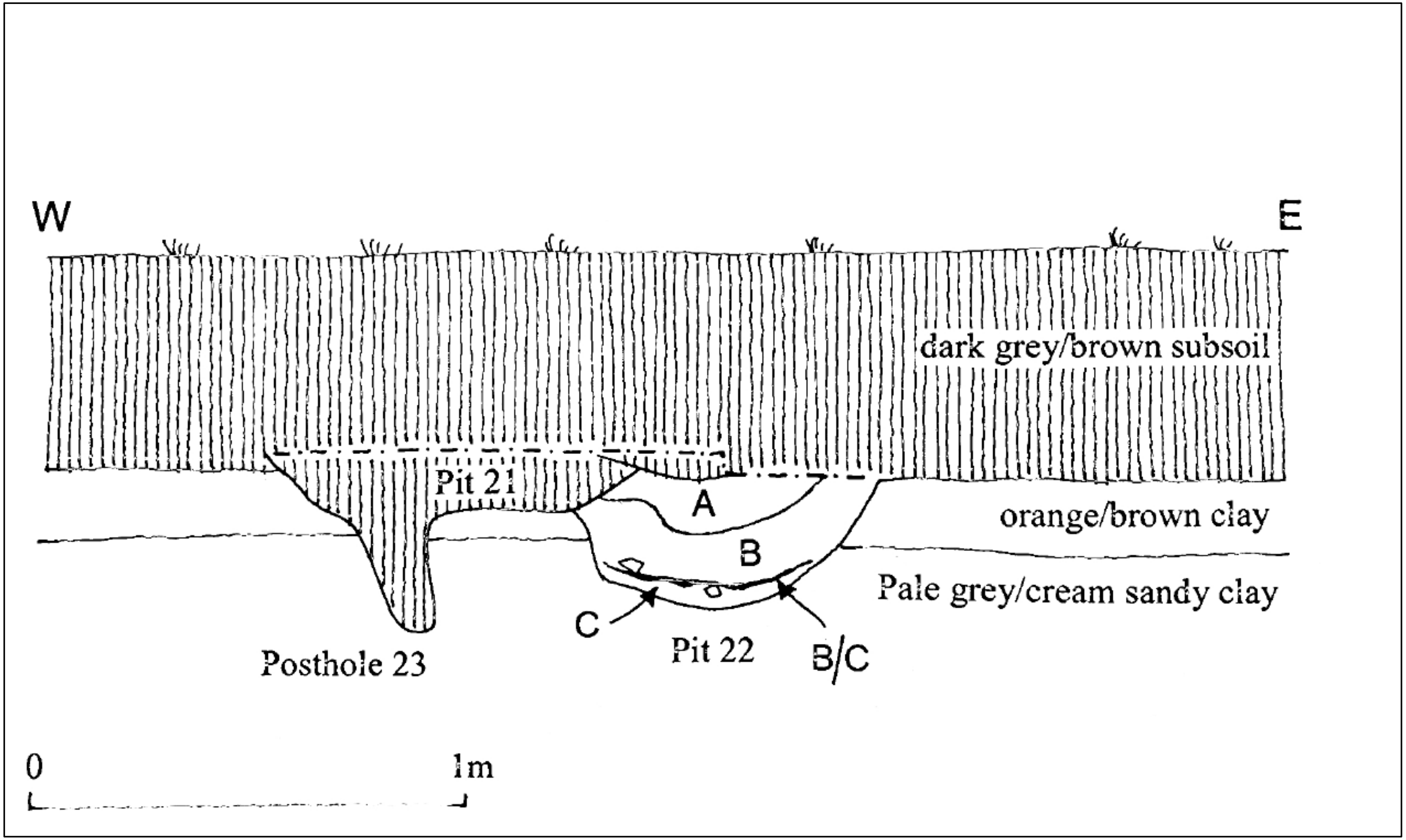


Figure 7.77: Aurochs bone scoop (Jones & Ayres, 2004: Figure 16.4)

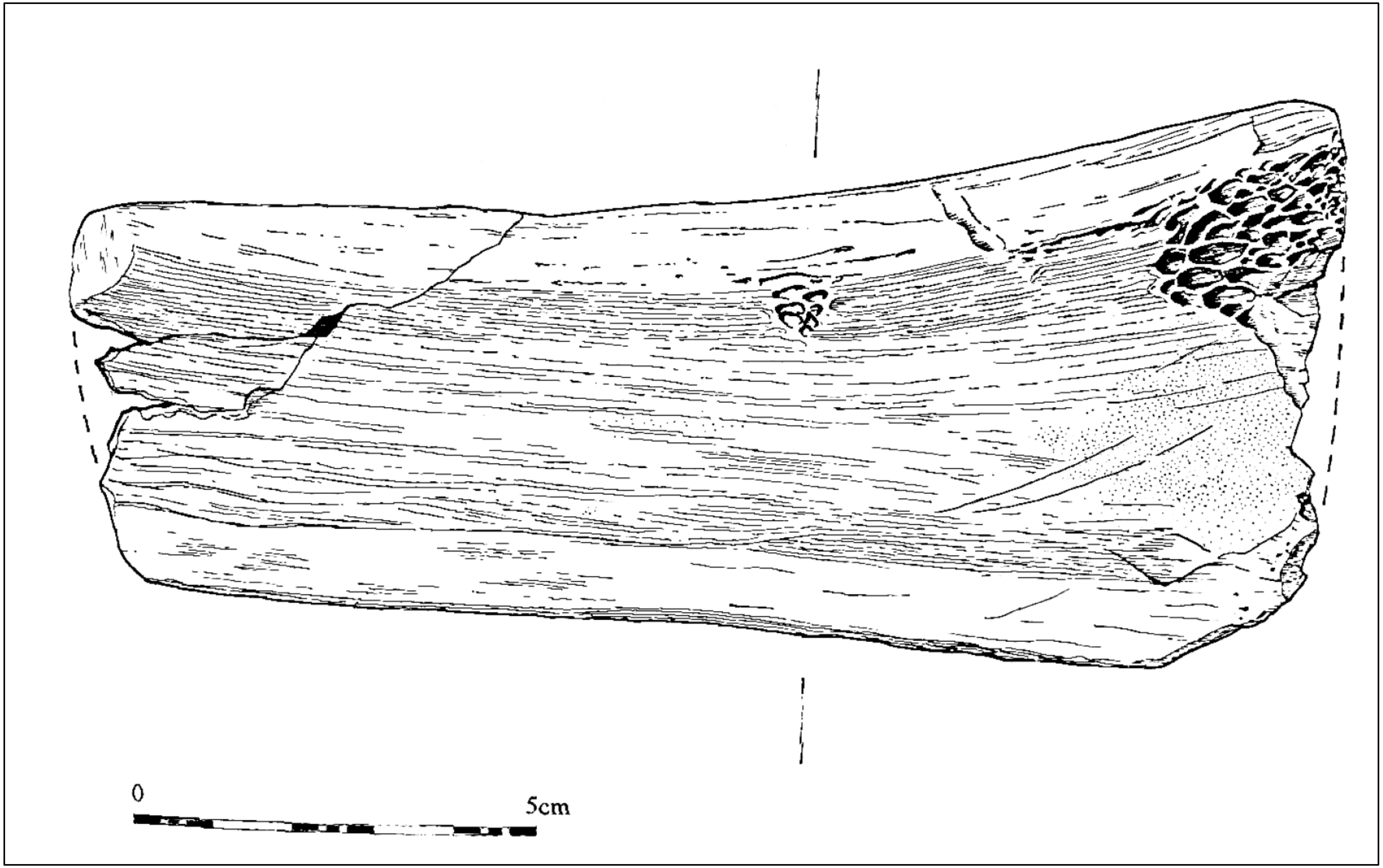


Figure 7.78: Grooved Ware vessel from Holloway Lane (Cotton, Mills & Clegg, 1986: Figure 22B)

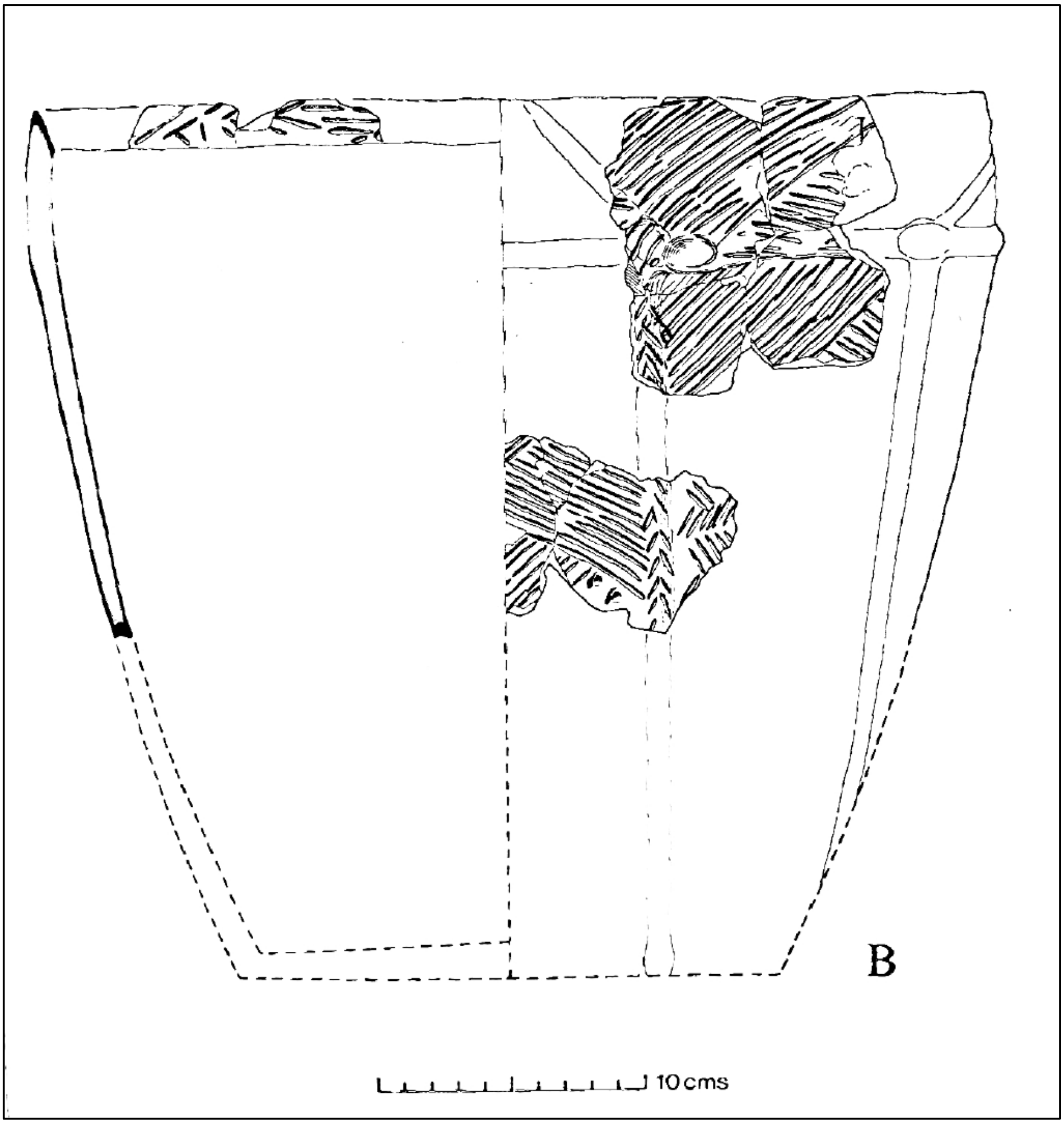


Figure 7.79: Double ditched enclosure (SML062) in relation to FA trenches (Jefferson, 2003: Figure 3)

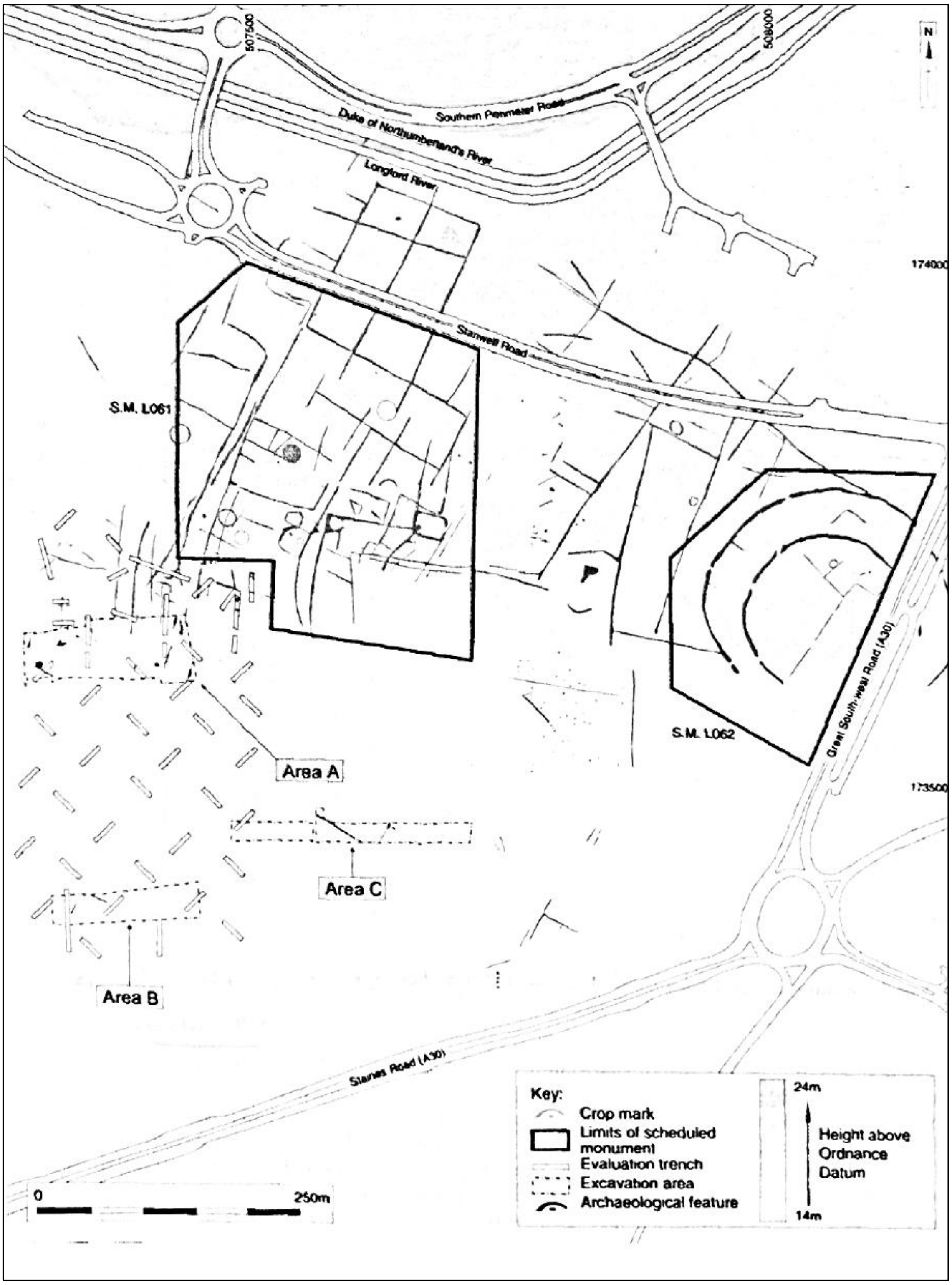


Figure 7.80: FA trenches (FA, 1998: Figure 4)

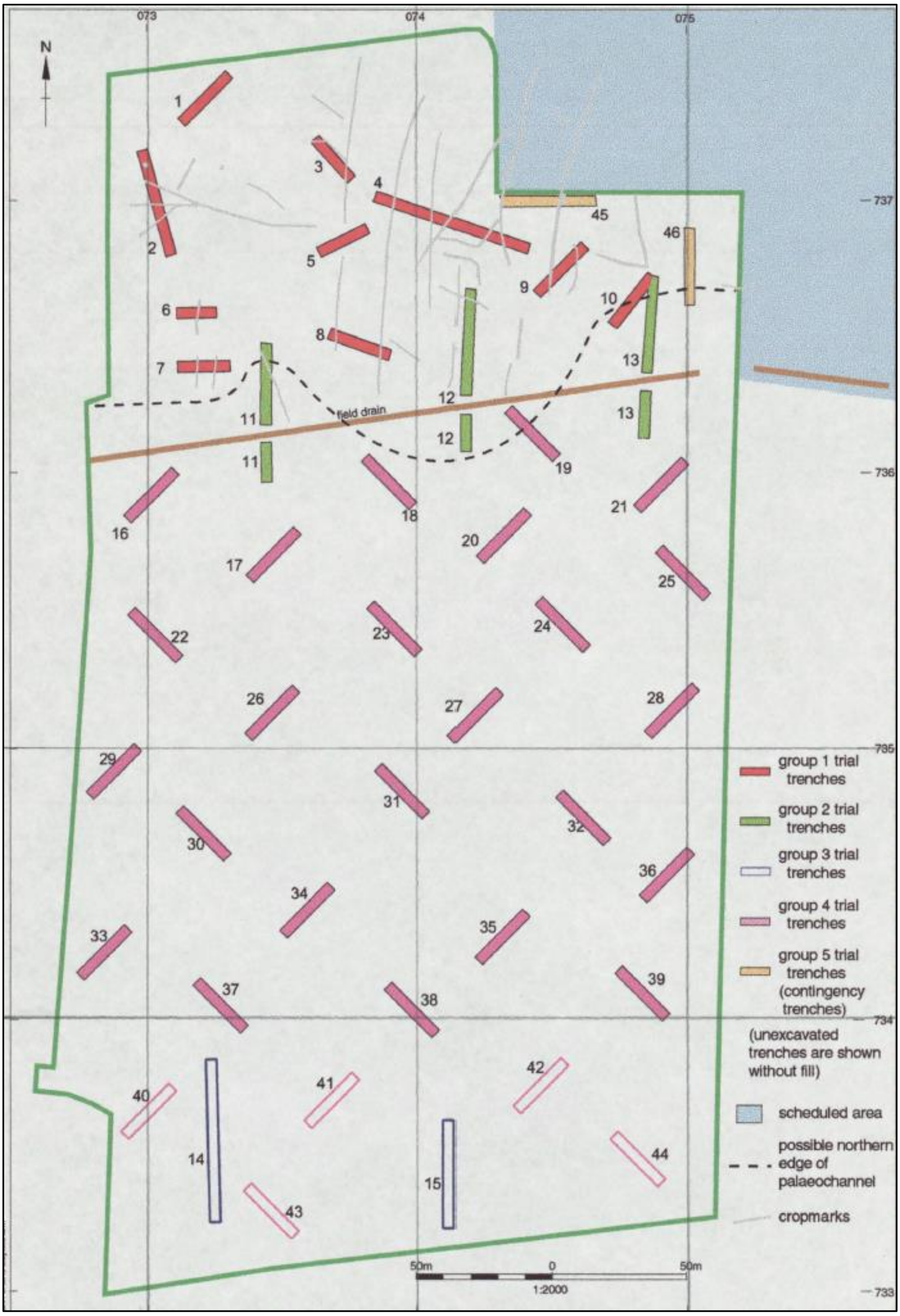


Figure 7.81: North-eastern section of double ditched enclosure (bottom left corner) (Farrant, 1971: Figure 2)

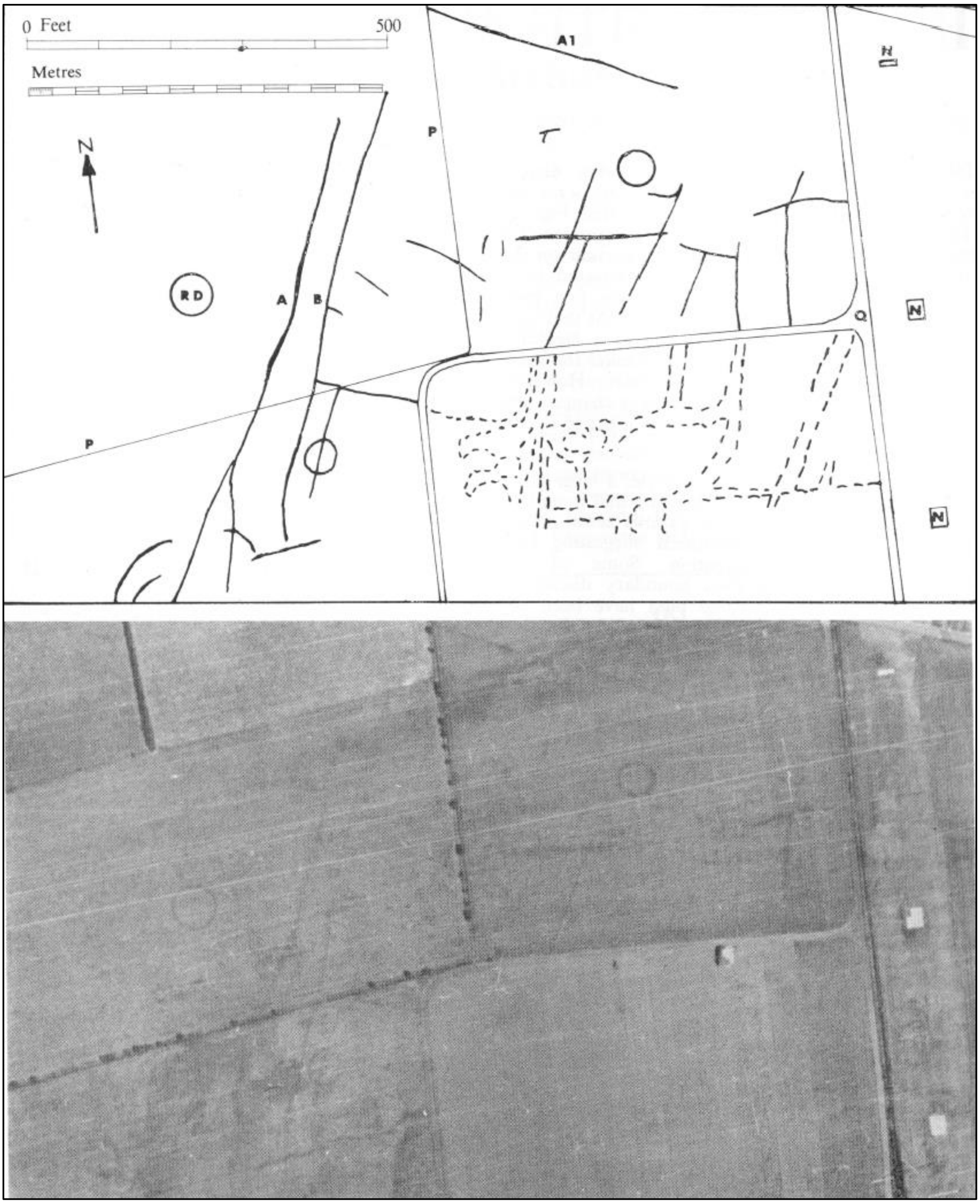


Figure 7.82: FA site area (FA, 1998: Figure 5)

