UNDERSTANDING EARLY NEOLITHIC HUMAN REMAINS AT CAUSEWAYED ENCLOSURE SITES

by

ADAM CARL PIETRZAK

A thesis submitted to the University of Birmingham for the degree of MRES ARCHAEOLOGY

Department of Classics, Ancient History and Archaeology

School of History and Cultures

College of Arts and Law

University of Birmingham

October 2014

UNIVERSITY OF
BIRMINGHAM

University of Birmingham Research Archive

e-theses repository

This unpublished thesis/dissertation is copyright of the author and/or third parties. The intellectual property rights of the author or third parties in respect of this work are as defined by The Copyright Designs and Patents Act 1988 or as modified by any successor legislation.

Any use made of information contained in this thesis/dissertation must be in accordance with that legislation and must be properly acknowledged. Further distribution or reproduction in any format is prohibited without the permission of the copyright holder.

Abstract

Over nearly a century of study, a number of interpretive paradigms have been proposed to account for the presence of Early Neolithic human remains at causewayed enclosures in England, and to suggest what they might mean. The human remains have largely been understood as the result of the deliberate exposure of bodies on-site as part of the excarnation process, or have been seen as votive deposits. However, the evidence has not been precisely defined in the literature, and the nature and scale of mortuary practices at causewayed enclosures remains unclear. This thesis collates, presents and analyzes the published data relating to 36 certain excavated causewayed enclosures to evaluate the validity of current interpretive paradigms for understanding the presence and meaning of the human remains. The evidence suggests that these interpretive paradigms are largely inadequate for understanding the human remains. The diversity of treatments and practices accorded to the human remains at the sites is demonstrated, and it is suggested that new interpretive frameworks need to be developed which can better account for the nature of the evidence.

Acknowledgements

I wish to express gratitude to Paul Garwood, for his guidance and support.

Thanks also to my family and friends, especially to my father, Carl Pietrzak.

Contents

List of tables and figures

Tables

Figures

Chapter 1: Introduction

Research topic and significance

This dissertation focuses on the Early Neolithic human remains present at causewayed enclosure sites in England. A number of interpretive paradigms have been proposed to account for the presence of these remains, and to suggest what they might mean in social and cultural terms. At present, the human remains have principally been explained as the result of the deliberate exposure of bodies on-site as part of the excarnation process, or votive deposits. However, the nature, scale, and chronology of mortuary practices at causewayed enclosure sites is unclear, and the evidence in its present state has not been precisely defined in the literature. This dissertation collates and analyses all published material relating to certain or probable Early Neolithic human remains at 36 excavated causewayed enclosure sites. It evaluates the current interpretive paradigms for accounting for the presence of the human remains at the sites, and argues that these are largely inadequate to explain the presence and meaning of the remains. This dissertation presents a more nuanced, diverse, and comprehensive picture of mortuary practices at causewayed enclosure sites than has previously been available, and argues that new interpretive frameworks need to be developed which can better account for the diversity of treatments and practices accorded to the human remains at the sites over space and time.

The number of causewayed enclosures in Britain is ambiguous and difficult to define precisely. In the most recent national survey in 2001, Oswald *et al* listed 107 sites in Britain as being possible, very probable, or certain Early Neolithic causewayed enclosures (Oswald *et al* 2001: 149-159). However, many of these sites have only been identified morphologically through aerial photography, and have not been confirmed by excavation (Oswald *et al* 2001). Enclosures which are morphologically characteristically causewayed in plan are not necessarily Early Neolithic in date. Recently, two characteristically causewayed enclosures in Wales, at Beech Court Farm, Ewenny, and at Caersws, in the Severn Valley, have produced Iron Age dates (Lewis and Huckfield 2008; Jones 2009b: 19).

Figure 1 shows the distribution of causewayed enclosures in Britain. It shows 76 sites. The 51 sites shown as 'certain' have been confirmed through excavation. The 25 sites shown as 'probable' are those identified by Oswald *et al's* survey as 'very probable sites' (Oswald *et al* 2001: xii, fig 1.1), with the addition of further probable causewayed enclosures suggested by recent research (Driver 2006; 2009). Because of the level of uncertainty regarding the identification and dating of the sites in Oswald *et al*'s 'possible' causewayed enclosures category, they have not been included in this map (Oswald *et al* 2001).

This thesis examines 36 causewayed enclosures. The locations of the sites selected for study are shown in Figure 2. A comparison of Figures 1 and 2 shows that the majority of 'certain' causewayed enclosures in Britain have been selected for study, and that all of the sites selected are 'certain' causewayed enclosures. In selecting sites to include in this thesis, there were two primary criteria. Firstly, as the thesis focuses on human remains at causewayed enclosures, the sites elected for study must have been excavated. This allows the presence or absence of human remains to be established, and for the potential for human remains to have been present to be estimated, based on size of area excavated, and preservation conditions. Secondly, sites studied in this thesis must have accessible, published excavation reports. This ensures that the data used in this study is reliable and detailed, and readily available for review. At present the excavations at Chalk Hill causewayed enclosure are unpublished (Shand 2001; Canterbury Archaeological Trust 2012). Human remains dated to the Early Neolithic period were present at the site, but the lack of publication means that details are difficult to access, define and evaluate. As such the site has not been selected for study in this thesis. The 36 sites selected out of the 51 certain excavated causewayed enclosure sites all have detailed, published excavation reports, which allow them to be analysed, compared and evaluated.

Mortuary practices have been a central area of interest in Early Neolithic studies, and human remains and associated structures and material culture form one of the main bodies of evidence from which the reconstruction of past social and cultural worlds has been attempted. In this context particular claims have been made about the dead, and wider Early Neolithic society and culture. In the 1970s, Colin Renfrew saw causewayed enclosures and long barrows as characteristic of a pre-chiefdom phase of social development (Renfrew 1973), and later as 'territorial markers' (Renfrew 1976). In the 1980s and 1990s, monuments such as long barrows were seen as places associated with ancestors (Bradley 1984: 15-20; Barrett 1988; 1994; Edmonds 1999). Mortuary structures have been seen as active in the construction and maintenance of power relations in Early Neolithic society (Shanks and Tilley 1982). The manipulation of human remains has been seen as a significant part of how Neolithic social worlds and relationships were formed, sustained, and negotiated (Pollard 2001; Fowler 2003; Harris 2010; 2011).

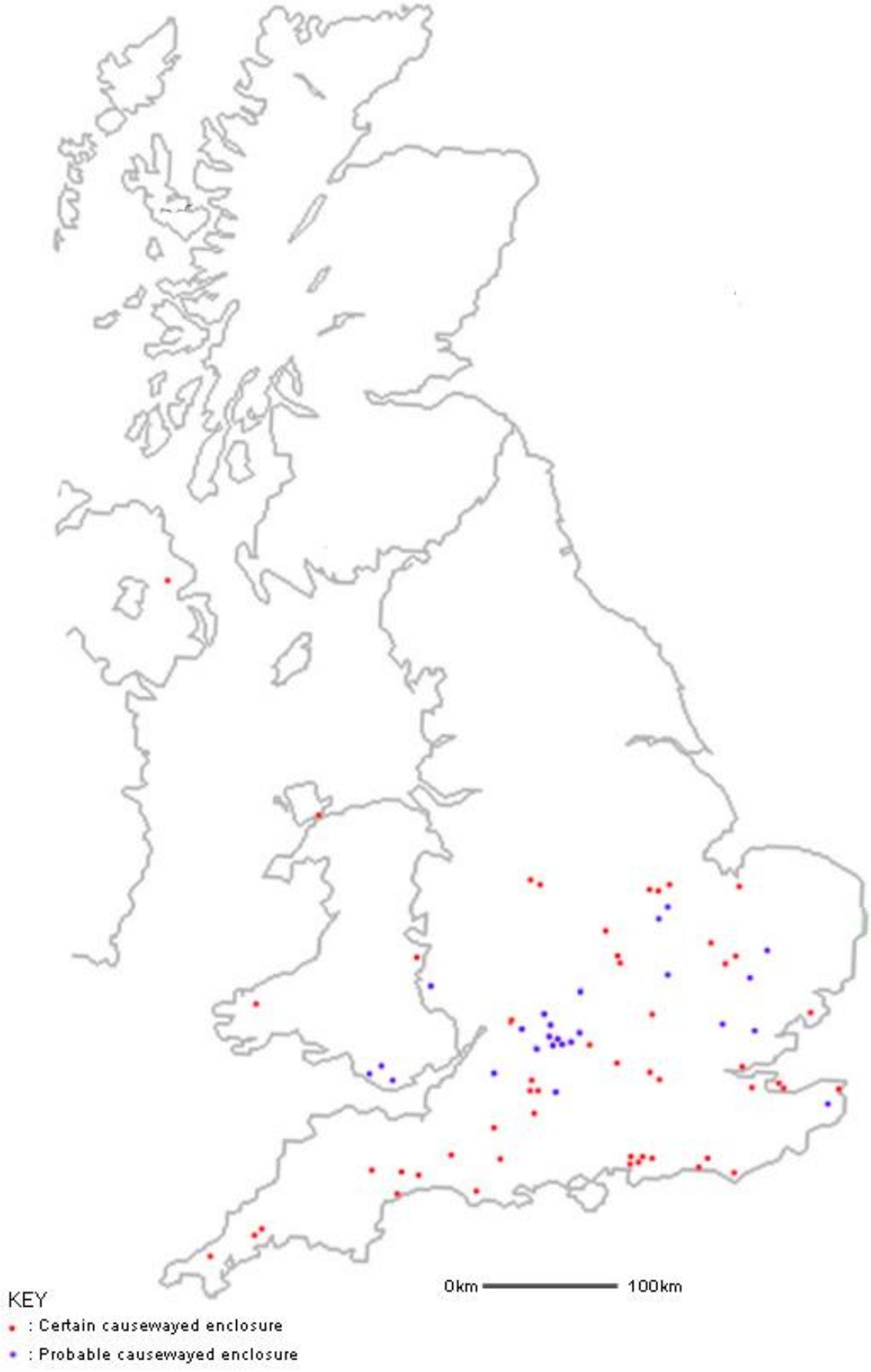
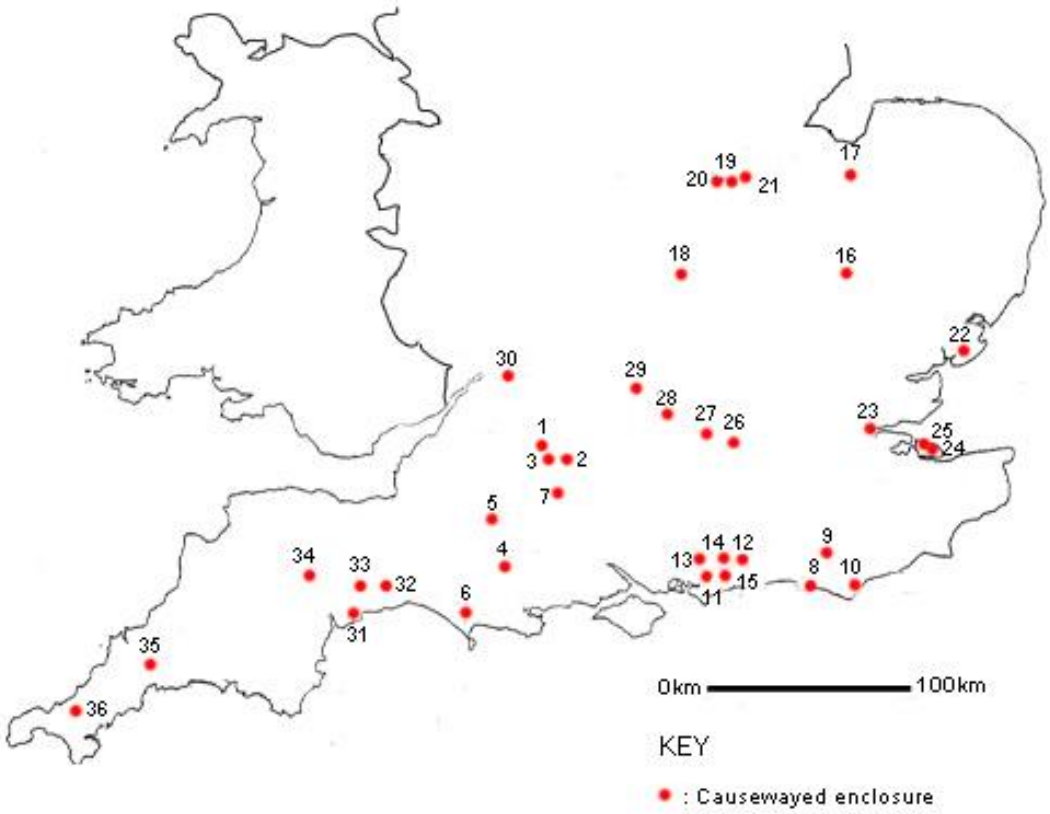


Figure 1: Distribution map of causewayed enclosures in Britain



LIST OF CAUSEWAYED ENCLOSURES:

The North Witshire Downs
1. Windmill Hill; 2. Knap Hill; 3. Rybury
South Wessex
4. Hambledon Hill (Main Enclosure); 5. Whitesheet Hill; 6. Maiden Castle; 7. Robin Hood's Ball
Sussex
8. Whitehawk Camp; 9. Offham Hill; 10. Combe Hill; 11. The Trundle; 12. Bury Hill;
13. Court Hill; 14. Barkhale; 15. Halnaker Hill
Eastern England
16. Great Wilbraham; 17. Haddenham; 18. Briar Hill; 19. Etton; 20. Etton Woodgate;
21. Northborough
The Greater Thames Estuary
22. Lodge Farm, St Osyth; 23. Orsett; 24. Kingsborough 1; 25. Kingsborough 2
The Thames Valley
26. Staines; 27. Eton Wick; 28. Gatehampton Farm, Goring; 29. Abingdon
The Cotswolds
30. Crickley Hill; 31. Peak Camp
The south-west peninsula
32. Membury; 33. Hembury; 34. Raddon Hill; 35. Helman Tor; 36. Carn Brea

Figure 2: Location map showing the causewayed enclosures selected for study in the thesis

Causewayed enclosures have been particularly significant in Early Neolithic research. In the 1990s causewayed enclosures were seen as places of past spiritual and religious significance, which could provide insights into past cosmologies and beliefs (Edmonds 1993; 1999: Tilley 1994; Whittle *et al* 1999). More recently, Whittle *et al* have placed them in the context of a chronologically and geographically broader process of the appearance and spread of "Neolithic things and practices" in Britain (Whittle *et al* 2011: 800-804). More broadly, causewayed enclosures in Britain descend from a longer continental tradition (Whittle *et al* 2011: 878-891).The appearance and spread of causewayed enclosures in Britain from the late 38th century cal BC correlates with a period when "the pace of change accelerated dramatically", and when, "over a period of two or three generations, the first Neolithic things and practices appear over a very wide area" (Whittle *et al* 2011: 836-837).

While not the first Early Neolithic constructions, preceded in the 41st century cal BC by flint mines in Sussex, and structures, such as Coldrum, and the White Horse Stone long hall in Kent (Whittle *et al* 2011: 800-801: Fig. 14.145., 833-835), causewayed enclosures are significant as the first large-scale enclosures of space in Britain. For the first time, space was clearly bounded and demarcated on a large scale. In the context of the spread of Neolithic things and practices, the study of causewayed enclosures has the potential to provide significant insights into beliefs and worldviews at this time.

Early Neolithic human remains

Recent research has emphasised the diversity of treatment accorded to human remains in the Early Neolithic (Schulting 2009; Fowler 2010). In his synthesis of Early Neolithic mortuary practices across the British Isles, Fowler identifies recurrent mortuary practices of collective burial, single burials of intact bodies, excarnation and the defleshing of bodies, cremation, and the manipulation of bodies in secondary and tertiary mortuary practices (Fowler 2010). Prolonged mortuary practices, and a concern with the fragmentation and disarticulation of bodies have featured prominently in discussions of the period (Thomas 2000; Pollard 2001; Fowler 2003; Smith and Brickley 2009: 41). Collective burial in non-megalithic long barrows, chambered tombs, and caves is the most well attested practice (Fowler 2010: 2-6). Intact bodies are relatively rare, but have been found at causewayed enclosures, in graves, other pits, caves and flint mines, sometimes with associated objects (Fowler 2010: 6-7). Individual bones have been found in ditches, pits, post-holes, and middens (Smith and Brickley 2009: 13).

It has recently been suggested that exposure may have been the most common treatment of bodies (Fowler 2010: 7). However, the significance of exposure during the period has long been debated, and evidence for it is limited and ambiguous (Darvill 2004: 146-153). Several

possible structures for the exposure of bodies have been identified (Scott 1992; Smith and Brickley 2009: 42, 164). These include a timber structure associated with human and animal bone near a river at Langford (Garton *et al* 1997), and a structure near the River Nene (Harding and Healy 2007: 10). Excarnation by prior burial has been suggested to have been a treatment accorded to bones deposited within Fussell's Lodge (Smith and Brickley 2009: 46-47). Bodies may have also been placed in caves to facilitate the decay process (Fowler 2010: 9). Evidence of gnawing on human bones has sometimes been interpreted as evidence of deliberate exposure; at Adlestrop Barrow, for example, 76 out of 376 identifiable human bone fragments showed evidence of canid gnawing (Smith 2006; Smith and Brickley 2009: 42-45). Cut marks have been found on human bones from several funerary monuments, including Aldestrop and West Tump, and may represent the deliberate defleshing of bodies (Smith and Brinkley 2009: 49). Significantly for this study, the deliberate on-site exposure of bodies has recurrently been suggested to have been a significant activity at causewayed enclosure sites, and perhaps their intended function (Drewett 1977; Mercer 1980; Edmonds 1993; Armour-Chelu 1998: 271-272; Pryor 1998: 362; McKinley 2008; Fowler 2010: 7-9).

Early Neolithic human remains at causewayed enclosure sites

Causewayed enclosures typically consist of "a roughly circular or oval area surrounded by one or more discontinuous circuits of bank and ditch" (Oswald *et al* 2001: 1). Most causewayed enclosures feature a single discontinuous ditch, while some have two or three ditch circuits (English Heritage 2011: 3). In their 2001 review of the evidence, Oswald *et al* listed 107 sites as being possible, very probable, or certain Early Neolithic causewayed enclosure sites in Britain (Oswald *et al* 2001: 149-159). Whittle *et al's* recent Bayesian statistical analysis of radiocarbon dates from 37 causewayed enclosure sites has identified the main period of their construction and primary use in the Early Neolithic, from around 3800 BC to 3400 BC (Whittle *et al* 2011: 1).

The segmented ditches of causewayed enclosures, and sometimes pits and features in the interior of the sites, were the focus for the deposition of material including pottery, chalk, flint, stone, and bone objects, flint debris, soils, rubbles, and animal and human bone (Oswald *et al* 2001). Both disarticulated human bones and articulated skeletons are present at causewayed enclosure sites. The presence of these human remains has often been explained with reference to two paradigms: (i). the deliberate on-site exposure and/ or defleshing of bodies as part of the excarnation process, and (ii). as votive deposits.

The idea that the deliberate on-site exposure of bodies constituted a significant activity at causewayed enclosure sites emerged in the late 1970s and 1980s, with the excavations at

Offham Hill (Drewett 1977) and Hambledon Hill (Mercer 1980). It was developed by Edmonds in the early 1990s (Edmonds 1993), and has persisted in the literature (Pryor 1998: 362; Jones 2008; McKinley 2008).

In his 1977 excavation report on Offham Hill, Peter Drewett was unusual in suggesting a primarily funerary function for causewayed enclosures (Drewett 1977: 222-226). Assessing the evidence for human remains at 19 excavated sites, he concluded that causewayed enclosures were "defined exposure areas", and suggested that the objects and human remains present at the sites were primarily the result of the deliberate exposure of bodies on-site (Drewett 1977: 225-226). In his view, bodies were exposed "within the enclosure" directly "on the old land surface" (Drewett 1977: 226). The resulting bones were then either scattered and decomposed, or were "casually lost or deliberately thrown, but not specifically buried, in the ditches" (Drewett 1977: 225). The idea that bodies were exposed deliberately at causewayed enclosures was emphasised by Roger Mercer during the 1974-1986 excavation of Hambledon Hill, with the 1980 interim report describing the main enclosure as "a gigantic necropolis constructed for the exposure of the cadaveric remains of a large population" (Mercer 1980: 63).

Several authors have noted that different elements of skeletons tend to be found at causewayed enclosures compared with long barrows (Piggott 1962; Smith 1965: 137). It has been recurrently suggested that disarticulated bones may have been circulated between causewayed enclosures and long barrows (Mercer 1980: 40-44, 63-64; Bradley 1984; Thrope 1984; Edmonds 1993; Thomas 2000). In his 1984 book *The Social Foundations of Prehistoric Britain*, Richard Bradley noted the importance given to the defleshing of bodies as a rite of passage in Huntingdon and Metcalf's 1979 cross-cultural study of death rituals (Bradley 1984: 22; Huntingdon and Metcalf 1979). He attempted to find similar complex treatments of the dead in the Early Neolithic, in order to potentially gain insights into ranking in the period (Bradley 1984: 21). Bradley suggested that 'preliminary treatment' of bodies in the form of exposure and defleshing took place at Hambledon Hill and other causewayed enclosures, before the resulting disarticulated bones were placed interred in long barrows and chambered tombs (Bradley 1984: 22-24).

In his influential 1993 article, *Interpreting Causewayed Enclosures in the past and the present* Mark Edmonds developed this line of argument. He drew several parallels between causewayed enclosures and long barrows, highlighting the control of movement made possible by the provision of causeways and ditches, and the similarity of the material deposited in enclosure ditches and long barrow ditches and forecourts, suggesting "a series of conceptual links", between enclosures and barrows (Edmonds 1993: 111-115). Edmonds saw mortuary

activities at causewayed enclosures as one part of a multi-stage mortuary process leading to the eventual deposition of disarticulated remains in tombs. Prior to their insertion into tombs, individuals' identities were 'transformed' and idealised at causewayed enclosures through excarnation (Edmonds 1993: 116). Further, Edmonds suggests that the meaning and significance of mortuary rites performed at causewayed enclosures may have changed, arguing that, over time, a more distinctive emphasis was placed on children, as enclosures became places "in which to 'contain' or control the significance offered to those who were increasingly excluded from tombs" (Edmonds 1993: 116).

Edmonds' interpretation, and in particular his argument that the deliberate excarnation of bodies on-site formed a significant activity at causewayed enclosure sites, and that this practice was linked to long barrows, has been influential, with several publications drawing on his ideas (Tilley 1994: 200; Armour-Chelu 1998: 271-272; Thomas 2000). The 2011 English Heritage introduction to causewayed enclosures recommends reading Edmonds' article for information on "the social context in which the phenomenon of causewayed enclosures took root" (English Heritage 2011: 5).

The significance of this research

It has been recognised that interpretations of causewayed enclosure sites have tended to rely too heavily on evidence from a limited selection of sites, such as Windmill Hill, Hambledon Hill, and Maiden Castle, which are located on the chalk hills of southern England (Oswald *et al* 2001: 147; English Heritage 2011: 4). Edmonds' 1993 article drew on a far more limited range of evidence than is now available. In particular, he was strongly influenced by Mercer's 1980 interim publication on Hambledon Hill, which emphasised excarnation as a significant activity at the site, but provided little detailed information to back up this claim (Mercer 1980). After a series of interim publications, a complete, comprehensive report on Hambledon Hill has recently been published (Mercer and Healy 2008). This work presents the results of the survey and excavation of Hambledon Hill in full, and features detailed information on stratigraphy, human remains, and dating evidence from the site. The new publication offers the opportunity to reassess the earlier claims made about human remains at the site, and those made about causewayed enclosures more broadly. Furthermore, since the publication of Edmonds' 1993 article, more causewayed enclosure sites have been subject to excavation and full publication, greatly increasing the information available. Recently there has been the publication of information relating to causewayed enclosures in other regions than Wessex and Sussex, such as Peak Camp in the Cotswolds (Darvill 2011). Ian Hodder's 1992 account of Haddenham, excavated between 1981 and 1987 (Hodder 1992: 213-240), has recently been superseded by a

full, detailed publication of the excavation (Evans and Hodder 2006). In their 2011 work, *Gathering Time*, Whittle *et al* use the Bayesian modelling of radiocarbon dates to present a more precise chronology for the construction and primary use of causewayed enclosures and other Early Neolithic monuments then has been available previously (Whittle *et al* 2011). They also provide new radiocarbon dates, some on human remains.

While the claim that the deliberate exposure of bodies on-site formed a significant activity at causewayed enclosures has often been repeated (Edmonds 1993; Jones 2008; Fowler 2010), there has been no systematic study of the evidence from all excavated sites. The scale, nature, and chronology of mortuary practices at causewayed enclosure sites have not been precisely defined in the literature. In regards to evidence sets, while some articulated skeletons have received attention, such as Harris' discussion of the two articulated child burials at Hambledon Hill (Harris 2010: 366-368), in general the articulated remains present at causewayed enclosure sites have attracted little attention in the literature. In his 1977 overview of 19 sites, Drewett lists articulated skeletons as present at seven sites, but fails to note the grave goods found with some burials, such as the chalk discs found at Whitehawk, stating: "All the burials are crouched and without grave goods" (Drewett 1977: 225).

The precise chronological framework and new dates presented by Whittle *et al*, as well as the range of recent, detailed site publications, mean that a new study is timely, and can on draw of a range of new information. A study of this kind, including a detailed examination of the taphonomy and contextuality of the human remains, offers scope for a significant reassessment of interpretive ideas relating to human remains at causewayed enclosure sites, and for the use of the sites more broadly. In this study, I review and analyse all the available published data to present a more nuanced, diverse, and comprehensive picture of mortuary practices at causewayed enclosure sites than has been available previously.

Research aims and methodology

This dissertation aims to:

1. Systematically review the published evidence for the presence of Early Neolithic human remains at 36 excavated causewayed enclosure sites.
2. Collate and present this data, including detailed contextual and spatial information.
3. Analyse the data from aim 2, identifying pattern and diversity in the treatment and deposition of the dead over time and space.
4. Draw on the information from aims 1, 2 and 3 to evaluate the suitability of current interpretive paradigms for accounting for the presence of the human remains and

understanding their meaning in social and cultural terms, and to discuss pattern and diversity in the treatment and deposition of the human remains over time and space.