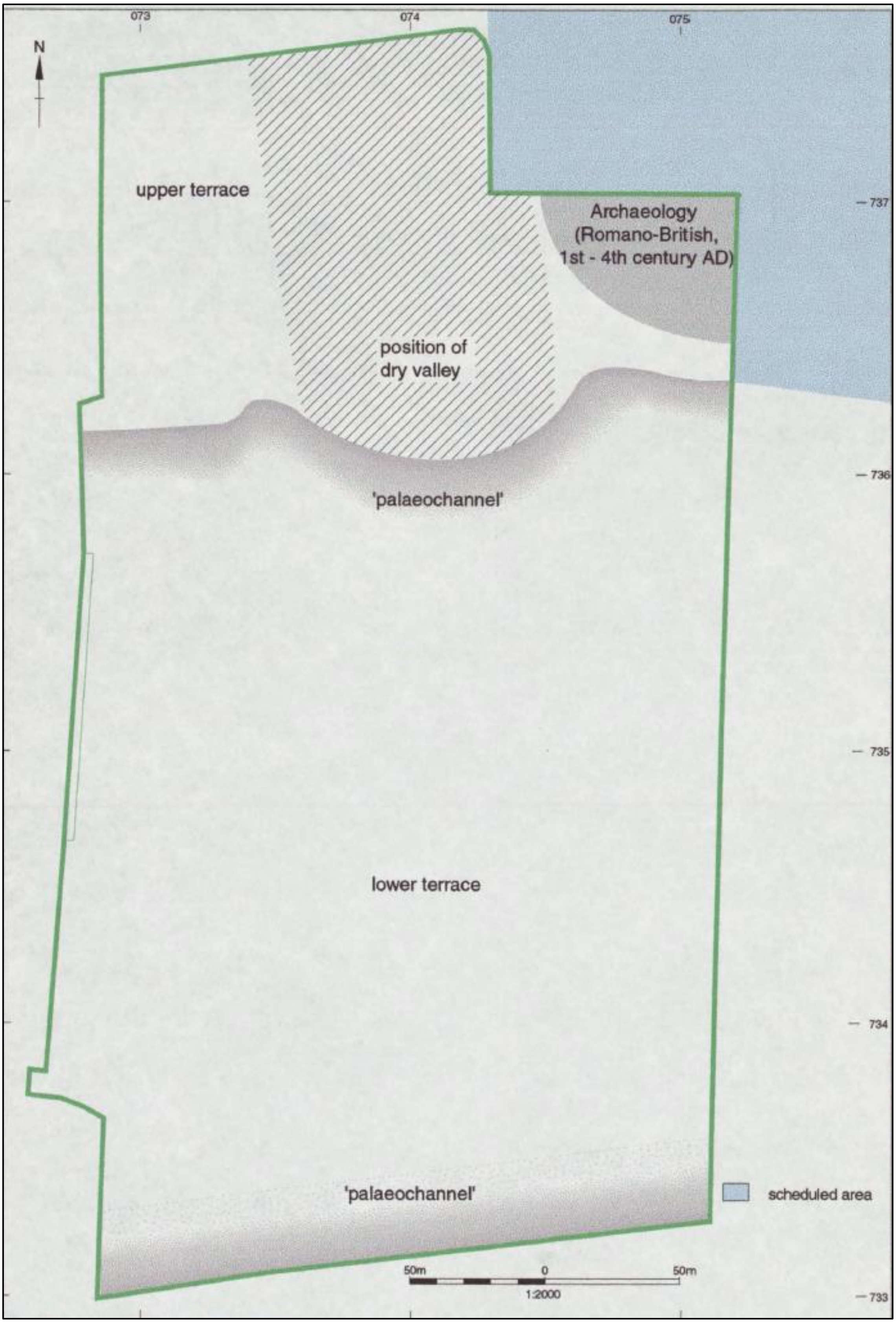


Figure 7.83: Early to Late Neolithic sites and find spots by density (ArcMap 10.7.1)

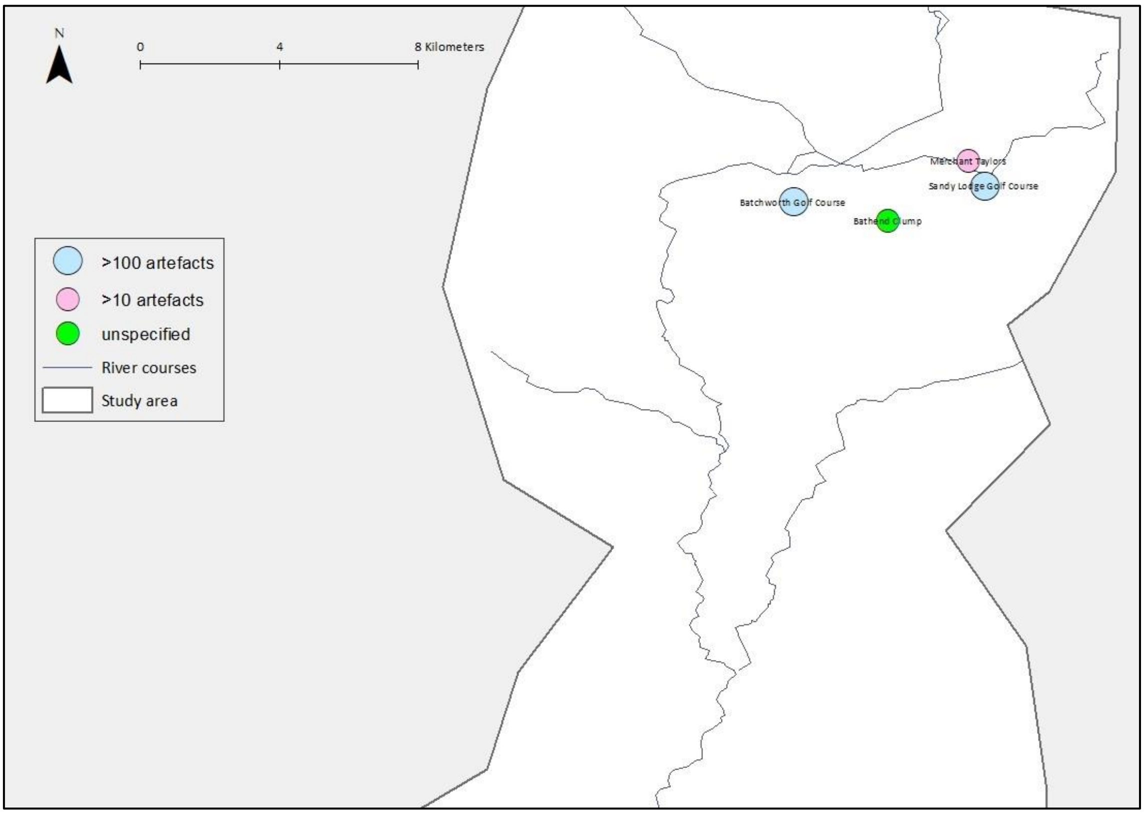


Figure 7.84: Flint scatters A-D at Batchworth Golf Course (HAT, 1995: Figure 1)

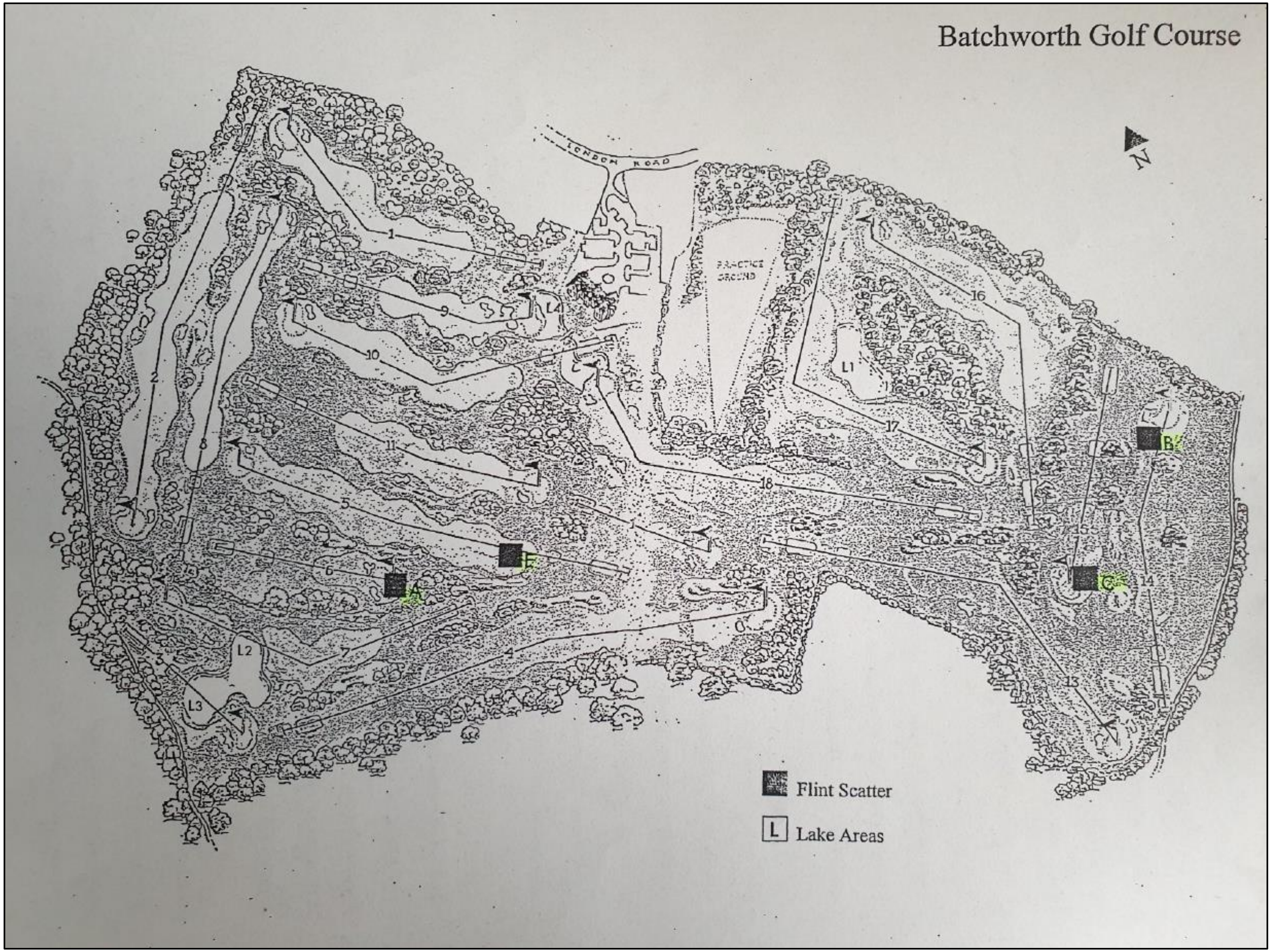


Figure 7.85: Sandy Lodge site location (HAT, 1993: Figure 2)

Figure 7.86: Sandy Lodge site plan (HAT, 1993: Figure 3)

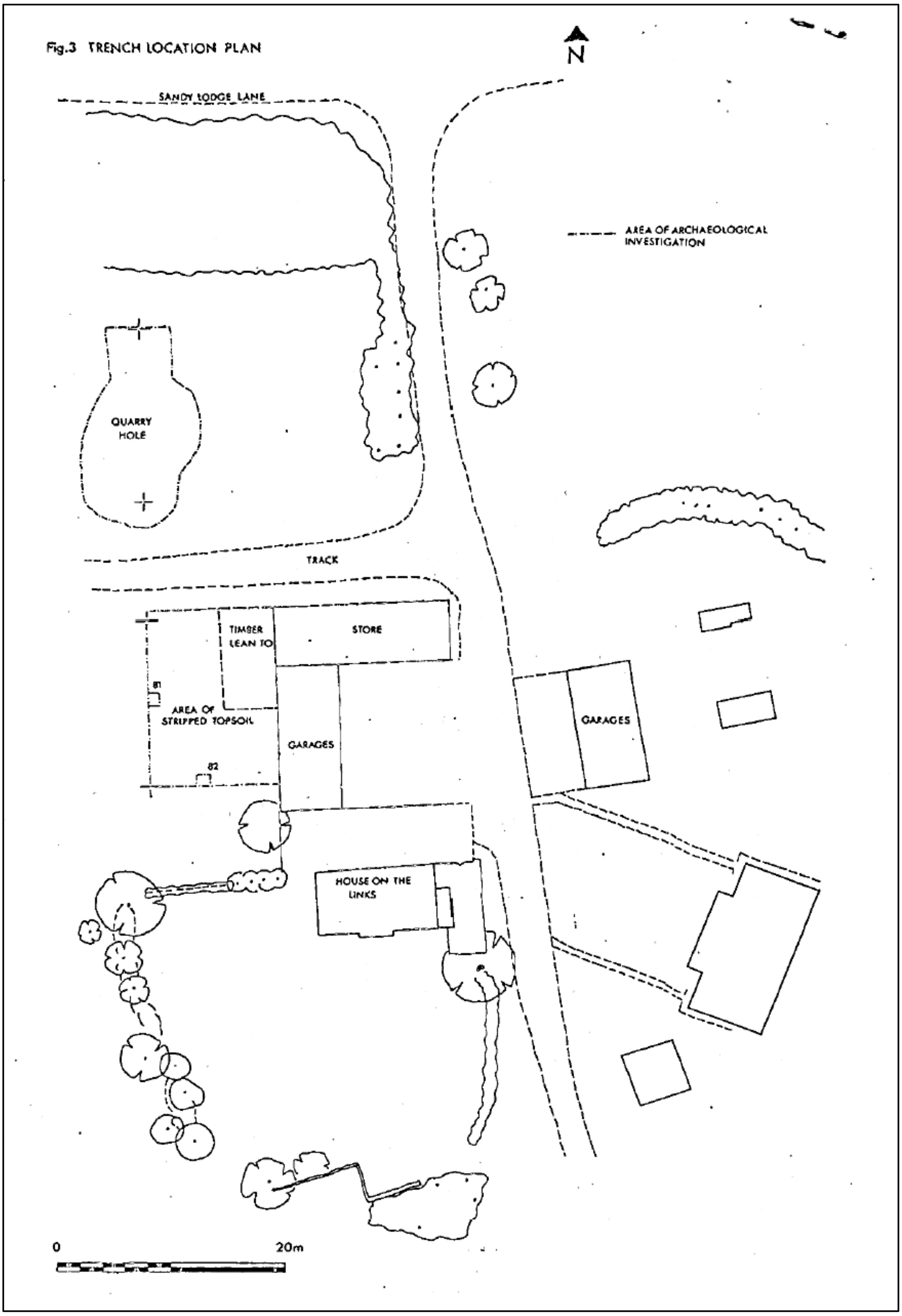


Figure 7.87: Discoidal knife from Hampermill Lane (Watford Museum, authors photograph)

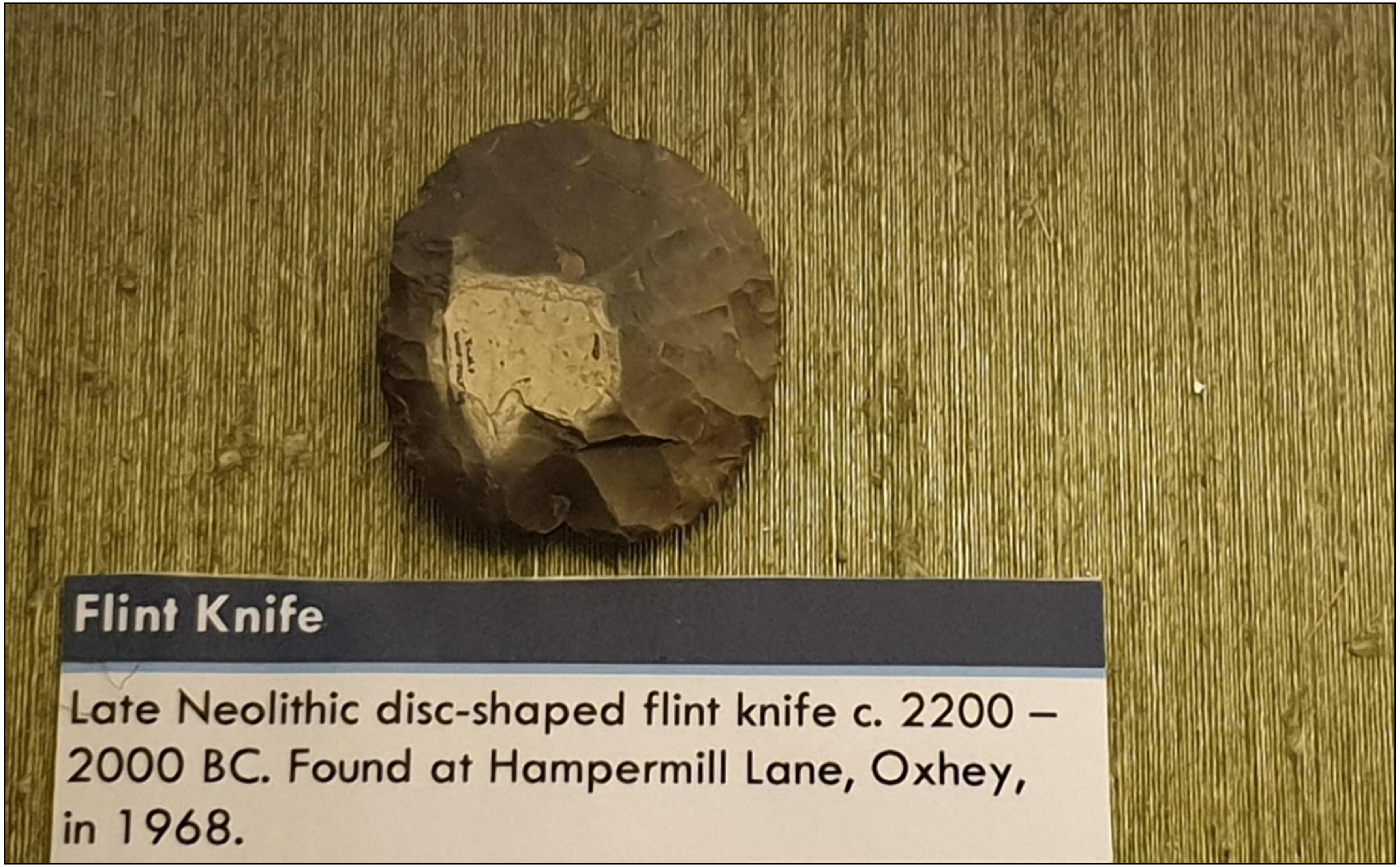


Figure 7.88: Illustration (A) showing location of Bathend Clump enclosure. Illustration B showing position of trenches across enclosure ditches (Phillipson, 1962: Figure 1)

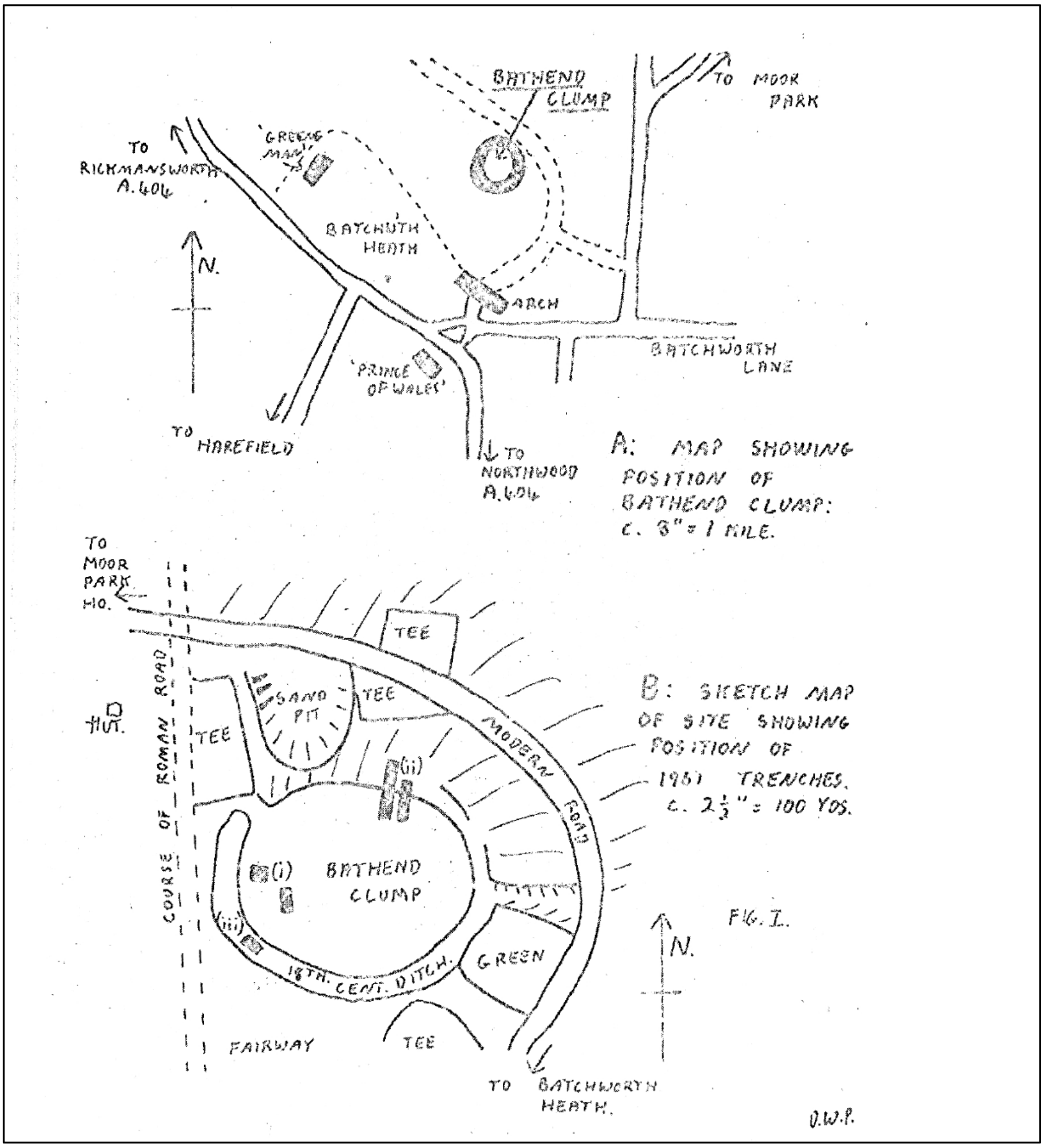


Figure 7.89: Neolithic enclosure at Bathend Clump (Collins, 1959: Figure 4)