The first aim involves systematically assessing the evidence from 36 excavated sites. I do this by reviewing all relevant published literature relating to these sites, especially excavation reports and interpretive articles and books. As no systematic review of the published evidence has been undertaken on this scale before, this method has the potential to offer significant new knowledge of the scale and character of the evidence, and new interpretive insights.

To accomplish the second aim, I collate the data from the disparate sources to produce tables and annotated plans, presented in the appendices. Appendix 1 lists the human remains and associated material found at the sites, and includes detailed contextual and taphonomic information. Appendix 3 presents annotated plans of eight sites at which human remains are present. On these, the locations of the human remains, and the scale and location of excavations, are clearly marked. To achieve the third aim, the dataset is interrogated with specific themes, such as modifications to remains, age, and sex, in mind. Data relevant to these specific themes is used to construct charts and schematic diagrams. These allow patterns to be drawn out of the dataset. In achieving the fourth aim, the dataset presented in the appendix, and the analyses of this data presented in Chapters 2 and 3, are drawn on to produce an informed, cohesive discussion.

Dissertation structure

Chapters 2 and 3 comprise broad surveys of the evidence relating to Early Neolithic human remains from 36 excavated causewayed enclosure sites. These chapters present analyses of the datasets in the appendix, and draw out some key patterns and themes from this data. Chapter 2 focuses on the presence, treatment, and deposition of the human remains. Chapter 3 examines the human remains over space and time. The spatial distribution of human remains at three key sites, Hambledon Hill, Windmill, and Etton, is presented in detail in this chapter, and a discussion is presented focused on fitting the causewayed enclosures and their associated human remains into a chronological framework. Chapter 4 draws on the analyses in Chapters 2 and 3, and the datasets in the appendix, to provide an extended interpretive discussion of the human remains at causewayed enclosure sites. The chapter evaluates the suitability and validity of current interpretive paradigms for understanding and accounting for the presence and meaning of the human remains, and argues that these are largely inadequate for understanding the evidence. A discussion is presented looking at patterns and diversity in the treatment and deposition of human remains across causewayed enclosure sites over space and time. The nuanced and diverse nature of the treatments and depositional practices accorded to human

remains at causewayed enclosures is highlighted, and it is argued that new interpretive frameworks need to be developed which can better account for the varied range of the evidence. Chapter 5 synthesises the data, analyses and discussion presented in this study. It summaries and evaluates the outcomes of the study, and discussed their broader significance. The methodology used in the study is critically evaluated in relation to how far it achieved the aims of the study, and then some directions for future research on the topic are presented.

Chapter 2: Analysis of human remains at causewayed enclosure sites: treatment and deposition

Introduction

This chapter presents an analysis of the data in Appendix 1, focusing on the character and context of the human remains from causewayed enclosure sites, and their treatment and deposition. An initial section first summarises previous approaches to human remains at causewayed enclosure sites, surveying the methods used to recover and analyse remains in the past and detailing previous ideas about patterning in their treatment and deposition. This section also discusses how the human remains have been interpreted and understood in the literature. Following this, analyses of the data in Appendix 1 are presented in three thematic sections: (i). presence and absence of human remains at causewayed enclosure sites; (ii). body treatment and bone modification; and (iii). deposition. Patterns identified in the evidence are examined in more depth in the wider context afforded by the discussions in Chapters 4.

Previous approaches to human remains at causewayed enclosure sites

The approaches taken towards human remains at causewayed enclosure sites in the published literature vary. Through time, the approaches that have been taken have been influenced by wider changes in scientific methods and technologies, and the paradigms of archaeological thought. This section summarises how the human remains at causewayed enclosure sites have been recovered, how they have been analysed, and how they have been understood and interpreted through time.

The first causewayed enclosure to be excavated and identified was Knap Hill, during 1908-1909 (Cunnington 1912). From the 1900s to the 1950s, eleven causewayed enclosures in England were subject to excavation. During these early excavations, such as those at Whitehawk Camp and Windmill Hill, ditches and features were dug and recorded in spits (Leeds 1927; 1928; 1929; Williamson 1930: 95; Whittle *et al* 1999: 25-26). There is no mention of sieving being undertaken. Both disarticulated and human remains and articulated skeletons are described in reports published during this period. However, the descriptions generally lack detail, particularly in regards to the traits used to arrive at remarks on age and sex, and in the identification of modifications on bone (Curwen 1934). Both the written and drawn published records tend to lack precise information on the location and context of disarticulated humans remains, and on their spatial relationships to other materials. Instead, this information is often presented more generally by spit (Williamson 1930).

Some efforts were made to account for and understand the presence of the human remains. The find of two fragmented skulls from "quite young persons" at Abingdon, led Leeds to note that this may "indicate that it was not the practice to accord burial to children below a certain age" (Leeds 1928: 476). At Whitehawk, both disarticulated remains and an articulated skeleton were interpreted in the context of their deposition in a layer of 'black mould', along with associated material including "quantities of broken pottery and animal bones", as 'refuse', thrown in incidentally along with the "domestic rubbish" of ditch deposits (Williamson 1930: 87; Curwen 1934: 108.). Three modified bones, charred skull fragments, were seen as possible evidence of cannibalism (Curwen 1934: 112). A cut marked adult male skeleton found at Maiden Castle, later dated to the Iron Age (Brothwell 1971), was interpreted by Wheeler as a sacrificial victim with reference to ethnographic parallels (Wheeler 1943).
In the 1960s and 1970s, 10 causewayed enclosures in England were subject to excavation. During this time, there was increasing recognition of the complexity of the excavated evidence, resulting in significantly improved recovery patterns, and detailed site recording. Radiocarbon dating was used to obtain calendar dates on materials from ditch fills, with mixed success (Meadows 2003). Staines was excavated during 1961-1963. The published report featured detailed plans showing the spatial locations and distributions of materials (Robertson-Mackay 1987). Human remains were described in detail, and precise descriptions and numbers were given of materials considered to be in association with human remains (Robertson-Mackay 1987). While no human bone was found during the 1974-1978 excavations of Briar Hill, except for cremations, the report similarly emphasised the complexity of deposition and stratigraphy at the site, detailing a complex sequence of ditch recuts (Bamford 1985).

In 1965 Isobel Smith published Alexander Keiller's excavations at Windmill Hill (Smith 1965). Her interpretations of the site explicitly emphasised the deliberate, formal and ritualistic nature of the deposits in the ditches. For the first time, human remains came to the foreground in the interpretation of causewayed enclosure sites. In Peter Drewett's 1977 report on Offham Hill, which was excavated in 1976, human remains were central to his interpretation of the site, and of causewayed enclosures more broadly. Drewett drew on his anthropological background to suggest that Offham Hill had been a site for the exposure of bodies, and understood some of the disarticulated human remains in the ditch fills as incidental survivors of this practice (Drewett 1977).

From the 1980s to the present day, approximately 28 causewayed enclosures in England were subject to excavation. In 1980, Roger Mercer published an interim report on the excavations at Hambledon Hill, which had begun in 1974 (Mercer 1980). Influentially, Mercer understood the

human remains found at the site as the result of mortuary practices focused on the excarnation of bodies, which included the on-site exposure of bodies, and the defleshing of individuals by cutting and animal gnawing (Mercer 1980). However, this report lacked detailed written and drawn evidence regarding the nature, spatial locations, and context of human remains.

The 1980s saw several important publications which have influenced how Neolithic human remains have been understood. Richard Bradley's 1984 book, *The social foundations of prehistoric Britain*, coherently presented the concept of 'ancestors', and suggested that human remains were circulated as relics amongst the living during the Early Neolithic (Bradley 1984: 23). Thrope suggested that a disparity in representation between bones in long barrows and those at causewayed enclosure sites, particularly in regards to skulls and long bones, reinforced the idea that disarticulated human bones were circulated between sites (Thrope 1984). In the late 1980s and 1990s Barrett published discussions of the concept of ancestors, which embedded the idea into discussions of Neolithic mortuary practice (Barrett 1988; 1994). He suggested that bone which had undergone transitional rites could have been regarded as having joined the community of ancestors, and could have functioned to establish the physical presence of the dead in rituals concerned with the living (Barrett 1998). In the 1980s and 1990s, the concept of 'structured deposition' emerged, in relation to deposition during the Neolithic (Richards and Thomas 1984; Thomas 1999; Garrow 2012). The formal, deliberate nature of deposition in the past was emphasised, and it was suggested that analysis of material culture patterning and 'odd deposits' could provide insights into past beliefs, cosmologies, and social worlds (Thomas 1991: Garrow 2012).

Against the background of these theoretical developments, Haddenham was excavated from 1981-1987, Etton from 1982 to 1986 and Windmill Hill in 1990. The final reports on these sites were published in the late 1990s and 2000s (Pryor 1998; Whittle *et al* 1999; Evans and Hodder 2006). These three excavations recognised the complex, ambiguous nature of the evidence, and took a forensic approach to its recovery and recording. Deposits of human remains and any associated materials were planned and described in detail, and their spatial locations, distribution, and context precisely recorded. In these reports, human remains were understood with reference to a wide range of idea and concepts. Evidence of gnawing and bone discolouration on disarticulated bones was seen as suggestive of the practice of on-site exposure at Etton (Armour-Chelu 1998: 271-272), while the displacement of the bones of an articulated skeleton, and the finds of amphibian bones in association with the remains, were seen as evidence of exposure at Windmill Hill (Whittle *et al* 1999: 344-345). In these reports, there is a greater concern with acts of deposition, and of the spatial relationships between

deposited materials, which are seen as "considered and evocative" metaphorical statements (Edmonds 2006: 352-353). Concepts of personhood are sometimes extended to associated objects; Pryor saw two pitted stones at Etton as representing human heads (Pryor 1998: 34, 269), while Edmonds saw an axe blade as a "torso" (Edmonds 2006: 352-353).

In 2008 a full, comprehensive report was published on Hambledon Hill, which featured detailed information, analyses, and discussion regarding the human remains recovered from the site (Mercer and Healy 2008). A full assessment of bones was undertaken to establish the presence or absence of gnawing, cut marks, and trauma. The results of this are discussed in the publication, and a more nuanced interpretation of the human remains is offered, which stresses their ambiguity and variety.

The ways that human remains from causewayed enclosure sites have been recovered, analysed, and understood in past reports still influences how they are understood in the recent literature. In 2008, Andrew Jones stated that "the dead were apparently defleshed and exposed within the ditches" at Hambledon Hill, and suggested that "the deposition of fragments of human remains, and in particular skulls, at sites such as Abingdon (Oxfordshire), Offham and Whitehawk (Sussex), Staines (Surrey) and Etton and Haddenham (Cambridgeshire), suggest similar practices" (Jones 2008: 182). He further stated that, at causewayed enclosure sites, "child burials notably predominate, and there is a marked distinction in the frequency of child burials at causewayed enclosures and long barrows" (Jones 2008: 182). Citing Thrope's 1984 article, he stated that "skulls predominate in causewayed enclosures, against the predominance of long bones in barrows" (Jones 2008: 182). Both skulls and child burials at causewayed enclosure sites have been the focus of recent articles, in which broader claims about Neolithic beliefs and social worlds have been made (Harris 2010; 2011; Reynolds 2014).

Explanation of terms and categories used in analyses

This section introduces and explains some terms and categories used in the analyses described in this chapter.

In establishing the quantity of disarticulated bones present at causewayed enclosure sites, a 'bone' is sometimes ambiguous and difficult to define. Every individual bone represented by a complete bone or bone fragment has been included. In cases where it is very likely that multiple fragments represent parts of the same, single bone, then these fragments are classed as one bone. For example, at Haddenham, twenty skull fragments from the same location refitted, and this material has been classed as one skull.

In the analyses in this study, disarticulated bones are often grouped in tables and charts by 'area of the body'. This grouping allows the large dataset presented in Appendix 1 to be more clearly displayed and compared, particularly in chart form. The groupings used broadly follow those used in the summary of human remains in the Hambledon Hill report (McKinley 2008: 478-489, Table 7.1). However, in order to more subtly represent the range of data, some modifications were made to this scheme. The categories of skull, mandible, and disarticulated teeth, were retained. The 'axial body' category, which comprises clavicles, vertebrae, and ribs, was retained, but pelves have been given their own category, as they may have been of special significance in the period (McKinley 2008: 502). The 'upper body' category comprises the scapulae and the long arm bones, while the 'leg' category comprises patella bones and the long leg bones. Hands and feet have been listed separately to these, as they may have been of special significance in the period (Smith and Brickley 2009: 82-83).

All articulated skeletons listed in Appendix 1 are considered in the analyses, with the exceptions of the two reported skeletons from Abingdon, the skeletons from Gatehampton Farm, The Trundle, Knap Hill, and one infant skeleton from Windmill Hill, which are all later in date than the Early Neolithic, or, in the case of the Abington skeletons, lack sufficient detailed evidence of their existence or character.

Presence and absence of human remains at causewayed enclosure sites

This section presents a brief overview of the presence and absence of Early Neolithic human remains across all 36 causewayed enclosure sites included in this study. Table 1 shows that disarticulated human remains were present at 12 out of the 36 causewayed enclosure sites examined. Articulated skeletons were present at 7 sites, all of them also featuring disarticulated remains. At 24 sites, two thirds of the total, no human remains have been found.

In total, 387 disarticulated bones have been found at causewayed enclosure sites. As shown in Table 1, across the majority of the sites which feature disarticulated human bone, there are relatively low numbers of bones present at each site. At Hambledon Hill, however, there are more bones than at all the other sites put together; disarticulated human bones present across all causewayed enclosure sites excluding Hambledon Hill total 137, while those at Hambledon Hill total 250. The human remains assemblage from entire Hambledon Hill complex has been included in this analysis, with the exception of the long barrow and 'flint mines'. Three groups of disarticulated bones from Hambledon Hill have also not been included in Table 1 or the charts in this chapter. These groups contained high numbers of fragmented bones, possibly from single individuals, and the exact numbers of bones are not listed in detail in the Hambledon Hill report (McKinley 2008; Mercer and Healy 2008). Rather than estimate overly

high numbers, these groups have been excluded from the analyses in this chapter. However, they are discussed in the broader context of the discussions in Chapter 4.

Figure 3 shows the total number of disarticulated bones present from Early Neolithic contexts across all causewayed enclosure sites. As seen in Figure 3, skulls are the most numerous body part by quantity, narrowly followed by leg bones. It is worth noting that if leg and arm bones were categorised together as 'long bones', then they would dominate the assemblage. The large number of skull and leg bones found at Hambledon Hill does not distort the data from the rest of the sites in this regard; as shown in Figure 4, this broad pattern holds constant across the bone assemblage from all sites excluding Hambledon Hill, and from the assemblage at Hambledon Hill itself.

As shown in Table 1, it is clear that there is a great deal of variation in the presence and quantity of bones from different parts of the body at individual sites. Leg bones are present at 9 out of the 12 sites which featured human remains. Skulls are narrowly second, present at 8 out of 12 sites. Two of the sites which lack skulls do, however, feature mandibles, so the 'head' is present at 11 sites. While there is a relatively high number of teeth present in the skeletal assemblage, they are not well distributed, all deriving from two sites. Similarly, as shown in Figure 4, while axial body bones are the fourth most numerous body part by quantity, the vast majority of them derive from Hambledon Hill.

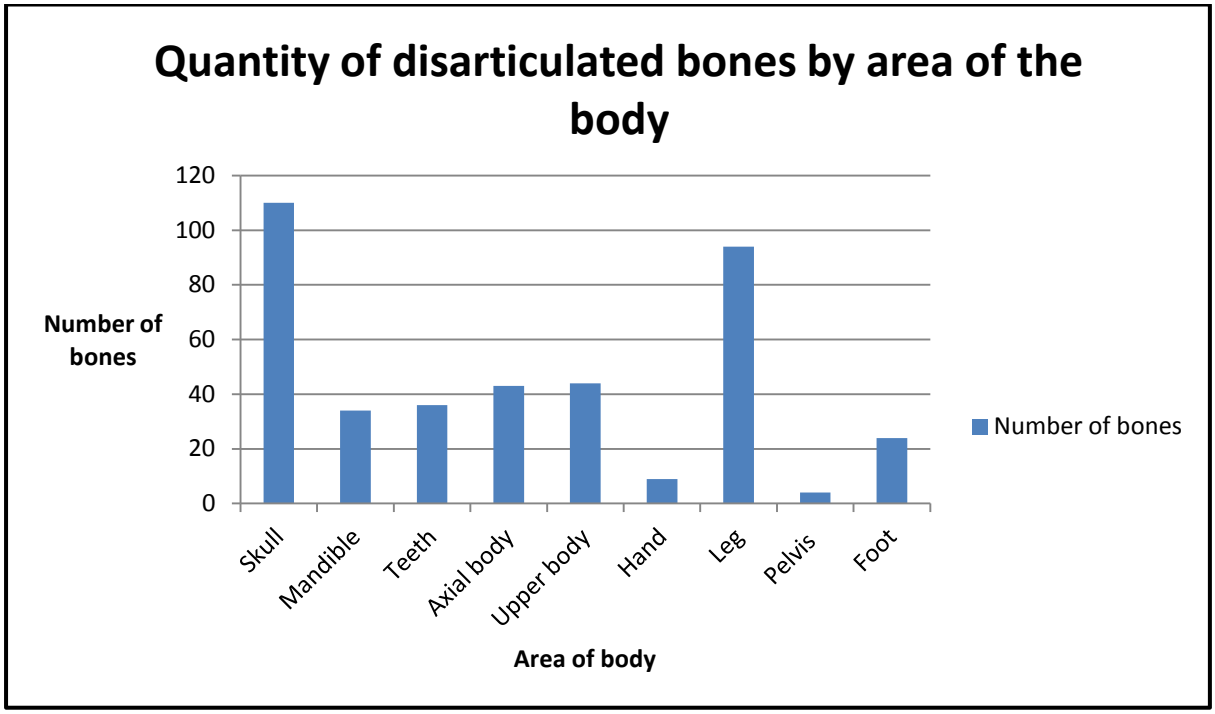


Figure 3: Chart showing the number of disarticulated human bones present across all causewayed enclosure sites, by area of the body

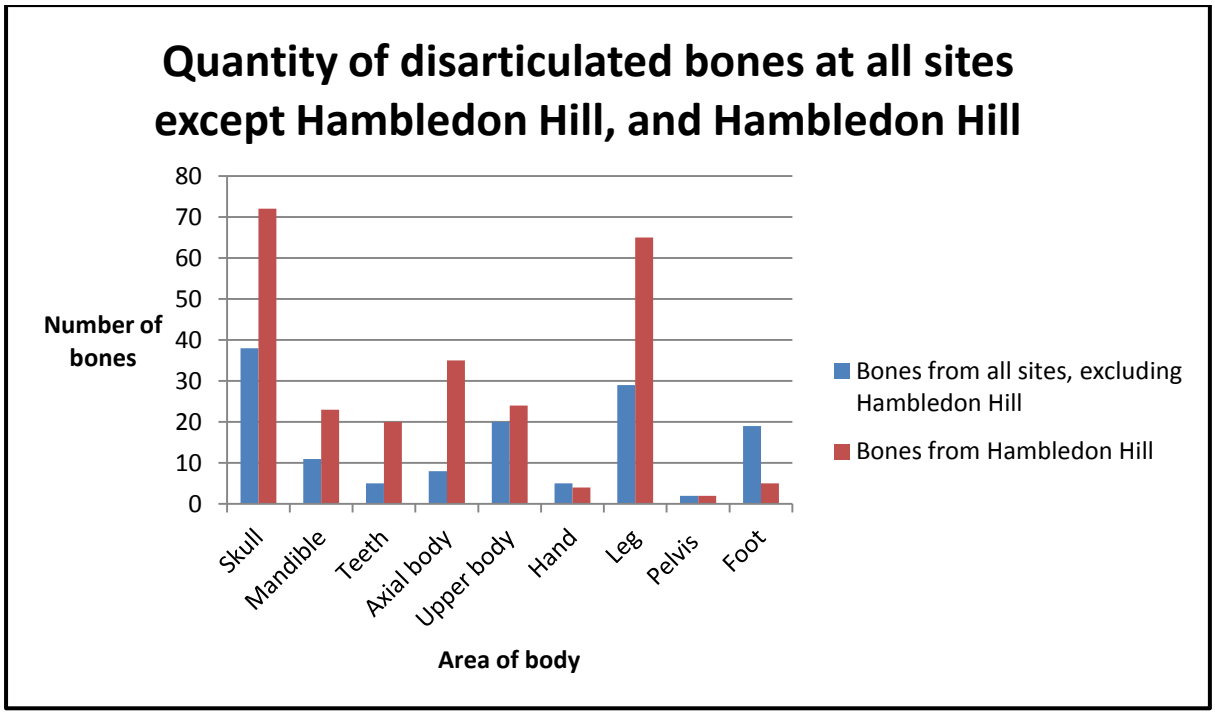


Figure 4: Chart showing the number of disarticulated human bones present across all causewayed enclosure sites excluding Hambledon Hill, and those at Hambledon Hill, by area of the body

Site	Disarticulated bones by area of the body									Skele
	Skull	Mandible	Teeth	Axial body	Upper body	Hand	Leg	Pelvis	Foot	AS
The North Wiltshire Downs										
Windmill Hill	16	3	6	1	6		11			2
Knap Hill		1								
Rybury										
South Wessex										
Hambledon Hill	72	23	30	35	24	4	65	2	5	11
Whitesheet Hill										
Maiden Castle	3	1					2			3
Robin Hood's Ball										
Sussex										
Whitehawk Camp	5	1		2	7	1	6	1	3	5
Offham Hill		2		1		1	2			1
Combe Hill										
The Trundle										
Bury Hill							1		5	
Court Hill										
Barkhale										
Halnaker Hill										
Eastern England										
Great Wilbraham										
Haddenham	4	1					1			
Briar Hill										
Etton	6				4		5			
Etton Woodgate										
Northborough										
The Greater Thames Estuary										
Lodge Farm										
Orsett										
Kingsborough 1										
Kingsborough 2										
The Thames Valley										
Staines	2	2		4	3	3	1			1
Eton Wick										
Gatehampton										
Abingdon	2							1		1
The Cotswolds										
Crickley Hill										
Peak Camp									11	
The south-west peninsula										
Membury										
Hembury										
Raddon Hill										
Helman Tor										
Carn Brea										
TOTAL FROM ALL SITES	**110**	**34**	**35**	**43**	**44**	**9**	**94**	**4**	**24**	**24**

Table 1: The number of disarticulated bones, by area of the body, and articulated skeletons, present across all causewayed enclosure sites. The headings 'Skele' and 'AS' refer to articulated skeletons.

The dominance of skull and leg bones can in part be explained by issues of preservation. Skull and leg bones are the most likely bones to be preserved from Neolithic contexts, while the preservation of pelvic bones is rare (Smith and Brickley 2009: 89). Issues of recovery may also affect the bone types present, with long bones and skulls being generally easier to spot than small hand or foot bones. However, recovery appears to have generally been good; a finger bone was recovered from a relatively early excavation (Curwen 1934), as were neonatal articulated remains (Curwen 1934), and a neonatal bone (Robertson-Mackay 1987). However, we cannot know what has been missed, and it is likely that biases in recovery can partly account for the relatively low numbers of small bones.

Figure 5 shows the sex of the disarticulated remains. As can be seen, very few of the disarticulated remains have been assigned a sex in the published reports. This can be explained by the general difficulties involved in confidently sexing disarticulated bones, and also by the fragmented or eroded state of many of the remains. Infants and juveniles cannot be sexed at all, and there is a level of error even in the sexing of adult remains (Lewis 2011). The skull is the bone which has been most frequently sexed, with 22 assigned a sex. This is because the skull displays the most obvious sexually dimorphic traits, and is the easiest bone to sex, and possibly because more skulls have been found than any other bone. As shown in Figure 6, skulls are balanced by sex, with 10% being male, and 10% female. More mandibles are however, male than female. In two cases, mandibles were disarticulated, but close to male skulls, from which they may have derived. Male leg bones predominate over female leg bones by a single bone. The only sexed pelvic bone is male. Female bones dominate the upper body and axial body categories.

As shown in Figure 10, all of the adult articulated skeletons have been sexed. The skeletons of unidentified sex shown in Figure 10 are all juveniles, infants, or neonates, which do not have sexually dimorphic traits, and which have not been sexed. Of the adults, the majority, ten, are male, and four female. Adult males tend to be over represented in skeletal assemblages due to biases in ageing and sexing techniques (Smith and Brickley 2009: 89); with this in mind, Figures 7 and 10 should be read cautiously. Interestingly, if the skeletons from Hambledon Hill are not included in the analysis, then the skeletons are demographically balanced.

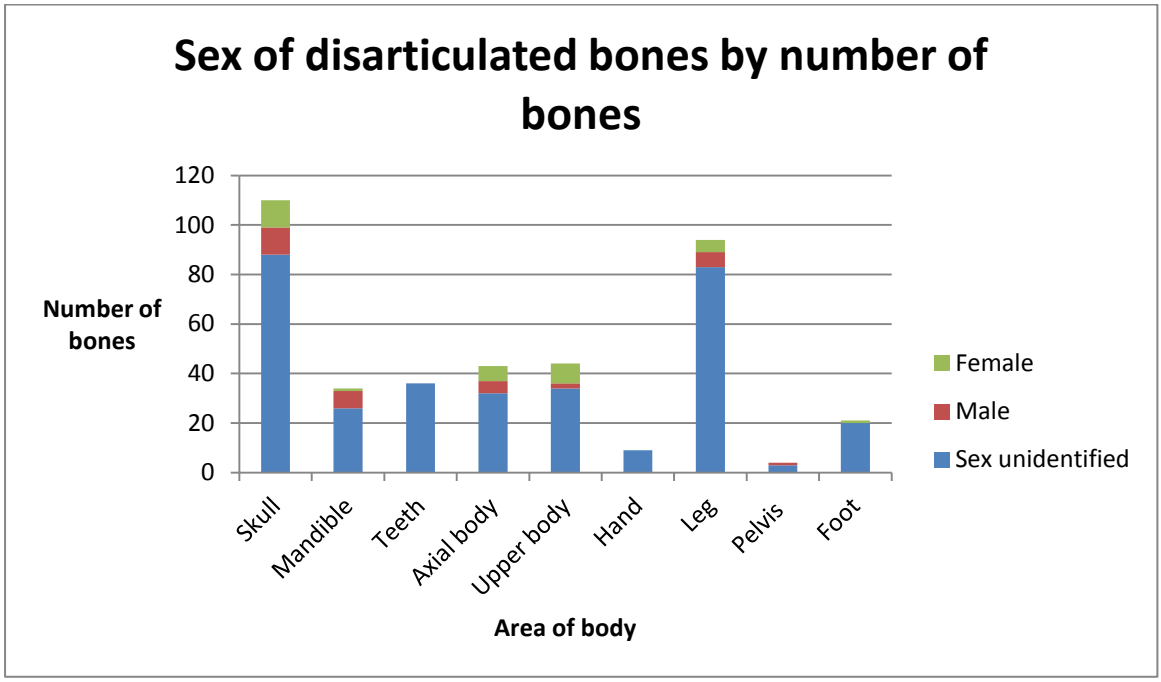


Figure 5: Chart showing the sex of the disarticulated human bones present across all causewayed enclosure sites, by numbers of bones in each area of the body

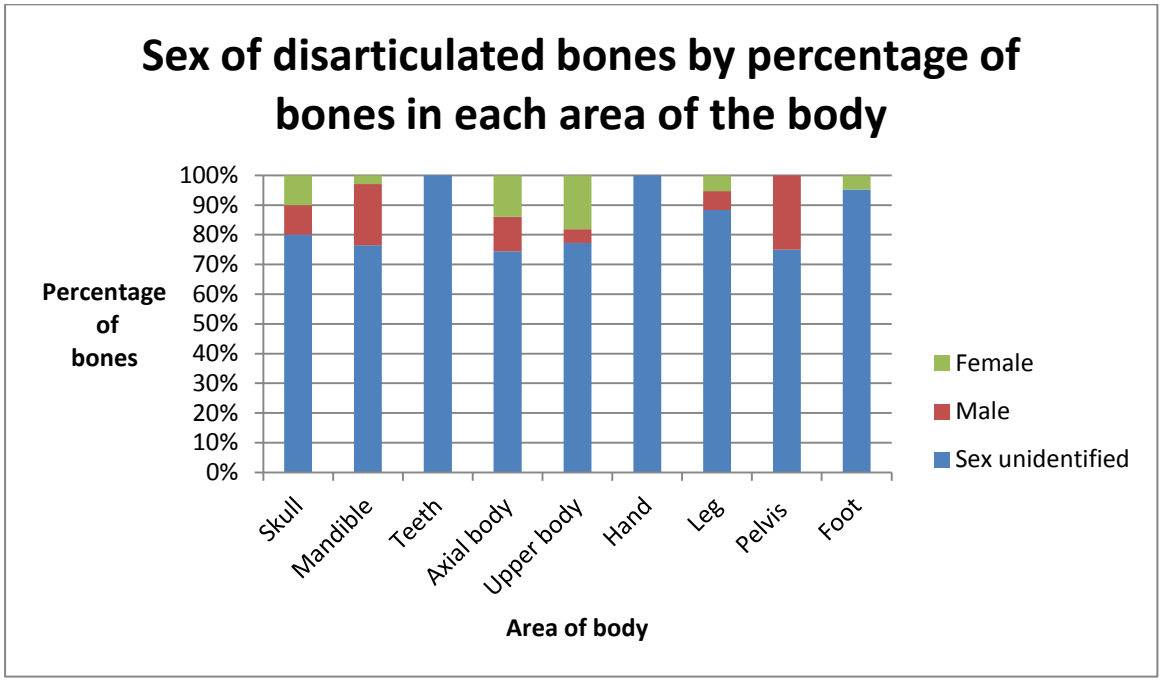


Figure 6: Chart showing the sex of the disarticulated human bones present across all causewayed enclosure sites, by percentage of bones in each area of the body

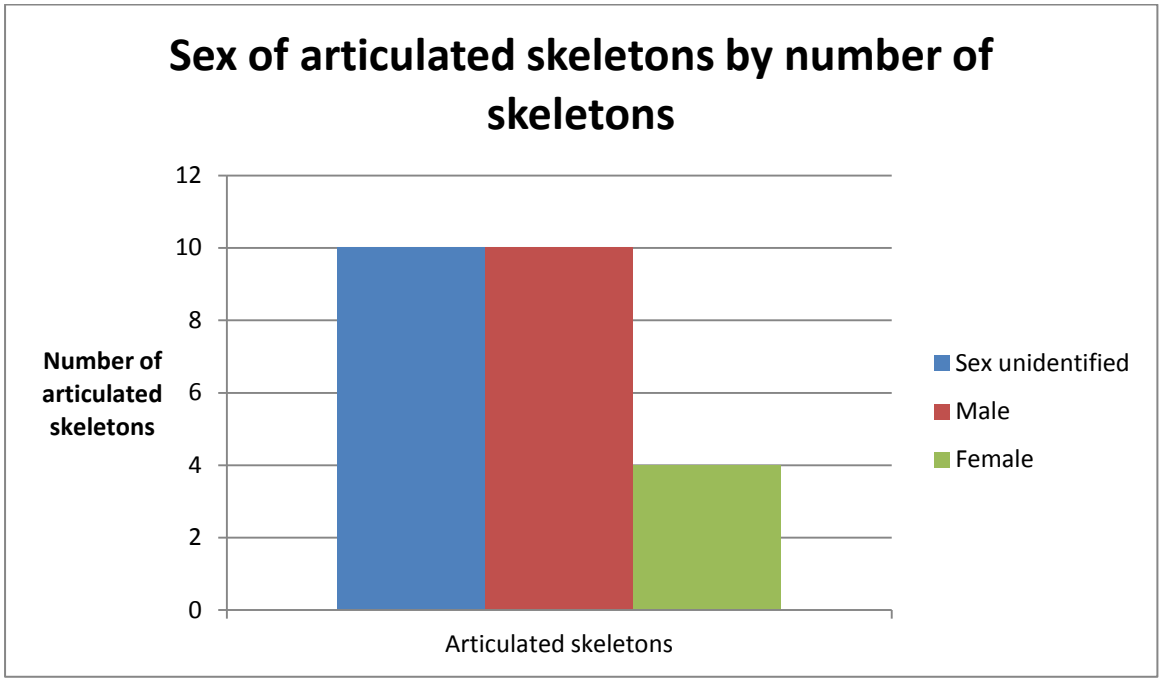


Figure 7: Chart showing the sex of the articulated skeletons present across all causewayed enclosure sites, by number of skeletons

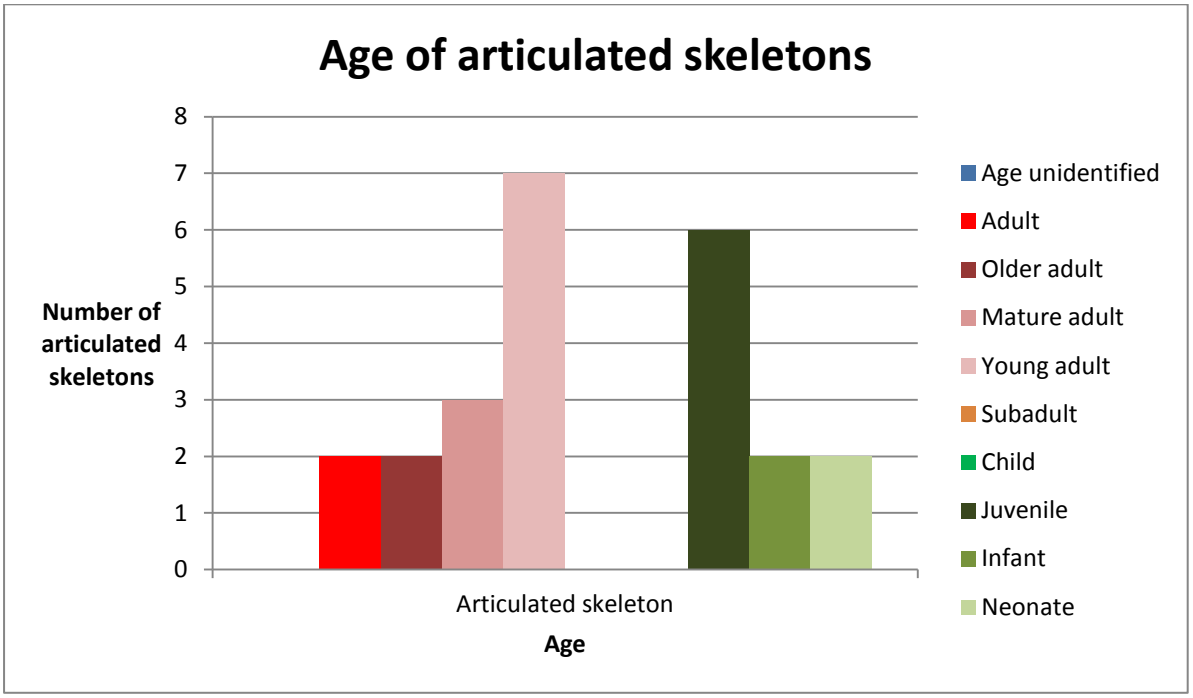


Figure 8: Chart showing the age of the articulated skeletons present across all causewayed enclosure sites, by number of skeletons.

Figures 8 and 9 show the age at death of the human remains. The human remains are categorised using the following terms, based on those outlined in the Hambledon Hill report (Mercer and Healy 2008: 490-491):

Neonate (includes foetuses)	< 6 months
Infant	6 months – 4 years
Juvenile	*c* 5-12 years
Subadult	*c* 13-18 years
Young adult	*c* 19-25 years
Mature adult	*c* 26-45 years
Older adult	*c* 45 years +

Mercer and Healy also use a range of more precise age categories, with twenty terms (Mercer and Healy 2008: 506, Table 7.5). The seven term scheme was chosen for the analyses in this chapter as it can be more clearly displayed and compared in chart form than the higher number of more precise age categories. Further, many of the more precise categories, such as 'older subadult' (c 15-18 years), are difficult to apply to bones listed in older site reports, which often use much broader age categories. The use of fewer, broader terms better represents the nature of the evidence as recorded in the majority of the site reports, and is suitable for a comprehensive study such the one in this chapter, which assesses evidence from many site reports. In addition to the seven terms listed above, three further terms are used in the analyses: 'Adult', 'Child', and 'Juvenile/ Subadult'. The use of these terms reflects the ambiguities and lack of precision in the ageing of some human remains. The term 'Adult' encompasses any remains aged 18 years and above which cannot be aged more precisely, and any remains listed only as 'Adult' in site reports; the term 'Child' is kept from earlier reports, and should largely be considered as analogous to 'Juvenile'. Their use in this study reflects a degree of uncertainty as to the age of some remains in earlier reports, which are sometimes listed loosely as either only 'Adult', or 'Child', with the parameters of neither of these terms defined. The term 'Juvenile/ Subadult' is used in Figure 9 for bones, all of which are from Hambledon Hill, which are *c* 5-18 years, but which cannot be aged more precisely. As shown in Figure 9, the majority of the disarticulated bones at causewayed enclosure sites have been assigned an age. Adult bones form the majority of bones in all categories. As shown in Figure 10, the majority of articulated skeletons, 14 out of 25, are adults. 11 out of 25 are juveniles, infants, or neonates.

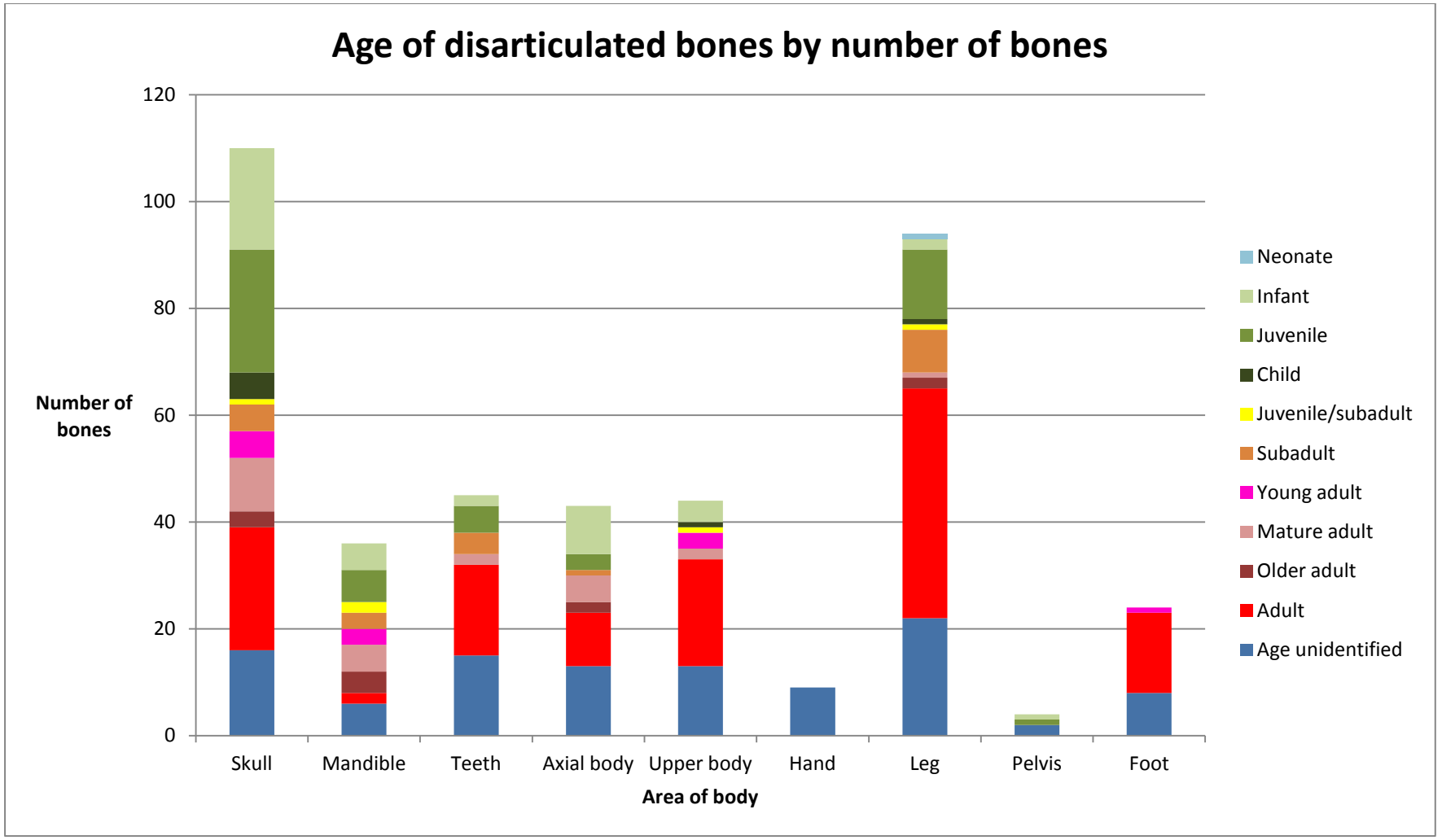


Figure 9: Chart showing the age of the disarticulated bones present across all causewayed enclosure sites, by number of bones

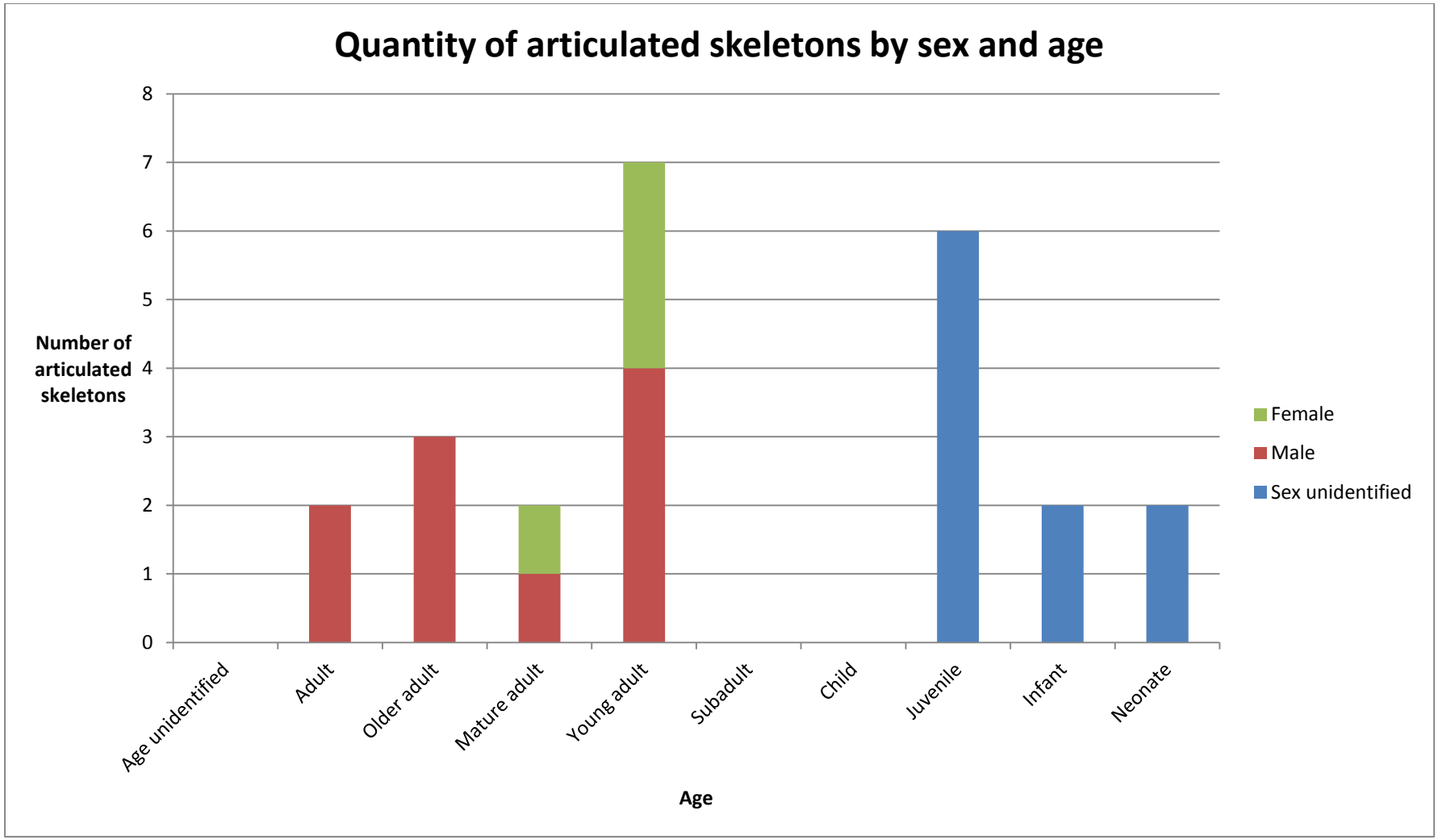


Figure 10: Chart showing the number the articulated skeletons present across all causewayed enclosure sites, by sex and age

Body treatment and bone modification

This section considers the treatment of bodies and bones prior to their final deposition. It analyses the evidence for bone modification both in relation the treatment of fleshed bodies and body parts, and the treatment of 'defleshed' or 'dry' bones. Five categories of bone modification are analysed: charring, staining, trauma, gnawing, and cutting. The category 'staining' comprises both 'sooted' or charcoal-stained bones, which occur only at Hambledon Hill, and which are very likely to have been intentionally stained, and the discoloured or stained bones from Staines and Etton, which were stained by soils in which may or may not have been deliberate action.

Figure 11 shows the quantity of modified disarticulated bones alongside the quantity of disarticulated bones which are not modified. A few remains feature more than one modification. These bones are shown multiple times in the table, once in each pertinent category. Figure 11 shows that the majority of bones across all areas of the body are not modified, or have no modifications which have been preserved or discerned. The skull is the body area which most frequently shows evidence of modification, followed by the leg bones. Charring and cutting are both equally well represented on skulls, with nine instances of each modification. While charring is almost entirely restricted to skulls, with only one other bone, a leg, being charred, cutting is present across mandibles, axial body parts, legs, and a pelvis. Gnawing is focused on the legs, with only two other bones, both arm bones, showing evidence of gnawing. Leg bones have a wider range of modifications than arm bones. However, this could be because of their larger numbers, as shown in Figure 3. Signs of trauma are rare, appearing only on two skulls and one rib. The only body parts which were not recorded as having been modified are the hand and foot bones, and teeth.

The majority of articulated skeletons, 17 out of 25, are not modified. All of the modified remains are from Hambledon Hill. The most frequent modification is cutting, in five cases, followed by gnawing, in four. In two cases these occurred on the same skeleton. No articulated remains show evidence of trauma.

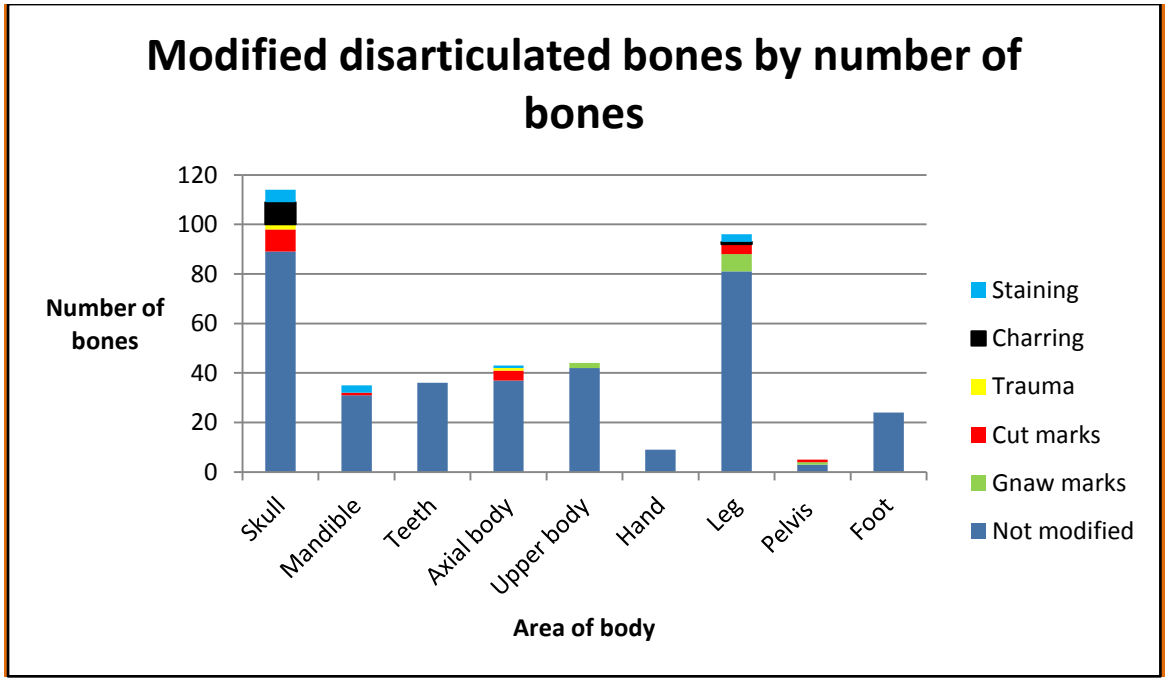


Figure 11: Chart showing the number of modified and unmodified disarticulated bones present across all causewayed enclosure sites

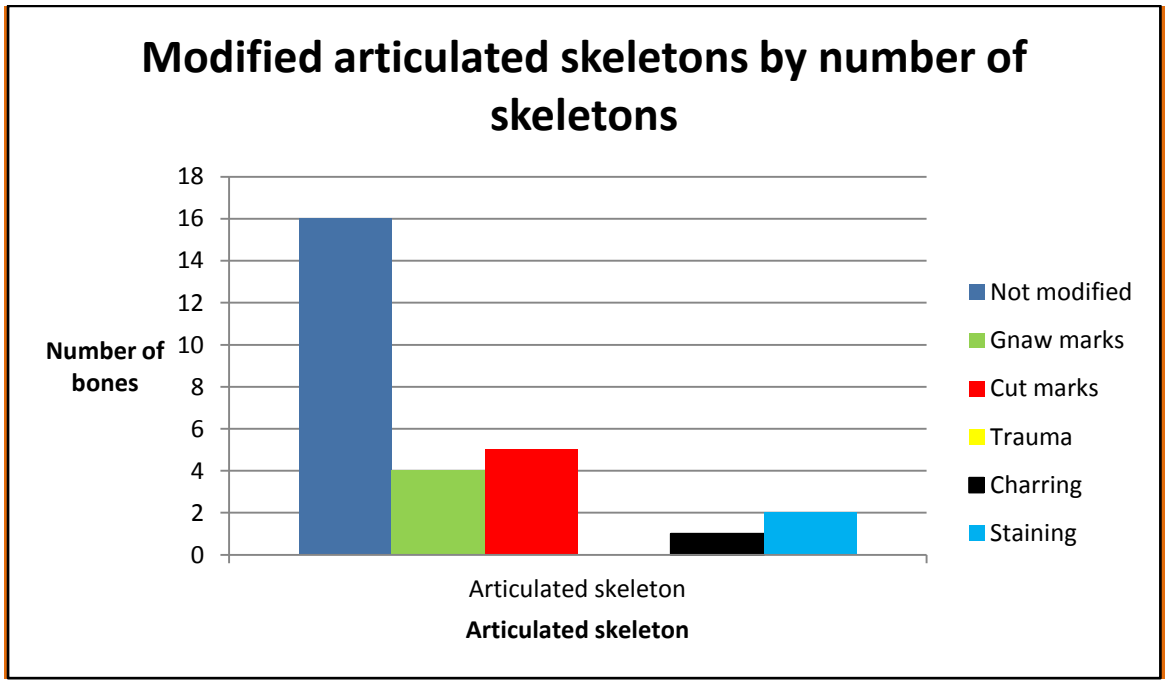


Figure 12: Chart showing the number of modified and unmodified articulated skeletons present across all causewayed enclosure sites

Deposition

This section focuses on the contexts in which the human remains were deposited. It examines deposition over eleven contexts. The largest quantities of disarticulated remains were deposited within the fills of ditch circuits. The next largest were fills of ditch re-cuts, the vast majority of which were recorded at Hambledon Hill. A significant amount of bones, particularly skulls, axial body bones, and teeth, were deposited either upon ditch bases or in the fills just above them. These latter two contexts are often difficult to separate. Very few disarticulated remains were recorded from internal or external pits, or from the surfaces of sites. The majority of foot bones, 11, were found in a ditch or pit apparently cut between the ditch circuits at Peak Camp; these are the only disarticulated bones found in a pit between circuits. No bones were found in cuts in ditch bases, or in cairns in ditch fills. A small number of bones were found in flint cairns on ditch bases at Hambledon Hill.