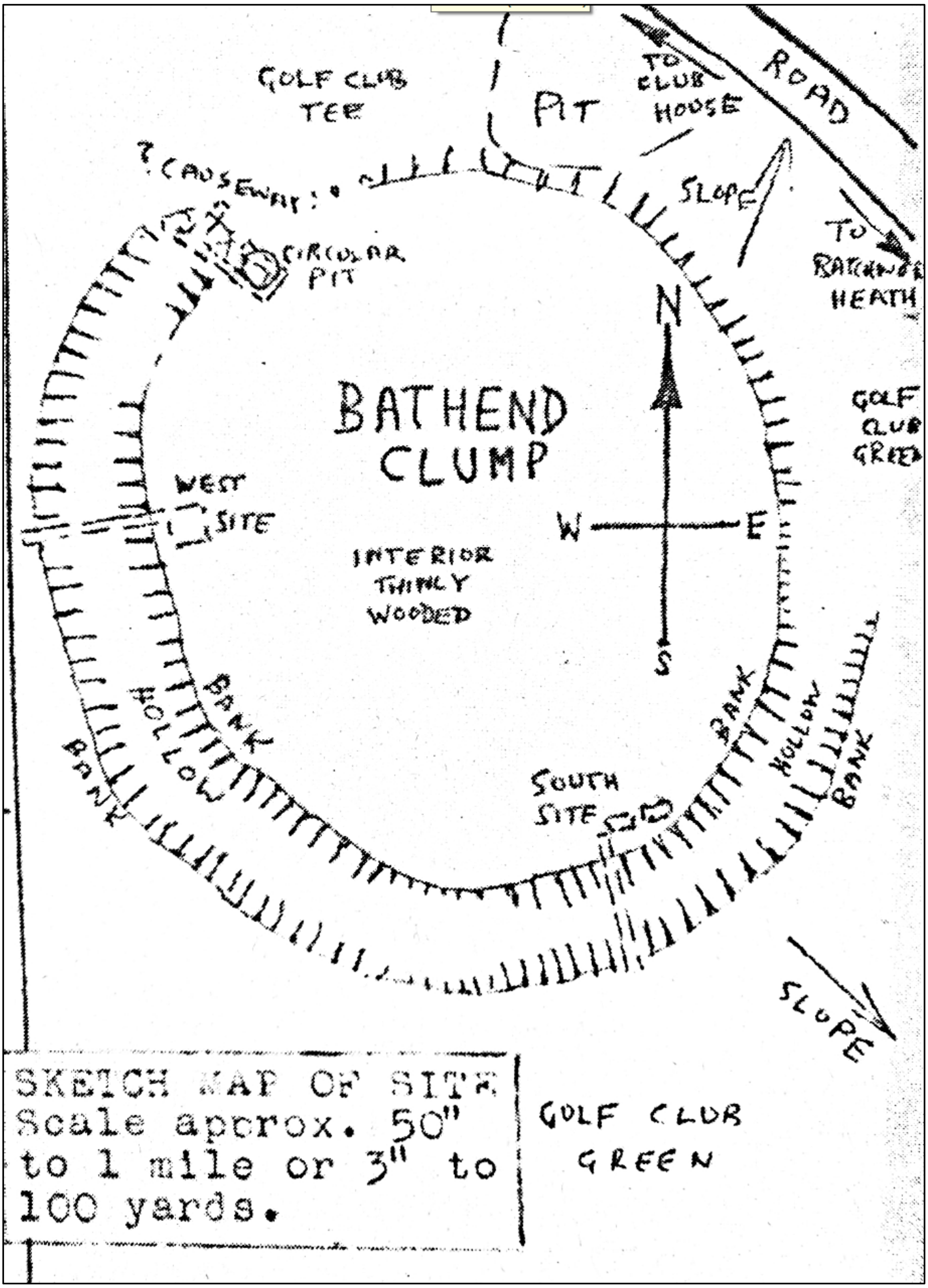
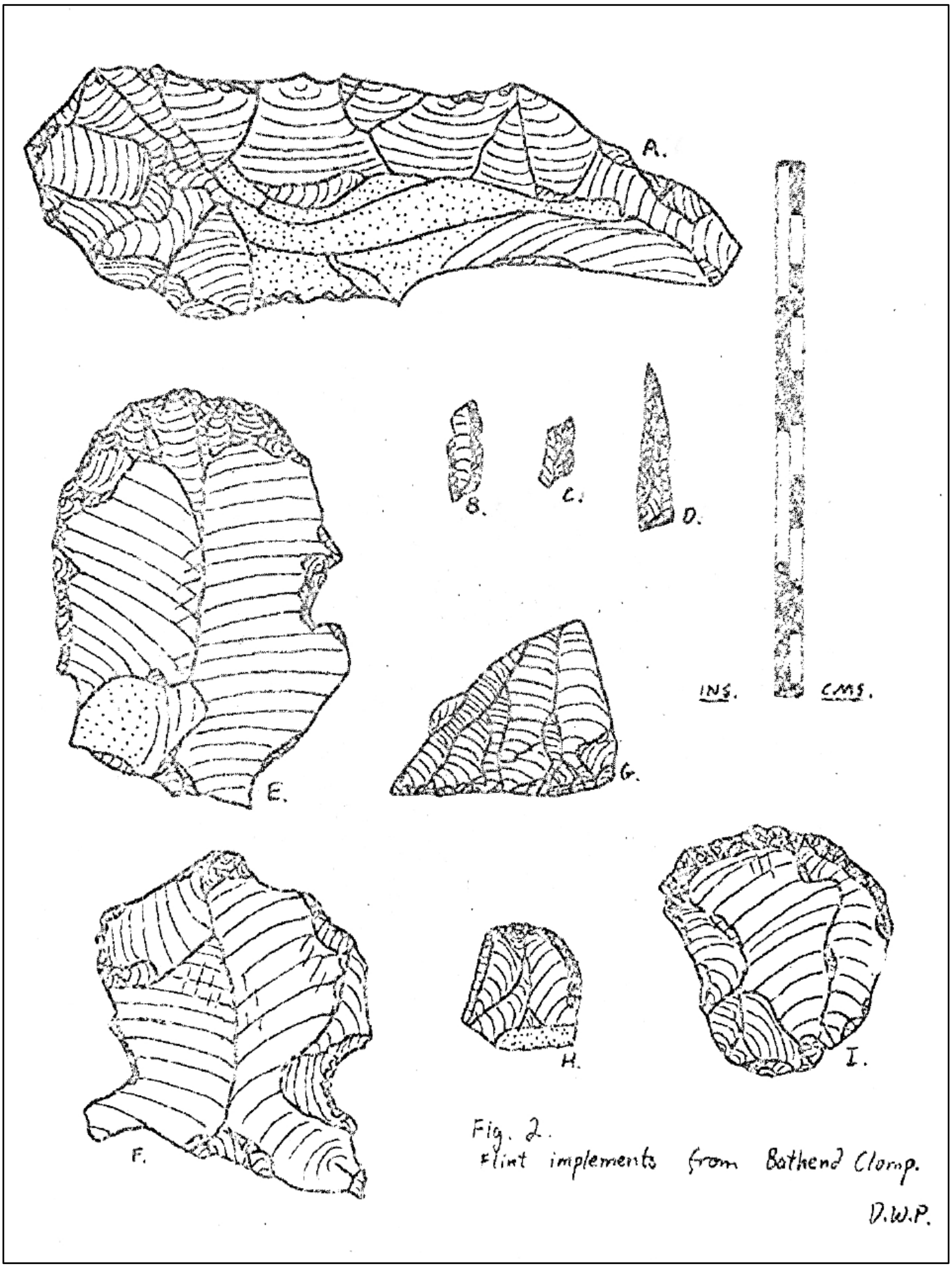


Figure 7.90: Flintwork from Bathend Clump (Phillipson, 1962)



Chapter 8: figures

Figure 8.1: Figure 3 from Bathend Clump documents ((Roger Jacobi archive, Franks House, British Museum)

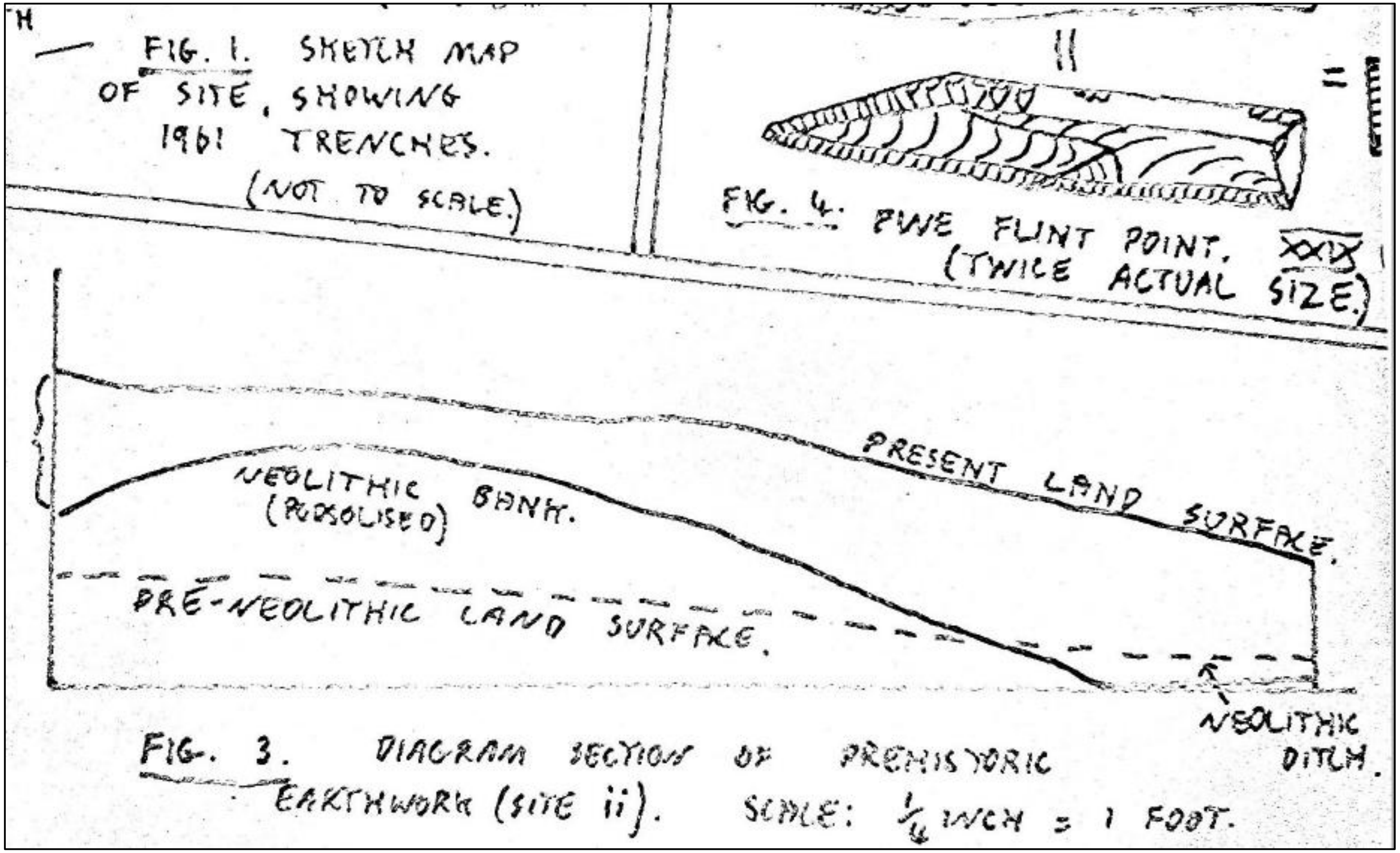


Figure 8.2: Distribution map for Neolithic axes (ArcMap 10.7.1)

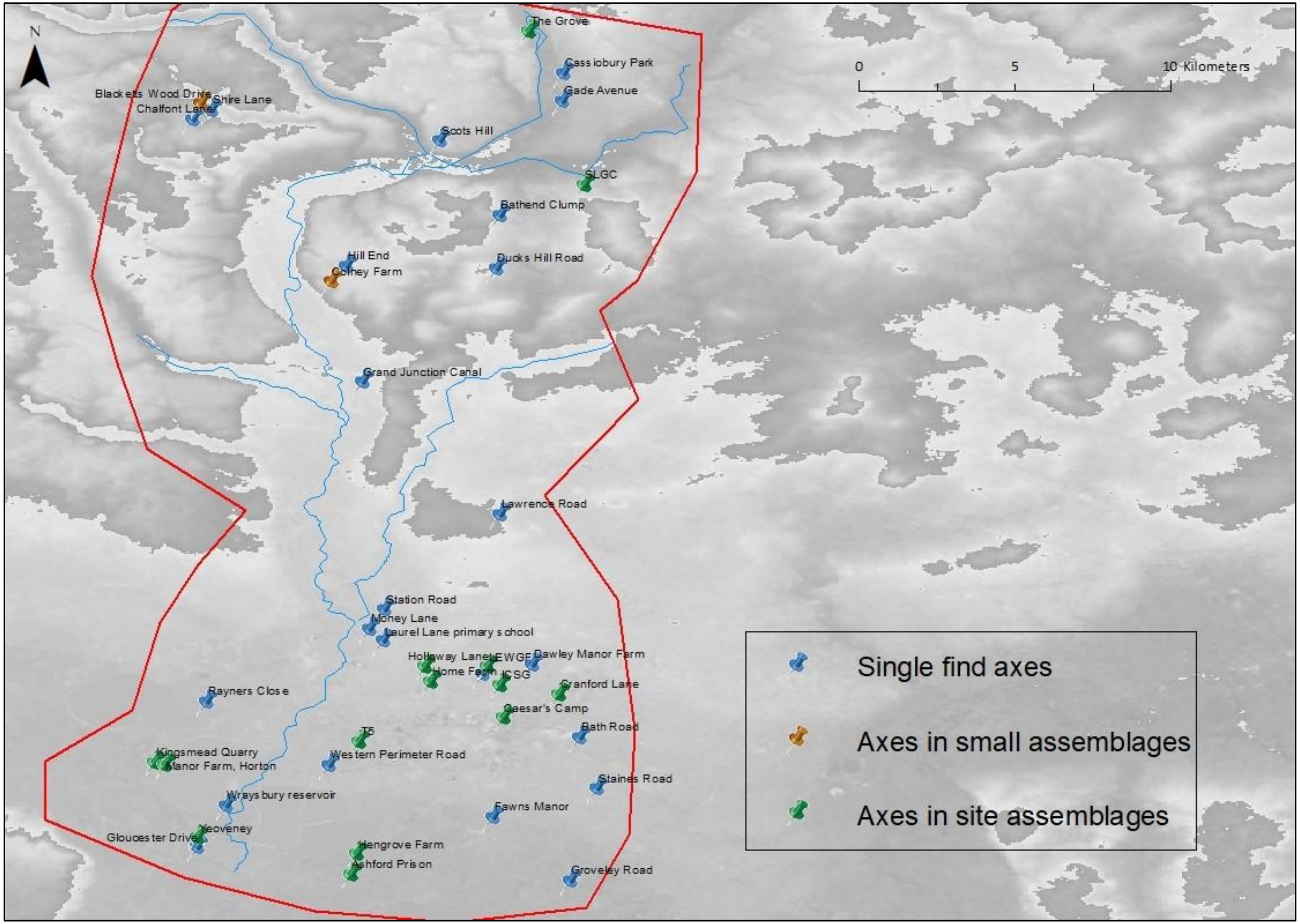


Figure 8.3: Laurel leaf tools (5 and 6) (Butler, 2005: Figure 54)

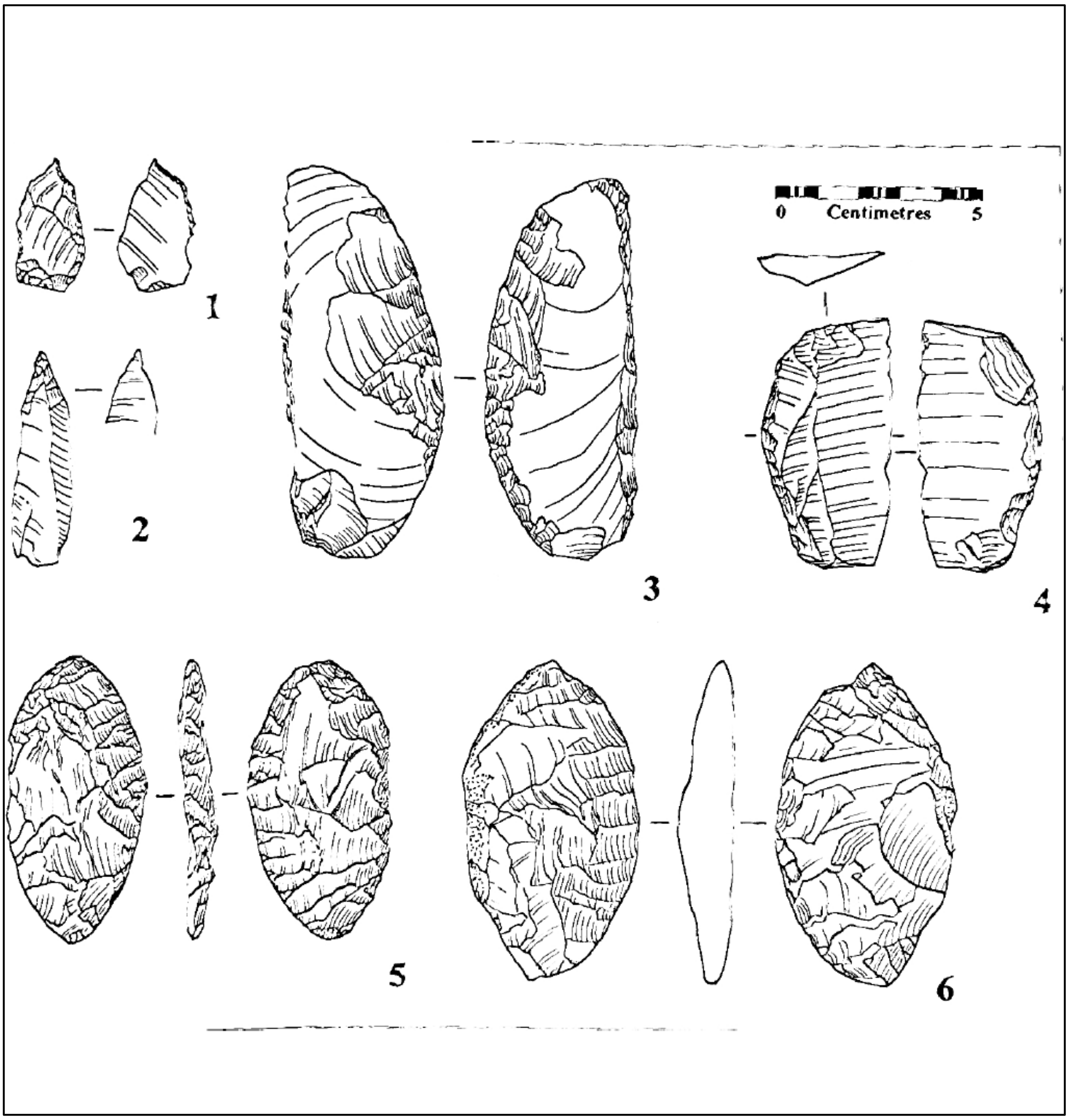


Figure 8.4: Replica arrowheads to show how they might be hafted (Butler, 2005: Plate 16)

Figure 8.5: Replica sickle to show how they might be hafted (Butler, 2005: Plate 26)

Figure 8.6: Replica axe to show how it might be hafted (Butler, 2005: Plate 19)

Figure 8.7: Discoidal and plano-convex knives (Butler, 2006: Figure 72)

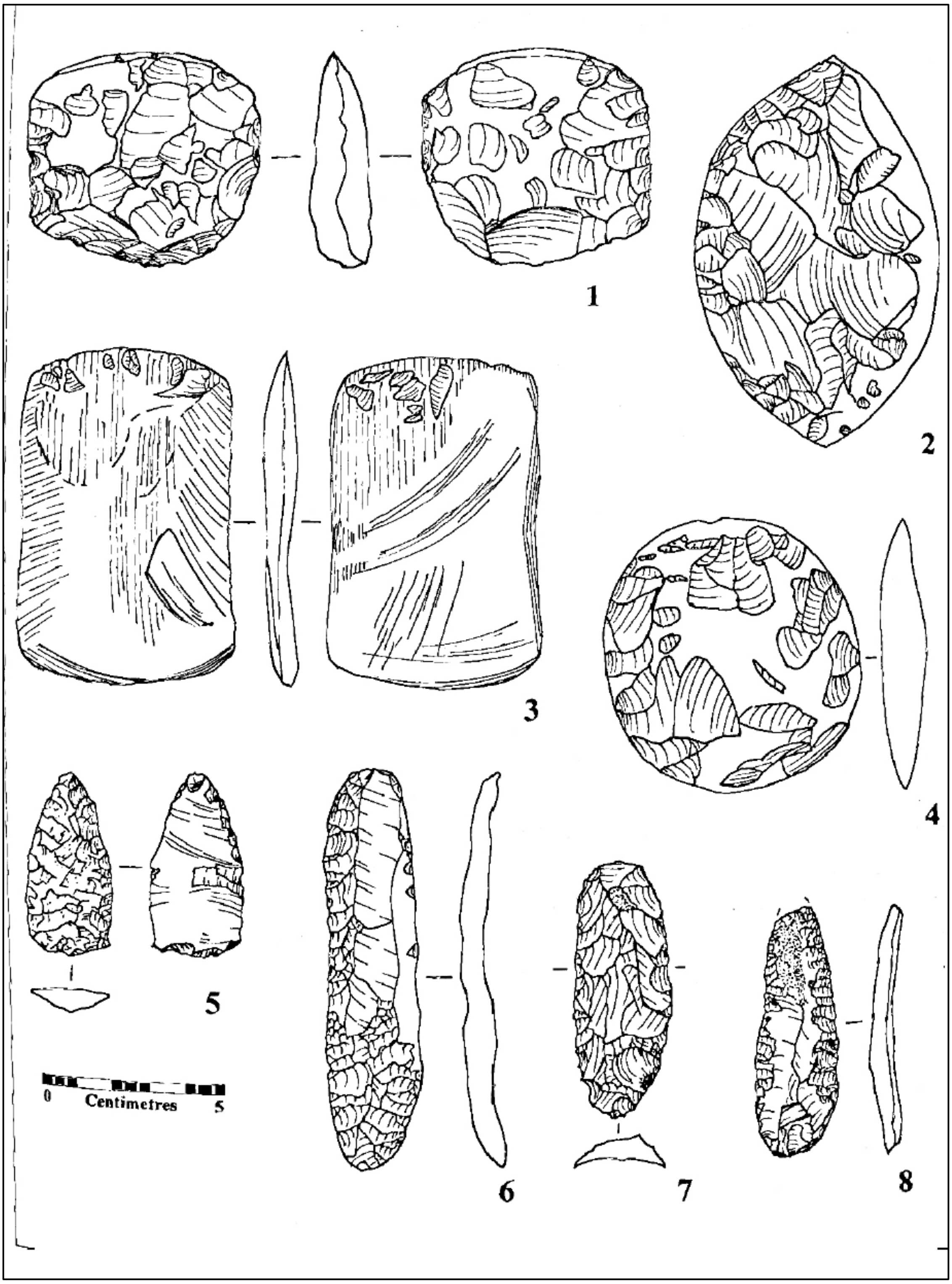


Figure 8.8: Transverse arrowhead from excavations at Horton (Wessex Archaeology)

Figure 8.9: Chisel and oblique arrowheads (Butler, 2006: Figure 66)

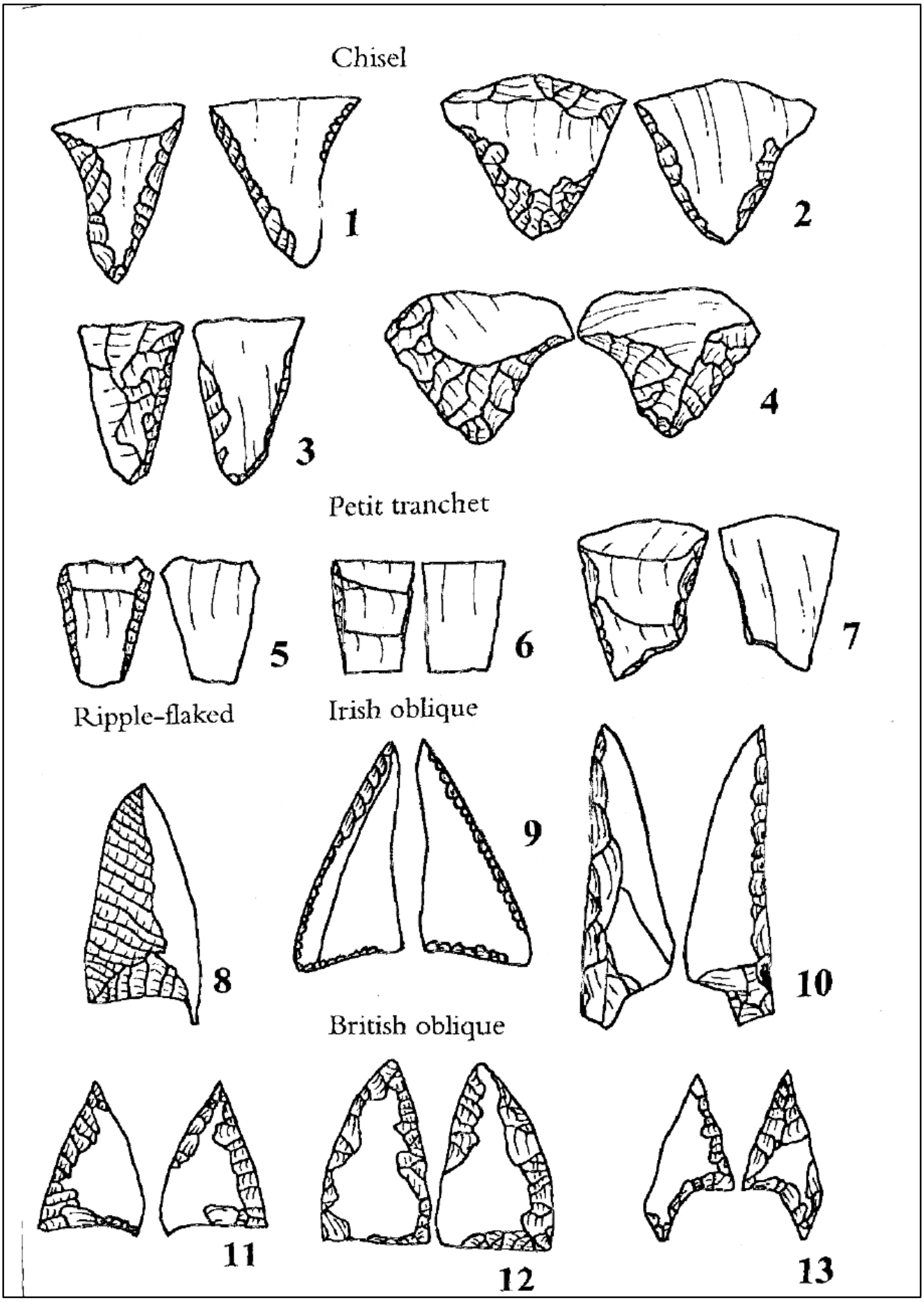


Figure 8.10: Chisel and oblique arrowheads (Butler, 2006: Figure 67)