Similar to the situation with disarticulated bones, the majority of articulated skeletons were found deposited in the fills of ditches. A significant number were also found in cuts in ditch fills, and on ditch bases. In contrast to the disarticulated remains, a relatively high number of articulated skeletons, 7, or 28% of the total, were found in pits, the majority of these between ditch circuits. Unlike disarticulated remains, articulated skeletons were also found both in a cut in a ditch base, and in a cairn in a ditch fill.

Review

The analyses of the dataset in Appendix 1 presented in this chapter clearly define the scale and character of the presence of human remains at causewayed enclosure sites. It is clear that there is significant variation between sites in terms of the quantities of remains present, and the representation of skeletal elements. In terms of sex, it is clear that data in this area is lacking, especially for the disarticulated remains. More remains have been aged, but often not very precisely, as shown by the large number of remains present in the ‘adult’ category in Figure 9. In terms of modifications, it has been shown very few bones have been modified. In terms of deposition, while disarticulated remains and articulated skeletons were both largely deposited in ditch fills and recuts in ditches, articulated skeletons had wider contexts of deposition than disarticulated remains, being deposited in cairns and pits more frequently than disarticulated remains.

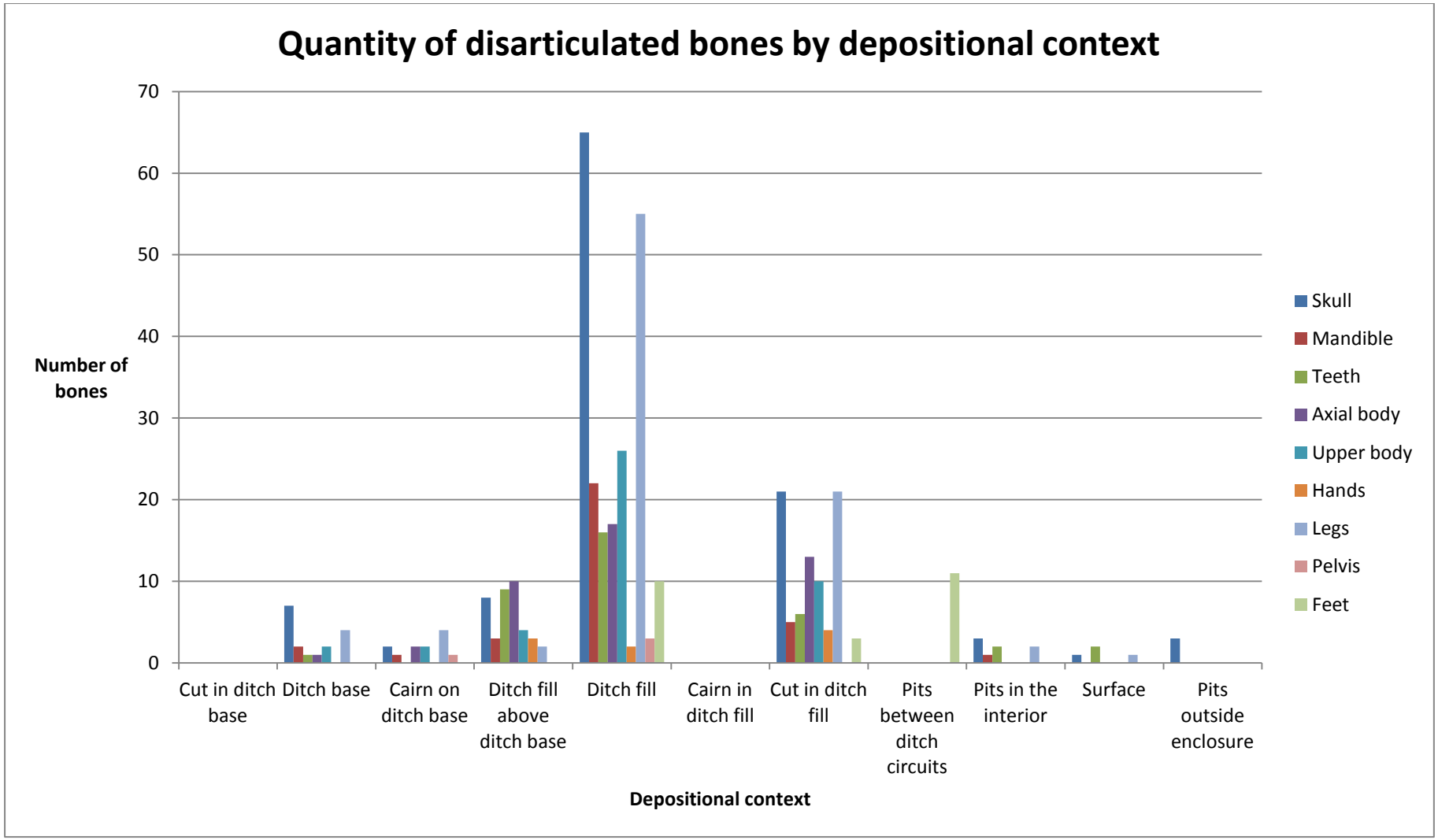


Figure 13: Chart showing the number of disarticulated bones present across all causewayed enclosure sites, by depositional context

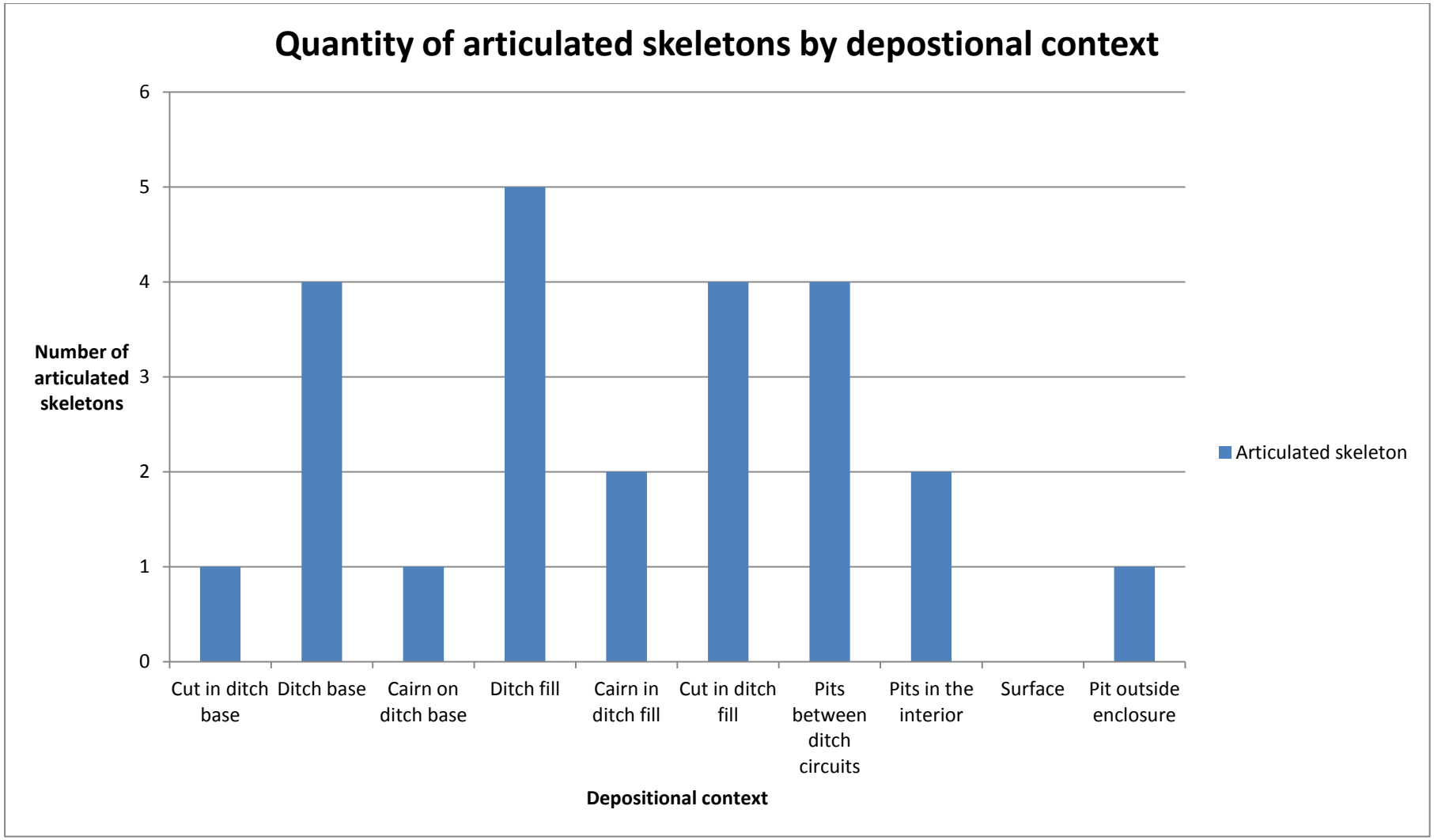


Figure 14: Chart showing the number of articulated skeletons present across all causewayed enclosure sites, by depositional context

Chapter 3: Analysis of human remains at causewayed enclosure sites: space and time

Introduction

This chapter presents an analysis of the data in the appendices, focusing on the spatial distribution and chronology of the Early Neolithic human remains from causewayed enclosure sites. Firstly, four schematic diagrams are presented showing the spatial locations and distribution of the human remains at three sites with especially detailed and reliable spatial evidence: the Main Enclosure at Hambledon Hill, Windmill Hill, and Etton. These diagrams show: (i). the spatial distribution of the bones of the head (comprising skulls, mandibles, and loose teeth), and long bones (comprising the arm and leg long bones); (ii). age; (iii). sex, and (iv). body treatment and bone modification. After this, the role of time in the deposition of the human remains at causewayed enclosure sites is considered. A discussion of the data in Appendix 2 is presented, evaluating how precisely the twelve excavated causewayed enclosures which feature Early Neolithic human remains, and those remains, can be placed within the context of a chronological framework. Schematic diagrams are then presented which display the human remains at Hambledon Hill by phase. This section provides a broad structure, sequence, and timescale for the deposition of the human remains. Finally, the chapter concludes with a review section, which draws out some key points and themes from the chapter.

The spatial distribution of human remains from three causewayed enclosure sites

The Main Enclosure at Hambledon Hill, Windmill Hill, and Etton were chosen for this analysis for several reasons. Firstly, they have been subject to relatively large-scale excavation, focused both on the ditch segments and interior areas. Large-scale excavation provides spatial data over a large area, which is necessary to usefully analyse the spatial distribution of material at sites. Secondly, unlike some sites which have been subject to large-scale excavations, such as Whitehawk Camp, the three sites considered here have reliable, detailed, recent publications. The Hambledon Hill report in particular, features a very recent, comprehensive reanalysis of the human remains from the site focusing on sex, age, and modification (McKinley 2008). In the case of Hambledon Hill, far more remains have been aged, and more precisely, than for any other site. As a third criterion, geographical, geological, and regional variation was desirable so that the sites would be more reflective of the broader range of sites. While Hambledon Hill and Windmill Hill lie on hilltops on chalk geology, Etton is a low-lying site on a river gravel terrace, and features preserved organic remains. Importantly, all three of these sites have generally very good bone preservation due

to their respective geologies. As a final important criterion, Etton and Hambledon Hill are the only sites which feature gnawed human remains, which have been central to the debate on excarnation and exposure at causewayed enclosure sites more generally (Armour-Chelu 1998: 271-272; Pryor 1998; McKinley 2008; Mercer and Healy 2008). Windmill Hill has also been associated with exposure in the literature (Whittle *et al* 1999), and all three sites have been associated with the deliberate placement of human remains for ancestral reasons. The analysis of these three well-excavated and published sites, which have been central to recent interpretive discussions of causewayed enclosure evidence in the literature, provides a basis for interpreting the human remains at other causewayed enclosure sites which have been less well-excavated and recorded, and so provides much material for the broader discussion in Chapter 4. For each analysis, the sites are all featured on the same page, to aid comparability.

The distribution of head and long bones

The frequency and distribution of both skulls and long bones has been a key topic of discussion in the literature on human remains at causewayed enclosure sites, and the two have often been compared and contrasted (Thrope 1984; Jones 2008). In the 2008 Hambledon Hill publication, there is some limited general discussion of the distribution of the human remains in the central area, and there are two separate diagrams; one showing the distribution of the bones of the head, the other the distribution of limb bones and axial skeleton elements (Mercer and Healy 2008: 173-175, figs 3.60 and 3.61). However, there is no focused, sustained comparison, analysis or discussion of the distribution of head and long bones at the site. Figure 15 shows the spatial distribution of the bones of the head, comprising skulls, mandibles, and loose teeth, and long bones, comprising humeri, ulnae, radii, femora, tibiae, and fibulae.

At Etton, skulls and long bones have quite restricted but distinct distributions. The majority of the long bones were deposited in a limited area of the western section of the ditch; head bones are not present in this area. In contrast, the deposition of skulls was focused in the eastern half of the enclosure. Two legs bones are also present in this area. While not entirely mutually exclusive, the distribution of skulls and long bones at Etton is generally split across the eastern and western areas of the ditch. In north-western area of the ditch, there are no bones at all.

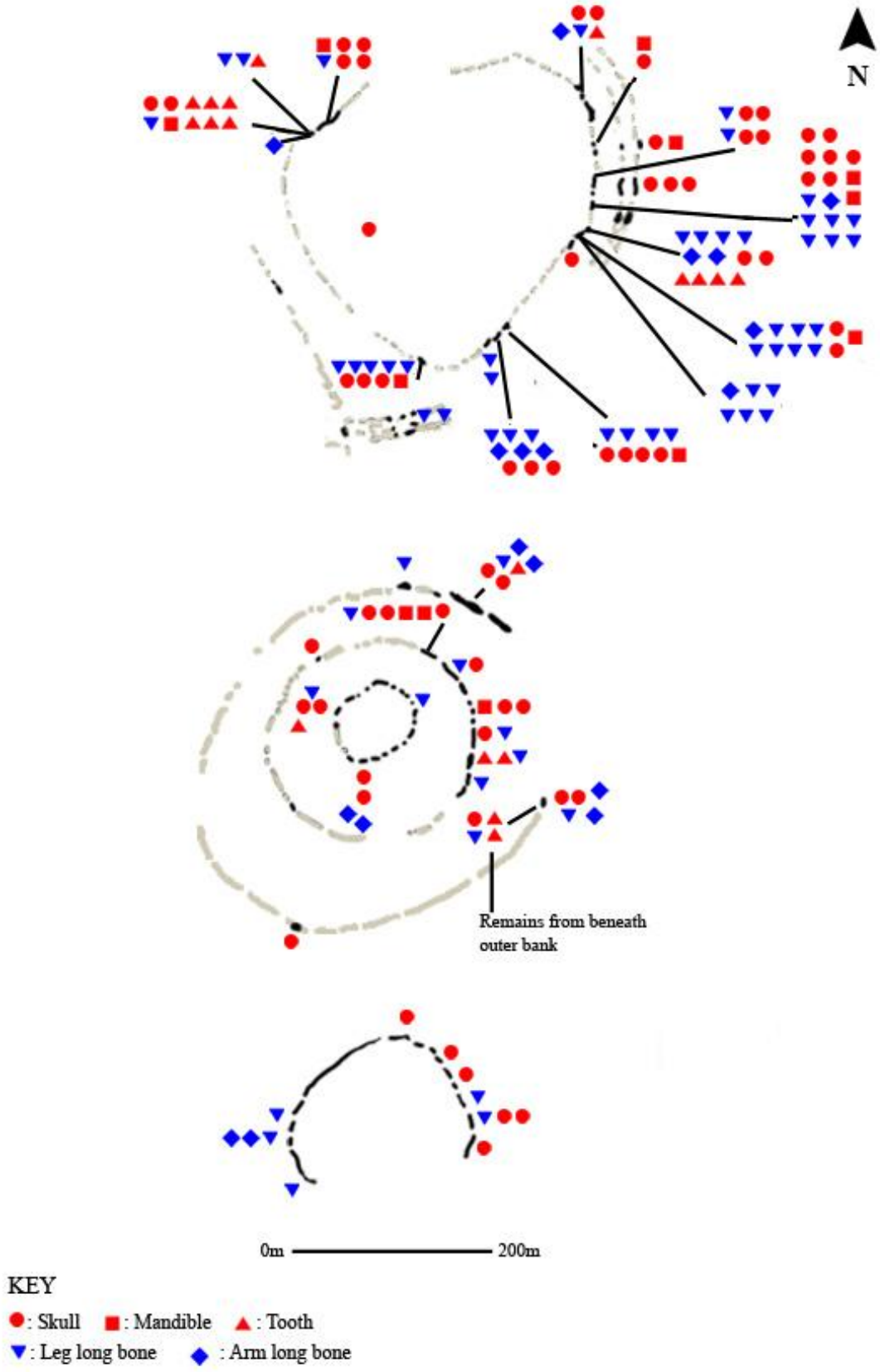


Figure 15: The distribution of head and long bones at (from top to bottom): the Hambledon Hill Main Enclosure (including cross-dykes and Western Outwork), Windmill Hill, and Etton

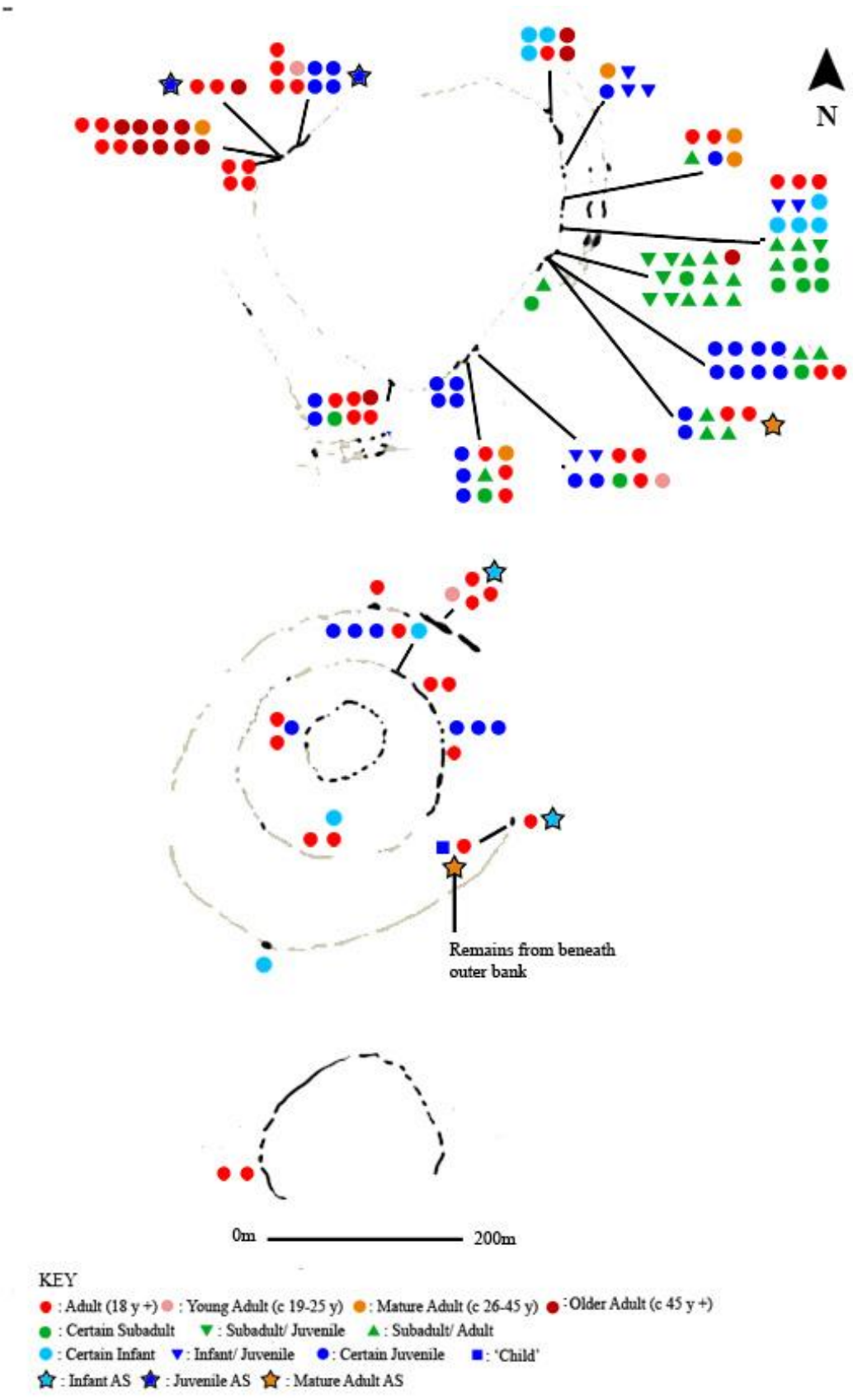


Figure 16: The distribution of human remains by age at (from top to bottom): the Hambledon Hill Main Enclosure, Windmill Hill, and Etton. 'AS' stands for 'articulated skeleton'.

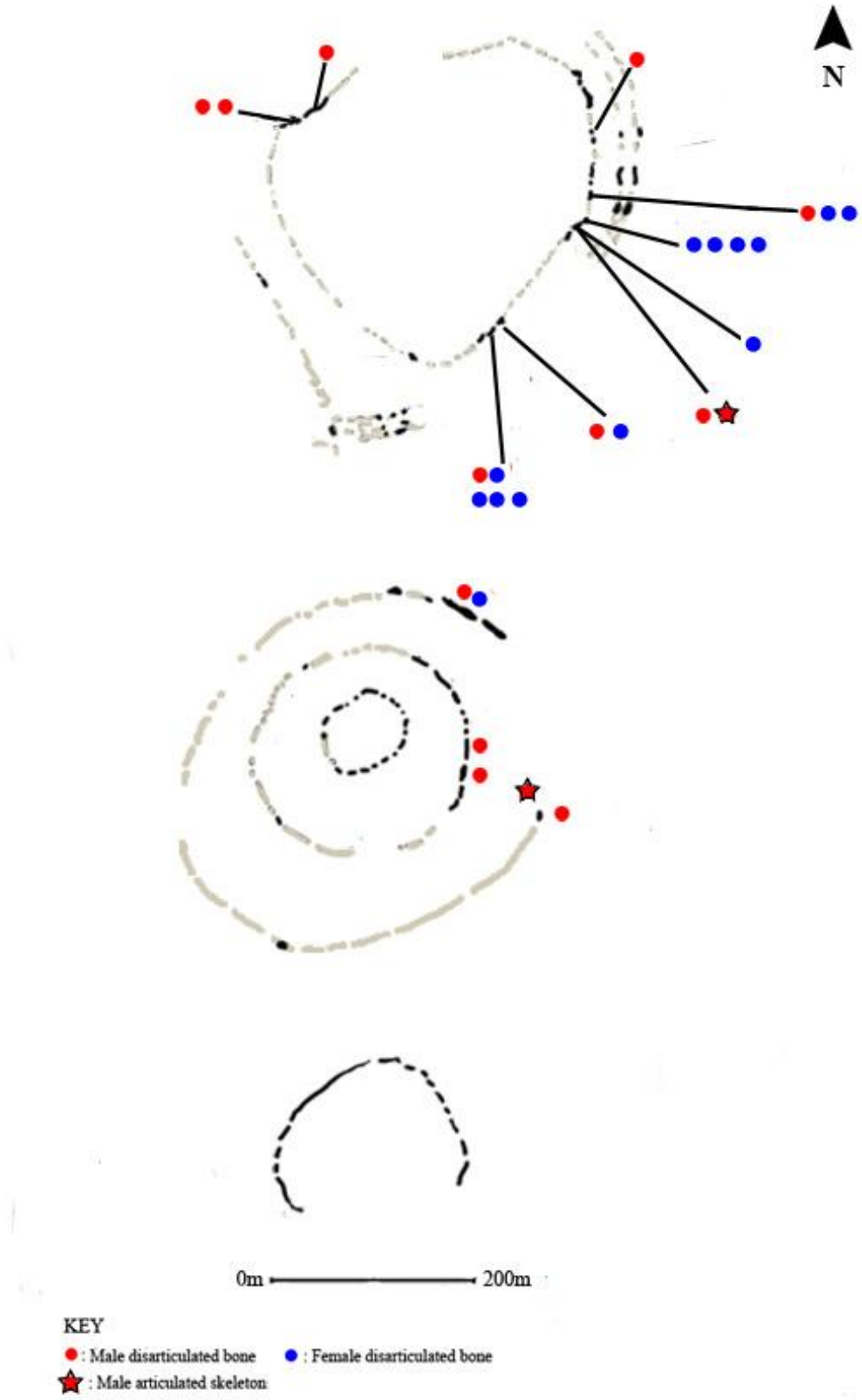


Figure 17: The distribution of human remains by sex at (from top to bottom): the Hambledon Hill Main Enclosure, Windmill Hill, and Etton.

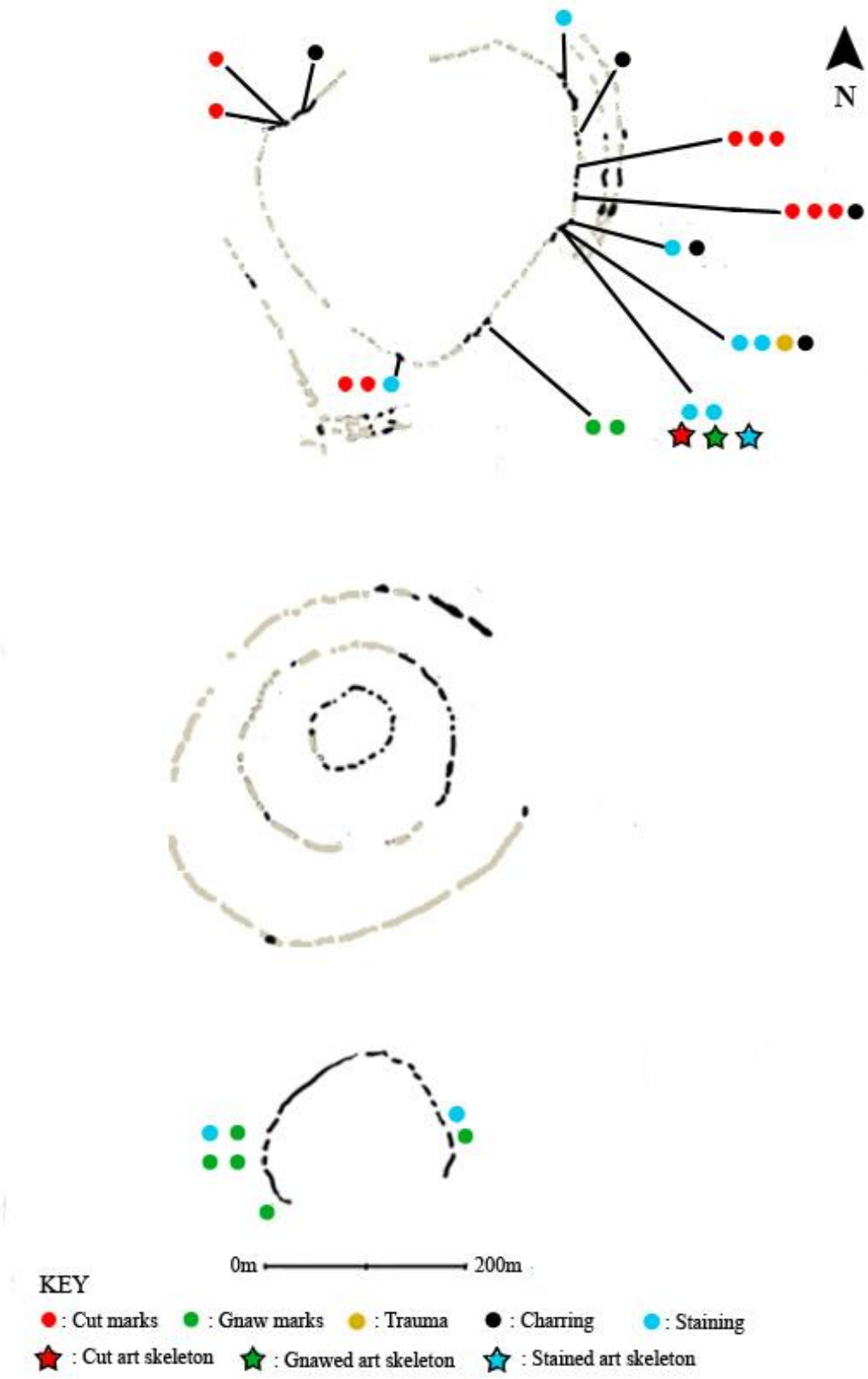


Figure 18: The distribution of modified human remains by modification at (from top to bottom): the Hambledon Hill Main Enclosure, Windmill Hill, and Etton.

In the outer ditch circuit of Windmill Hill, in contrast, the numbers of head and long bones are generally balanced, as is their distribution. Long bones very slightly predominate over head bones. In contrast, throughout the middle circuit, head bones dominate, with the exception of three ditch segments. In two of these head and leg bones are balanced, in one there is exclusively one leg bone. In the inner circuit, there is generally balance in distribution. Legs bones however have a slightly wider distribution than head bones here.

At Hambledon Hill, head and leg bones both have a similar, wide distribution across the excavated ditch segments. In the south-east part of the enclosure, there is a general dominance of leg bones, which predominate in five out of the eight excavated ditch segments in this area. There are three exceptions to this: in segment 4 skulls slightly predominate; in segment 5, skulls predominate, but there is very little bone in general in this segment; and in segment 7 head bones predominate, but almost all of these are loose teeth. In the north-western area of the enclosure in contrast, head bones tend to dominate assemblages. In segments 12-15, in the north east part of the site, head bones predominate, but there low numbers of bones generally. This may be due to poor preservation in this areas (Mercer and Healy 2008: 174). The dominance of head bones in this area may be more reflective of differential preservation rather than actual depositional preferences.

Age

In this analysis, a greater range of age categories are used than in the analyses in Chapter 2. These are more precise, and admit uncertainty in the ageing of some remains. These age categories have only been identified in relation to human remains in the recent Hambledon Hill report (McKinley 2008; Mercer and Healy 2008). They are displayed in Figure 16 to provide more detail in relation to the remains at the site. As this level of precision and uncertainty in the ageing of human remains is not present in the other site reports, the use of these greater range categories was not appropriate for the broader analyses in Chapter 2.

As shown in Figure 16, none of the bones at Etton have been assigned an age, with the exception of two adult scapulae in the western area of the ditch. At Windmill Hill however, more bone has been aged. While a substantial number of disarticulated bones at the site have not been aged, the distribution of the bones which have been is generally representative of the distribution of the entire disarticulated human bone assemblage. All of the disarticulated bones from the outer circuit are adult, with the exception of an infant skull from the south side of the enclosure. Two infant articulated skeletons are also present in the outer ditch

circuit. However, one of these, the one closest to the adult male skeleton, has very recently been dated to the Bronze Age: 2200-1980 cal BC (95% confidence) (Whittle *et al* 2011: 79, Table 3.2., 89). It is included here, and in Figure 17, only as it has been widely discussed in the literature as an assumed Early Neolithic skeleton (Whittle *et al* 1999). It is important to note its location in this context in relation in the discussion in Chapter 4. One mature adult skeleton is present between the outer and middle circuit, either beneath the outer bank or cut into a pit in the surface between the outer bank and middle ditch circuit. The middle circuit is to an extent dominated by juvenile bones, with six juvenile bones, one infant bone, and four adult bones. One segment exclusively features juvenile bones, while two exclusively feature adult bones. In contrast, there are double the numbers of adult bones in the inner circuit than the bones of younger individuals. In terms of overall presence, infant and adult remains feature in every circuit, while juvenile remains feature in only the middle and inner circuits and under the outer bank.

The vast majority of remains at Hambledon have been assigned an age, and have often been aged more precisely than those at other sites. There is also greater uncertainly admitted in the ageing of some remains. Categories such as Subadult/ Adult reflect this. Adult bones, particular older adult bones, dominate in the northwest part of the ditch circuit. A sizeable portion of these, five, can be accounted for as loose teeth from segment 19. However, even discounting these teeth, there are still more adult and older adult remains in this area than anywhere else at the site. Disarticulated adult remains have a wide distribution, featuring in almost every excavated segment of the ditch. Subadult remains dominate assemblages from segments 5, 7 and 8, in the east of the enclosure. However, many of these are imprecisely aged, and could be either juvenile or adult remains. Confirmed juvenile remains are most frequent in the south-eastern area of the ditch, where they are however often outweighed in terms of quantity by adult remains. Confirmed infant remains have a limited distribution in the east and northeast of the site. There are however two bones in the southern area of the site with are imprecisely aged as Infant/Juvenile, which widens the distribution of infant remains. In regards to articulated skeletons, two juvenile skeletons come from the northwest of the site, an area largely dominated by adult disarticulated bones, and a young/ younger mature adult skeleton comes from the east/ southeast of the site.

Sex

As shown in Figure 17, very few remains from any causewayed enclosure sites have been sexed, and none at all from Etton. At Windmill Hill male disarticulated bones predominate, and the only adult articulated skeleton is male. However, only a small number of the disarticulated bones have been sexed, and so this may not reflect actual depositional practices. At Hambledon Hill, more remains have been assigned a sex than at any other site. However, the numbers sexed are still limited. Female remains occur more frequently than male remains in the south, southeast, and east areas of the ditch, with male remains having only a limited presence here. However, there is a male articulated skeleton present on the east/ southeast of the enclosure ditch. Of the few remains sexed in the northeast and northwest areas of the site, all are male.

Modifications

Windmill Hill features no identified deliberately modified bones under the five categories examined here: cut marks, gnaw marks, trauma, charring, and staining. There are however, cases of human bones being deliberately inserted into and otherwise closely associated with animal bones. These instances are discussed in the broader context of Chapter 4.

As shown in Figure 18, At Etton, gnawing and staining was restricted to long bones. Both modifications were present on remains from both the western and eastern areas of the site. Gnawing was more frequent in the western part of the enclosure, perhaps due to the greater numbers of long bones here.

At Hambledon Hill, cutting is the most frequent modification, occurring on ten disarticulated bones and an articulated skeleton. It is widely distributed over six segments, which are located around the entire excavated area of the ditch circuit. Staining, in the form of 'sooting', or 'charcoal-staining', is the second most frequent modification, occurring on seven disarticulated bones and an articulated skeleton. It is also widely distributed over five segments. However, it does not occur in the northwest of the enclosure. Charring occurs on five disarticulated bones, four of them skulls and one a leg bone. Charred remains have a distribution restricted to the east, northeast, and northwest of the site. Gnawing occurs on two disarticulated bones and one articulated skeleton. These are all from the east and southeast areas of the site. Trauma occurs only on one bone, a skull, located in the east of the enclosure.

Synthesis

Comparison of all four analyses presented in Figures 15, 16, 17 and 18, allows some further patterns to be drawn out. A comparison of Figures 15 and 18 shows that, at Etton, long bones and skulls were treated and deposited in different ways. The gnawing and staining of long bones across both the western and eastern halves of the site, and the lack of any modification to skull bones, indicates that long bones were treated differentially to skulls prior to deposition. The general mutual exclusiveness of long bones and skulls spatially indicates that these also were deposited differentially. Comparison of Figures 15 and 16 suggests differences in the character of the disarticulated bones present in the middle ditch circuit at Windmill Hill, in comparison to the inner and outer circuits. Whereas the bone material deposited in the inner and outer circuits has a high frequency of adult bones and long bones, the bone assemblage from the middle circuit has a higher number of juvenile and head bones. In comparing Figures 15, 16, 17, and 18, the human remains in the northwest of the Main Enclosure at Hambledon appear very different in character to those in the south, east, and northeast of the site. The bones in the northwest of the site are mostly head bones, adult, male, and show a low frequency of modification. Other areas of the site generally feature more long bones, more juvenile bones, infant and subadult remains, female remains, and a higher frequency of modification.

Causewayed enclosures and associated human remains in a chronological framework

This section draws on the data from Appendix 2 to discuss how precisely the 12 causewayed enclosures which feature Early Neolithic human remains, and those remains, can be placed within the context of a chronological framework. In doing this, it aims to provide an understanding of the structure and sequence of past events, which can enable the construction of a narrative. As Whittle *et al* state, "in narrative we can trace change, connection and causality", and therefore can gain insights into social dynamics in the past (Whittle *et al* 2011:682). Further, this provides insights into the present state of the evidence, in particular how useful and robust it is in terms of dating.

Firstly, a brief summary is given of the broader currency of causewayed enclosure sites in southern Britain, as proposed by Whittle *et al* (Whittle *et al* 2011). This provides a precise timespan in which to frame the deposition of human remains and related activity at the sites. After this, there is a discussion of the data from Appendix 2, which lists the absolute calendar construction dates, end dates, and primary use periods for all twelve sites which feature Early Neolithic human remains. This discussion briefly considers the significance of the data for

challenging previous ideas about enclosure construction, chronology, and use. It then considers how the data affects how the human remains at the sites can be understood. Following this, there is a section assessing how far it is possible to precisely date and establish a sequence for the deposition of the human remains found at causewayed enclosure sites, and how precisely these remains can be fitted into the wider chronological frameworks of the sites themselves

Causewayed enclosures in a chronological framework

Whittle *et al* 2011 provide probabilistic chronological models for the beginning, duration, and ending of the initial construction and use of causewayed enclosures in southern Britain, based on Bayesian analysis of radiocarbon dates (Whittle *et al* 2011). The models for overall currency of causewayed enclosure sites in southern Britain (Whittle *et al* 2011: figs. 14.1-14.4) and for the foundation of enclosures in this area (Whittle *et al* 2011: fig. 14.5) agree in placing the construction of the first enclosure in the last quarter of the 38th century BC. An intensive period of causewayed enclosure construction began in southern Britain in 3715-3670 cal BC (95% probability) (Whittle *et al* 2011: fig 14.7). This period of intensive circuit construction ended in 3555-3515 (95% probability) (Whittle *et al* 2011: 686). This heyday spanned a period of 120-190 years (95% probability).

Whittle *et al* have proposed a staggered ending for the primary use of causewayed enclosures over 245-440 years, with the first enclosure to go out of primary use in the period 3665-3540 BC, and the last in 3320-3195 BC (Whittle *et al* 2011b: 703). In most areas the last causewayed enclosure to go out of primary use did so in the 34th century BC (Whittle *et al* 2011b: 704). Overall, causewayed enclosures in southern Britain were in primary use for 385-485 years (95% probability), and probably for 400-455 years (68% probability) (Whittle *et al* 2011: 704). It is important to note that individual causewayed enclosures were not in use over this entire time, and the use periods of individual sites vary.

Appendix 2 lists the construction dates, end dates, and primary use period for the 12 sites which feature Early Neolithic human remains (Whittle *et al* 2011). These new timescales refine, and in some instances differ from, previous estimations of the chronology and phasing of these sites, and have significant implications for how they are understood. However, it is important to note that the models provided are probalistic only. They are dependent on the information fed into them. The models referred here the ones preferred by Whittle *et al* in their work (Whittle *et al* 2011).

In 1999, Whittle *et al* proposed a 'best model' for the chronology of Windmill Hill, suggesting that a 'primary enclosure' was first laid out, consisting of the inner and middle ditch circuits, which was augmented by the outer ditch circuit at a later date (Whittle *et al* 1999: 352-353). In proposing spatial variation in the character of deposits across the three circuits, they suggested that the inner and middle circuits were the focus for deposits and materials expressing "domesticity… and the sphere of the living", while the outer circuit, which featured less deposits generally, but more human bone, including articulated skeletons, was the focus for deposits expressing ideas of "nature… the dead, ancestors and the past" (Whittle *et al* 1999: 382: Fig. 227., 387). The new sequence of ditch construction proposed by Whittle *et al* serves to overturn this interpretive scheme. If the middle ditch post-dates the inner and outer ditches than the earlier spatial scheme is overturned. The definition of a new timescale for the construction of the entire enclosure, probably over two generations, and a precise primary use period, probably of around 350 years (Whittle *et al* 201l: 95-96), means that deposition at the site can be discussed in a way that is more appreciative of the roles and rhythms of social dynanamics and relationships over time.

Figure 19 shows the lengths of the primary use periods of the ten causewayed enclosure sites which feature Early Neolithic human remains for which this data is available. The length of use of Staines and Bury Hill could not be calculated, and they are not included in Figure 19. 'Primary use' is difficult concept, and constant use throughout 'primary use periods' should not be envisaged. Rather, many causewayed enclosure ditches appear to have been left to silt, before being recut, indicating episodic use (Mercer and Healy 2008: 756). 'Primary use' in this context refers to the length of time that activity at occurred at the sites that appears to be related to their original, intended functions. Figure 19 shows the mid-range of broad date ranges. As such it gives a false idea of precision and certainty, and is intended to provide only a very rough idea of the timescales over which each enclosure was in primary use. Detailed information, and full date ranges, are given in Appendix 2, and Figure 20 should be cross-referenced with this data. As shown in Figure 19, and Appendix 2, several sites, such as Haddenham, Etton, Hambledon Hill, Windmill Hill, and Whitehawk Camp, appear to have had relatively long periods of primary use. In contrast, several other sites, including Bury Hill, Knap Hill, Maiden Castle and Offham Hill, were probably very short-lived.

In the wider context of all 37 causewayed enclosure sites examined by Whittle *et al*, Hambledon Hill, Windmill Hill, and Etton stand out as having endured for long periods; for 300 years or longer (Whittle *et al* 201: 704-706). In comparison, the primary use of c. 30% of causewayed enclosures lasted for less than 50 years, and c. 80% of causewayed enclosures

were used for less than 250 years (Whittle *et al* 201: 704). As shown in Figure 19, Haddenham and Peak Camp may also have been in use for long periods of time. However, they are extremely poorly dated, and so their apparent longevity is uncertain (Whittle *et al* 201: 457, 705-706).

The varied use periods of causewayed enclosure sites have implications for the quantity and character of the human remains present at them. Figure 20 shows the number of disarticulated human bones found at each of the twelve causewayed enclosure sites. A comparison of Figures 19 and 20 shows that three of the longest-lived and most complex sites, Hambledon Hill, Windmill Hill, and Whitehawk Camp, feature the highest quantities of disarticulated bone. The human remains at these sites are also varied and complex in character, and include articulated skeletons, and, at Hambledon Hill and Whitehawk Camp, modified remains. In contrast, some short-lived, less complex sites, such as Knap Hill and Bury Hill, feature relatively few human remains. There appears to be a broad correlation between length of use and the quantity of disarticulated bone deposited. This suggests that the human remains at some sites may have accumulated over a considerable period of time. In the cases of Windmill Hill and Hambledon Hill, this is likely to have been a few centuries. This is significant in that spatial patterning in the deposition of remains at these and other long-lived sites may not be indicative of broadly contemporary structured practices, but rather the location, quantity and complexity of bone treatment may be a product of varying practices over time.

However, the data in Appendix 2, and Figures 19 and 20, also show that there are no clear, straightforward correlations between architectural complexity, length of use, the quantity of human remains deposited, or the character of the human remains deposited. Examining all 37 causewayed enclosures dated by Whittle *et al*, it is apparent that some complex sites with up to three circuits and some less complex sites could both be generally short lived (Whittle *et al* 2011: 704, Fig. 14.34.).

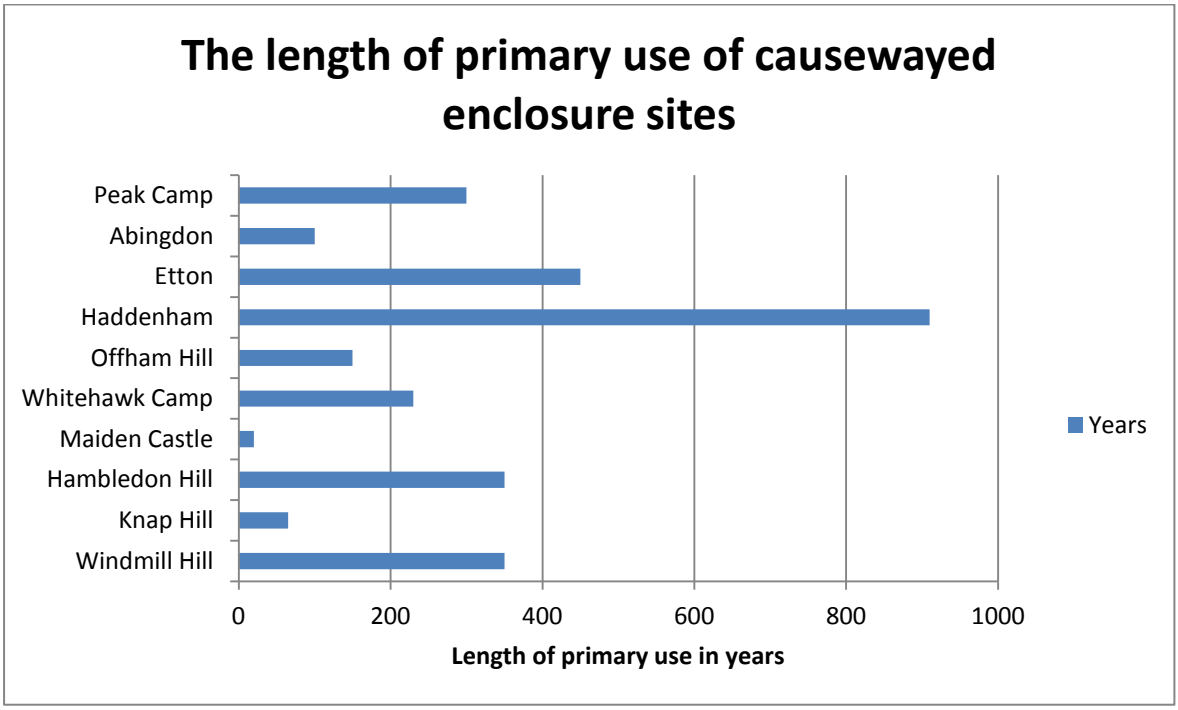


Figure 19: The approximate length of the phases of primary use phases at ten causewayed enclosure sites

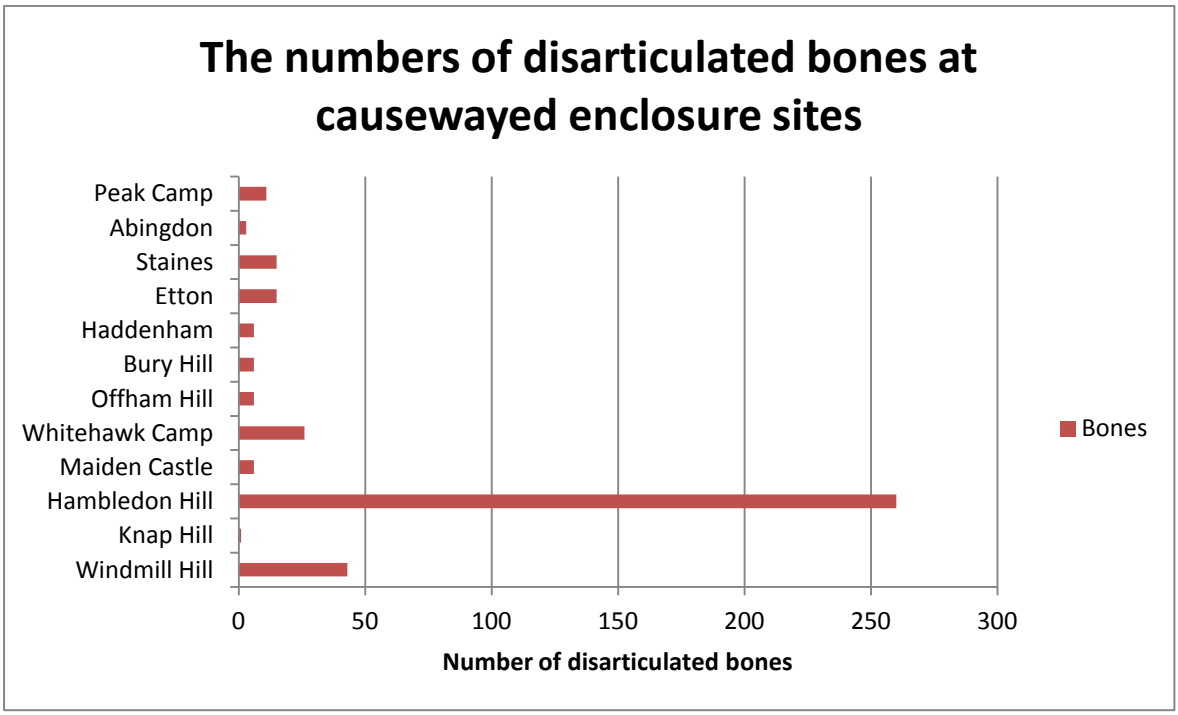


Figure 20: The numbers of disarticulated human bones present at twelve causewayed enclosure sites

Using the data from Appendix 2, it is possible to propose a sequence for the construction and primary use of the 12 causewayed enclosures assessed in this study. In this context it is worthwhile to refer to the causewayed enclosure of Chalk Hill, in Kent. The recent excavations at this site (Shand 2001) are unpublished at present (Canterbury Archaeological Trust 2012), and as such the site has not been included in the appendices, or the analyses in Chapters 2 and 3. It is relevant here as the first causewayed enclosures in southern Britain were probably in the Greater Thames Estuary, and Chalk Hill possibly represents the earliest known site (Whittle *et al* 2011: 897, 899, Table 15.2).

Chalk Hill features three ditch circuits (Shand 2001: Figs 3-4), which were all constructed within a short timespan, probably a few decades (Whittle *et al* 2011: 375). The construction of Chalk Hill established the practice of large-scale, multiple circuits at the outset of causewayed enclosure building in Britain. It also established the practice of depositing human remains; the remains of at least five humans dated to the Early Neolithic period were present at Chalk Hill (Whittle *et al* 2011: 675).

Kingsborough 2, on the Isle of Sheppey, was probably constructed soon after Chalk Hill. Bury Hill appears to have been the earliest constructed, in the 38th century BC, and was probably built very soon after Kingsborough 2. In contrast to Chalk Hill both these sites were simpler, single circuit constructions (Whittle *et al* 2011: 239-242, 364-371). Etton was probably constructed next, in the late 38th or early 37th centuries BC. Windmill Hill, the Main Enclosure at Hambledon Hill, and Abingdon, were constructed in the 37th century BC. It is more than 99% probable that the Stelpleton Enclosure was built after the Main Enclosure at Hambledon Hill, either by 5-90 years (95% probability), or 10-60 years (68% probability) (Whittle *et al* 2011: 131-148) . Peak Camp was constructed in the late 37th century BC. Offham Hill was probably constructed next, followed by Maiden Castle and Knap Hill in the 35th Century BC.

What emerges from this discussion is that there is not a clear process of causewayed enclosure development over time, either in terms of size, architectural complexity, or deposition of human remains. This is significant for discussion of the presence and meaning of human remains at sites. In his report on Offham Hill, Drewett proposed that the character and quantity of human remains deposited at causewayed enclosure sites, the complexity and scale of architecture and material deposition, and their duration, may be directly linked (Drewett 1977). He drew an analogy between human remains at the sites, and the relics of saints in the Medieval period, to suggest that presence of skeletons at causewayed enclosures may have resulted in increased visitation, deposition and architectural elaboration, and further

resulted in the longer duration of these sites respective to those with less human remains (Drewett 1977).

Generally, there is a correlation between the length of use of sites, and the quantity and varied character of the human remains present at them. However, as can be seen at Maiden Castle and Etton, this correlation is not constant or clear. A picture of variation emerges, and different explanations besides length of use and architectural complexity must be suggested to account for the presence, quantity, and character of the human remains.

Human remains from causewayed enclosures in a chronological framework

It has been shown that, using the data from Appendix 2, it is possible to propose a sequence for the construction and primary use of the twelve causewayed enclosures assessed in this study. It is however, more difficult to place the human remains into this chronological framework with any precision.