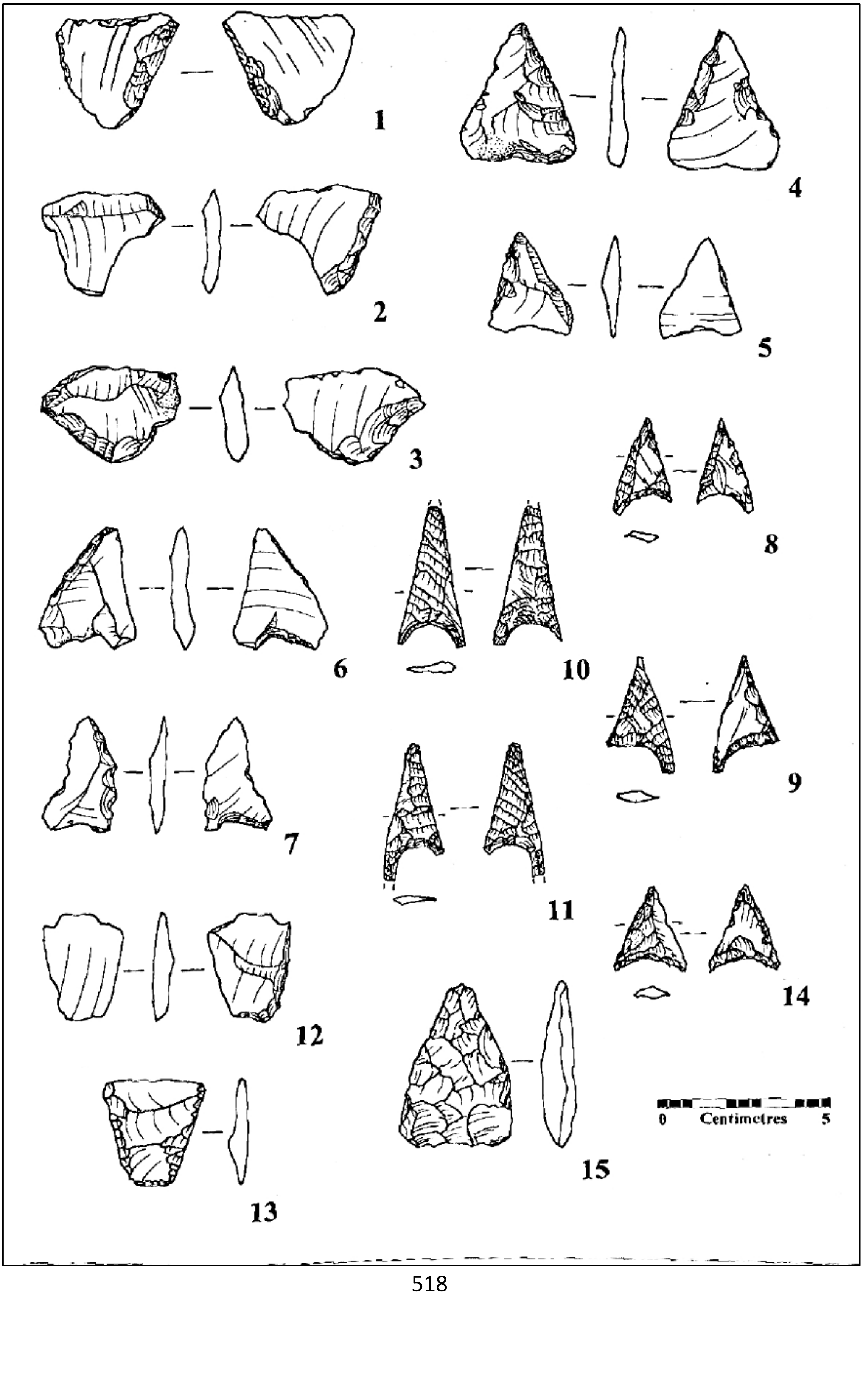


Figure 8.11: Early Neolithic horseshoe scraper from Colney Farm (Hillingdon Local Studies, Archives and Museum Service, authors photograph)

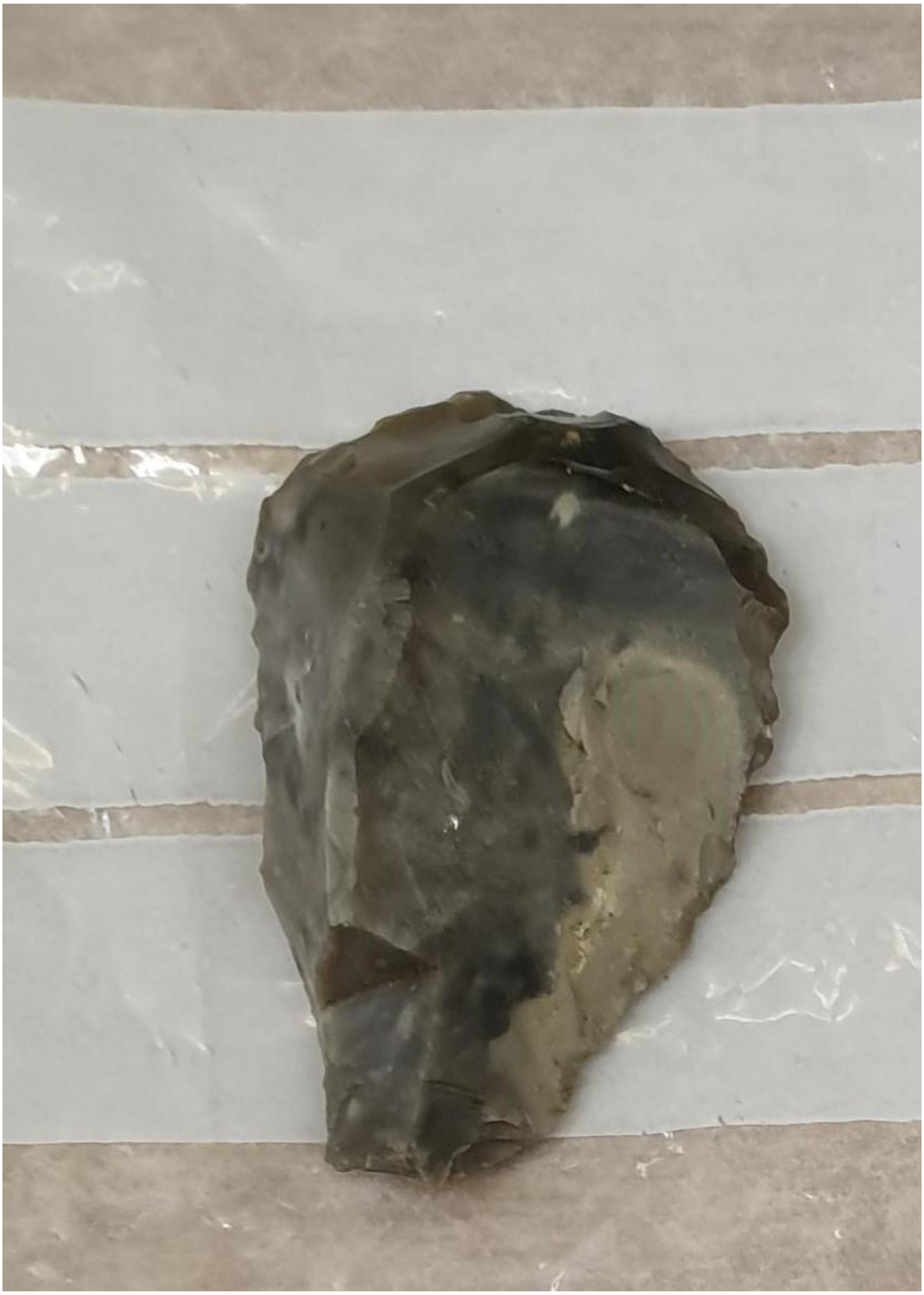


Figure 8.12: Fengate Bowl from Manor Farm, Horton (British Museum online: 1990, 1009.3)

Figure 8.13: Whipped cord maggot impressions (Gibson, 2002: Plate 12)

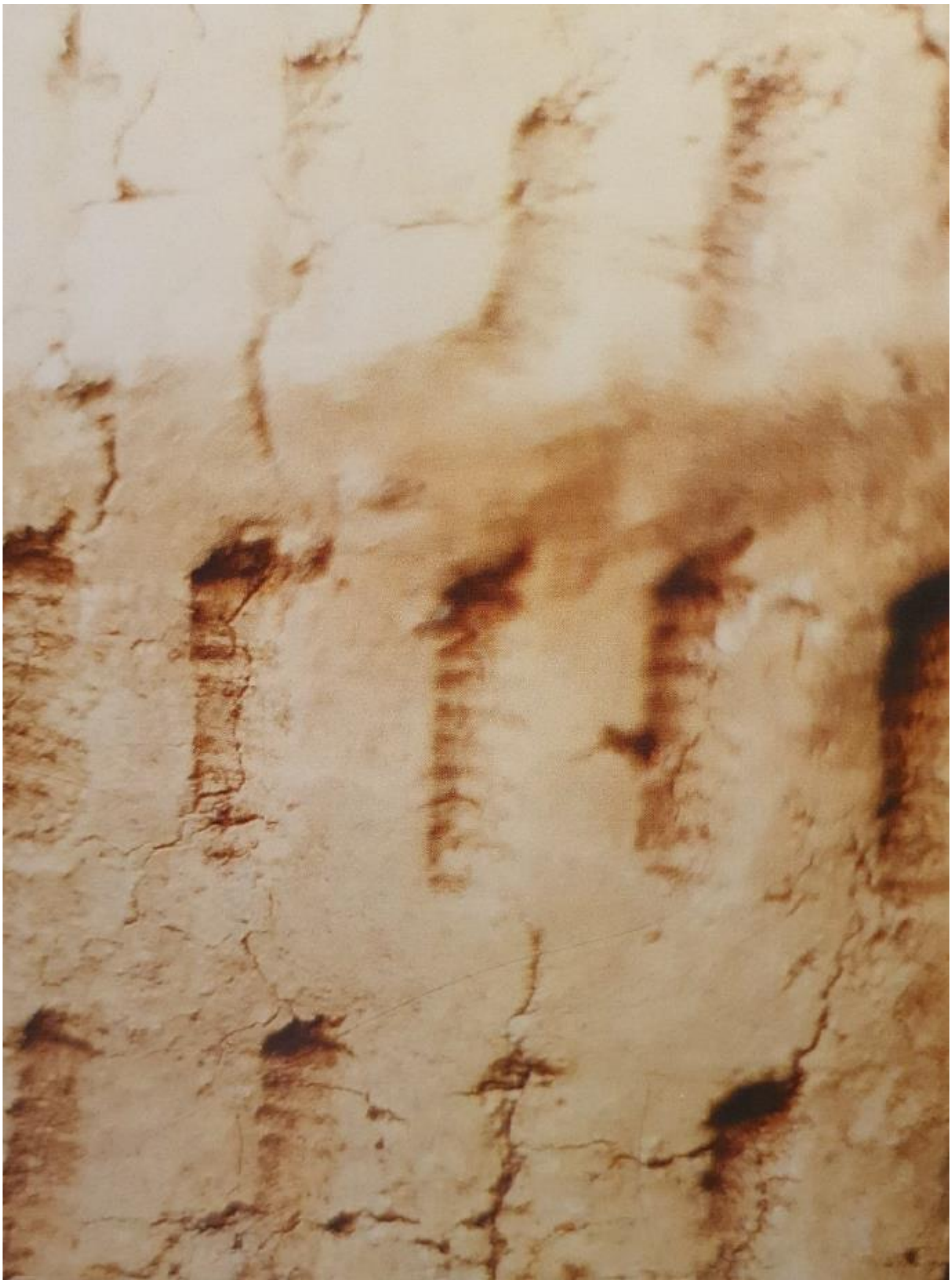


Figure 8.14: Birdbone impressions on Peterborough Ware (Gibson, 2002: Plate 13)

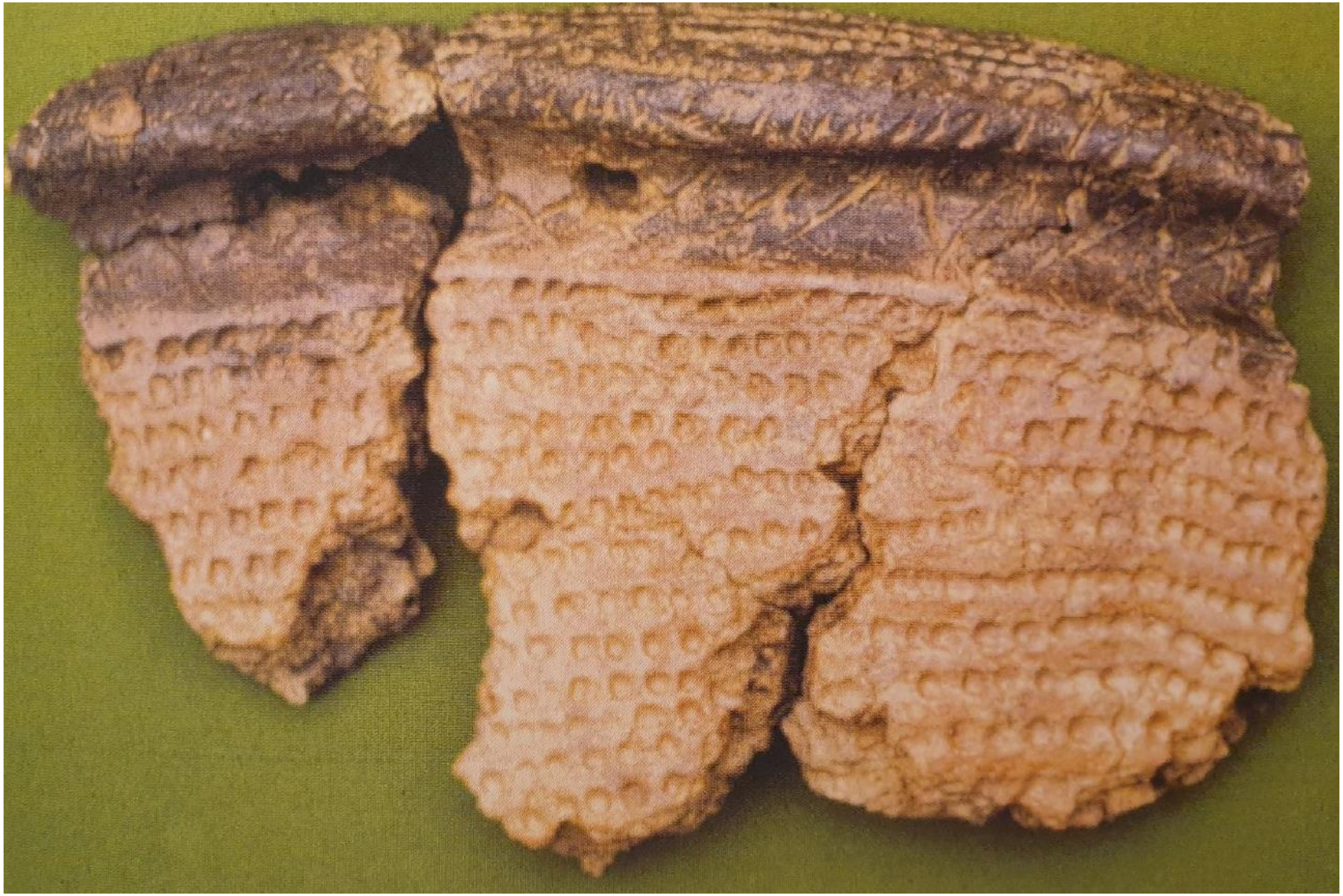


Figure 8.15: Early Neolithic taskscape in the Lower Colne Valley (M-Sorgo, 2021)

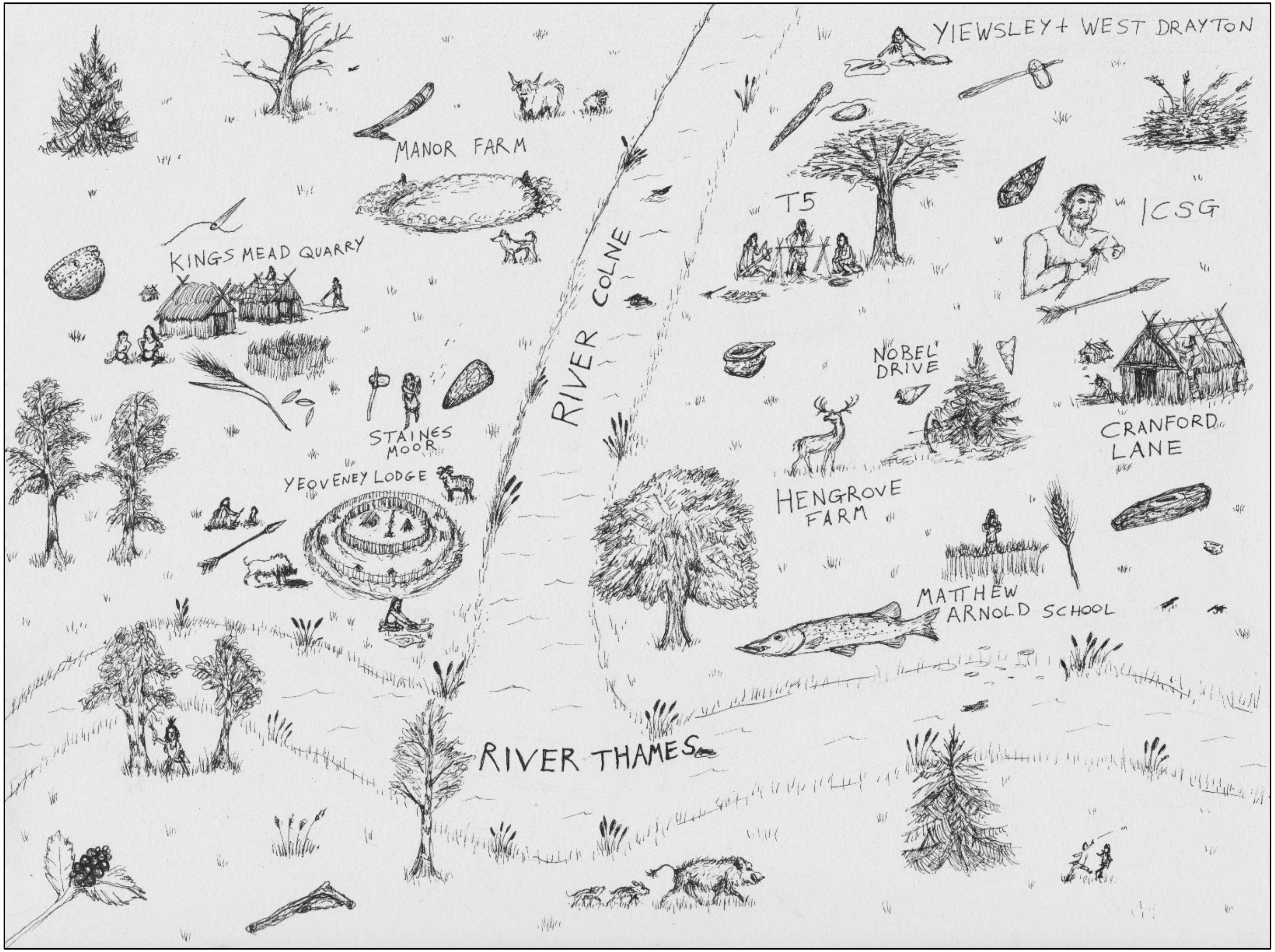


Figure 8.16: Kingsmead Quarry taskscape (M-Sorgo Artwork; 2021)

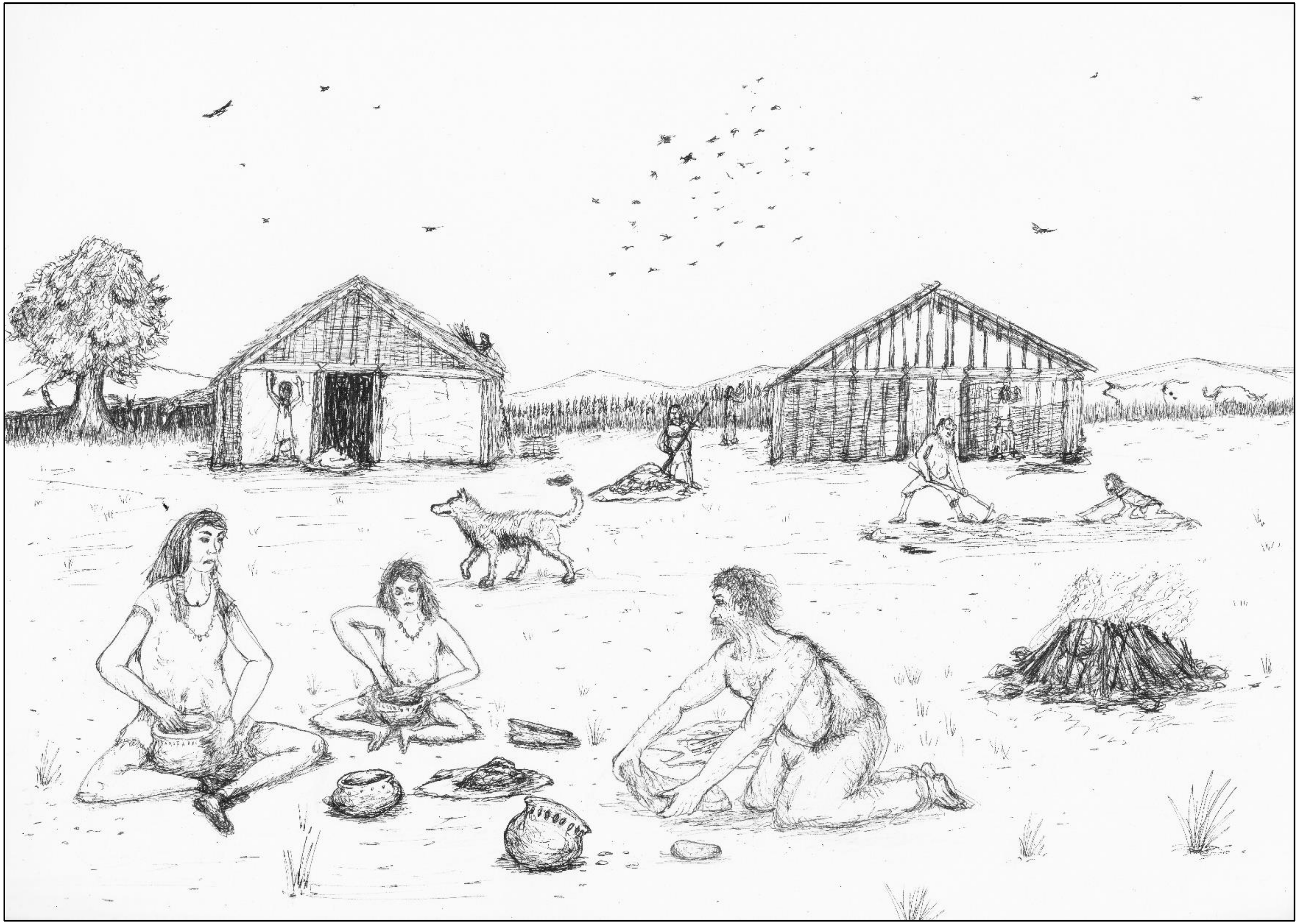


Figure 8.17: Yeoveney Lodge causewayed enclosure and taskscape (M-Sorgo, 2021)