It has been recognised that during the primary use of causewayed enclosures the deposition of material varied in frequency and intensity through time; ditches were often recut and deposits made after periods of silting (Edmonds 1993: 109, Fowler 2003: 47, Mercer and Healy 2008: 756). An understanding of depositional sequence is necessary to usefully interpret the patterning of deposited material, especially at sites which were in use over several centuries (Garrow 2012: 90). The deposition of the human remains found at causewayed enclosures in Early Neolithic contexts can be broadly dated by their inclusion in one of the site date ranges shown in Appendix 2. This gives a broad indication of the chronology of their deposition, and in some cases indicates which remains may have been deposited earlier or later than others on a regional and national scale. For example, the human foot bones at Bury Hill were deposited earlier, probably by longer than a century, than the human jaw bone at Knap Hill. However, as the use periods of many sites are long and overlap, and as the phasing of the deposition of the human remains at individual sites is still very poorly understood, it is very difficult to propose precise regional or national sequences for the deposition of human remains. Further, the available published data is often not precise or robust enough to propose precise sequences for the deposition of remains at individual sites. Very few radiocarbon dates are from human bone samples, or from their contexts of deposition. While some broad inferences could be made based on stratigraphic data, such as that the remains lower down in ditch fills were deposited earlier than those higher up, these would be in many cases be unreliable and imprecise; stratigraphy is poorly recorded for several sites, such as Knap Hill and Whitehawk Camp, which were dug in spits (Williamson 1930), and it is often uncertain whether basal

remains were deposited soon after ditch segments were dug or in later recuts (Robertson-Mackay 1987: 36).

In regards to Windmill Hill and Etton, two sites which form the focus of the spatial analysis in the first half of this chapter, it is very difficult to be precise about the sequence of human remains deposition, as the ditches were probably infilled and reworked over long periods (Whittle *et al* 1999: 26, 368). At Hambledon Hill however, Mercer and Healy have proposed a detailed phasing for the site (Mercer and Healy 2008). This has been used to construct Figures 21-24, which provide insights into the timing and tempo of the deposition of human remains.

Figure 21 shows that human remains were deposited at the Main Enclosure as soon as, or very soon after, it was constructed. Notably, two juvenile skulls in segment 1 and the disarticulated partial remains of a subadult in segment 6.1, were deposited in flint cairns on the ditch base in Phase 1. A comparison of Figures 21, 22, and 23, shows that the frequency, intensity, and location of human remains deposition changed through time. The largest human bone assemblage comes from Phase VI, which comprised shallow recuts of the largely silted ditch segments (Mercer and Healy 2008: 756). Notably, two juvenile burials were placed in adjacent ditch segments in the north-west area of the enclosure centuries apart.

Review

The spatial analyses presented in this chapter broadly show variation in the deposition of human remains spatially, rather than consistent patterning. At Etton, and in some areas of Hambledon Hill, the deposition of skulls and long bones does appear, however, to have been spatially mutually exclusive. It was more difficult to draw patterns in terms of sex and age from Etton and Windmill Hill, as only a very limited number of remains from these sites have been sexed or aged. At Hambledon Hill, several patterns could be identified in relation to the distribution of remains by sex and age which suggested that deposition in the north-western area of the enclosure was different to deposition in the southern and eastern areas of the enclosure. In the north-western area of the enclosure there was a concentration of adult male remains, particularly skulls. At Hambledon Hill, where distinct phasing has been proposed, it is apparent that the deposition of human remains varied in intensity, character, and spatial location over time. It is clear that any spatial patterning in the deposition of human remains at causewayed enclosure sites must be considered cautiously, as it may derive from multiple, separate acts of deposition over a long period of time.

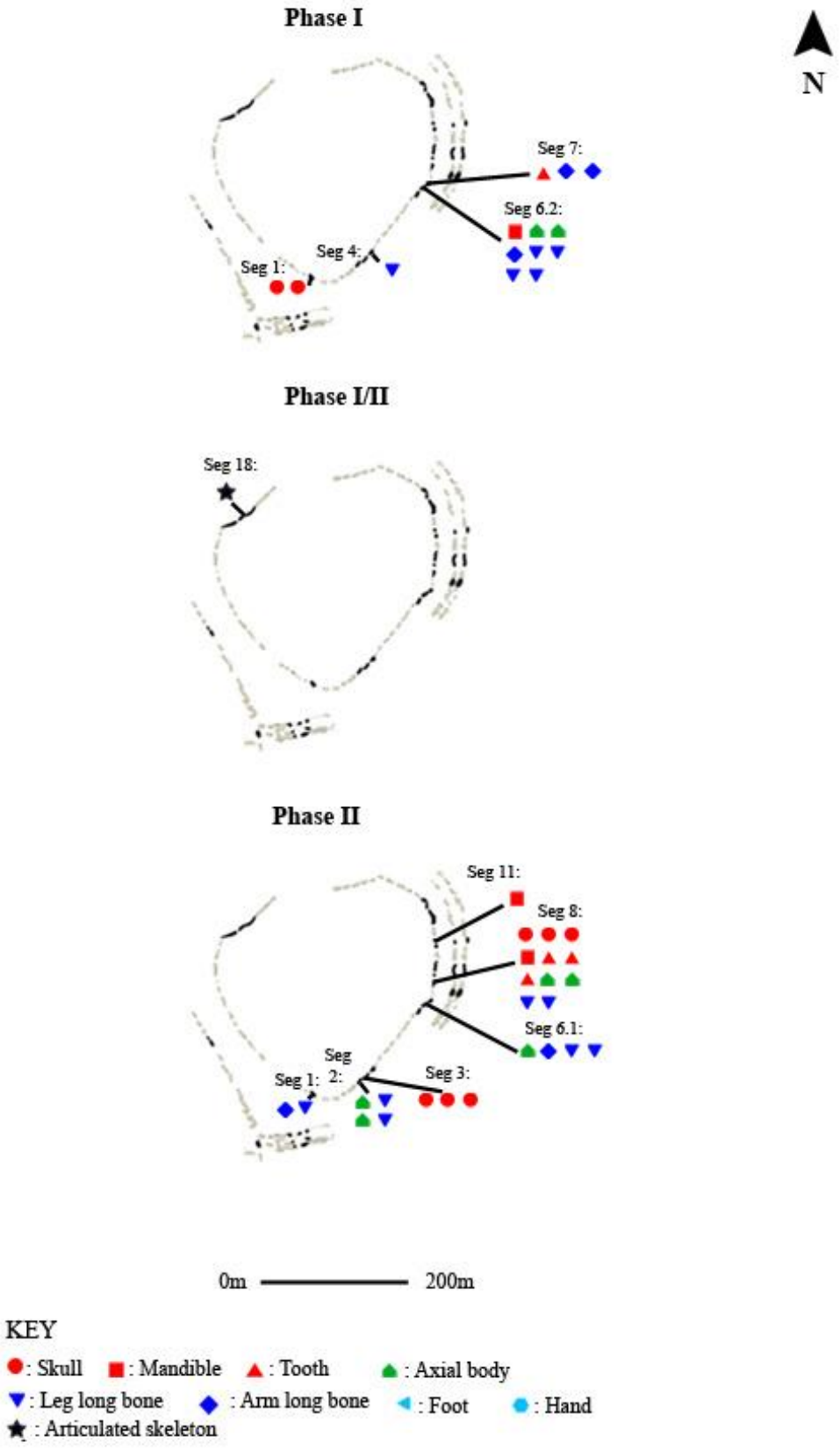


Figure 21: The distribution of human remains at the Hambledon Hill Main Enclosure, by phases 1, I/II and II

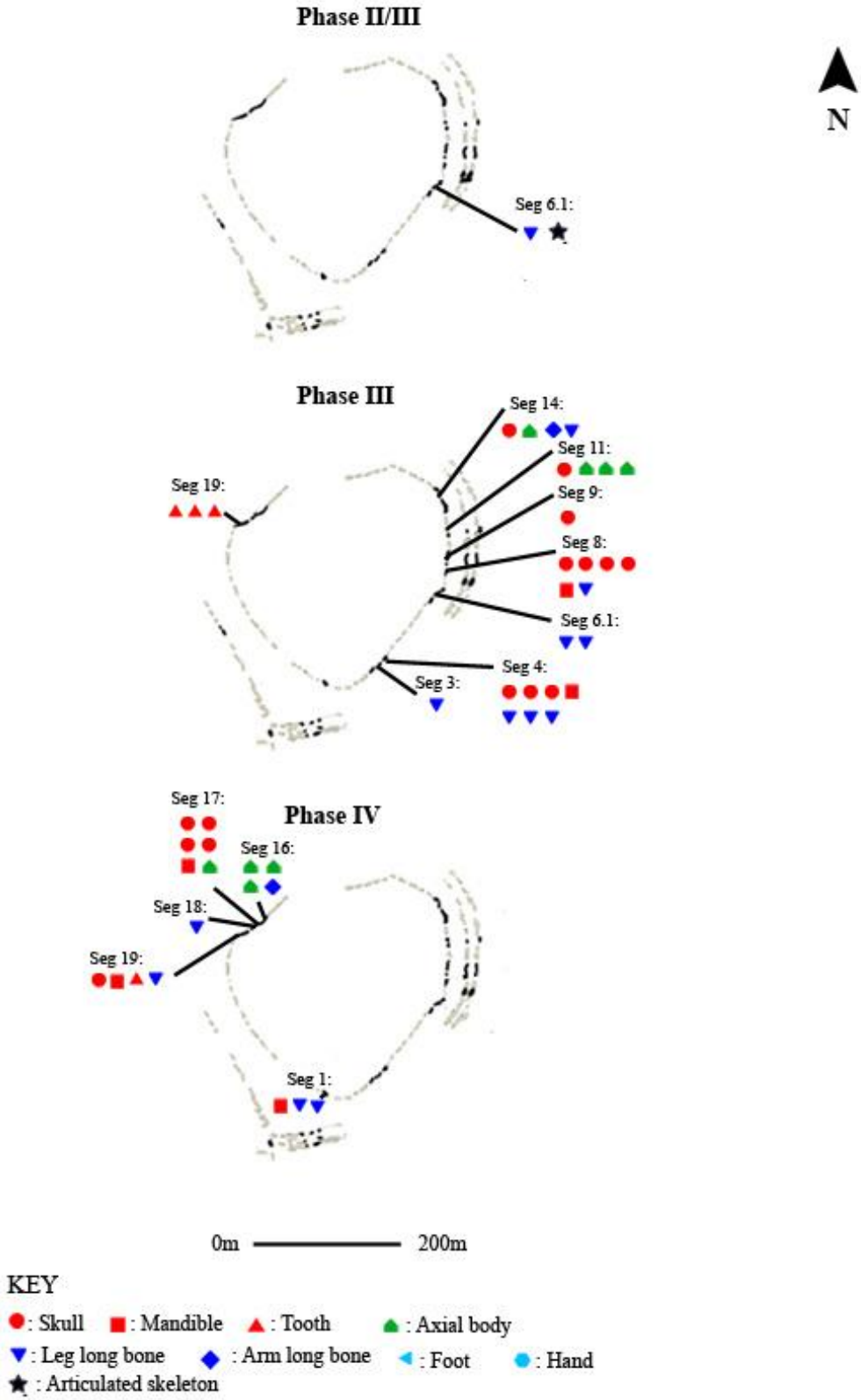


Figure 22: The distribution of human remains at the Hambledon Hill Main Enclosure, by phases 1I/III, III and IV

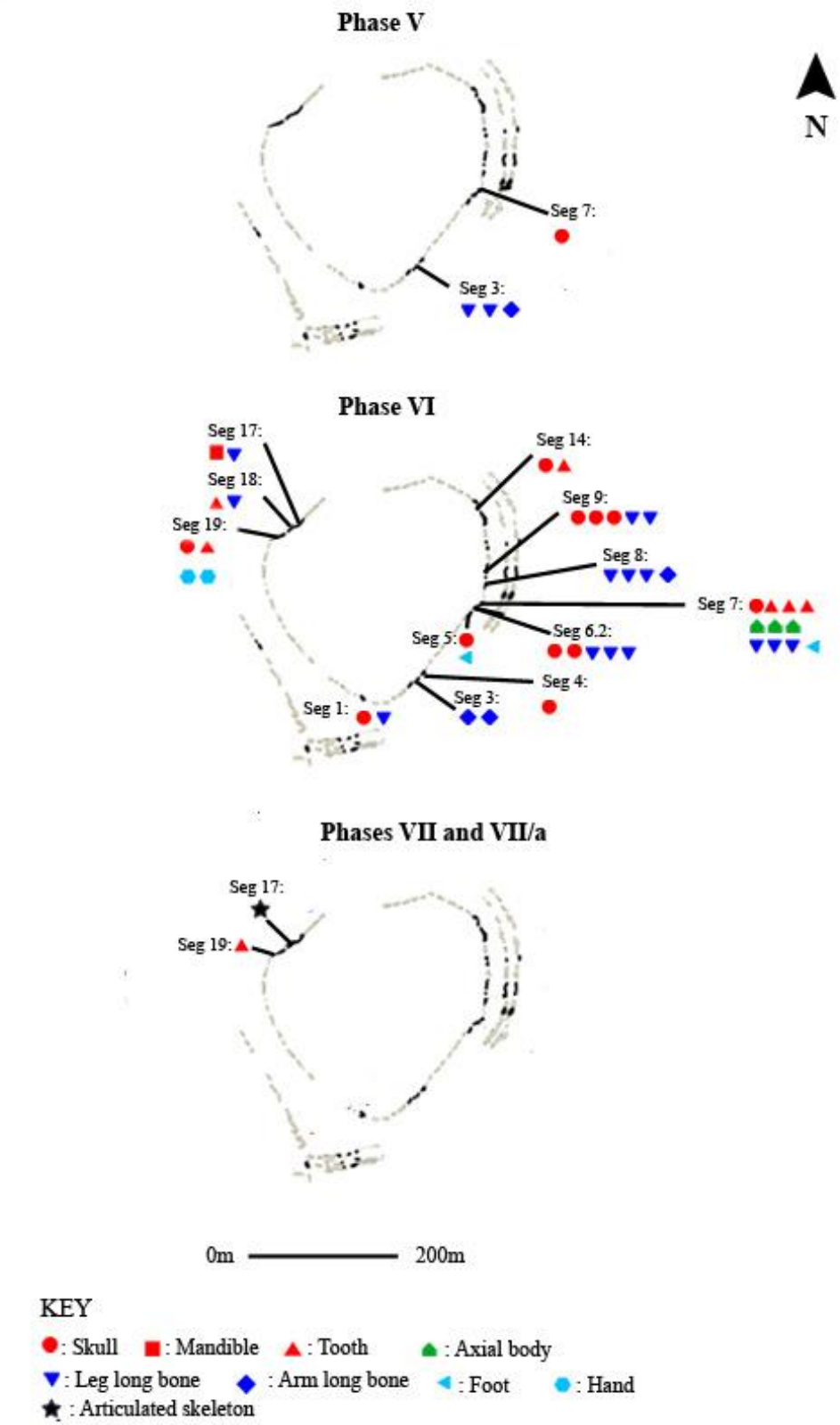


Figure 23: The distribution of human remains at the Hambledon Hill Main Enclosure, by phases V, VI, VII and VII/a.

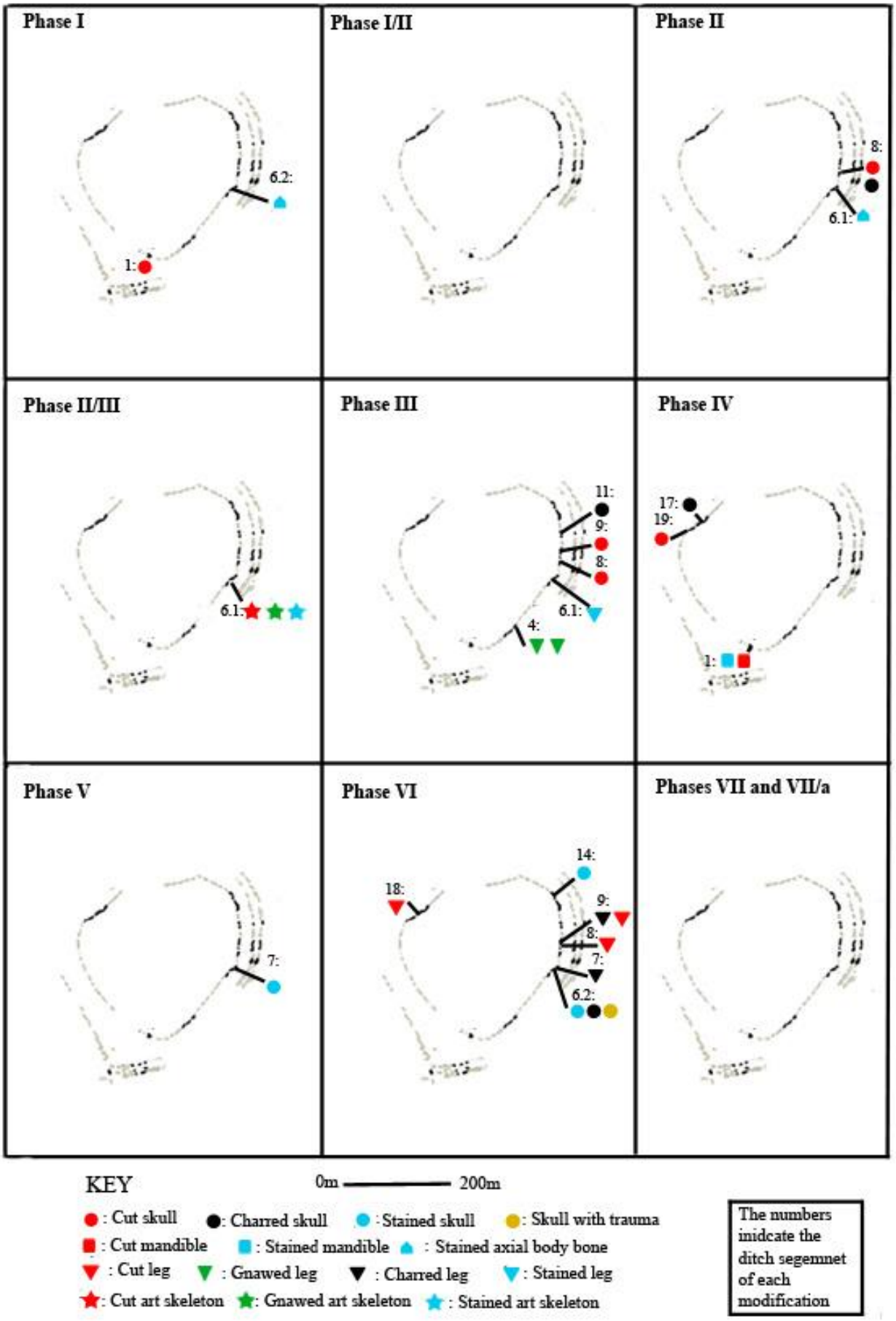


Figure 24: The modified human remains at the Hambledon Hill Main Enclosure, by phase

Chapter 4: Understanding the human remains at causewayed enclosure sites

Introduction

This chapter presents an interpretive discussion of the Early Neolithic human remains found at causewayed enclosure sites, drawing on the analyses presented in Chapters 2 and 3, and the datasets in the appendices. It evaluates the suitability and validity of current interpretive paradigms for understanding and accounting for the presence and meaning of the human remains, and argues that these are largely inadequate for understanding the evidence. It suggests that new interpretive frameworks need to be developed which can better account for the varied range of the evidence.

The first part of this chapter evaluates the current interpretive paradigms with reference to which the human remains at causewayed enclosure sites have principally been understood. These are discussed under three categories: (i). excarnation, (ii). votive deposition, and (iii). the presence of intact bodies. It is important to note, however, that these should not be regarded as distinct, bounded models; often, discussions in the literature draw on two or more of these paradigms. Disarticulated bones produced by excarnation have been regarded as being accidentally or votively deposited, and whole bodies may have been subject to exposure or excarnation, or formed votive deposits. Rather they are defined and evaluated here as broad frameworks through which the human remains have been understood.

Excarnation

It has been argued that the presence of human remains at causewayed enclosure sites can be explained as the result of the deliberate excarnation of bodies, which it has been suggested may have formed a significant activity at these sites (Drewett 1977; Mercer 1980; Edmonds 1993; Tilley 1994: 200; Armour-Chelu 1998: 271-272; Jones 2008; McKinley 2008; Fowler 2010: 8-9). The evidence most frequently cited for the deliberate excarnation of bodies on site comes from three sites: Hambledon Hill, Etton, and Windmill Hill (Jones 2008: Fowler 2010: 8-9). The most comprehensive argument for understanding the human remains in terms of on-site excarnation has been made in relation to Hambledon Hill, and the site is necessarily the focus of this discussion (Mercer 1980; Mercer and Healy 2008; McKinley 2008).

Mercer and Healy have recently argued that bodies were excarnated at Hambeldon Hill through two processes, which were not necessarily mutually exclusive: deliberate exposure to scavengers and the elements, and deliberate defleshing through cutting (Mercer and Healy

2008). In support of this idea they cite the weathered and eroded nature of the human remains, gnaw and cut marks on some remains, and the imbalance of skeletal elements represented at the site, notably a dearth of smaller bones such as vertebrae.

Mercer and Healy note that the human remains from Hambledon Hill are generally more weathered than the animal remains, which they suggest could indicate different treatment prior to burial, in the form of "prolonged exposure" (Mercer and Healy 2008: 759). A similar situation was noted at Etton, where it was suggested that the "broken and battered" appearance of the human bones relative to the "well-preserved" animal bone assemblage indicated that human bodies had a different dispositional history, possibly being excarnated within the enclosure (Armour-Chelu 1998: 271-272). However, the disparity in weathering between human and animal bones does not necessarily indicate the on-site excarnation of bodies; the eroded human bones could have been brought from elsewhere (Mercer and Healy 2008: 759). While human bones at other sites, such as Peak Camp, have been described as eroded (Darvill 2011), a disparity in erosion between human bone and animal bone has not been noted at other sites besides Etton and Hambledon Hill.

Damage to disarticulated bones at Hambledon Hill was not all the product of weathering; weathering of the interior of some broken bones show that they were deliberately broken before deposition, while damage to some bones was caused by post-depositional factors such as water percolation and root-marking (McKinley 2008: 493). Further, a significant quantity of the human remains from Hambledon Hill was not weathered. McKinley has rated the severity of "general weathering and abrasion" on the remains on a scale of 1, denoting slight wear or a not quite 'fresh' in appearance, to 5, denoting heavy wear or substantial erosion of the cortical bone surface (McKinley 2008: 491-492, Table 7.3). While 80% of skulls were weathered, and 71% of articulated skeletal remains, only 49% of disarticulated bone fragments were weathered, and of these only 47% were heavily weathered (McKinley 2008: 49, Table 7.3). This indicates that not all human remains were exposed for lengthy periods, and suggests that they were treated in a variety of ways.

Mercer and Healy have suggested that gnaw marks identified on some human remains are indicative of the deliberate exposure of bodies at the site, where they could be accessed by scavengers (Mercer and Healy 2008: 759). However, only a very small number of human remains from the whole complex show direct evidence of gnawing. Seven finds, *c* 2% of the total, show evidence of gnawing by canids or foxes, while 5 finds, *c* 1%, show evidence of gnawing by rodents (McKinley 2008: 494). Slightly more of the animal bone, 2.7% showed evidence of gnawing by canids, while 0.3% showed evidence of gnawing by rodents

(McKinley 2008: 393). As shown in Chapter 2, gnawing was very rare on human bone across all causewayed enclosure sites. Direct evidence of gnawing only occurs at one other causewayed enclosure, Etton, where 7 bones, 50% of the assemblage, were gnawed (Armour-Chelu 1998: 271-272). Only 4% of the animal bones from Etton showed signs of gnawing (Smith and Brickley 2008: 42).

The gnawed human remains however, may not have been intended to be subjected to gnawing. A gnawed partially articulated adult male found in the ditch in the Main Enclosure at Hambledon Hill was probably dragged there by scavengers from its original burial context of a shallow grave (McKinley 2008: 494). Further, two articulated skeletons in the ditch of the Main Enclosure at Hambledon Hill, were covered by flint cairns. McKinley has noted that these may have served to keep scavengers from disturbing these remains, and has suggested that this may have been their main purpose (McKinley 2008: 515).

McKinley cites the low numbers of small human bones across the site, particularly vertebra and pelvic bones, and hand and foot bones, as indirect evidence of action by scavengers (McKinley 2008: 496). In studies on the effects of hyena on animal carcasses, these elements are the most likely to show evidence of gnawing, and their survival could have been disproportionally adversely affected by scavenger activity (McKinley 2008: 493). As shown in Chapter 2, there are low numbers of pelvic and hand bones across causewayed enclosure sites, which could indirectly indicate broad scavenger activity. However, there are other explanations which could account for the low numbers of these bones, such as differential deposition, preservation, and recovery. Across all Early Neolithic contexts, the preservation of pelvic bones is rare, while skull and leg bones are the most likely bones to be preserved (Smith and Brickley 2009: 89). Skulls and leg bones, particularly femurs, were the most common bones at Hambledon Hill, perhaps because they are the most robust, and so are most likely to be preserved. There is evidence to suggest that pelvic bones may have been conceptualised, treated, and deposited differently to other bones at Hambledon Hill. Two pelvic bones from the south long barrow featured geometric transverse cut marks, unrelated to the processes of defleshing or cleaning (McKinley 2008: 502). Hand and foot bones may also been of special, different significance to other bones in the Neolithic (Smith and Brickely 2008: 82-83; Darvill 2011). At Peak Camp and Bury Hill, they were deposited in discrete deposits. Further, the deliberate removal of the feet from an articulated skeleton at Hambledon Hill may indicate they were regarded as being of special significance by the people who used this site. The dominance of skulls and long bones at Hambledon Hill, shown in Chapter 2, as well as the “large, very visible pieces” of bone which dominated the

assemblage at Etton (Pryor 1998: 378), could be the result of these bones being deliberately selected and brought to the site, after undergoing excarnation elsewhere. Their dominance of the assemblages at these sites does not necessarily indicate the exposure of bodies on-site.

Mercer and Healy have suggested that cut marks on human bones from Hambledon Hill represent evidence of deliberate defleshing as part of the excarnation process (Mercer and Healy 2008: 759). 23 finds of human bone from the site featured cut marks, *c* 7% of the total (McKinley 2008: 497). However, the poor definition of the cut marks on eight of these mean that they cannot be confirmed (McKinley 2008: 497). The interpretation of these cuts as evidence of defleshing as part of an excarnation process is however, difficult. Unlike the butchery marks associated with animal remains at the enclosure, the cut marks on human bone do not follow a consistent pattern, and do not suggest systematic and complete defleshing of bodies and cleaning of bones (Mercer and Healy 2008: 795; McKinley 2008: 499). In several cases, such as a femur which featured around a hundred transverse cuts, two parallel cuts on a mandible, and two pelvic bones which featured transverse, shallow cuts forming a geometric pattern, the cuts cannot simply be explained in terms of defleshing or cleaning (Mercer and Healy 2008: 795; McKinley 2008: 502).

The only other cut marks identified on human bone from causewayed enclosure sites is from Staines, where the skull and four vertebrae of a male displayed clear, transverse cuts (Robertson-Mackay 1987: 38). However, these cuts are probably the result of decapitation, rather than defleshing (Robertson-Mackay 1987: 38). They have recently been seen in terms of ritual sacrifice (Jones 2011: 96), and violent head-taking to gain the 'power' of the decapitated individual (Schulting and Wysocki 2005:128–9; Fowler 2010: 8).

All of the evidence so far presented for the deliberate excarnation of bodies on-site at causewayed enclosures, only shows that some disarticulated remains, which possibly had undergone processes of deliberate excarnation were present at some causewayed enclosure sites, namely Hambledon Hill and Etton. It does not show that excarnation took place at the sites themselves; the remains may plausibly have been brought to them from elsewhere. Gnawing on remains may have been incidental.

However, Mercer and Healy have cited the articulated skeletons of two individuals from the Main Enclosure and the Stepleton Enclosure at Hambledon Hill, as evidence "from the intermediate stages in the process" of excarnation, to argue that it took place on the hill itself (Mercer and Healy 2008: 759). The skeleton from the Main Enclosure showed extensive

evidence of gnawing and cut marks. The cut marks were focused on the left femur, and may represent a stage in a prolonged process of excarnation.

The disarticulated remains of two individuals, 50% of a juvenile placed in the Stepleton Outwork ditch and 40% of a subadault placed in a carin in the Main enclosure are also cited by Mercer and Healy as evidence of excarnation on the hill itself, as they appear to have been "gathered up while undispersed" (Mercer and Healy 2008: 759). However, these remains could plausibly have been excarnated elsewhere and brought to the site.

The articulated burial of an adult male in a grave cut at Windmill Hill has been frequently cited as evidence of on-site exposure (Whittle *et al* 1999: 79-80, Fig 76.; Fowler 2003: 50; McKinley 2008: 516, Smith and Brickley 2008: 42). Weathering on the sites of the grave cut, the disturbance of some bones, and the presence of the bones of amphibians and rodents have been seen as evidence that the pit was left open in order to expose and deflesh the remains (Whittle *et al* 1999: 351-352). However, there is only slight weathering at the very top of the grave cut, suggesting that it was not open for long (Whittle *et al* 2011: 77). Since the pit was backfilled after a short time and never reopened, the body may have not been intended to undergo rites of excarnation.

Overall, considering the evidence as it stands at present, the evidence for deliberate excarnation on-site at causewayed enclosure sites, through exposure to the elements and scavengers, defleshing, and inhumation, is very limited. At Hambledon Hill, the scale and nature of the evidence for excarnation is unusual when compared to other causewayed enclosure sites, and it cannot be regarded uncritically as a model for understanding other sites. At Hambledon Hill, it appears that two bodies, the articulated skeletons highlighted by Mercer and Healy as evidence of "the intermediate stages in the process" of excarnation were deliberately excarnated on the hill itself, probably through a prolonged process (Mercer and Healy 2008: 759). It is however uncertain whether excarnation was the intended outcome of the cutting of many bones at the site, or if the exposure of gnawed remains to scavengers was intentional, or even if any of this activity took place at the site itself. Recent research has illuminated a variety of contexts in which bodies were excarnated in the Early Neolithic, such as in graves, caves and on raised wooden platforms (Scott 1992; Smith and Brickley 2008: 41-57; Schulting 2009; Fowler 2010: 7-10). While some limited excarnation may have occurred at Hambledon Hill, and possibly Windmill Hill, much of the disarticulated bone material present at causewayed enclosure sites could plausibly have been excarnated elsewhere, and brought to the causewayed enclosure. The scale and frequency of excarnation at Hambledon Hill is very unlikely to have been close to that suggested by Tilley, who

interpreted Hambledon Hill as a "ritualised death island", to which "bodies were taken in processions" and "allowed to decompose", before the bones were circulated between long barrows in Cranbourne Chase (Tilley 1994: 200). However, it must be noted that absence of evidence is, in this case, not evidence of absence. Mercer and Healy and McKinley have noted that the cut and gnawed remains at Hambledon Hill probably represent a minimum; the effects of erosion have made cut and gnaw marks difficult to identify, and scavengers probably removed or destroyed some bones. At many sites, such as Whitehawk Camp, cut marks may not have been identified. In regards to material from more recent excavations however, such as those at Windmill Hill and Etton, their absence is likely to be real.

Votive deposition

The human remains at causewayed enclosure sites, particularly skulls, have often been interpreted in terms of votive deposition (Thomas 1991: 75; Fowler 2003: 49; McKinley 2008: 515; Fowler 2010:8). As a part of this model, there have been recurrent suggestions in the literature that some of the human remains were deposited intentionally, in a formal way (Thomas 1991: 112; Whittle *et al* 1999: 361; Pollard 2001; Reynolds 2014). Often concurrent with this view is the idea that some of the human bones deposited at causewayed enclosures were 'curated bones', or bones which were circulated for a long period of time before their deposition (Mercer and Healy 2008: 760). More broadly, it has been suggested that human remains were circulated as ancestral relics between causewayed enclosures and other contexts, particularly long barrows (Bradley 1984; Edmonds 1993; Tilley 1994: 200).

Claims for deliberate, formal deposition of human bones have been made for many causewayed enclosure sites, including Offham Hill (Drewett 1977), Etton (Edmonds 2006: 352-353), Hambledon Hill (Mercer 1980: 30; Mercer and Healy 2008: Reynolds 2014), and Windmill Hill (Smith 1965: 7; Whittle *et al* 1999: 357, 361-362). However, the scale and meaning of this intentional deposition remains unclear. A number of deposits featuring human bone in association with other materials have been highlighted by the excavators, yet these apparently deliberate, formal deposits of material include only a small quantity of the human bone found across all the sites. Besides these, it is uncertain as to which bones were intentionally deposited, the degree of formality represented in their deposition, and the meaning of their deposition.

The scale of intentional deposition is uncertain. At Hambledon Hill, it has been argued that eight skulls deposited on ditch bases across the site appear to have been placed deliberately (Mercer 1980: 30; McKinley 2008: 513; Mercer and Healy 2008: 760). Their apparent deliberate placement has lead to suggestions that they had special significance, perhaps in a

shamanistic context (Reynolds 2014). However, as Mercer and Healy note, skulls can roll, and so the position of some skulls on ditch bases may have been accidental (Mercer and Healy 2008: 760). It has been noted that all of the human bones from Hambledon Hill, rather than just the skulls, could have potentially been deliberately placed into the ditches (Thomas 1999: 75). At Offham Hill, Drewett suggested that a single mandible may have been deposited intentionally at a ditch terminal, while he saw the remainder of the disarticulated bones as having arrived in the ditches accidentally (Drewett 1977). In contrast, at Windmill Hill, where most of the human bones from the Keiller excavations were recorded by spit and as "as seemingly isolated finds", the most recent excavators believed that "there is little reason to doubt that most, if not all, of the human bone was intentionally deposited", because it constituted an inherently "potent symbol" (Whittle *et al* 1999: 362).

Often concurrent with claims of intentional deposition are suggestions that some bones were 'curated' for long periods before their deposition. At Windmill Hill it has been suggested that weathering on some bones implies that they were already old when they were deposited (Smith 1965: 137; Whittle *et al* 1999: 362). At Hambledon Hill, skulls were generally more weathered and worn than other disarticulated human bones present at the site, and this has lead to suggestions that the eight skulls found on ditch bases may have been curated before deposition (McKinley 2008: 492-493; Mercer and Healy 2008: 760). However, the vast majority of human remains from all causewayed enclosure sites, including the skulls from Hambledon Hill, have not been radiocarbon dated, and so claims of lengthy curation before deposition are difficult to prove.

At Hambledon Hill, foot bones found in the rubble fills of the Stepleton Spur Outwork ditch were radiocarbon dated, and were found to be older than antler picks and an articulated dog skeleton which lay beneath them on the base of the same ditch segment (Mercer and Healy 2008: 760). This may indicate that these bones were curated before their deposition. However, some bone fragments from non-adjoining phases and different segments at Hambledon Hill were found to match, indicating later reworking of deposited materials, which could account for the earlier date of the foot bones relative to the materials below them (McKinley 2008: 493). However, more broadly, foot bones are likely candidates for curation. At Peak Camp and Bury Hill, foot bones were deposited which were heavily weathered, and so may have been curated before their deposition (Bedwin 1981; Darvill 2011).

Several authors have noted anomalies in the representation of skeletal elements in Early Neolithic human bone assemblages from long barrows and causewayed enclosure sites (Smith and Brickley 2008: 69-73). It has been noted that different elements of skeletons tend

to be found at causewayed enclosure sites as compared with long barrows (Piggott 1962; Thrope 1984). On recognition of this, it has frequently been suggested that human remains may have been circulated between causewayed enclosures and long barrows (Smith 1965: 137; Mercer 1980: 40-44, 63-64; Bradley 1984: 22-24; Edmonds 1993: 111-116; Tilley 1994: 200; Thomas 2000). However, there is no direct evidence to support such an interpretation, and there are alternative explanations which can account for the representation of human bone elements at long barrows and causewayed enclosure sites.

Smith and Brickley have suggested that some human bones may have been removed or introduced into long barrow assemblages during recent or unrecorded antiquarian excvations, which could account partially for anomalies in the representation of skeletal elements at some sites (Smith and Brickley 2008: 71-73). The differing numbers of skulls and long bones at long barrow and causewayed enclosure sites (Thrope 1984), could also be explained by processes of deliberate selection when remains were brought to the sites from elsewhere; bones do not necessarily need to have circulated between them to account for the evidence. Importantly, it has recently been shown that long barrows start to go out of use at the point when the construction and use of causewayed enclosures peaks (Whittle *et al* 2011). This casts doubt on the idea that activity at the monuments was very closely related, as has been frequently proposed (Edmonds 1993; Tilley 1994: 200). Rather, causewayed enclosures may have replaced long barrows as an appropriate context for deposition of human remains.

The presence of intact bodies

Articulated skeletons are present at the majority of causewayed enclosure sites which feature disarticulated human remains. As shown in Chapter 2, in Table 1, there are twenty four probable Early Neolithic articulated skeletons, distributed across seven causewayed enclosure sites. Only three causewayed enclosures which feature disarticulated human remains, Bury Hill, Etton, and Peak Camp, do not feature articulated skeletons. However, more broadly finds of articulated skeletons from the Early Neolithic period are relatively rare (Fowler 2010: 6-7). This may explain why the articulated skeletons present at causewayed enclosure sites have attracted little sustained attention in the literature. A number of suggestions have however been made in regards to their presence, meaning and significance, which are outlined and evaluated in this section.

Fowler has recently highlighted two single burials of adult males, one from Windmill Hill, and one from the Stepleton Spur area of Hambledon Hill, which may predate the construction of their respective enclosures (Fowler 2010: 6). He has suggested that, “in both of these cases

it is possible that the deposition of a single body was foundational to later activity in which a wider range of bodies were manipulated through a far wider range of mortuary activities over several generations" (Fowler 2010: 6). Similarly, Jones has argued that the early date of the Stepleton Spur burial shows that it constitutes "a deliberate deposit to mark the inauguration" of Hambledon Hill (Jones 2011: 95). The idea that some articulated skeletons may have acted as deposits 'foundational' to later activity, was also suggested by Drewett, who suggested that presence of articulated skeletons at causewayed enclosures may have resulted in increased visitation and deposition (Drewett 1977). The skeleton at Offham Hill was cut into the ditch base, and is the earliest dated material from the site (Whittle *et al* 2011: 228-230, Table 5.3.). However, while some skeletons, such as the Stepleton Spur burial and the Offham Hill skeleton may have constituted some of the earliest dated deposits at causewayed enclosures, the idea that articulated skeletons may have constituted 'foundational' deposits at the sites is questionable. As shown in Chapter 3, in Figures 21-24, the three articulated skeletons at The Main Enclosure Hambledon Hill were deposited at times when there was very little or no deposition of disarticulated bones. When the deposition of disarticulated bones was frequent, such as in Phases III or VI, no articulated skeletons were deposited. This suggests that the deposition of disarticulated human remains at Hambledon Hill was not linked to the deposition of articulated skeletons. Rather, as the articulated skeletons at the site appear to have been deposited when the deposition of disarticulated bones ceased, they may have been conceptualised differently to disarticulated bones, and the deposition of the two may have not have been very closely linked.

The deposition of intact bodies of young individuals in causewayed enclosure ditches, has been seen as a way of defining the 'boundaries' represented by the ditches, and of articulating structured social and religious distinctions spatially (Thomas 1996: 188; Whittle *et al* 1999: 382, Fig. 227., 387; Leach 2008). At Windmill Hill, the presence of two infant skeletons in the outer ditch circuit, as well articulated animal skeletons, has led to it being seen as an area concerned with "nature… the dead, ancestors and the past… and perhaps with the unsocilaised or not fully socialised", which are deposited close to "the woodland edges", "a realm of spirits, potential danger, and ambiguity" (Whittle *et al* 1999: 387). This is in contrast to the inner and middle circuits at the site, which have been seen as areas concerned with "'domesticness', socialisation, and the sphere of the living" (Whittle *et al* 1999: 387). At Maiden Castle, articulated infants in the outer ditch have been seen as deposits which "came to define" the circuit and to draw as distinction between the inside and outside of the enclosure (Thomas 1996: 188). As infants, who were "not full social beings", their bodies emphasised the liminal nature of the ditch circuit (Thomas 1996: 188). However, the recent

dates presented by Whittle *et al* render this interpretation difficult to sustain. While one infant skeleton from the outer ditch at Windmill Hill does date to the Early Neolithic period, the other dates to the Bronze Age, 2200-1980 cal BC (Whittle *et al* 2011: 75, 79, Table 3.2., 89). As the outer ditch at Windmill Hill was probably constructed very soon after the inner ditch, but before the middle ditch, it may have a close relationship with the inner ditch in terms of how it conceptualised. As such, it may not have represented a stark 'boundary', and the infant skeleton deposited in its fills may not have been conceptualised as not fully social.

Fowler has recently suggested that "a very specific kind of mortuary practice", concerned with 'premature' or 'bad' deaths can be identified in relation to a group of intact bodies deposited in causewayed enclosure ditches (Fowler 2010: 6-7). In this group he includes the adult skeletons from Offham Hill and The Trundle, the infant skeletons from Windmill Hill, the two juvenile skeletons from Hambledon Hill, and the burial of a woman and infant from Whitehawk Camp (Fowler 2010: 7). He suggests that the flint and chalk borders or cairns associated some of the skeletons at Hambledon Hill, The Trundle, and Whitehawk, may have served to 'contain', the bodies of people who had suffered from bad deaths (Fowler 2010: 7, 15-16). However, the identification of a single, "specific mortuary practice" concerned with "bad" deaths in relation to this group of remains is problematic. The Trundle skeleton, associated with a chalk cairn, cannot be included within the group as it has recently been dated to the Iron Age (Whittle *et al* 2011: 235, table 5.5). The flint cairns at Hambledon Hill may have served to keep scavengers from disturbing these remains, rather than to metaphorically 'contain' bodies (McKinley 2008: 515). Fowler assumes that the woman at Whitehawk Camp died before giving birth, and sees this as a 'bad' death (Fowler 2010: 7). However, doubt exists about the age of the infant at death; it was probably born and may have lived for some months (Curwen 1934: 125; Roberts and Cox 2003: 56). At Hambledon Hill, the placement of the juveniles within ditch segments, and their associated objects, may have been a consequence of the 'special' status accorded by their disability, or hereditary kin ties, rather than their premature deaths (Mercer and Healy2008; Harris 2010).

Diversity and pattern in Early Neolithic human remains at causewayed enclosure sites

This section reconsiders discussion of the Early Neolithic human remains from causewayed enclosure sites, drawing on the analyses presented in Chapter 2 and 3, and the information in appendices, to provide a more comprehensive, diverse, and nuanced account of the human remains than has been available previously. A discussion is presented highlighting patterns in the treatment and deposition of human remains between sites and groups of sites, and over time. It is argued that current paradigms are largely inadequate for understanding the broad

range of the evidence, and suggests that new interpretive frameworks need to be developed which can better account for the presence, meaning, and significance of the human remains.

A number of ways of grouping causewayed enclosures have been proposed, on the basis of similarities in architectural form, location, and deposition, and on their proximity to other causewayed enclosures and monuments (Palmer 1976; Pryor 1998: 374-379; Oswald *et al* 2001; Evans and Hodder 2006: 356-364). This discussion highlights patterns in the treatment and deposition of human remains at causewayed enclosure sites with reference to three different groupings: (i). Geologically, with Abingdon, Staines, Etton, and Haddenham grouped together as low-lying sites on gravels, and the remainder of the sites grouped together as sites on hills, usually on chalk; (ii). Geographically by region, in five categories: Wessex, which comprises South Wessex and The North Wiltshire Downs, Sussex, Eastern England, The Thames Valley, and The Cotswolds; and (iii). the three big, architecturally complex, long-lived sites, Hambledon Hill, Windmill Hill, and Whitehawk Camp, compared as a group with the remainder of the sites, with are all smaller and/or have fewer ditch circuits.

Some similarities in the human remains present across different sites have been suggested in site reports. In terms of skeletal elements, skulls have been accorded broad significance (Fowler 2003: 49; McKinley 2008: 515). Pryor has argued that, at Staines, "the two skulls, pottery, and other material in the outer ditch strongly recall an Etton structured deposit" (Pryor 1998: 378). He has also noted that, as at Etton, "the loose human bone from Staines also consisted of large, very visible pieces" (Pryor 1998: 378). Skulls have also been seen as being of special votive significance at Haddenham, which has also been compared to Etton (Edmonds 2006: 352-353; Pryor 1998: 378). The deposition of some skull fragments at Etton and Haddenham is similar, in that skull fragments were deposited in ditches with apparently deliberate reference to an array of other materials, some of which may have been invested with personhood or regarded as metaphors for the body (Pryor 1998: 34, 35, Fig 33, 375-378; Evans and Hodder 2006: 253-255, Fig 5.13, 352-353, Fig 6.4). Geologically, all three of these sites are low-lying, and on gravels. Two of them, Etton and Haddenham, are in Eastern England.

However, the deposition of skulls at Etton has also been compared with the deposition of skulls at Hambledon Hill, a very different site in terms of geology, location, and size (Pryor 1998: 375). Broadly, the presence and general significance of skulls and skull fragments appears to transcend rigid geographical and geological distinctions. Head bones, mainly from skulls, were present at all sites where human remains have been found, except at Peak Camp

and Bury Hill. Skulls appear to have been a particularly appropriate element for deposition at causewayed enclosure sites over a sustained period of time, or were significant episodically over a relatively long period. Skulls were found on ditch bases and within basal silts at several sites, such as Chalk Hill, Hambledon Hill, Haddenham, and Staines, indicating that they were considered an appropriate element to deposit almost as soon as enclosures were constructed. As shown in Chapter 3, although the frequency of deposition of skulls at the Main Enclosure at Hambledon Hill varied over its c. 300-400 year period of primary use, they were recurrently a frequently deposited skeletal element over hundreds of years (Mercer and Healy 2008: 751).

In regards to articulated skeletons, none are present at Etton or Haddenham, both sites in Eastern England, or at Peak Camp in The Cotswolds. Given the scale of excavations at Etton, the lack of skeletons at this site at least is likely to be real (Pryor 1998: 361). At Staines and Abingdon however, sites geologically similar to Etton and Haddenham in that they are low-lying sites on gravels, but in The Thames Valley region, articulated skeletons were present. They were also present in Wessex and Sussex. In these regions they were more frequent, generally being concentrated at the three largest, most complex sites.

While there are some very broad similarities in the presence of some human remains, such as skulls and intact bodies, and the mode and nature of their deposition, across most causewayed enclosure sites, the picture that emerges from this study is one of significant variation in the treatment and deposition of human remains, both regionally, and at individual sites. There are striking differences as well as similarities in the way that human remains were treated and deposited at different causewayed enclosure sites. While the manipulation and deposition of disarticulated bones, particularly skulls and long bones, and intact bodies was widespread, it appears to have taken a number of locally distinctive forms. In terms of treatment, at Hambledon Hill a number of skulls and other human remains were cut (Mercer and Healy 2008: 759). Some of these cuts appear to relate to defleshing, while others are more difficult to interpret. The only other site to feature cut human bone was Staines. Here, the cut marks appear to have had a very different purpose to defleshing, relating instead to decapitation, perhaps in the context of ritual sacrifice (Jones 2011: 96). At Hambledon Hill however, there are parallels for this treatment. Three skulls at the site were deposited with their mandibles and some vertebrae intact (McKinley 2008). The deposition of skulls with intact mandibles and vertebrae has been recognised more widely in the Early Neolithic, and may have related to violent head-taking (Schulting and Wysocki 2005.128-129). In the Hambledon Hill examples however, the skulls and vertebrae appear to have separated from the remainder of

the skeleton post-mortem (McKinley 2008). As such, while similar to the Staines example, the three skulls from Hambledon Hill may relate to a different practice focused on the manipulation of deceased bodies.

At Hambledon Hill, a small number of bones, predominantly skull fragments, were charred (McKinley 2008: 497). Their condition indicates they were burnt as dry, or close to dry bone, and probably when already fragmented (McKinley 2008: 497). Similar treatment was accorded to skull fragments at Whitehawk Camp, where "three small charred fragments of human skull" were found (Curwen 1934: 111). These charred remains are difficult to interpret as burning of already dry bone clearly represented something different to cremation (McKinley 2088: 497). It is possible that the burning of these remains was incidental. At Hambledon Hill six contexts containing charred human bone also contained charcoal, and at Whitehawk Camp the three fragments were found "in close relation", to a 'hearth' surrounded by "a wide scatter of ashes" (McKinley 2008: 497; Curwen 1934: 111-112). However, there are wider parallels for the charring of bone in the period, in the presence of charred but otherwise unburnt human bones from several long barrows (Piggott 1962: 24, 68; McKinley 2008: 497; Smith and Brickley 2008: 60). Given the quantity of charred material found from the Early Neolithic, it is likely to represent a deliberate, ritual practice, although one that is currently poorly understood (McKinley 2008: 497; Smith and Brickley 2008: 60).

At Hambledon Hill, uniquely amongst causewayed enclosures, some disarticulated bones were placed in flint cairns. Other, more varied, coverings can also be identified in relation to intact bodies at Hambledon Hill. The complete, articulated skeleton of a male in the Stepleton outwork ditch was covered with chalk rubble prior to full skeletisation, and another skeleton was covered with a tabular flint covering (McKinley 2008: 512). Cairns associated with Early Neolithic intact bodies also occur at Whitehawk Camp, in the form of "10 large and a few small chalk blocks", which surrounded an adult female skeleton and a neonatal skeleton (Curwen 1934 :108). While superficially similar in appearance, these cairns may have had very different meanings in the past. At Hambledon Hill, the flint cairns have been constructed to keep scavengers from disturbing remains (McKinley 2008: 515). At Whitehawk Camp, the cairn may have been linked to a desire to 'contain' 'bad' deaths (Fowler 2010: 6-7, 15-16). Some of the chalk blocks from the Whitehawk Camp burial are incised (Curwen 1934 :108). Decorated chalk blocks are relatively rare in the British Early Neolithic, but they have been found at Maiden Castle, Flagstones, North Marden long barrow, and in flint mines (Teather 2011: 242-245, Table 2, Table 3).

In terms of the deliberate exposure of bodies on-site, direct evidence for intermediate stages in the process is present only at Hambledon Hill, in the form of two partially articulated bodies in the ditches (McKinley 2008). Gnawed disarticulated human bones are present at two sites, Hambledon Hill and Etton. However, the presence of this material at these sites does not necessarily imply the deliberate exposure of bodies on-site. Their gnawing on-site may have been incidental, or the bones could have been brought from elsewhere. The latter explanation is especially likely for the gnawed bones at Etton. As no animal remains from the site were gnawed, and as the gnawed human bone was often stained by soils, in contexts with unstained bones, the latter appears to have had a very different history of treatment and deposition to the rest of the bone from the site prior to its final deposition.

Weathering on human remains from causewayed enclosure sites is often highly variable, indicating diverse histories for the remains prior to their final deposition. At Hambledon Hill, 49% of disarticulated bone fragments were weathered, while the remainder were not (McKinley 2008: 492-493, Table 7.3.). On some bones, some areas were more heavily weathered than others (McKinley 2008: 493). The condition of the human remains at Haddenham was also variable; an adult femur and some skull fragments from different ditch segments were heavily iron concreted, some skull fragments were polished as if by water action, and some skull fragments had no erosion recorded (Evans and Hodder 2006: 306-307). Two mandibles found at Staines had "internal blue-black staining", while the remainder of the bone, including a skull found near to one mandible, was not stained (Robertson-Mackay 1987).

Across causewayed enclosure sites human remains were accorded a wide range of treatments, the significance of which are not yet well understood, and were deposited in varied ways. There are parallels between Hambledon Hill and Whitehawk Camp, both large, complex, long-lived sites on chalk hills in Wessex, in terms of the deposition of articulated bodies in cairns and the charring of skull fragments. However, these similarities may only be superficial, and these similar treatments may have had very different meanings. Apparent broad significance is accorded to skulls at a range of sites from different groupings, including Etton, Haddenham, Staines, and Windmill Hill. However the significance of skulls appears to have taken locally distinctive forms, such as charring at Hambledon Hill and Whitehawk Camp, and decapitation at Staines. These treatments are also present more broadly in the Early Neolithic in a variety of contexts. It is apparent that the current interpretive paradigms are inadequate for understanding the broad, varied nature of the evidence, and that new frameworks of understanding need to be established.