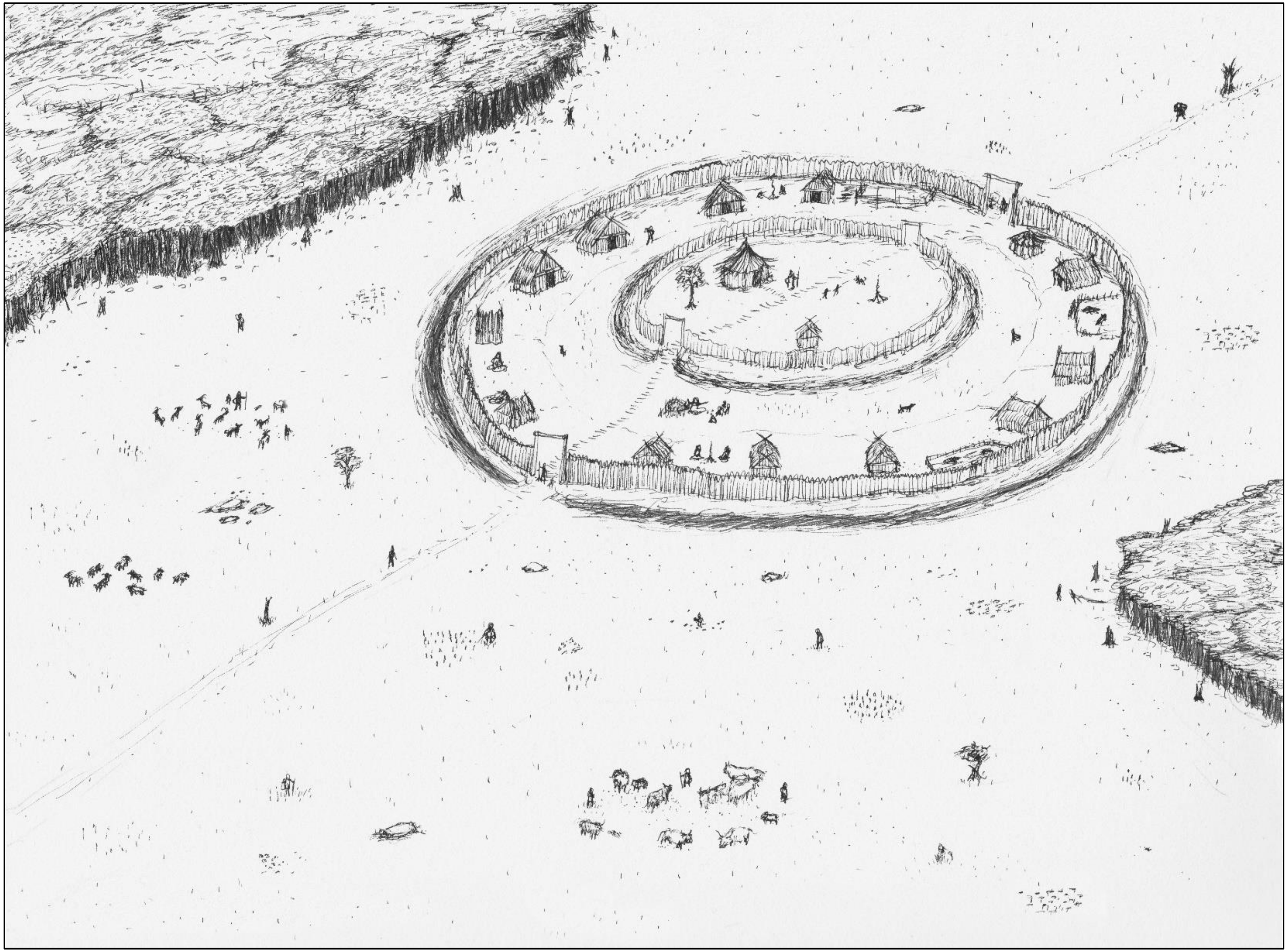
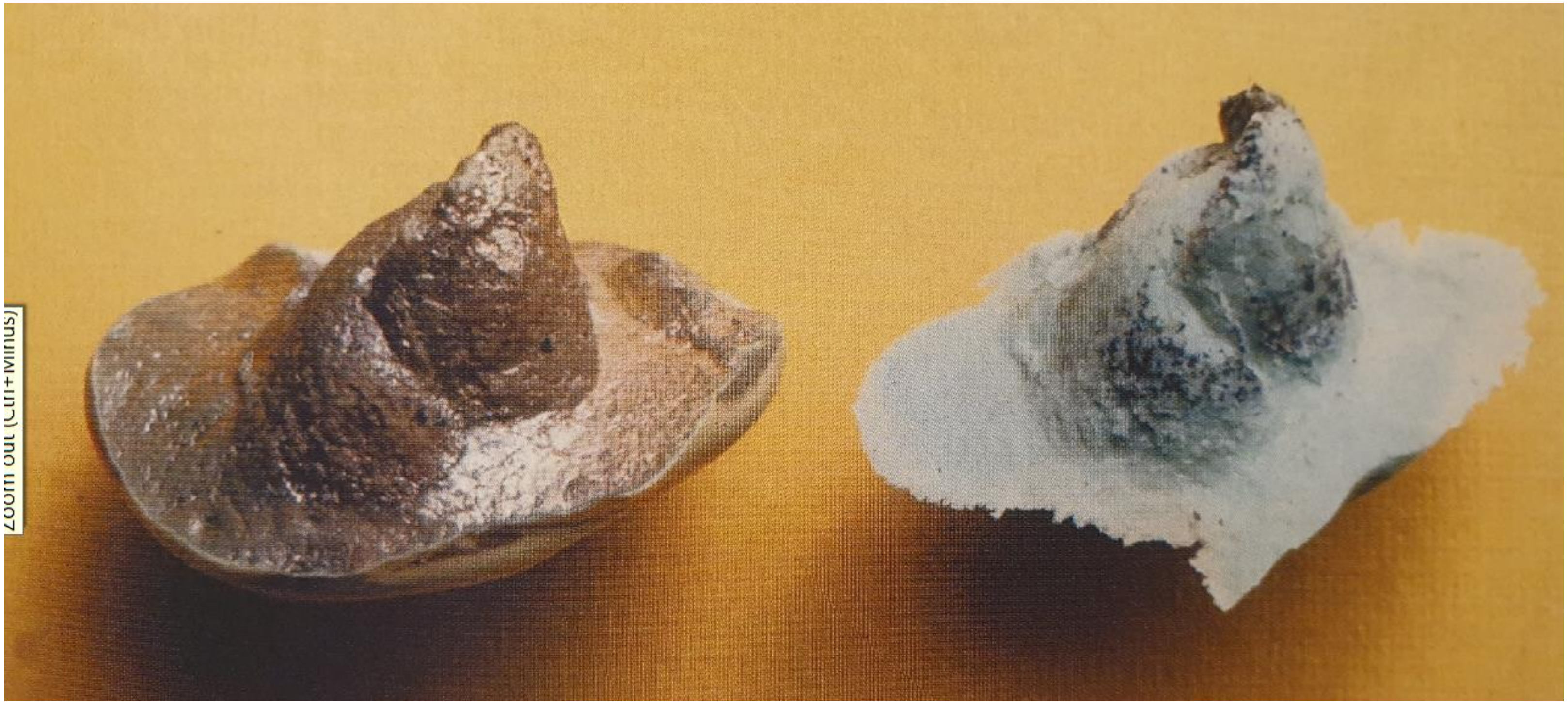


Figure 8.18: Fingernail and tip impressions in Peterborough Ware vessel from the River Thames (Gibson, 2002: Plate 8)



Appendix i: Archaeological Research Frameworks (Historic England, https://historicengland.org.uk/content/docs/research/table-historic-environment-research-frameworks-26-02-18-xls/

Coverage						Framework					
Region	County/Urban area	Local Planning Authority	Period	Theme	Name of Research Framework	Resource Assessment	Research Agenda	Research Strategy	Date	Available online	Queries
East of England	all	Central Bedfordshire, Bedford Borough Council, Cambridgeshire County Council, Essex County Council, Hertfordshire County Council, Norfolk County Council, City and District of St Albans, Peterborough City Council, Suffolk County Council	all	all	East of England Regional Research Framework	x			1997	http://www.eaareports.org.uk/research_and_archaeology.htm	ALGAO East of England
East of England	all	" "	all	all	East of England Regional Research Framework		x	x	2000	http://www.eaareports.org.uk/research_and_archaeology.htm	ALGAO East of England
East of England	all	" "	all	all	Revised Regional Research Framework	x	x	x	2011	http://www.eaareports.org.uk/EAA%20OP24_RRF%20Revised_online.pdf	ALGAO East of England
East of England	Bedfordshire	Central Bedfordshire Council, Bedford Borough Council	all	all	Bedfordshire Research Framework	x	x	x	2007	http://www.persona.uk.com/a5dunstable/deposit-docs/DD026-DD050/DD-047.pdf	
East of England	Colchester	Colchester Borough Council	all	all	Colchester Urban Archaeological Assessment	x			2013	hardcopy http://www.oxbowbooks.com/oxbow/colchester-fortress-of-the-war-god.html	
East of England	St Albans	St Albans City & District Council	all	all	St Albans Urban Archaeological Assessment	x			2005	hardcopy http://www.amazon.co.uk/Albans-Buried-Towns-Assessment-Archaeology/dp/1842171496	
East Midlands		Boston Borough Council, Derbyshire County Council, Leicester City, Leicestershire County Council, Lincoln City Council, Lincolnshire County Council, North Kesteven District Council, Northamptonshire County Council, Nottingham City Council, Nottinghamshire County Council, Peak District National Park, South Kesteven District Council	all	all	Updated East Midlands Regional Research Agenda and Strategy (2012) and Resource Assessment (2006)	x	x	x	2006/2012	http://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/wiki/	East Midlands Research Framework steering group. Contact David Knight <dknight@yorkat.co.uk>
East Midlands	Lincoln	Lincoln City Council	all	all	Lincoln Archaeological Research Assessment	x	x		2003	http://www.lincoln.gov.uk/visitor-and-leisure/events-entertainment-and-attractions/archaeology/lara-%28lincoln-archaeological-research-assessment%29/111738.article	
East Midlands	Witham Valley	Lincoln City Council, Lincolnshire County Council	all	all	The archaeology of the Witham Valley	x				http://www.lincsheritage.org/publications/archaeological_reports/details.php?bookref=ftwv	
	Witham Valley	" "	all	all	Archaeological Research Design for the Witham Valley		x	x		http://www.lincolnshire.gov.uk//Download/720	
East Midlands	Nottinghamshire		all	all	Nottinghamshire Aggregates Research Framework	x	x	x	2013	http://tparchaeology.co.uk/notts-aggregates-resource-assessment.htm	
East Midlands	Derwent Valley World Heritage Site	Derbyshire County Council, Derby City Council, Amber Valley Borough Council, Derbyshire Dales District Council, Erewash Borough Council	all	all	Derwent Valley Research Framework		x	x	2016	http://www.derwentvalleymills.org/wp-content/uploads/2016/09/DVMWHS-Research-Framework.pdf	Contact David Knight <dknight@yorkat.co.uk>
London		City of London, Greater London, Southwark Council	all	all	London Archaeological Research Framework	x			2000	http://www.mola.org.uk/publications/archaeology-greater-london-assessment-archaeological-evidence-human-presence-area-now	
London		" "	all	all	London Archaeological Research Framework		x		2002	http://www.mola.org.uk/sites/default/files/downloads/Research%20framework%20for%20London%20Archaeology%20MOLA%202002.pdf	
London		" "	all	all	London Archaeological Research Framework			x	forthcoming		
North East		Durham County Council, Newcastle City Council and Tyne & Wear, Northumberland County Council, Northumberland National Park, Tees Archaeology	all	all	North East Regional Research Framework	x	x	x	2006	http://www.durham.gov.uk/research	
North East	Northumberland National Park	Northumberland National Park	all	all	Northumberland National Park Archaeological Research Framework	x	x	x	2010	http://www.northumberlandnationalpark.org.uk/understanding/historyarchaeology/archaeologicalresearchframework	
North East	Durham World Heritage Site	Durham County Council	all	all	Durham WHS Research Framework				2015	https://www.dur.ac.uk/resources/imems/WHS/WHSResearchFrameworkFinal.pdf	
North West		Cheshire, Cumbria County Council, Greater Manchester, Lake District National Park Authority, Lancashire County Council	all	all	North West Regional Research Framework	x			2007	http://www.liverpoolmuseums.org.uk/mol/archaeology/arf/	ALGAO North East
North West		" "	all	all	North West Regional Research Framework		x	x	2007	http://www.liverpoolmuseums.org.uk/mol/archaeology/arf/	
North West	Chester	Cheshire West and Chester	all	all	An Archaeological Research Framework for Chester		x		2013	http://www.cheshirearchaeology.org.uk/wp-content/uploads/UAD-Chester-Research-Frameworks.pdf	
North West, North East	Hadrians Wall World Heritage Site	Cumbria County Council, Northumberland County Council, Newcastle City Council, Councils for North Tyneside and South Tyneside, Carlisle, Allerdale, and Copeland District	all	all	Hadrian's Wall WHS Research Framework	x			2007	https://www.dur.ac.uk/research/directory/view/?mode=project&id=485	
South East - Solent Thames		East Berkshire, West Berkshire Council, Buckinghamshire County Council, Hampshire County Council, Isle of Wight Council, Milton Keynes Council, New Forest National Park, Oxford City Council, Oxfordshire County Council, Southampton City Council, Winchester City Council	all	all	Solent Thames Research Framework	x	x		2008-2010, published 2014	http://thehumanjourney.net/index.php?option=com_content&task=view&id=553&Itemid=277 Regional resource assessment - http://thehumanjourney.net/index.php?option=com_content&task=view&id=552 County resource assessments - http://thehumanjourney.net/index.php?option=com_content&task=view&id=551 Regional research agenda - http://thehumanjourney.net/index.php?option=com_content&task=view&id=564	
South East - Solent Thames	Oxford	Oxford City Council	all	all	Oxford Archaeological Resource Assessment and Research Agenda	x	x		2012	http://www.oxford.gov.uk/PageRender/decP/OxfordArchaeologicalPlan.htm	
South East - Solent Thames	Winchester	Winchester City Council	all	all	Winchester Urban Archaeology Assessment	x	x		forthcoming		
South East – South East		West Sussex County Council, East Sussex County Council, Chichester District Council, Surrey County Council, Kent County Council, Canterbury City Council	all	all	South East Research Framework	x	x		forthcoming		
South East – South East		" "	all	all	South East Palaeolithic Research Framework	x	x		2010	http://www.academia.edu/4045605/SERF_-_South-East_Region_Palaeolithic_Research_Framework	
South East		Winchester City Council	all	all	Winchester: Swithun's 'City of Happiness and Good Fortune': An Archaeological Assessment	x			2017	https://www.oxbowbooks.com/oxbow/winchester-swithun-s-city-of-happiness-and-good-fortune.html	

South West		Bath and North-East Somerset Council, Bristol City Council, Cornwall Council, Dartmoor National Park, Devon County Council, Dorset County Council, Exeter City Council, Exmoor National Park, Gloucester City, Gloucestershire County Council, North Somerset Council, Plymouth City Council, Somerset County Council, South Gloucestershire Council, Torbay Council, Wiltshire Council	all	all	South West Regional Research Framework	x	x		2007	http://www1.somerset.gov.uk/archives/hes/swarf/publications.htm	ALGAO South East
South West		" "	all	all	South West Regional Research Framework			x	2012	http://www1.somerset.gov.uk/archives/hes/swarf/publications.htm	
South West	**Scilly Isles**	Scilly Isles Council	all	all	Scilly Historic Environment Research Framework (SHERF)	x	x		2012	http://scilly.gov.uk/planning/heritage-conservation-environment	
South West	**Cirencester**	Cotswold District Council	all	all	Cirencester urban archaeological assessment	x			1994	http://www.cotswoldarchaeology.co.uk/content/uploads/2011/07/Cirencester_Town__Landscape_1st-half.pdf	
South West	**Stonehenge World Heritage Site**	Wiltshire Council	all	all	Stonehenge World Heritage Site Research Framework	x	x	x	2005	http://www.historicengland.org.uk/images-books/publications/stonehenge-whs-research-framework/	
South West	**Avebury World Heritage Site**	Wiltshire Council	all	all	Avebury World Heritage Site Research Framework	x	x	x	2001	https://www.historicengland.org.uk/images-books/publications/archaeological-research-agenda-avebury/	
South West	**Stonehenge and Avebury World Heritage Site**	Wiltshire Council	all	all	Stonehenge and Avebury Revised Research Framework	x	x	x	2016	http://www.stonehengeandaveburywhs.org/world-heritage-site-research-framework/	
South West	**Exmoor National Park**	Exmoor National Park	all	all	Historic Environment Research Framework for Exmoor 2010-2015		x	x	2010	http://www.exmoor-nationalpark.gov.uk/__data/assets/pdf_file/0009/137268/research_framework_series1.pdf	
South West	**Bristol Avon Basin**	Bristol City Council, Bristol and North East Somerset	Palaeolithic	all	Palaeolithic Research Framework for the Bristol Avon Basin	x	x	x	2005	http://www.bristol.gov.uk/sites/default/files/documents/planning_and_building_regulations/archaeology/Palaeolithic%20Research%20Framework%20for%20the%20Bristol%20Avon%20basin.pdf	
South West	**Forest of Dean**	Gloucestershire	all	all	Research Framework for Forest of Dean District	x	x		2017	https://www.gloucestershire.gov.uk/media/16569/forest-of-dean-gloucestershire-research-framework-2017.pdf	Gloucestershire Council
West Midlands		Birmingham City Council, City of Coventry, Dudley M.B.C., Herefordshire Council, Sandwell Metropolitan Borough Council, Shropshire Council, Staffordshire County Council, Stoke on Trent City Council, Warwickshire County Council, Wolverhampton City Council, Worcester City Council, Worcestershire County Council	all	all	West Midlands Regional Research Framework	x	x	x	2011	http://archaeologydataservice.ac.uk/archives/view/wmrf_he_2016/downloads.cfm?part=papers	ALGAO West Midlands
West Midlands		" "	all	all	West Midlands Regional Research Framework county assessments	x	x	x	2002-03	http://archaeologydataservice.ac.uk/archives/view/wmrf_he_2016/downloads.cfm?part=papers	
West Midlands	**Worcester**	Worcester City Council	all	all	Worcester Archaeological Research Framework	x	x	x	2007	http://www.worcester.gov.uk/documents/10499/47612/Worcester+Research+Framework+v2.51-reduced.pdf/bc7e8fb8-f6fc-4061-b483-f22dabae323c	
West Midlands	**Hereford**	Hereford City Council	all	all	Hereford Archaeological Research Framework	x	x		2013	http://htt.herefordshire.gov.uk/docs/HEREFORD_ARF.pdf	
West Midlands	**Shrewsbury**	Shrewsbury City Council	all	all	Shrewsbury Urban Archaeological Assessment				2010	hardcopy http://www.oxbowbooks.com/oxbow/shrewsbury.htmlhttp://www.amazon.co.uk/Albans-Buried-Towns-Assessment-Archaeology/dp/1842171496	
Yorkshire		Humber Archaeology Partnership, North East Lincolnshire, North Lincolnshire Council, North York Moors National Park, North Yorkshire County Council, South Yorkshire, West Yorkshire Archaeology Service, City of York Council, Yorkshire Dales National Park	all	all	Yorkshire Regional Research Framework	x			2003	http://www.yas.org.uk/shop/index.php?main_page=product_info&products_id=29	
Yorkshire		" "	all	all	Yorkshire Regional Research Framework	x			2005	https://www.historicengland.org.uk/images-books/publications/yorks-arch-res-framework-resource-assessment/	
Yorkshire		" "	all	all	Yorkshire Regional Research Framework		x		2007		
Yorkshire	**West Yorkshire**	Bradford, Calderdale, Kirklees, Leeds, Wakefield	all	all	West Yorkshire Archaeological Research Agenda	x	x		2009-2013	http://www.archaeology.wyjs.org.uk/wyjs-archaeology-research.asp	
South East and East of England	**Greater Thames Estuary**	Essex County Council, Kent County Council	all	all	Greater Thames Estuary Archaeological Research Framework	x			1999	http://www.thamesweb.com/action-groups-menu/archaeological-steering-committee	
South East and East of England	**Greater Thames Estuary**	" "	all	all	Greater Thames Estuary Archaeological Research Framework		x	x	2010	http://www.thamesweb.com/action-groups-menu/archaeological-steering-committee	
all	all	all	**Palaeolithic and Mesolithic**	all	Research Frameworks for the Palaeolithic and Mesolithic of Britain and Ireland		x		1999		
all	all	all	**Palaeolithic**	all	Research and Conservation Framework for the British Palaeolithic		x	x	2008	http://www.historicengland.org.uk/images-books/publications/research-and-conservation-framework-for-british-palaeolithic/	
all	all	all	**Mesolithic**	all	Mesolithic Research and Conservation Framework	x			2012	http://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-1632-1/dissemination/pdf/Resource_Assessment_2013-10-05.pdf	
all	all	all	**Mesolithic**	all	Mesolithic Research and Conservation Framework		x	x	2013	http://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-1632-1/dissemination/pdf/MRF_complete.pdf	
all	all	all	**Iron Age and Roman**	all	Iron Age and Roman Archaeological Research Agenda	x	x		2001	http://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-281-1/dissemination/pdf/cba_rr_125.pdf	
all	all	all	all	**Industrial Archaeology**	Research Framework For Industrial Archaeology in Britain	x	x		2005	Information available from: http://industrial-archaeology.org/aiareview.htm	
all	all	all	all	**Archaeometallurgy**	Research Framework for archaeometallurgy	x	x		2008	http://hist-met.org/publications/hms-occasional-publications.html	
all	all	all	**Roman**	**Pottery**	Research Strategy and Updated Agenda For the Study of Roman Pottery in Britain		x	x	2013	http://mprgframework.info/	
all	all	all	**Medieval and Post Medieval**	**Pottery**	A Research Framework for Post-Roman Ceramic Studies in Britain		x	x	2011	http://romanpotterystudy.org/SGRPPublications/strategy/strategy.html	
all with maritime borders	all	all	all	**Maritime, marine and coastal archaeology**	Maritime Archaeological Research Agenda for England	x	x	x	2013	hardcopy only http://www.archaeologyuk.org/books/ransley2013	http://archaeologydataservice.ac.uk/archives/view/mheresearch_eh_2011/downloads.cfm
all	all	all	all	Extractive Industries	A Research Framework for the Archaeology of the Extractive Industries in England (Mining and Quarrying)	x	x		2016	https://www.namho.org/research.php	

Appendix ii: sedimentary stratigraphy and sampling from environmental trenches 1, 2 and 3 (Bates et al; 2001: tables 2-6)

Table 2

	Monoliths	Bulk samples	Kubiena Tins
Environmental Trench 1			
P1	M1, 0.40-1.07m	Bulk 1, 0.50-0.60m	Kubiena Tin K1, 0.75-0.85m
	M2, 1.05-1.68m	Bulk 2, 0.60-0.70m	Kubiena Tin K2, 1.08-1.18m
		Bulk 3, 0.70-0.80m	Kubiena Tin K3, 1.40-1.50m
		Bulk 4, 0.80-0.85m	
		Bulk 5, 0.85-0.90m	
		Bulk 6, 1.00-1.10m	
		Bulk 7, 1.18-1.22m	
		Bulk 8, 1.30-1.40m	
		Bulk 9, 1.47-1.50m	
		Bulk 10, 1.50-1.60m	
		Bulk 11, 1.60-1.70m	
		Bulk 12, 1.72-1.78m	
P2	M3, 0.52-1.05m	Bulk 13, 0.60-0.70m	
	M4, 1.07-1.47m	Bulk 14, 1.25-1.30m	
	M6, 1.35-1.62m	Bulk 15, 1.30m (wood)	
		Bulk 16, 1.40-1.45m	
		Bulk 17, 1.45-1.50m	
		Bulk 18, 1.50-1.55m	
		Bulk 19, 1.56-1.62m	
P3	M5, 0.83-1.48m		
Environmental Trench 2			
	M7	Bulk 1 Bulk 9	
	M8	Bulk 2 Bulk 10	
	M9	Bulk 3 Bulk 11	
	M10	Bulk 4 Bulk 12	
		Bulk 5 Bulk 13	
		Bulk 6 Bulk 14	
		Bulk 7	
		Bulk 8	
Environmental Trench 3			
L1	M11, 0.42 – 1.37m	Bulk 1, 0.85-0.90m	
		Bulk 2, 1.05-1.10m	
		Bulk 3, 1.15-1.20m	
		Bulk 4, 1.30-1.35m	
L2		Bulk sample 0.35-0.40m	
		Bulk 5, 0.85-0.90m	
L3	M12, 0.40-1.50m	Bulk 6, 0.75-0.80m	
		Bulk sample, 0.90-0.95m	
		Bulk 7, 1.05-1.10m	
		Bulk 8, 1.20-1.25m	
L4	M13, 0.56-0.86m	Bulks ample 1.00-1.05m	
	M14, 1.15-1.50m	Bulk 9, 1.25-1.30m	
		Bulk 10, 1.35-1.40m	
L5	M15, 0.63-1.24m	Bulk 11, 0.75-0.80m	
		Bulk 12, 0.90-0.95m	
		Bulk 13, 1.10-1.15m	
L6	M16, 0.60-1.25m	Bulk 14, 0.95-1.00m	
		Bulk 15, 1.10-1.15m	
L7	M17, 0.82-1.60m	Bulk 17, 0.90-0.95m	
		Bulk 18, 1.35-1.40m	
		Bulk 19, 1.55-1.60m	
		Bulk 20 1.65-1.70m	
L8	M18, 1.20-1.75m	Bulk 21, 0.50-0.55m	
		Bulk 22, 0.95-1.00m	
		Bulk 23, 1.05-1.10m	
		Bulk 24, 1.25-1.30m	
		Bulk 25, 1.35-1.40m	
		Bulk 26, 1.45-1.50m	
		Bulk 27, 1.55-1.60m	
		Bulk 28, 1.65-1.70m	

Table 3

	P1	P2	P3
Top soil/alluvium (1.1)	2100 2101	2100 2101	2100 2101
Oncoidal gravel (1.2)	2102 2103 2104 2105 2106	2103 2104 2105	2102 2104 2105
Organic complex (1.3)	2107 2108 2109 2110 2111	2107 2108 2109 2110 2111	2107 2109 2111
Grey flint gravel (1.4)	2112	2114 2112	2112

Table 4

	Trench 2
Dark grey silts (2.1)	2026 2028
Yellow-brown silt (2.2)	2022 2023 2024 2025 2026 2027 2034 2035
Tufa silt (2.3)	2037 2038 2040 2041 2042
Peat-organic silt/Organic complex (2.4)	2043 2044 2045 2046
Red – brown gravel (2.5)	2029 2030 2031
Grey gravels (2.6)	2047

Table 5

	L1	L2	L3	L4	L5	L6	L7	L8
Yellow-brown clay-silt	2078	2079	2078	2078	2078	2078	2078	2078
(3.1)	2079	2178	2079	2079	2079	2079	2079	
	2081							
	2082							
Tufa silt	2085							
(3.2.a)	2085							
	2085							
	2096							
	2097							
	2098							
Tufa silt	2099							
(3.2.b)	2115							
			2116	2134				
			2117					
			2118					
			2119					
			2120					
			2121					
			2122					
Tufa silt			2123					
(3.2.c)			2124					
			2125					
			2126					
			2127					
					2142	2149		
					2143	2150		
					2144			
					2145			
					2147			
Cemented tufa		2124						
(3.3.a)		2130						
		2131						
		2080						
Cemented tufa		2132						
(3.3.b)		2133						
				2135				
				2136				
				2137				
				2138				
Cemented tufa				2139				
(3.3.c)				2140				
				2141				

	L1	L2	L3	L4	L5	L6	L7	L8
						2151		
						2152		
						2153		
						2154		
						2155		
						2156		
Oncoidal tufa							2157	2203
Gravel							2158	2204
(3.4)							2159	2205
							2160	2206
							2161	2207
							2162	2208
							2163	2209
							2164	
							2165	
							2200	
Peat/Organic silt					2018		2201	2100
(3.5)								2210
Yellow-brown clay-silt	2077	2077	2080	2080		2147		
(3.6)			2077	2077				
Grey Gravel						2148	2202	2211
(3.7)								
Red Brown Gravel	2076	2076			2076			
(3.8)								

Table 6

Sediment Group	Pollen	Plant macrofossils	Molluscs	Ostracods
Brown silt				
Dark grey silts				
Yellow-brown silt				
Tufa silt	Trench 3, 2 samples		Trench 3, samples 1, 2, 3, 4 Area of archaeological excavation adjacent to Trench 3 samples 28, 40, 43	Trench 3, 1 sample
Cemented tufa				
Tufa pellet gravel/Oncoidal tufa			Trench 1, P1, sample 9 and 10	Trench 1, P1 4 samples
Peat-organic silt/Organic complex	Trench 1, P1, 2 samples Trench 2, 3 samples	Trench 1, P1, samples 8 and B Trench 2, samples 9, 10, 11	Trench 1, P1, sample 8	
Yellow-brown clay-silt				
Grey gravels				
Red-brown gravels				

Appendix iii: Contexts of faunal assemblage at Sanderson's (MoLAS, 2006: tables 11 & 12,)

Table 11: Hand-collected (3D recorded) and wet-sieved animal bone (summary)

CONTEXT	SAMPLE	WT (kg)	FRAGS	PRES	LMAM	SMAM	FISH	BIRD	AMPH	MANDIBLES	MEASURABLE	EPIPHYSES	COMPLETE	COMMENTS
119	0	0.12	>75mm	medium	8	0	0	0	0	0	0	2	0	?mustelid radius
120	0	0.1	>75mm	good	3	0	0	0	0	0	0	0	0	longbone
133	0	0.18	<25mm	poor	199	1	0	0	0	0	0	0	0	longbone
133	115	0.01	25-75mm	poor	2	0	0	0	0	0	0	1	0	
133	117	0.002	<25mm	poor	10	0	0	0	0	0	0	0	0	
133	118	0.002	<25mm	poor	4	0	0	0	0	0	0	0	0	
133	119	0.005	25-75mm	poor	5	0	0	0	0	0	0	0	0	
133	122	0.002	<25mm	poor	9	0	0	0	0	0	0	0	0	
133	124	0.001	<25mm	good	1	0	0	0	0	0	0	0	0	
133	170	0.005	25-75mm	poor	15	0	0	0	0	0	0	0	0	
133	421	0.02	25-75mm	poor	40	0	0	0	0	0	0	0	0	longbone
133	483	0.005	25-75mm	poor	5	0	0	0	0	0	0	0	0	
133	526	0.002	25-75mm	poor	2	0	0	0	0	0	0	0	0	longbone
133	529	0.005	25-75mm	medium	1	0	0	0	0	0	0	0	0	
133	592	0.001	<25mm	poor	1	0	0	0	0	0	0	0	0	longbone
133	595	0.001	<25mm	poor	3	0	0	0	0	0	0	0	0	longbone
133	599	0.001	<25mm	good	2	0	0	0	0	0	0	0	0	longbone
133	683	0.005	25-75mm	poor	13	0	0	0	0	0	0	0	0	longbone
133	712	0.02	25-75mm	poor	50	0	0	0	0	0	0	0	0	longbone
133	713	0.01	25-75mm	poor	15	0	0	0	0	0	0	0	0	longbone
133	714	0.15	>75mm	poor	10	0	0	0	0	0	0	0	0	longbone
133	715	0.08	>75mm	poor	5	0	0	0	0	0	0	0	0	
133	716	0.01	>75mm	poor	5	0	0	0	0	0	0	0	0	longbone
133	717	0.003	25-75mm	medium	3	0	0	0	0	0	0	0	0	longbone
133	718	0.005	>75mm	medium	5	0	0	0	0	0	0	0	0	longbone
133	719	0.02	25-75mm	medium	25	0	0	0	0	0	0	0	0	longbone
133	720	0.04	25-75mm	good	2	0	0	0	0	0	0	1	0	
133	721	0.02	25-75mm	medium	25	0	0	0	0	0	0	0	0	

CONTEXT	SAMPLE	WT (kg)	FRAGS	PRES	LMAM	SMAM	FISH	BIRD	AMPH	MANDIBLES	MEASURABLE	EPIPHYSES	COMPLETE	COMMENTS
133	722	0.01	>75mm	medium	1	0	0	0	0	0	0	0	0	longbone
133	723	0.005	25-75mm	medium	2	0	0	0	0	0	0	0	0	longbone
133	724	0.005	>75mm	medium	1	0	0	0	0	0	0	0	0	longbone
133	725	0.01	25-75mm	medium	5	0	0	0	0	0	0	0	0	
133	726	0.005	25-75mm	medium	1	0	0	0	0	0	0	0	0	longbone
133	727	0.01	25-75mm	poor	15	0	0	0	0	0	0	0	0	
133	728	0.01	<25mm	poor	10	0	0	0	0	0	0	0	0	longbone
133	729	0.001	<25mm	medium	1	0	0	0	0	0	0	0	0	
133	730	0.002	<25mm	poor	5	0	0	0	0	0	0	0	0	longbone
133	731	0.005	25-75mm	medium	2	0	0	0	0	1	0	0	0	
133	732	0.001	<25mm	poor	2	0	0	0	0	0	0	0	0	longbone
133	733	0.005	25-75mm	poor	7	0	0	0	0	0	0	1	0	longbone
133	734	0.001	25-75mm	medium	1	0	0	0	0	0	0	0	0	longbone
133	735	0.001	<25mm	poor	8	0	0	0	0	0	0	0	0	longbone
133	736	0.001	<25mm	poor	4	0	0	0	0	0	0	0	0	
133	737	0.005	<25mm	poor	10	0	0	0	0	0	0	0	0	longbone
133	738	0.002	25-75mm	poor	5	0	0	0	0	0	0	0	0	
133	739	0.02	25-75mm	poor	10	0	0	0	0	0	0	0	0	longbone
133	740	0.001	25-75mm	poor	3	0	0	0	0	0	0	0	0	
133	742	0.01	25-75mm	medium	1	0	0	0	0	0	0	0	0	
133	743	0.05	25-75mm	poor	5	0	0	0	0	1	0	0	0	
133	744	0.005	25-75mm	medium	10	0	0	0	0	0	0	0	0	longbone
133	764	0.001	25-75mm	medium	1	0	0	0	0	0	0	0	0	
133	785	0.001	25-75mm	medium	1	0	0	0	0	0	0	0	0	
133	839	0.002	25-75mm	medium	1	0	0	0	0	0	0	0	0	longbone
133	840	0.005	25-75mm	poor	15	0	0	0	0	0	0	0	0	
133	858	0.001	<25mm	poor	2	0	0	0	0	0	0	0	0	
133	872	0.005	25-75mm	medium	1	0	0	0	0	0	0	0	0	
133	873	0.001	<25mm	poor	2	0	0	0	0	0	0	0	0	
133	874	0.005	25-75mm	poor	2	0	0	0	0	0	0	0	0	
133	875	0.001	25-75mm	poor	5	0	0	0	0	0	0	0	0	

CONTEXT	SAMPLE	WT (kg)	FRAGS	PRES	LMAM	SMAM	FISH	BIRD	AMPH	MANDIBLES	MEASURABLE	EPIPHYSES	COMPLETE	COMMENTS
167	175	0.002	<25mm	poor	5	0	0	0	0	0	0	0	0	
167	178	0.001	<25mm	medium	6	1	0	0	0	0	0	0	0	
167	181	0.005	25-75mm	poor	6	0	0	0	0	0	0	0	0	
167	1855	0.001	<25mm	poor	5	0	0	0	0	0	0	0	0	
167	1943	0.001	<25mm	poor	3	0	0	0	0	0	0	0	0	
167	1986	0.001	<25mm	poor	3	0	0	0	0	0	0	0	0	
167	2006	0.001	25-75mm	poor	1	0	0	0	0	0	0	1	0	
167	2012	0.002	25-75mm	medium	1	0	0	0	0	0	0	0	0	
167	2026	0.003	<25mm	poor	5	0	0	0	0	0	0	0	0	
167	2028	0.001	<25mm	poor	2	0	0	0	0	0	0	0	0	
167	2047	0.001	<25mm	poor	4	0	0	0	0	0	0	0	0	
167	2067	0.002	25-75mm	medium	1	0	0	0	0	0	0	0	0	
167	2078	0.001	<25mm	poor	2	0	0	0	0	0	0	0	0	
167	2101	0.001	<25mm	good	5	0	0	0	0	0	0	0	0	
167	2145	0.005	25-75mm	poor	1	0	0	0	0	0	0	0	0	
167	2192	0.003	<25mm	poor	10	0	0	0	0	0	0	0	0	
167	2227	0.001	<25mm	poor	2	0	0	0	0	0	0	0	0	
167	2242	0.005	25-75mm	poor	1	0	0	0	0	0	0	2	0	
167	2243	0.001	<25mm	poor	2	0	0	0	0	0	0	0	0	
167	2258	0.005	25-75mm	poor	1	0	0	0	0	0	0	0	0	longbone
167	2315	0.001	25-75mm	poor	2	0	0	0	0	0	0	0	0	
167	2326	0.001	<25mm	poor	3	0	0	0	0	0	0	0	0	
167	2329	0.002	25-75mm	medium	3	0	0	0	0	0	0	0	0	
167	2335	0.003	<25mm	medium	5	0	0	0	0	0	0	0	0	
167	2337	0.002	<25mm	poor	1	0	0	0	0	0	0	1	0	
167	2346	0.001	<25mm	poor	2	0	0	0	0	0	0	0	0	
167	2376	0.002	25-75mm	poor	4	0	0	0	0	0	0	0	0	
167	2396	0.002	<25mm	medium	2	0	0	0	0	0	0	0	0	
167	2398	0.005	25-75mm	poor	4	0	0	0	0	0	0	0	0	
167	2422	0.001	<25mm	poor	1	0	0	0	0	0	0	0	0	longbone
167	2433	0.001	<25mm	poor	2	0	0	0	0	0	0	0	0	longbone

CONTEXT	SAMPLE	WT (kg)	FRAGS	PRES	LMAM	SMAM	FISH	BIRD	AMPH	MANDIBLES	MEASURABLE	EPIPHYSES	COMPLETE	COMMENTS
167	2438	0.001	<25mm	poor	1	0	0	0	0	0	0	0	0	longbone
167	2440	0.001	<25mm	poor	1	0	0	0	0	0	0	0	0	
167	2463	0.002	25-75mm	poor	4	0	0	0	0	0	0	0	0	longbone
184	0	0.002	<25mm	medium	5	0	0	0	0	0	0	0	0	longbone
184	182	0.001	<25mm	poor	1	0	0	0	0	0	0	0	0	
184	185	0.001	<25mm	poor	1	0	0	0	0	0	0	0	0	
184	2515	0.02	25-75mm	poor	20	0	0	0	0	0	0	0	0	longbone
184	2516	0.005	25-75mm	poor	6	0	0	0	0	0	0	1	0	longbone
184	2644	0.002	25-75mm	medium	1	0	0	0	0	0	0	0	0	
184	2654	0.001	<25mm	poor	4	0	0	0	0	0	0	0	0	longbone
184	2683	0.005	25-75mm	poor	20	0	0	0	0	0	0	0	0	longbone
184	2789	0.02	25-75mm	poor	25	0	0	0	0	0	0	0	0	longbone
184	2792	0.002	25-75mm	poor	3	0	0	0	0	0	0	0	0	longbone
184	2975	0.005	<25mm	poor	25	0	0	0	0	0	0	0	0	longbone
184	2989	0.001	<25mm	poor	11	0	0	0	0	0	0	0	0	longbone
184	3018	0.001	<25mm	poor	4	0	0	0	0	0	0	0	0	longbone
184	3055	0.001	<25mm	poor	2	0	0	0	0	0	0	0	0	longbone
184	3057	0.003	<25mm	poor	25	0	0	0	0	0	0	0	0	longbone
184	3058	0.002	<25mm	poor	6	0	0	0	0	0	0	0	0	longbone
184	3085	0.001	<25mm	poor	4	0	0	0	0	0	0	0	0	
184	3166	0.005	<25mm	poor	30	0	0	0	0	0	0	0	0	longbone
184	3207	0.001	<25mm	poor	6	0	0	0	0	0	0	0	0	longbone
184	3208	0.005	<25mm	poor	30	0	0	0	0	0	0	0	0	longbone
184	3210	0.005	25-75mm	poor	15	0	0	0	0	0	0	0	0	longbone
TOTAL		**1.479**			**1259**	**4**	**0**	**0**	**0**	**2**	**0**	**10**	**0**	

Table 12: The animal bones, detailed summary

CONTEXT	SAMPLE	SPECIES	PART	AGE	STATE
119	0	red deer	lower limb	mature	
119	0	red deer	upper limb	mature	
119	0	sheep-sized	lower limb	mature	
133	0	beaver	tooth	mature	
133	0	red deer	tooth	mature	
133	0	red deer	antler	mature	
133	0	red deer	lower limb	mature	
133	0	red deer	rib	mature	
133	0	pig	tooth	mature	
133	0	pig	lower limb	mature	
133	115	pig	lower limb	mature	
133	483	pig	tooth	mature	
133	529	pig	tooth	mature	
133	712	red deer	tooth	mature	
133	712	red deer	antler	mature	
133	714	red deer	antler	mature	
133	715	red deer	anler	mature	
133	716	red deer	antler	mature	
133	719	red deer	tooth	mature	
133	720	red deer	upper limb	mature	
133	721	red deer	upper limb	mature	
133	725	red deer	tooth	mature	
133	727	pig	tooth	mature	
133	729	red deer	tooth	mature	
133	731	red deer	tooth	mature	
133	731	pig	tooth	mature	
133	733	pig	lower limb	mature	
133	739	pig	lower limb	mature	
133	740	pig	lower limb	mature	
133	742	pig	upper limb	mature	
133	743	pig	tooth	mature	
133	764	pig	tooth	mature	
133	785	pig	tooth	mature	
133	840	red deer	upper limb	mature	
133	872	pig	tooth	mature	
133	875	pig	tooth	mature	
133	878	pig	tooth	mature	
133	900	red deer	foot	mature	
133	903	ox-sized	upper limb	mature	
133	1444	pig	upper limb	mature	
133	1467	pig	tooth	mature	
133	1484	red deer	tooth	mature	
133	1500	red deer	lower limb	mature	
133	1529	ox-sized	vertebra	mature	

CONTEXT	SAMPLE	SPECIES	PART	AGE	STATE
165	0	pig	tooth	mature	
167	0	beaver	tooth	mature	
167	0	red deer	tooth	mature	
167	0	ox-sized	vertebra	mature	
167	0	pig	tooth	mature	
167	0	pig	lower limb	mature	
167	140	field vole	tooth	mature	
167	143	beaver	tooth	mature	
167	143	sheep-sized	rib	mature	burnt
167	172	red deer	tooth	mature	
167	174	ox-sized	vertebra	mature	
167	175	pig	tooth	mature	
167	178	mouse/vole	tooth	mature	
167	2006	red deer	foot	mature	
167	2012	red deer	tooth	mature	
167	2067	red deer	tooth	mature	
167	2145	red deer	lower limb	mature	
167	2242	red deer	rib	mature	
167	2335	ox-sized	rib	mature	
167	2337	pig	foot	mature	
167	2396	pig	tooth	mature	
167	2440	ox-sized	rib	mature	
184	0	pig	tooth	mature	
184	2515	ox-sized	upper limb	mature	
184	2516	red deer	upper limb	mature	
184	2644	pig	tooth	mature	
184	2789	red deer	foot	mature	
184	2975	pig	tooth	mature	
184	3057	pig	tooth	mature	

Appendix iv: (Scott; 2018)

18.2 Summary of flint from Trench 084

Context	084001	084002					084003	084005		084006		084010	084011			084012	084014	084016		084018	084025	084033	84038		084043		084044		Total
Test Pit	-	-		TP4	TP5	TP6	-	-		-			-	-	TP7	-	-	-		-	-	-	-		-		-		
Sample	-	-	all	-	-	-	-	-	19	-	21	20	-	both	-	-	-		36	-	48	47	-	49	-	51	-	50	
Core	2	8	-	-	2	1	3	-	-	-	-	-	3	-	-	-	-	-	-		-	-	-	-	1	-	1	-	21
Core frag	1	6	-	-	2	-	1	-	1	-	-	-	-	-	-	1	2	-	-	1	-	-	-	-	-	-	-	-	15
Flake	17	102	24	64	34	15	9	3	13	-	18	1	10	1	3	11	12	8	5	2	-	-	12	23	1	3	7	7	405
Flake frag	9	21	15	20	15	5	6	-	6	-	3		3	1	3	11	4	-	4	-	2	-	-	-	-	-	-	4	132
Blade	2	18	1	6	4	5	6	1	6	1	4	1	4	-	-	3	-	2		-	-	-	3	1	1	1	1	1	72
Blade frag	2	15	-	4	4	1	2	-	-	1	3	-	3	-	-	1	-	1	1	-	-	-	-	11	2	-	-	2	53
MRF	-	3	-	-	1	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	5
MRB	1	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	4
Flake burnt	-	22	44	12	16	6	1	-	11	-	23	2	3	1	3	-	-	-	4	-	-	-	-	9	-	-	-	-	157
Blade burnt	-	-	-	-	-	1	-	1	-	-	2	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	6
Shatter	2	22	1	11	4	2	2	-	-	-	-	-	6	-	1	3	4	2	-	-	-	-	5	-	-	-	-	-	65
Debitage	-	12	201	16	5	2	2	-	35	-	38	24	1	5	3	-	2	-	26	-	-	-	-	60	-	7	-	18	457
Arrowhead	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	1
Notched	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	1
Burin	-	spall	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	1
Scraper	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	1
Serrated blade	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-		-	-	-	-	-	-	-	-	-	2
Awl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		-	-	-	-	-	-	-	-	-	1
Rejuvenation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	1	-	-	-	1
Microlith	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Sub total	36	231	286	134	87	38	35	5	72	2	91	28	35	8	13	31	24	15	40	4	2	0	20	105	6	11	10	32	1405
Natural	12	63	23	22	10	6	6	1	-	-	30	4	17	3	7	6	22	2	3	-	-	4	3	13	-	2	1	2	262
Natural burnt	1	26	288	5	8	8	3	-	41	-	45	4	6	4	9	-	-	1	12	-	-	8	2	60	-	4	-	6	541

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Sub total	13	89	311	27	18	14	9	1	41	-	75	8	23	7	16	6	22	3	15	-	0	12	5	73	0	6	1	8	803
Total	49	320	597	161	105	54	44	6	113	2	166	36	58	15	29	38	46	18	55	4	2	12	25	178	6	17	11	40	2210
Weight (g)	903	3894	1151.6	500	702	467	767	33	4073.8	9	450.0	42.6	942.6	3.1	72.4	291	753	118		80	1.0	39.0	253	517.9	102	29.2	165	153.2	16483.4

18.4 Summary of worked flint recovered from Trial Tranches (except Trench 84)

Context	055002	061002	065005	070003	070008	070012	070016		070020
Sample	-	-	7	-	14	15	-	16	17
Core	-	-	-	1	-	-	-	-	-
Core frag	-	-	-	-	-	-	-	-	-
Flake	2	2	-	-	-	-	-	-	3
Flake frag	-	-	-	-	-	-	-	-	3
Blade	-	-	1	-	-	-	-	-	1
Blade frag	-	-	-	-	-	-	-	-	-
MRF	-	-	-	-	-	-	-	-	-
MRB	-	-	-	-	-	-	-	-	-
Flake burnt	-	-	-	-	-	-	-	-	-
Blade burnt	-	-	-	-	-	-	-	-	-
Shatter	-	-	-	-	-	-	-	-	-
Debitage	-	-	-	-	-	-	-	0.9g	2
Arrowhead	-	-	-	-	-	-	-	-	-
Notched	-	-	-	-	-	-	-	-	-
Burin	-	-	-	-	-	-	-	-	-
Scraper	-	-	-	-	-	-	-	-	-
Serrated blade	-	-	-	-	-	-	-	-	-
Awl	-	-	-	-	-	-	-	-	-

Rejuvenation	-	-	-	-	-	-	-	-	-
Sub total	2	2	1	1	0	0	0	0.9g	9
Natural	1	1	3	-	3	8	1	4	14
Natural burnt	-	-	1	-	-	5	-	-	1
Sub total	1	1	4	0	3	13	1	4	15
Total	3	3	5	1	3	13	1	4	24
weight	39.5	46.5	2.7	44.6	37.1	53.8	4.1	4.7	37.4

Context	076002	076003	076004		081016	082001	082005	083001	083002
Sample	-	-	-	13	31	-	18	-	-
Core	-	-	-	-	-	-	-	-	-
Core frag	-	-	-	-	-	-	-	-	-
Flake	-	-	-	-	-	1		3	1
Flake frag	-	-	-	-	-	-	1	1	-
Blade	2	1	-	-	-	-	-	1	-
Blade frag	-	-	-	-	-	-	-	-	-
MRF	-	-	-	-	-	-	-	-	-
MRB	-	-	-	-	-	-	-	-	-
Flake burnt	-	-	1	-	-	-	-	-	-
Blade burnt	-	-	-	-	-	-	-	-	-
Shatter	-	-	-	-	-	-	-	-	-
Debitage	-	-	-	2	-	-	-	-	-
Arrowhead	-	-	-	-	-	-	-	-	-
Notched	-	-	-	-	-	-	-	-	-
Burin	-	-	-	-	-	-	-	-	-
Scraper	-	-	1	-	-	-	-	-	-
Serrated blade	-	-	-	-	-	-	-	-	-
Awl	-	-	-	-	-	-	-	-	-
Rejuvenation	-	-	-	-	-	-	-	-	-
Sub total	2	1	2	2	0	1	1	5	1
Natural	1	-	-	-	4	-	-	-	1
Natural burnt	-	-	-	-	1	-	22+6.9g	-	-
Sub total	1	0	0	0	5	0	22+6.9g	0	1
Total	3	1	2	2	5	1	23+6.9g	5	2
Weight	112.7	2.8	11.0	0.8	0.3	8.2	126.6	53.2	1.0

Continuation

Context	085001	085002	086001	087001	088001	105005	106002	106006	
Sample	-	-						-	8
Core	-	-	-	-	-	-	-		-
Core frag	-		-	-	-	-	-	1	-
Flake	-	1	-	1	-	-	1	1	-
Flake frag	-	-	-	-	-	1	1	1	3
Blade	-	-	2	-	-	-	-	2	-
Blade frag	-	-	-	-	-	-	-	-	-
MRF	-	-	-	-	-	-	-	-	-
MRB	-	-	-	-	-	-	-	-	-
Flake burnt	-	-	-	-	-	-	-	-	-
Blade burnt	-	-	-	-	-	-	-	-	-
Shatter	-	-	-	-	-	-	-	-	-
Debitage	-	-	-	-	-	-	-	-	4
Arrowhead	-	-	-	-	-	-	-	-	-
Notched	-	-	-	-	-	-	-	-	-
Burin	-	-	-	-	-	-	-	-	-

Scraper	-	-	-	-	-	-	-	-	-
Serrated blade	-	-	-	-	-	-	-	-	-
Awl	-	-	-	-	-	-	-	-	-
Rejuvenation	-	-	-	-	-	-	-	-	-
Sub total	0	1	2	1	0	1	2	5	7
Natural	1	-	2	-	1	-	-	2	18
Natural burnt	-	-	-	-	-	-	-	-	-
Sub total	1	0	2	0	1	0	0	2	18
Total	1	1	4	1	1	1	2	7	25
weight	73	6	23.5	16.9	30.5	5.8	5.1	156.0	76.1

Context	106008		106009		106015		107001	107002	Total
Sample	-	9	-	11	-	10			
Core	-	-	-	-	-	-	-	-	1
Core frag	-	-	-	-	-	-	-	-	1
Flake	5	7	2	1	2	-	-	1	34
Flake frag		8	-	-	-	1	-	-	20
Blade	1	2	-	-	-	-	-	-	14
Blade frag	-	2	-	-	-	-	-	1	3
MRF	-	-	-	-	-	-	-	-	0
MRB	-	-	-	-	-	-	-	-	0
Flake burnt	1	5	-	-	-	-	-	-	7
Blade burnt	-	-	-	-	-	-	-	-	0
Shatter	-	-	-	-	-	1	-	-	2
Debitage	-	30	-	-	-	7	-	-	45
Arrowhead	-	-	-	-	-	-	-	-	0
Notched	-	-	-	-	-	-	-	-	0

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Burin	-	-	-	-	-	-	-	-	0
Scraper	-	-	-	-	-	-	-	-	1
Serrated blade	-	-	-	-	-	-	-	-	0
Awl	-	-	-	-	-	-	-	-	0
Rejuvenation	-	-	-	-	-	-	-	-	0
Sub total	-	54	2	1	3	9	1	2	108
Natural	-	12	2	-	-	10	-	-	89
Natural burnt	-	-	-	-	-	2	-	-	32
Sub total	0	12	2	0	0	12	0	0	148
Total	7	66	4	1	3	21	1	2	242
Weight	40.0	14.7	22.4	0.1	15.4	19.3	9.2	29.9	1130.9

Appendix vi: Diagnostically EN flintwork at T5 (taken from finds data, ADS online: https://archaeologydataservice.ac.uk/archives/view/t5_framework_2011/downloads.cfm)

Sitecode	CtxtNo	ObjectDate	Object	ObjectSubGroup	Material	ObjectCount
PSH02	538290	EN	Arrowhead	laurel leaf	Flint	1
PSH02	594130	EN	Arrowhead	Leaf	Flint	1
WPR98	180046	EN	Arrowhead	Leaf	Flint	1
PSH02	516057	EN	Axe or core tool	polished axe fragment	Flint	1
WPR98	100000	EN	Axe or core tool	polished axe fragment	Flint	1
POK96	962150	EN	Blade or broken blade	blade	Flint	1
TEC05	835002	EN	Blade or broken blade	blade fragment	Flint	1
WPR98	127068	EN	Blade or broken blade	blade	Flint	1

WPR98	134159	EN	Blade or broken blade	blade	Flint	1
WPR98	148109	EN	Blade or broken blade	blade	Flint	1
TEC05	823170	EN	Core preparation flakes etc	rejuvenation flake core face or edge	Flint	1
PSH02	563055	EN	Flake or broken flake	secondary flake 1 to 74	Flint	1
TEC05	823170	EN	Flake or broken flake	secondary flake fragment	Flint	3
TEC05	823170	EN	Flake or broken flake	tertiary flake 0	Flint	3
TEC05	827251	EN	Flake or broken flake	tertiary flake 0	Flint	1
TEC05	827251	EN	Flake or broken flake	tertiary flake fragment	Flint	2

TEC05	827251	EN	Flake or broken flake	secondary flake fragment	Flint	2
TEC05	827253	EN	Flake or broken flake	tertiary flake fragment	Flint	1
WPR98	160306	EN	Flake or broken flake	tertiary flake 0	Flint	1
TEC05	827256	EN	Retouched blade or flake	miscellaneous retouch	Flint	1
TEC05	834053	EN	Retouched blade or flake	retouched flake	Flint	1
WPR98	127064	EN	Retouched blade or flake	retouched flake	Flint	1
TEC05	823170	EN	Scraper	end and side scraper	Flint	1
TEC05	827258	EN	Scraper	end scraper	Flint	1
TEC05	827318	EN	Serrate denticulate	Serrated piece	Flint	1

Appendix vii: (Powell et al; 2015: table 2.1 2.2)

Table 2.1 Summary of Neolithic pits RMC Land

Group	Feature	W (m)	L (m)	D (m)	Fills (no. from base)	Pottery (g)	Fired clay (g)	Struck flint (no.)	Stone (g)	Burnt flint (g)	Animal bone (g)	Hazelnut shells
RMC Area 1												
A	719	4.4	5.0	0.40	720 (1 of 1)	98	-	7	-	9	-	-
A	733	0.5	0.5	0.25	734 (1 of 1)	167	12	24	-	131	-	-
A	1118	1.5	1.9	0.60	714 (3 of 3)	102	9	17	-	68	-	-
-	683	1.0	1.0	0.20	685 (1 of 1)	3	-	-	-	3	-	-
-	753	1.4	1.6	0.70	752 (1 of 1)	9	-	38	-	65	-	-
-	1153	0.7	0.8	0.15	735 (1 of 1)	215	-	12	-	-	-	-
-	2003	0.7	0.7	0.10	2002 (1 of 1)	105	-	1	-	-	-	-
-	2026	0.6	1.5	0.20	2025 (1 of 1)	8	-	3	-	-	-	-
-	Ev605	0.3	0.3	0.05	EV604 (1 of 1)	98	-	2	-	-	-	-
						805g		104				
RMC Area 2												
B	2752	0.7	0.7	0.40	2753 (upper spit)	4060	66	37	-	1108	4	365
					2754 (lower spit)	769	54	85	1312	82	20	-
B	2817	1.0	1.0	0.60	2814 (4 of 4)	635	9	13	-	12	-	-
					2815 (3 of 4)	850	-	31	-	9	1	260
					2816 (2 of 4)	206	-	7	262	69	3	-
					2863 (1 of 1)	77	-	26	-	-	8	-
C	4400	0.8	0.8	0.20	4401 (1 of 1)	230	-	1	-	-	-	255
C	4411	0.6	0.6	0.20	4414 (2 of 4)	1369	21	4	-	11	5	-
C	4422	0.9	0.9	0.50	4424 (1 of 2)	832	-	50	7713	10	8	-
C	4476	0.6	0.6	0.06	4477 (1 of 1)	27	-	2	-	-	-	-
C	4534	0.4	0.4	0.08	4535 (1 of 1)	-	-	6	-	-	-	-
D	4425	0.6	0.6	0.06	4426 (1 of 1)	26	-	1	-	-	-	-
D	4428	1.3	1.3	0.15	4431 (1 0f 3)	65	-	2	-	18	-	-
E	4471	0.8	0.8	0.10	4472 (1 0f 2)	12	-	-	-	-	-	-
E	4481	0.7	0.8	0.45	4484 (3 of 3)	30	-	6	-	-	-	-
					4483 (2 of 3) on base	64	-	13	-	107	1	195
I	5763	0.5	0.5	0.20	5764 (1 of 1)	-	-	12	-	1	-	-
I	5783	0.5	0.6	0.20	5784 (1 of 1)	1587	-	9	-	127	1	544
-	5616	1.0	1.0	0.20	5617 (1 of 1)	31	538	2	-	15	-	9
-	2158	1.3	2.2	0.60	2156 (4 of 6)	9	-	8	-	9	-	-
-	2162	0.3	0.5	0.10	2161 (1 of 1)	2	-	4	-	-	-	-
-	2164	1.1	1.3	0.20	2163 (1 of 1)	2	-	-	-	-	-	-
-	2169	0.9	2.1	0.50	2167 (2 0f 2)	26	-	4	-	-	-	-
-	2184	0.8	0.9	0.30	2183 (1 of 1)	1	-	1	-	8	-	-
-	2187	2.4	2.7	1.00	2188 (4 of 4)	842	-	8	-	-	-	1000+
-	2199	1.2	2.3	0.50	2197 (2 of 3)	3	-	6	-	10	-	-
-	2253	1.3	1.5	0.30	2255 (2 of 2)	3	-	3	-	-	-	-
-	2260	1.2	1.8	0.40	2261 (1 of 1)	2	-	1	-	-	-	-
-	2265	0.7	1.9	0.30	2268 (2 of 3)	4	-	1	-	1	-	-
-	3165	1.3	1.7	0.30	3101 (1 of 1)	372	-	1	-	-	-	-
-	3630	0.5	0.5	0.10	3631 (1 of 1)	111	-	-	-	2	-	-
-	4485	0.7	0.7	0.20	4486 (1 of 1)	15	-	3	-	684	-	-
	47							547				
RMC Area 3												
M	5912	1.0	1.0	0.12	5913 (2 of 2)	152	-	3	-	-	-	-
M	5923	0.8	0.9	0.20	5924 (1 of 1)	125	-	1	-	-	-	-
M	5961	0.8	0.8	0.10	5962 (1 of 1)	251	-	10	-	89	-	127
M	5969	1.0	1.1	0.40	5970 (1 of 1)		-	2	-	65	-	-
-	5950	1.1	1.1	0.20	5952 (2 of 2)	9	-	2	-	3	4	-
-	6293	0.6	0.6	0.10	6294 (1 of 1)	15	-	5	-	73	-	-
-	7217	0.8	0.8	0.1	7218 (1 of 1)	-	-	12	-	-	-	-
RMC Area 4												
F	4593	1.0	1.1	0.30	4594 (1 of 1)	73	-	2	-	9	179	-
F	4625	0.9	1.0	0.60	4626 (2 of 2)	10	-	1	-	-	-	-
G	4615	0.6	0.6	0.10	4616 (1 of 1)	265	-	6	-	-	-	-
G	4621	0.9	1.0	0.40	4622 (1 of 1)	26	-	6	-	-	-	-
G	4628	0.8	0.8	0.60	4629 (1 of 1)	27	-	3	-	4	-	-
G	4638	0.7	0.7	0.20	4639 (1 of 1)	70	-	8	-	-	-	-
H	4632	0.7	0.7	0.20	4633 (1 of 1)		-	1	-	53	-	-
H	4646	0.8	0.8	0.25	4647 (1 of 1)		-	6	-	-	-	-
H	4652	0.7	0.8	0.30	4653 (1 of 1)	13	-	-	-	-	-	-
H	4654	1.1	1.1	0.20	4656 (1 of 2)	53	-	-	-	-	-	-
H	4657	0.9	0.9	0.10	4658 (2 of 2) on base	8	-	-	-	-	-	-
H	4660	0.6	0.7	0.20	4661 (1 of 1)		-	3	-	-	-	-
H	4664	0.6	0.8	0.23	4664 (1 of 1	57	-	6	-	19	-	-
J	5035/5041	1.3	1.6	0.60	5036 (2 of 3)	46	-	1	-	45	-	-
J	5088	0.7	0.9	0.50	5089 (3 of 3)	88	-	14	-	108	2	120
K	5376	0.7	0.9	0.10	5377 (1 of 1)	3	-	2	-	-	-	-
K	5386	1.0	1.0	0.15	5387 (1 of 1)	138	-	4	347	-	-	-
K	5388	0.5	0.5	0.10	5390 (2 of 2)	22	-	1	-	-	-	-
L	5381	0.6	0.6	0.10	5382 (1 of 1)	212	-	8	-	121	-	-

Table 2.1 Continued

Group	Feature	W (m)	L (m)	D (m)	Fills (no. from base)	Pottery (g)	Fired clay (g)	Struck flint (no.)	Stone (g)	Burnt flint (g)	Animal bone (g)	Hazelnut shells
RMC Area 4 (con't)												
L	5392	0.9	0.9	0.40	5394 (3 of 3)	23	-	2	-	-	-	-
					5395 (2 of 3)	436	-	8	-	86	-	-
					5396 (1 of 3)	30	-	3	467	39	-	-
-	4617	1.0	1.4	0.15	4618 (1 of 1)	3	-	-	-	-	-	-
-	4623	1.1	1.7	0.15	4624 (1 of 1)	141	-	7	-	-	-	-
-	5101	0.5	0.8	0.20	5103 (1 of 2)	4	-	-	-	-	-	-
-	5313	1.5	2.7	0.90	5318 (6 of 6)	8	-	6	-	-	-	-
					5317 (5 of 6)	1	-	-	120	3	-	-
-	5328	0.4	0.4	0.18	5329 (1 of 1)	3	-	-	-	-	-	-
-	5352	0.7	0.8	0.20	5353 (1 of 1)	4	-	1	-	-	-	-
-	5369	0.7	0.8	0.20	5370 (1 of 1)	2	-	-	-	-	-	-
	5380	1.9	2.6	2.00	5427 (12 of 17)	1	-	-	-	-	-	-
					5438 (3 of 17)	13	-	-	-	-	-	-
-	recut 5442	1.9	2.6	1.30	5414 (9 of 9)	23	-	4	-	67	-	-
					5415 (8 of 9)	14	-	1	-	-	6	-
-	5391	1.2	2.8	1.70	5397 (16 of 16)	20	-	4	-	18	-	-
					5398 (15 of 16)	1	-	-	-	-	-	-
					5411 (3 of 16)	-	-	1	-	-	-	-
-	5393	0.5	0.5	0.10	5413 (1 of 1)	23	58	5	-	-	1	-
-	7177	1.4	2.1	1.2	7191 (14 of 16)	1	-	1	-	-	-	-
					7190 (13 of 16)	11	-	-	-	-	-	-
RMC evaluation												
-	Ev4003	1.4	2.1	0.30	Ev4004 (1 of 1)	132	10	-	-	-	-	-
-	Ev9006	0.4	0.4	0.2	Ev9007 (1 of 1)	1	-	-	-	-	-	-

Table 2.2 Summary of Neolithic pits ICSG

Group	Feature	W (m)	L (m)	D (m)	Fills (no. from base)	Pottery (g)	Fired clay (g)	Struck flint (no.)	Stone (g)	Burnt flint (g)	Animal bone (g)	Hazelnut shells
ICSG Area A												
N	G344	0.7	0.7	0.40	4411/4420/4422 (1 of 1)	242	-	36	-	193	3	73
					4412/4421 (lens in 4411/4420/4422)	203	2	21	-	20	58	24
N	G345	0.8	0.8	0.45	1683/1698 (1 of 1)	366	24	10	-	168	2	-
					1684/1699 (lens in 1683/1698)	481	11	6	-	28	36	42
-	4081	0.7	0.7	0.10	4082 (1 of 1)	211	-	5	70	-	2	-
-	4239	0.9	1.2	0.70	4243 (4 of 7)		-	24	-	-	-	-
ICSG Area B												
O	10236	1.0	1.0	0.20	10235 (1 of 1)	15	-	-	-	-	-	-
O	10238	0.8	0.8	0.10	10237 (1 of 1)	69	18	-	-	-	-	-
O	10459	0.9	0.9	0.10	10458 (1 of 1)	10	-	-	-	-	-	-
P	10298	0.6	0.6	0.07	10297 (1 of 1)	3	-	2	-	8	-	-
P	10300	0.4	0.4	0.05	10299	18	-	-	146	6	-	-
Q	10821	0.8	0.8	0.10	10820 (2 of 2)	1088	-	8	?	-	1	-
					10822 (1 of 2)	8	-	-	-	-	-	400
Q	11018	0.7	0.7	0.10	11017 (3 of 3)	2	3	2	-	-	-	-
					11019 (2 of 3)	1	-	3	-	-	-	-
					11020 (1 of 3)		-	-	-	-	-	395
Q	11024	0.4	0.4	0.07	11023 (1 of 1)	128	-	1	-	-	-	550
Q	11026	0.6	0.6	0.10	11025 (1 of 1)	28	-	12	?	-	-	380
-	1962	0.4	0.7	0.20	1961 (1 of 1)	23	-	-	-	-	-	-
-	10480	0.8	0.8	0.20	10478 (2 of 2)	123	8	8	461	84	-	-
					10479 (1 of 2)	107	-	-	22	-	-	-
-	11062	0.6	1.4	0.20	11061 (1 of 1)	23	-	-	-	-	-	-
-	11340	0.4	0.6	0.03	11339 (1 of 1)	133	4	1	-	14	4	172
ICSG Area C												
R	16031	0.6	0.6	0.07	16030 (1 of 1)	49	49	-	-	-	-	-
R	16033	0.7	0.7	0.06	16032 (1 of 1)	115	-	2	-	-	-	73
R	16109	0.8	0.8	0.16	16108 (3 of 1)	3	-	-	-	1	?	35
					16110 (2 of 1)	446	-	-	-	-	1	29
-	17057	0.6	0.7	0.20	17058 (1 of 1)	1	-	-	-	-	-	-
ICSG Area D												
-	17588	0.6	0.6	0.05	17589 (1 of 1)	-	-	17	-	-	3	-
ICSG Area E												
-	40252	0.8	0.9	0.1	40262 (1 of 1)	-	374	12	-	5	-	-

Appendix viii: (Powell et al; 2015: table 6.2)

Table 6.2 Prehistoric pottery fabrics by chronological period

Date	*Fabric*	*No. sherds*			*Weight (g)*			*ASW (g)*
		ICSG	*RMC Land*	*Total*	*ICSG*	*RMC Land*	*Total*	
EN	*FL1*	41	6	47	298	77	375	
	FL2	316	2	318	3025	41	3066	
	Sub-total	*357*	*8*	***365***	*3323*	*118*	***3441***	***9.43***
MN	*FL8*	141	162	303	967	1019	1986	
	FL9	6	6	12	66	16	82	
	FL10	463	605	1068	3,014	8583	11,597	
	FL11	0	118	118	0	1444	1444	
	FL12	0	175	175	0	2,902	2902	
	FL13	0	45	45	0	478	478	
	GR4	6	97	103	13	830	830	
	GR5	27	116	143	71	593	664	
	Sub-total	*643*	*1193*	***1867***	*4131*	*15,693*	***19,996***	***10.71***
			1324	1967				
LN	*V2*	0	41	41	0	109	109	
	Sub-total	*0*	*41*	***41***	*0*	*109*	***109***	***2.66***
EBA	*GR1*	4	3	7	13	19	32	
	GR2	0	3	3	0	5	5	
	GR3	66	2	68	813	15	828	
	GR6	70	0	70	426	0	426	
	Sub-total	*140*	*8*	***148***	*1252*	*39*	***1291***	***8.72***
MBA	*FL7*	235	14	249	3,496	297	3,793	
	FL14	89	0	89	1,212	0	1,212	
	FL15	150	0	150	997	0	997	
	FL16	23	0	23	863	0	863	
	Sub-total	*497*	*14*	***511***	*6568*	*297*	***6865***	***13.34***
LBA-EIA	*FL3*	532	655	1187	3907	6053	9948	
	FL4	853	416	1269	2233	3056	5289	
	FL5	251	103	354	1071	634	1705	
	FL6	216	95	311	938	439	1377	
	QU1	61	47	108	466	197	663	
	QU3	37	0	37	51	0	51	
	QU4	173	0	173	1007	0	1007	
	V1	33	7	40	147	45	192	
	V3	40	0	40	133	0	133	
	Sub-total	*2196*	*1097*	***3419***	*9953*	*8468*	***20,365***	***5.95***
U	*FL99*	78	11	89	112	11	123	
	U1	0	1	1	0	2	2	
Total		***3911***	***2630***	***6541***	***25,33***	***26,898***	***52,237***	***7.98***

Appendix ix: (Cramp and Leivers; 2010: table 3)

Table 3: Summary of the struck flint by site from Terminal 5, Heathrow.

		Site:							
Category:	Sub-category:	POK 96	WPR 98	GAI 99	GAA 00	PSH 02	LFA 05	TEC 05	Total:
Flake/broken flake	Primary flake	94	184	24		662		29	993
	Secondary flake	274	553	78	13	1673	12	215	2818
	Tertiary flake	120	359	24	5	740	7	229	1484
	Levallois flake					1			1
	Flake from a polished implement	2	6			7			15
	Unclassifiable waste	9	70	2		685	2	160	928
Blade/broken blade	Blade	7	36	2	1	64		9	119
	Bladelet	11	16			14		1	42
	Bladelike flake	15	52	5		77	1	12	162
Core preparation flake	Core face/edge rejuvenation flake	2	3			39		11	55
	Rejuvenation flake tablet	3	5			1		2	11
	Crested blade					3			3
Axe/adze sharpening flake	Axe/adze thinning flake	1	3			2			6
Burin spall	Burin spall		1		1			2	4
Microburin	Microburin		2						2
Chip/sieved chip	Chip	141	449	15		261	46		912
	Sieved chip					1377		54	1431
Core/core fragment	Single platform flake core	6	19	2		77		1	105
	Multi-platform flake core	17	60	12		125		22	236
	Levallois/other discoidal flake core		1			4		2	7
	Keeled core		1			2	1	4	8
	Single platform blade core		1			6		1	8
	Opposed platform blade core		1						1
	Multi-platform blade core					2			2
	Unclassifiable blade core					1			1
	Core on a flake	1	12	7		13		2	35
	Unclassifiable core		1			42		13	56
Nodule	Partially worked nodule	19	34	8		109	1	7	178

		Site:							
Category:	Sub-category:	POK 96	WPR 98	GAI 99	GAA 00	PSH 02	LFA 05	TEC 05	Total:
Retouched blade/flake	Retouched flake	47	107	10	2	160	2	35	363
	Retouched blade(let)	8	18		1	14		4	45
	Unclassifiable retouch	1	16			12	1		30
Scraper	End scraper	2	13	4		32		19	70
	Side scraper	6	5		1	3		3	18
	End-and-side scraper	6	15	3	2	33		15	74
	Disc scraper	1	1			1		4	7
	Thumbnail scraper	1	2	1		7			11
	Unclassifiable scraper	3	10	4		16		11	44
Knife	Backed knife	2	1			11		3	17
	Scale-flaked knife					2			2
	Edge-ground knife							2	2
	Unclassifiable knife		1			1		7	9
Microlith/backed bladelet	Microlith		1			2			3
Serrate/denticulate	Serrated piece	4	13			15		9	41
	Denticulate	4	4			8		1	17
	Notched piece	7	16			19		4	46
Piercer	Awl/piercer	7	20	2		41		4	74
	Spurred piece	3	5	1		2		5	16
	Burin					1			1
Fabricator	Fabricator					1			1
Arrowhead	Laurel leaf					1			1
	Leaf-shaped		1			1			2
	Chisel		3		1	5		1	10
	Oblique		2			3		2	7
	Barbed-and-tanged		1			4		1	6
	Unfinished arrowhead					1		1	2
	Unclassifiable arrowhead					3			3
Axe/core tool	Flaked axe		1			1			2
	Polished axe		1			1			2

		Site:							
Category:	Sub-category:	POK 96	WPR 98	GAI 99	GAA 00	PSH 02	LFA 05	TEC 05	Total:
Hammerstone	Flint hammerstone					8		1	9
Unclassifiable	Natural					2			2
Total:		824	2126	204	27	6398	73	908	10560

Appendix x: Features stratigraphically earlier than the C1 cursus (FA; 2010: table 2.7)

Interpretation	Feature No.
Ditch	529516
	529520
Gully	527233
Natural feature	521022
	579142
Pit	527200
	569066
	579136
	587028
	178054
Posthole	962054
	962063
	962067
	962081
	962132
	524204
	529196
	529198
	529210
	575149
	582115
	598027
	605003
	605005
	605007
	605009
	605011
Tree-throw	128032
	962200
	512103
	513080
	525481
	527229
	555449
	555466
	559507
	579140
	588042

Appendix xi: Radiocarbon dates from Manor Farm, Horton (Preston et al; 2003: table 2.17)

TABLE 2.17 Radiocarbon dates

OxA 3577	Birch bark bowl B1 on base of outer ditch (208)	4390+75 BP
OxA 3008	Birch bark bowl B2 on base of outer ditch (208)	4320+120 BP
OxA 3576	Birch bark bowl B3 on base of outer ditch (208)	4585+75 BP
OxA 3578	Carbonized residues adhering to Fengate style pot on base of outer ditch (208)	4520+80 BP
BM 2754	Collagen from antler 3 on base of outer ditch (208)	4100+60 BP
BM 2797	Cellulose from roundwood on base of outer ditch (208) (*Fraxinus* sp.)	4390+100 BP
BM 2816	Repeat of BM 2797	4350+40 BP
	Weighted mean of BM 2797 and 2816	4355+37 BP
	<u>Discounted dates</u>	
OxA 3086	Bark bowl B3 on base of outer ditch (208)	3500+90 BP
OxA 3088	Repeat of OxA 3086	3570+80 BP

Quoted in the form recommended by Stuiver and Pollach 1977

Calibrated dates are:

	one sigma	two sigma
Bowl 1 OxA 3577	3105-2915 cal BC 3265-3245 cal BC	3335-3215 cal BC 3190-3150 cal BC 3105-2895 cal BC
Bowl 2 OxA 3008	3300-3240 cal BC 3110-2870 cal BC 2810-2770 cal BC 2720-2700 cal BC	3340-2850 cal BC 2830-2610 cal BC
Bowl 3 OxA 3576	3500-3420 cal BC 3380-3305 cal BC 3240-3175 cal BC 3165-3130 cal BC 3125-3105 cal BC	3610-3580 cal BC 3520-3090 cal BC 3065-3040 cal BC
Pot residues OxA 3578	3350-3255 cal BC 3255-3100 cal BC	3495-3470 cal BC 3470-3425 cal BC 3380-3020 cal BC 2995-2925 cal BC
Antler 3 BM 2754	2865-2805 cal BC 2775-2755 cal BC 2750-2720 cal BC 2700-2670 cal BC 2670-2585 cal BC	2885-2795 cal BC 2785-2560 cal BC 2545-2495 cal BC
Wood BM2797	3305-3235 cal BC 3175-3160 cal BC 3110-2910 cal BC	3350-2880 cal BC 2800-2780 cal BC
Wood BM2816	3035-2960 cal BC 2940-2915 cal BC	3095-3060 cal BC 3045-2905 cal BC
Weighted mean of BM 2797 and BM2816	3035-2955 cal BC 2950-2915 cal BC	3095-3060 cal BC 3045-2910 cal BC

Calibrated using the University of Washington CALIB programme after Van der Plicht and Mook (1989) and Pearson *et al.* (1986). Presented in a form recommended by Mook (1986).

Appendix xii: Pottery distribution at Ashford Prison (Carew et al; 2006: table 8)

			NEO						NEO or IA		MIA			MIA/LIA				LIA		
Feature			CF1	CF2	CFCQ	CFQ	F1	FF	F3	*FCQ*	CQ1	Fe	Q1	CQ2	U1	U2	Q2	F2	*FFCQ*	G	
			Weight in grams																		
Ditch	2035	Linear assoc. with RD1	12	0	1	10	0	1	0	3	0	0	0	0	0	0	0	0	0	0	NEO
Ditch	2037	Linear assoc. with RD1	0	0	0	18	0	3	0	0	0	0	0	0	0	0	0	0	0	0	
Ditch	2040	Linear assoc. with RD1	0	12	10	32	4	0	98	0	0	0	0	0	0	0	0	0	0	0	
Ditch	2060	BA field system	35	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	
Ditch	2062	BA field system	0	0	0	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RD1	2085	upper fill	0	5	1	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RD1	2086	secondary fill	27	246	19	32	18	0	0	0	0	0	0	0	0	0	0	0	?1	0	
RD1	2087	primary fill	0	0	9	1	0	5	0	5	0	0	0	0	0	0	0	0	0	0	
RD1	N/A	fill	0	90	1	0	0	0	0	0	0	0	0	0	?1	0	0	0	0	0	
Pit 588	2128	Pit circle, RD1	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pit 596	2128	Pit circle, RD1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pit 677	2128	Pit circle, RD1	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pit 866	2128	Pit circle, RD1	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	
Pit 868	2128	Pit circle, RD1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
Pit 1148	2128	Pit circle, RD1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
CS5	2093	fill	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	
Pit	797	In CS7	0	0	0	0	0	0	0	0	38	0	0	0	8	0	0	0	0	0	MIA
Pit	1426	In CS8	0	0	0	0	0	0	0	0	0	0	0	392	0	186	0	0	0	0	
Pit	1453	In CS3	0	0	0	0	0	7	0	16	396	16	140	0	127	208	0	0	0	0	
CS9	2092	primary fill	0	0	0	0	0	0	7	0	0	0	0	0	13	2	0	0	0	0	
CS1	2095	fill	0	0	0	0	0	0	1	0	0	0	0	6	35	0	5	0	0	0	
CS2	2096	fill	0	0	2	3	0	0	0	0	52	0	0	22	1	0	0	0	0	0	
CS6	2098	primary fill	0	0	0	0	0	0	31	29	62	0	39	107	103	96	0	0	0	0	
CS3	2104	fill	0	0	3	0	0	0	0	0	300	0	0	30	195	21	0	0	0	0	
CS3	2106	inner fill	0	0	0	0	0	0	0	0	24	0	0	0	30	0	0	0	0	0	

4-post	2113	FP1	0	0	0	0	0	0	2	0	0	0	0	1	0	1	0	0	0	0	MIA
4-post	2118	FP2	0	0	0	0	0	0	1	0	1	0	0	1	4	0	0	0	0	0	
Pit	2124	In CS5	0	0	0	0	0	0	0	0	0	0	0	3	6	1	0	0	0	0	
Pit 655	2128	Pit circle, RD1	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	
Pit 657	2128	Pit circle, RD1	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	
Pit 675	2128	Pit circle, RD1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
Pit 837	2128	Pit circle, RD1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
Pit 1136	2128	Pit circle, RD1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
Pit 1964	2128	Pit circle, RD1	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	
Ditch	2081	Pit circle, RD1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	0	0	MIA/LIA
CS6	2097	upper fill	0	0	0	0	0	0	0	0	0	0	0	27	35	48	0	0	0	0	
CS6/7	2102	fill/s	0	0	0	0	0	0	0	0	24	0	4	336	339	159	0	29	0	0	
4-post	2107	FP7	0	0	0	0	0	0	0	0	5	5	0	13	27	0	1	10	0	0	
CS4	2088	upper fill	0	0	0	0	0	1	1	52	89	13	0	64	275	98	4	16	8	0	
CS4	2089	primary fill	0	0	0	0	0	5	2	2	11	0	0	41	109	1	11	0	14	0	
CS4	2090	inner fill	0	0	0	0	0	0	0	0	0	0	0	14	13	0	0	0	2	0	
Pit	687	CS4, terminal	0	0	0	0	0	0	0	0	0	0	0	13	142	0	0	0	0	0	
CS9	2091	upper fill	0	0	0	0	0	3	26	4	15	0	0	0	160	14	3	2	6	0	
Pit	712	CS 9	0	0	0	0	0	0	0	0	1	0	0	30	36	22	0	6	253	0	
CS5	2094	outer fill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	
CS7	2100	fill	0	0	1	5	0	0	3	0	57	0	0	188	166	209	31	15	39	0	
CS8	2103	fill	0	0	0	0	0	0	13	13	35	0	20	113	259	82	24	14	3	0	
4-post	2111	FP5	0	0	0	0	8	0	3	0	0	0	0	0	0	3	0	0	2	0	
4-post	2126	FP3	3	0	0	0	6	0	0	23	13	0	0	22	12	19	6	0	10	0	
878	2128	Pit circle, RD1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	
Pit	1959	CS7	0	0	0	0	0	0	0	0	0	0	0	179	0	102	0	0	9	0	
CS9	N/A	fill	0	0	0	0	0	7	5	0	8	0	0	9	40	0	0	0	0	47	LIA
CS3	2105	inner fill	0	0	0	0	0	0	0	0	151	70	0	141	383	69	0	0	28	28	
4-post	2109	FP9	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	31	

NEO = Neolithic; MIA = Middle Iron Age; LIA = Late Iron Age; IA = Iron Age (undifferentiated); FP = Four-post Structure; CS = Circular Structure; RD = Ring-ditch

Table 8 Sherd weight, date range of individual pottery fabrics and pottery dating of key excavated contexts

Appendix xiii: (Scott; 2018: table 9)

Table 9 Summary of archaeobotanical remains recovered from Dews Farm.

A: abundance, D: diversity (1 = occasional, 2 = moderate, 3 = abundant).
BGC = Bucks Golf Course Test Pit

context	sample	flot vol(ml)	chd grain	chd wood	wlg seeds	wlg stems	comments
073003	3	5				1 1	
074009	5	50		1 1	1 1	2 1	CAREX
109002 BGC109	6	1000		2 1	1 1	3 1	ACORN, SAMBUCUS, RUBUS, STACHYS PALUSTRIS, SAPONARIA.
065005	7	50		1 1	1 1	3 1	RUMEX, SPERGULARIA
106006	8	50	1 1		1 1	2 1	1 CF. EMMER GRAIN, SAMBUCUS, RUMEX, CHENOPODIUM
106008	9	50		1 1	1 1	3 1	CHENOPODIUM, ATRIPLEX, RUMEX
106015	10	50	1 1	1 1	1 1	1 1	2 TRIT CF. SPELT, 1TRIT CF. EMMER, POLYGONUM, SOLANUM, POTENTILLA
106009	11	50			1 1	2 1	RUMEX
106010	12	25			2 1	2 1	RUBUS, RUMEX, CHENOPODIUM, SOLANUM,TARAXACUM,SCHEUCHZERIA
076004	13	10		2 1	1 1	2 1	SCHEUCHZERIA
070008	14	5			1 1		CAREX
070012	15	5		1 1	1 1	2 1	CHENOPODIUM
070016	16	8	1 1	2 1		2 1	AVENA C.1
070020	17	7		3 1		2 1	
084005	18	10		1 1		1 1	
084010	20	10			1 1	3 1	CAREX, GLUME EPIDERMIS
084006	21	15			1 1	2 1	CAREX, CHENOPODIUM
081011	31	15			1 1	3 1	CHENOPODIUM, CENTAUREA
084039	34	15				2 1	GLUME EPIDERMIS
084016	36	20		2 1	1 1	2 1	TARAXACUM
084002	37	10		2 1		1 1	
084011	39	10			1 1	2 1	CAREX, CHENOPODIUM
context	sample	flot vol(ml)	chd grain	chd wood	wlg	wlg	comments
					seeds	stems	
084033	47	80	1 1	2 1	1 1	1 1	INDET CEREAL GRAINS, CHENOPODIUM
084025	48	50		3 1	1 1		SOLANUM NIGRUM
084038	49	30		1 1	1 1	3 1	CAREX, CONIUM, DIPSACUS
084044	50	25		1 1	1 1	2 1	CHENOPODIUM, CAREX
084043	51	25				2 1	
084002	53	20		1 1	1 1	2 1	HAZELNUT SHELL FRAGMENTS

Appendix xiv: Powell et al; 2015: table 7.5

Table 7.5 Summary of flint from Middle Neolithic pits from ICSG and RMC Land

Pit	*Flakes, blades*	*Chips*	*Irreg. waste*	*Cores*	*Retouched pieces*	*Total*
ICSG Context 113 IMP96 (MoLAS evaluation) EV114	107	306	-	1 single platform	9 (3 end/end and side scrapers, 4 serrated flakes, 1 retouched flake, 1 hammerstone)	423
G345*	10 (inc. 1 from polished axe)	-	-	2 (1 multi-platform, with natural hole, 1 reworked polished axe fragment)	4 (1 knife, 1?scraper fragment, 1 knife fragment, 1 knife or scraper)	16
4081*	3	-	1	1 flake core fragment	-	5
G344*	48 (inc. 2 from polished axes)	1	3	1 single platform	4 (1 end scraper, 1 retouched flake, 1 scraper, 1 piercer)	57
10245*	6 (inc. ?flake from polished axe)	5	-	-	1 knife fragment	12
10298*	2	-	-	-	-	2
10480*	6 (inc. 1 from polished axe)	5	-	-	1 ?knife fragment	12
10821*	6	-	1	-	1 polished flake with retouched edges	8
11018*	3	-	-	-	2 (1 end scraper, 1 end and side scraper)	5
11024*	1	-	-	-	-	1
11026*	10	-	-	2 (flake cores, 1 is a reworked polished axe frag.)		12
11340*	1	-	-	-	-	1
16033*	2	-	-	-	-	2
17588	13	1	-	1 multi-platform	2 (1 broken serrated flake, 1 ?unfinished axe)	17
4239	20 (inc. 1 from polished axe)	-	-	-	4 (1 backed knife or sickle, 2 knife fragments, 1 serrated flake)	24
40252	10	-	-	1 rough chunk	1 worn serrated flake	12
RMC Land						
EV605	2	-	-	-	-	2
719*	6	1	-	-	-	7
733*	18	1	1	2 (1 discoidal flake core on polished axe frag, 1 discoidal frag)	2 (1 end and side scraper, 1 misc. retouch)	24
753*	26	6	1	3 (1 single platform blade, 1 multi-platform, 1 fragment)	2 (retouched flakes)	38
1118*	13	1	1	-	2 (1 chisel arrowhead, 1 end and side scraper)	17
1153*	8	1	-	1 single platform	2 (1 end and side scraper, 1 retouched flake)	12
2003*	1	-	-	-	-	1
2026*	3	-	-	-	-	3
2158*	7	-	-	1 single platform	-	8
2162*	3	-	-	-	1 end scraper	4
2169*	4	-	-	-	-	4
2184*	1	-	-	-	-	1
2187*	6	-	1	-	1 microdenticulate	8
2199*	5	-	-	-	1 oblique arrowhead	6
2253*	2	-	-	-	1 end and side scraper	3
2260*	1	-	-	-	-	1
2265*	1	-	-	-	-	1
2752*	64 (inc. 12 from polished axes)	47	8	2 (1 multi-platform, 1 core fragment on a polished axe)	2 (1 backed knife, 1 Y-shaped tool on polished axe frag.)	123
2817*	63 (inc. 3 from polished axes)	11	-	-	3 (1 polished mace-head made on naturally holed flint nodule, 1 retouched blade, 1 end scraper)	77
3101*	1	-	-	-	-	1
3165	1	-	-	-	-	1
4400*	1	-	-	-	-	1
4411*	3	-	-	-	1 knife	4

* Associated with Peterborough Ware

Table 7.5 Continued

Pit	Flakes, blades	Chips	Irreg. waste	Cores	Retouched pieces	Total
4422*	36 (inc. 5 from polished axe)	-	7	1 multi-platform	6 (3 misc retouch, 2 knives, 1 hammerstone)	50
4425*	1	-	-	-	-	1
4428*	2	-	-	-	-	2
4476*	2	-	-	-	-	2
4481*	5	-	-	-	1 misc retouch	6
4485*	3	-	-	-	-	3
4534	2	-	-	-	4 (1 hammer, 1 axe fragment, 1 serrated flake, 1 retouched flake)	6
4593*	1 (with ground edge)	-	-	1 discoidal	-	2
4615*	3	-	3	-	-	6
4621*	6	-	-	-	-	6
4623*	3	-	1	-	3 (2 retouched flakes, 1 misc retouch)	7
4625*	1	-	-	-	-	1
4628*		-	2	-	1 knife	3
4632		-	-	1 single platform	-	1
4638*	4	-	1	-	3 (1 end and side scraper, 1 knife, 1 hammerstone)	8
4646	5	-	-	-	1 serrated flake	6
4660	2	-	1	-	-	3
4664*	5	-	-	-	1 piercer	6
5035*		-	1	-	-	1
5088*	14	-	-	-	-	14
5352*	1	-	-	-	-	1
5381*	8	-	-	-	-	8
5386*	4	-	-	-	-	4
5388*	1	-	-	-	-	1
5392*	11	-	-	-	2 (1 end and side scraper, 1 hammerstone)	13
5393*	4	1	-	-	-	5
5616*	2 (inc. 1 from a polished axe)	-	-	-	-	2
5763	8	3	-	1 multi-platform	-	12
5783*	4 (inc. 1 from polished axe)	-	-	-	-	4
5912*	2	-	-	-	1 end scraper	3
5923*	1	-	-	-	-	1
5950*	2	-	-	-	-	2
5961*	10	-	-	-	-	10
5969*	2	-	-	-	-	2
6293	3	-	-	-	2 (1 end scraper, 1 misc retouch)	5
7217	8	-	-	1 single platform	3 (1 scraper , 2 serrated flakes)	12
7177		-	-	-	1 serrated flake	1
Total	654	390	33	23	75	1175

* Associated with Peterborough Ware

Appendix xv: (Powell et al; 2015: table 10.2)

Table 10.2 Charred plant remains from Neolithic pits at RMC Land

	Phase	Middle Neolithic									Late Neol.
	Feature	2187	2752	2817	4400	4481	5088	5616	5783	5961	5732
	Context	2191	2753	2815	4401	4483	5089 SW q.	5617	5784	5962	5733
	Sample	159	198	204	300	303	318	359	370	373	366
	Vol (l)	10	40	40	10	10	16	10	37	10	47
	Flot Size (ml)	200	375	300	40	50	60	40	150	30	675
	Roots %	2	10	10	15	7	10	60	2	10	5
Cereals	Common name										
Hordeum vulgare L. *sl* (hulled grain)	barley (many are tail grains)	-	-	-	-	-	-	1	8	-	-
Hordeum vulgare L. *sl* (grain)	barley	-	-	-	-	-	-	-	2	-	1
Triticum sp. L. (grains)	wheat	-	1	-	-	-	-	-	-	-	-
Triticum cf. *aestivum-turgidum* L. *sl* (grain)	bread wheat	-	2	7	-	-	2	cf. 5	6	-	14
Triticum aestivum-turgidum (rachis fragment)	bread wheat	-	-	-	-	-	-	-	1	-	-
Secale cereale (grain)	rye	-	-	-	-	-	-	-	-	-	3
Cereal frag. indet. (est. whole grains from fragments)	cereal	-	2	-	-	1	-	2	-	-	-
Other species	Common name										
Corylus avellana L. (fragments)	hazelnut shell	1000+ (118ml)	365 (12ml)	260 (10ml)	255 (8ml)	195 (5ml)	120 (5ml)	9	544	127	300
Rumex sp. L.	docks	-	-	1	-	-	-	-	-	-	-
Prunus spinosa L.	sloe	-	-	-	-	-	-	cf.1	-	1	-
Vicia L./*Lathyrus* sp. L.	vetch/wild pea	-	3	1	-	-	1	-	-	-	1
Plantago lanceolata L.	ribwort plantain	-	-	-	-	-	-	1			
Anthemis cotula L.	stinking mayweed	-	-	-	-	-	-	1			
Anthemis/Tripleurospermum L./Sch. Bip.	stinking/scentless mayweed	-	-	-	-	-	-	-	-	-	1
Avena sp. L. (grain)	oat grain	-	-	-	-	-	-	-	-	-	1
Bromus sp. L.	brome grass	-	-	-	-	-	-	-	-	-	1
Parenchyma indet.	soft plant tissue	++f ?kernal	-	-	-	-	-	-	-	-	-
Catkins fragments indet.	-	-	-	-	1	-	-	-	-	-	-

Appendix xvi: Radiocarbon dates from Tolpit's Lane (Roger Jacobi archive, Franks House, British Museum)

TOLPITT'S LANE: B101.
GRID A7, FEATURE FI, FILLING, SEDIMENT 2.2.
COLLECTED 1972.

WOOD CHARCOAL (NOT IDENTIFIED).

Q-1147 = 8,260 ± 120 BP.

TOLPITT'S LANE: B101.

M.T.S. EXCAVATION 1965.
TRENCH I, LAYER 7, FLINT CONCENTRATION. } COMBINED.
TRENCH II, POST-HOLE 5 FILLING. }
UN-SEALED.

WOOD CHARCOAL (NOT IDENTIFIED) WITH RARE FRAGMENTS OF CHARRED HAZEL NUT SHELLS.

Q-1099 = 6,330 ± 80 BP.

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