Chapter 5: Conclusion

This chapter synthesises the data, analyses and discussion presented in this study. Firstly, the outcomes of the study are summarised and evaluated, and their broader significance is discussed. After this, the methodology used in the study is critically evaluated and considered in relation to how far it achieved the aims of the study, and how appropriate it was for achieving them. Finally, some directions for future research on the topic are presented.

Outcomes of the data collation, analyses and discussion

The collation of all published material relating to 36 excavated causewayed enclosures, including site reports, articles, and books, notably *Gathering Time*, has allowed this study to present a systematic survey of the human remains from causewayed enclosure sites. No systematic survey of the evidence on this scale has been undertaken previously, and the collation of the data from disparate sources and its clear presentation here in the form of tables, charts, and annotated plans, can be considered a major outcome of this study.

The collation of the data has allowed the scale and character of the Early Neolithic human remains at causewayed enclosure sites to be clearly established. From the data presented in the tables and annotated plans in the appendices, the analyses presented in Chapters 2 and 3 were constructed. These analyses, the collated data, as well as reference to recent publications, allowed the discussion in Chapter 4 to draw on a much broader range of evidence than has been considered in previous discussions, such as those by Edmonds (1993) and Jones (2008). The state of the evidence as it stands at present can be clearly seen in the datasets in the appendix. Drawing on this evidence, the discussion in Chapter 4 was able to evaluate the suitability and validity of the current paradigms with which the human remains have been understood. Previous authors have applied the model of the deliberate excarnation and exposure of bodies on-site to several causewayed enclosure sites, including Offham Hill and Whitehawk Camp; it has been regarded as having constituted a significant practice at these sites, and possibly their intended function (Drewett 1977; Mercer 1980; Edmonds 1993: Jones 2008; Fowler 2010). The discussion in Chapter 4 was able to draw on a wide range of evidence to show that there is no direct evidence of intermediate stages in the processes of the excarnation or deliberate exposure of bodies on-site at any causewayed enclosure other than Hambledon Hill. At Hambledon Hill, taking evidence such as cut marks, gnaw marks, and weathering on remains, and the representation of skeletal elements, into account, it is apparent that the scale of deliberate exposure on-site at the site may have been very limited. In regards to other sites, some excarnation in the form of the burial of intact bodies, and their

later exhumation, may have occurred at Windmill Hill on a very limited basis, probably for only one or two bodies. Exposure on-site has been suggested for Etton in the literature (Armour-Chelu 1998: 271-272), but it cannot be confirmed based on the evidence. Gnawing of human bone at the site may have been incidental, or the gnawed bones may have been brought from elsewhere. It has further become clear that, as a paradigm, the idea of votive deposition must be applied more carefully and with greater care. The scale, level of intentionally, and meaning of 'votive' deposits at causewayed enclosure sites is still very uncertain.

In terms of the ways in which articulated bodies at the sites have been understood, the idea of 'a specific mortuary practice' enacted in relation to 'bad' deaths at the sites, as recently suggested by Fowler (2010), appears untenable in regards to the range of articulated skeletons it has been applied to. It is difficult to draw parallels between the bodies in flint carins at Hambeldon Hill, those surrounded by incised chalk blocks at Whitehawk Camp, and that of the individual at Offham Hill, as Fowler has done. Rather, the variety of the treatment and deposition accorded to these remains must be emphasised, and a range of explanations put forward, rather than a single, blanket interpretation. The idea that the intact bodies of children placed into outer ditches at Windmill Hill, and Maiden Castle represented the use of individuals who were not fully socialised as a way of marking liminal boundaries, must also be carefully examined in light of new dating evidence. Recent work on children in the Neolithic suggests that the deposition of their remains may suggest something very different (Harris 2011).

The disarticulated bones at the sites display highly variable patterns of weathering and treatment, indicating that they have diverse histories. The remains cannot therefore be fully explained and understood by any one of the current main paradigms. Instead more diverse, nuanced interpretations must be formed, that better account for the diversity of the evidence. These must also acknowledge the role of time in the deposition of the human remains. Many causewayed enclosures appear to have been used episodically, with ditches left to silt before being recut. At Hambledon Hill there is evidence, in finds of refitting bone fragments in non-adjacent segments and phases, of the later reworking of earlier deposits. Mortuary practices related to causewayed enclosures must be understood in the context of time. Practices were not necessarily constant or unchanging. Some practices may have been brief, or recurrently popular, or, in the case of the significance of skulls, apparently relatively constant, but taking distinctive local forms. An understanding of the timing and tempo of the deposition of human remains across the sites, which has been shown Chapter 3 in relation to Hambledon Hill, can

provide a more nuanced understanding of how human remains were deposited over time, and what they might mean in terms of social agency and cultural representation.

Evaluation of methodology

The aims presented in Chapter 1 included collating and presenting the evidence relating to human remains at 36 excavated causewayed enclosure sites, and analysing this data in order to present an extended discussion which would evaluate the suitability of current interpretive paradigms for understanding the evidence, and discuss pattern and diversity in the treatment and deposition of the human remains over time and space. The methodology to achieve these aims comprised examining and reviewing all the published literature related to causewayed enclosures, including site reports, articles, and books. The decision to use only published literature was made primarily to ensure that the data was as reliable, accurate, and full as possible, and for ease of access, and in this respect it was successful. The recent excavations at Chalk Hill, which featured Early Neolithic human remains, are at present unpublished (Shand 2001; Canterbury Archaeological Trust 2012). Published information on the site, such as in *Gathering Time*, is lacking in detail. As such, the decision was made to discuss the site where appropriate and relevant in Chapters 3 and 4, but not to include it in the appendix or the analyses in Chapters 2 and 3. In achieving the aims stated in Chapter 1, this methodology was largely successful. The assessment of all relevant publications allowed the data tables, annotated plans, charts, and figures to be constructed, which presented abundant material for the discussion. The discussion was able to draw on a much broader range of evidence than any previous discussion, and so was able to fulfil the aims of evaluating the usefulness of current interpretive paradigms for understating the evidence, and discussing pattern and diversity in the treatment and deposition of the human remains over space and time

Directions for future research

Oswald *et al's* observation that our "understanding of causewayed enclosures has relied too heavily on the handful of sites that have been extensively excavated", still holds true, particularly in regards to the human remains present at the sites (Oswald *et al* 2001: 147). More extensive excavations at sites at which there are low numbers of human remains present, but which have been subjected only to limited excavation, such as Peak Camp, would be interesting as a way of ascertaining whether the low numbers of human remains at these sites are real, or whether they are consequence of the limited scale of excavations. Even the large-scale excavations at Haddenham have been criticised by the excavator as being too limited to detect the suspected range of evidence (Evans 2011: 162-163). New probable

causewayed enclosures are being excavated relatively frequently, such as an as yet unnamed causewayed enclosure in South Petherton, Somerset (Somerset Historic Environment Record 2009; Brett, Mudd, and Collard 2009). It is important that during future excvations of possible causewayed enclosures, and further excavation of certain sites, that fine sieving is performed. This would help find any smaller bones, such as finger or toe bones, which have been generally lacking from some sites. Detailed recording and assessments of human remains during future excavations also need to be made.

However, while more large-scale excavations of causewayed enclosure sites would be very useful and would provide new comparative evidence, they would be expensive, time-consuming, and difficult to undertake on many known sites, which are scheduled. On this note, it is important to also suggest some more manageable, achievable aims for future research, which would also be very informative. In this regard, it is significant that the cut marks on bones at Hambledon Hill were only noted during a recent reassessment of the material (McKinley 2008). Reassessment of human bone assemblages held in archives from other causewayed enclosure sites might provide new evidence of the cutting and gnawing of human remains. In particular, reassessment of the assemblage from Whitehawk Camp would be very useful. The human remains at Whitehawk Camp parallel those at Hambledon in several ways, such as in the presence of relatively high numbers of articulated skeletons, some with cairns, and in the presence of charred skull fragments. Like Hambledon Hill, Whitehawk Camp is also a large, multi-circuit, long-lived site. The human bone assemblage was last assessed in the 1930s (Williamson 1930; Curwen 1932; 1934; 1935). Recent broader reassessments of archived materials from even the relatively recent, well-recorded excavations at Staines and Etton have resulted in new insights (P. Bradley 2004; Garrow 2010), and a reassessment of the Whitehawk Camp assemblage, using microscopes to actively look for modifications, may provide new evidence.

Finally, a targeted programme of radiocarbon dating focused on the human remains would also be very useful. *Gathering Time* focused on obtaining dates for broadly dating the use of the enclosures, and contains relatively few new dates on human bone material. However even these few dates have revealed some interesting new information. Notably, the articulated skeleton from The Trundle, and an infant skeleton from Windmill Hill, which were until recently believed to date from the Early Neolithic period, have been dated to the Iron Age and Bronze Age respectively. In advocating a new programme of focused radiocarbon dating, some remains are of particular interest. None of the eight skulls on the ditch bases at Hambledon Hill have been radiocarbon dated. Dates on these may provide evidence of

curation, which could reinforce the apparent symbolic importance of skulls in the period. It would also be interesting to date more undated articulated skeletons. The undated examples in pits at Staines and Abingdon are good candidates. As they were not deposited within the causewayed enclosure ditches, it is difficult to assume with any certainty that they were deposited in the Early Neolithic period.

Despite nearly a century of study, and long-held interpretive assumptions concerning causewayed enclosures, it is clear that these sites deserve renewed, critical enquiry, and that such study can reveal can reveal important new directions for the investigation and understanding of causewayed enclosures, and the Early Neolithic period more widely.

Appendix 1: The possible, probable and certain Early Neolithic human remains present at 36 causewayed enclosure sites

The table in this appendix shows the possible, probable and certain Early Neolithic human remains present at 36 excavated causewayed enclosure sites. In the context of this table 'N/A', means that there are no Early Neolithic human remains present at a site.

Site and publication	Human remains
The North Wiltshire Downs	
Windmill Hill Smith 1965 Whittle *et al* 1999	Geological context: Chalk Architecture: Three ditch circuits **Ditch:** *Outer ditch:* Infant cranium. 3-4 years of age. Fragmented into 20 large pieces, and many smaller ones. Found lying between a cattle frontlet and a cattle scapula and tibia fragment. Dated to 3660-3360 cal BC (Whittle *et al* 2011: 74). Adult tibia. Adult tooth; from around and just below tooth, a quantity of burnt bone "presumably a human or animal cremation". However from its position within the ditch fills, this deposit is probably not Early Neolithic in date (Whittle *et al* 1999: 362). Adult female femur. Adult tooth Adult humerus. Humerus fragments. Occipital and parietal fragments of young adult. Occipital fragment of adult. Possibly male. A cervical vertebra Distal ulna fragment. Small fragment of an adult parietal bone. Tibia fragment. Ten shaft fragments, one identified as a right proximal ulna of a male. Frontal bone. Articulated infant skeleton. 2-3 years of age. Found on base of ditch, against the ditches' inner side. Dated to 3370-3120 cal BC (95% confidence) (Whittle *et al* 2011: 75).

	Articulated infant skeleton. 7-7.5 months old. Lying on right side with head to the east. From the interface between two fills. "Covered with backfilled silt or chalk" (Smith 1965: 136; Whittle *et al* 1999: 362). Dated to 2200-1980 cal BC (Whittle *et al* 2011:79). *Middle ditch:* Juvenile occipital fragment. Infant skull fragment. Two mandibles. Juvenile upper jaw fragment Adult femur. Fragments of lower skull. Adult right maxilla. Left femur. Possibly adult. Upper jaw and mandible of one juvenile. Right male femur. Adult parietal bone. Right male femur. Fragment of left tibia. *Inner ditch:* Immature left femur. Circa. 5-7 years of age. No macroscopically visible indications of weathering, but "a few random scratch or cut-like marks, possibly the result of animal trampling or natural attritional processes" (Whittle *et al* 1999: 346). Inserted into a Bos humerus. Fragment of an adult parietal. Adult right lower second premolar. Left fibula. Adult distal humerus fragment. Adult left ulna. Fragmentary child skull. Temporal bone. Unidentified long bone fragments. Fragment of frontal bone. **Pits and cut features:** *Under outer bank:* Articulated adult male skeleton. 35-45 years of age. Right forearm, both hands, and right leg

	below thigh disturbed. Right radius rotated and placed across the left humerus shaft. Right fibula rotated and moved towards pelvic basin. Right tibia rotated and superimposed over left forearm. Right femur displaced downwards and rotated. Both hands disturbed. Found on the base of an oval pit cut into the chalk. Amphibian bones, some articulated, in the same context as the skeleton. Associated with a single flint flake. Skeleton dated to 3660-3360 cal BC (Whittle *et al* 2011: 77). **Pre-bank surface:** Lower canine Distal shaft fragment; probably a human tibia. Possibly a small fragment of immature occipital. An upper second molar of an adult.
Knap Hill Cunnington 1912 Connah 1965	Geological context: Chalk Architecture: One ditch circuit **Ditch:** A mandible, "rather small, with worn teeth" (Cunnington 1912). Articulated skeleton in grave cut into upper ditch fill. Female, 40-50 years of age. Patella found amongst foot bones. Left clavicle disturbed. Undated, but probably Roman; probable boot nails near feet. **Outside ditch circuit:** Articulated skeleton. Located immediately under the turf at the centre of an artificial mound outside the northern corner of the enclosure, Roman pottery within the turf, but no dating evidence from mound. All bones present except the legs, feet, and right hand. Undated. From the 'plateau ditch and rampart': fragments of skull and limb bones of an infant 'embedded in the rampart'. Undated. Probably Iron Age/ Roman based on location.
Rybury Booney 1964	N/A
South Wessex	
Hambledon Hill (Main Enclosure) Mercer and Healy 2008	For reasons of space, this entry describes only the human remains found in the ditches of the Main Enclosure at Hambledon Hill. Descriptions of the human remains found at the other areas of the complex can be found in *Hambledon Hill, Dorset: excavation and survey of a Neolithic monument complex and its surrounding landscape* (Mercer and Healy 2008). The areas of the complex which are not described here, but are included in the analyses and discussions in this study are as follows: Inner East cross-dyke, Outer East cross-dyke, Inner South cross-dyke, Shroton spur outwork, Stepleon Enclosure, Outer Stepleton outwork, Middle Stepleton outwork, Inner Stepleton outwork, and the Hanford spur. For ease of cross-referencing with Figures 21-24 in Chapter 3, the human remains in this entry are listed by phase rather than ditch segment. Brief descriptions of the characteristics of the main phases are given at the relevant points in this entry. Geological context: Chalk Architecture: One ditch circuit **Main Enclosure Phase I (fine chalky silts formed on the ditch bottom, from which they**

	were sometimes removed, and deposits made): Two skulls, without mandibles. One, a young juvenile (6-7 years of age), with cuts. The other, an older juvenile adult. Deposited in a flint cairn on the ditch base. One adult lower limb fragment. 23 fragments of an older juvenile, comprising mandible, axial skeleton, upper limb/s, and lower limb/s. Possible sooting. Placed in a flint cairn on the ditch base. One tooth of an older juvenile/ young subadult. Five fragments of upper limb, possibly female. Subadult/ adult juvenile. **Main Enclosure Phase I/II (interface between Phases I and II):** c. 85% of an articulated juvenile skeleton. Buried in an ovoid grave cut into the ditch base in a corner of the shaollwer of two sub-segments. Not clear if grave had been cut through primary silts. Flexed, on the left side, facing NW. Head bent back, hands drawn up in front of chest. Feet not recovered. Associated with three tublar bone beads in the head area; one from the tibia of a large bird, perhaps a swan, and a flint flake in front of the hands. All but the skull was covered by a tabular flint cairn built directly over the body. **Main Enclosure Phase II (fine chalky silts formed on the ditch bottom, from which they were sometimes removed, and deposits were made):** One fragment of an adult lower limb. One fragment of an upper limb. Older subadult/ adult juvenile. Four fragments of the axial skeleton and lower limb of a juvenile. Skull, without mandible, of a young juvenile (5-6 years of age). Skull, without mandible, of a mature adult (c. 25 years of age). One lower limb fragment, older juvenile. One axial body fragment, adult. Five lower limb fragments, adult. Possibly male. One upper limb fragment, subadult/ adult. >25 skull fragments, subadult/ adult. Possibly female. Cuts, charred. c. 3 skull fragments, older infant/ young juvenile. 8 skull fragments, older infant/ young juvenile. 1 axial body fragment, subadult. 1 lower limb fragment, subadult/ adult. Dry. Eight fragments, comprising mandible, axial body, and lower limb. Young subadult. Six mandible fragments, older mature adult. Possibly male. **Main Enclosure Phase II/III (interface between Phases II and III):** One lower limb fragment, subadult/ adult. c. 15% of an articulated young/ younger mature adult skeleton. Lower axial skeleton and

	femora present. In ditch fill. Axial body and lower limb/s. Male. Cuts, canid gnawing, sooting. Covered by a diffuse spread of flint nodules contained in a dark, charcoal matrix. **Main Enclosure Phase III (typically the bulk of every segment: vacuous chalk rubble, runs of finer silts, and cemented chalky deposits):** Four lower limb fragments, juvenile. Dry. Six skull fragments, older juvenile (c. 11 years of age). 1 skull fragment, infant/ juvenile. >5 skull fragments, infant/ juvenile. 5 mandible fragments. Subadult. F?? Dry. Three lower limb fragments, juvenile. Canid gnawing? One lower limb fragment, young adult. Five lower limb fragments, adult. Canid gnawing? Two lower limb fragments, subadult/ adult. Dry. One lower limb fragment, older juvenile. Sooting. Three skull fragments, adult. One lower limb fragment. Juvinille/ subadult. Skull fragment, infant (c. 3 years of age). Cuts. >80 skull fragments, infant. Ten skull fragments, young infant (c. 1.5-2 years of age). Five mandible fragments, young infant (c. 1.5-2 years of age). Skull, no mandible. Young juvenile 6-7yr. Cuts. 43 fragments of skull, older infant/ young juvenile. Three axial body fragments, older infant/ juvenile. >8 fragments, comprising skull, and the lower or upper limb. Juvenile. Skull charred. Ten fragments comprising the skull, axial body, and upper limb of an older infant One lower limb of an adult. Three teeth of an older adult. **Main Enclosure Phase IV (pits cut into the chalk rubble fills, with soft, loose, ashy grey fills):** Two lower limb fragments of an adult Three mandible fragments of an older adult. Cuts, sooting; dry Four upper body fragments of an adult Skull and mandible of an older juvenile.

	>30 skull and axial body fragments of a juvenile >6 skull and axial body fragments, juvenile (c. 9 years of age).. Dry. 13 adult skull fragments, charred. 1 tooth, older adult Fragments of the skull and mandible, and axial body of an older adult male. Cuts. 2 lower limb fragments. Young/ mature adult 1 lower limb fragment. Subadult/ adult. 2 upper limb fragments. Adult. Possibly female. 1 lower limb fragment. Juvenile. 12 skull fragments,. Older adult. Female. Sooting >6 skull fragments. Young subadult Possible lower limb of a human or animal 5 upper limb fragments. Adult. Possibly male. 2 upper limb fragments. Young mature adult. Female. c. 6 skull fragments. Young/ mature adult. Possibly male. 10 skull fragments. Subadult/ young adult. 1 lower limb fragment. Subadult/ adult. c. 15 skull fragments Subadult/young adult 6 skull fragments. Subadult/ mature adult. Trauma (depressed fracture- blunt instrument). Sooting/ charred. 3 lower limb fragments Subadult/adult. Female. Dry. 5 lower limb fragments Subadult/ adult. Dry. 1 upper limb fragment. Subadult. 2 lower limb fragments. Subadult/adult. Charred. c. 34 skull fragments. Older juvenille/young subadult. 1 lower limb fragment. Older Subadult / adult. Possibly female. c. 3 axial body and lower limb fragments. Subadult/adult. 1 lower limb fragment. Adult. Possibly male. 1 lower limb fragment. Adult. Female. Cuts, dry 1 upper limb fragment. Subadult/adult. 2 lower limb fragments. Older subadult/adult Skull. Mature adult.

	Skull. Mature adult. 2 lower limb fragments. Adult. Cuts. 13 skull y/ma cut/nick c. 28 skull fragments. Older mature /older adult. Sooting. 1 tooth. Older adult. 4 mandible fragments. Young adult. 1 lower limb fragment. Adult. 1 tooth. Older adult. 2 lower limb fragments. Adult. Cut. Skull. Older mature adult. 3 upper limb fragments. Adult. 1 tooth. Adult. **Main Enclosure Phase VII:** c. 70% of an articulated young juvenile skeleton. Buried in a grave cut into the butt of a ditch segment. Flexed, on right side, facing south. Arms at sides, two chalk lumps behind head. Lay under an overhanging slab of in situ tabular flint. Further flint slabs placed over the body. Dated to 3380-3320 cal BC. Slightly later than filling. Must have been cut into the ditch from a high level. **Main Enclosure Phase VII/a:** 1 tooth. Older mature adult.
Whitesheet Hill Piggott 1952 Rawlings *et al* 2004	N/A
Maiden Castle Wheeler 1943 Brothwell 1971 Sharples 1991	Geological context: Chalk Architecture: Two certain ditch circuits. Possibly a third, outermost circuit, or outworks (Sharples 1991: 50). **Ditch:** *Undated possible third, outermost ditch, or outwork:* Articulated child skeleton "in the thick turfline which sealed the ditch". Wheeler dated this skeleton to the Iron Age based on the presence of a single sherd of Iron Age B pottery found with the burial. It has not been more precisely dated than this. *Second ditch (probably outermost):* Two fully articulated child skeletons. "Probably 6 to 7 years old, buried together north and south in crouched positions, head to tail" (Wheeler 1943: 344). Buried with a very small, plain, round-based cup; placed at the shoulder of one of the children.

	"The badly preserved and disarticulated remains of at least three individuals", deposited within "the truncated basal fill" of the outer ditch (Sharples 1991: 151). "The skull and jaw fragments present indicate that there was an adult about 45 years old, a child between five and ten years old, and a child between three and five years old. Many other bones from the adult were recovered, but there were no bones from the bodies of the two children". Associated with these remains were animal bones, a scatter of flint flakes, and a stone axe (Sharples 1991: 52, 60: Fig 54). The exact numbers of human remains could not be determined from the description in this Sharples' report. As a minimum, they are assumed to be those mentioned and dated by Whittle *et al* (Whittle *et al* 2011): A left femur dated to 3790-3510 cal BC (Whittle *et al* 2011: 172, Table 4.9). A second femur, dated to 3960-3520 cal BC (Whittle *et al* 2011: 173, Table 4.9). A mandible, from 3-5 year old, dated to 3650-3390 cal BC (Whittle *et al* 2011: 172, Table 4.9), and skull fragments from one further child, and an adult. Sharples' suggests that the skull of an adult male, "20-25 years of age", recovered by Wheeler (Wheeler 1943: 344), could possibly represent part of a Neolithic articulated burial (Sharples 1991: 52). However, this could not be confirmed. *Inner ditch:* Articulated infant skeleton. Three-to-four years old. Only partially excavated. Found in the top of a 'thicker and relatively unconsolidated' fill, comprising layers of chalk rubble, which immediately overlay and intermingled with an initial chalk fine silting of the ditch base. Dated to 3710-3630 cal BC (Whittle *et al* 2011: 169) **Interior:** A fragment of an adult tibia from the base of the bank barrow mound. Undated.
Robin Hood's Ball Thomas 1964 Richards 1990	N/A
Sussex	
Whitehawk Camp Williamson 1930 Curwen 1934; 1935; 1936 Russell and Rudling 1996	Geological context: Chalk Architecture: Four ditch circuits. Two further, incomplete, ditch circuits. Two tangential ditches. **Ditch:** *Third ditch (Ditch III):* Lower end of left a humerus Lower end of the left humerus of a child Found "in close relation", to a 'hearth' surrounded by "a wide scatter of ashes" were a quantity of Neolithic pot sherds, parts of two human brain pans and "three small charred fragments of human skull". A roe-deer antler, a few animal bones, one mussel, two cockles, 91 calcined flints, 22 flint fragments, and one small fragment of grain-rubber were found in association with this deposit (Curwen 1934: 111). Internal residue from a plain Neolithic Bowl body sherd was dated to 3630-3360 cal BC (Whittle *et al* 2011: 216, Table 5.2). Two charcoal fragments "extracted from find that consisted mainly of bone", dated to 3700-3530 cal BC and 3910-3640 cal BC (Whittle *et al* 2011: 216-217, Table 5.2). However, this second date is older than two skeletons and the samples from the underlying chalk rubble, and is excluded from Whittle *et al's* model of the site (Whittle *et al* 2011: 223). Two charcoal fragments from the same context dated to 3640-3370 cal BC and 3650-3370 cal BC (Whittle *et al* 2011: 217, Table 5.2). Articulated adult female skeleton. 25-30 years of age. Semi-prone on left side, head to NW.

	Left arm behind back, knees drawn up. Found lying in the middle line of the ditch, "in the dark band of the occupation layer" (Curwen 1924: 107). No sign of a grave cut. One fossil, an *Echinocorys scutalus*, was found in association with these remains. Dated to 3720-3090 cal BC or to 3660-3555 cal BC (Whittle *et al* 2011: 216, Table 5.2). Articulated adult female skeleton. 20-25 years of age. Lying on right side, knees drawn up. Some bones disturbed, and most of the feet bones were missing. In an elongated oval area, 5ft. long and 1 and a half ft. wide, which was "surrounded by 10 large and a few small chalk blocks" (Curwen 1934.:108). The skeleton was lying in this space, covered with soil up to the level of the chalk blocks. A layer of charcoal was spread above this. Two large blocks featured 'imperfect or broken" perforations. Dated to 3650-3520 cal BC (Whittle *et al* 2011: 216, Table 5.2). Articulated infant skeleton in the same grave as above, between the elbow and knee of the adult. Associated with two small perforated chalk pieces, worn smooth all round, the. lower half of an ox radius, and two fossil *Echinocorys scutatus*. *Second ditch (Ditch II):* Part of a left pelvis, with acetabulum The middle portion of right tibia *Inner ditch (Ditch I):* Lower end of a left humerus. Left ulna lacking lower end. The middle portion of a right ulna. A fragment of vertebra. The middle portion of the left femur of a child. *Ditch undetermined (either Ditch IV or/ and Ditch III). The exact locations of these remains cannot be determined from Curwen's report (Curwen 1934); they derive either variously or totally from the fourth (Ditch IV) or third (Ditch III) ditch circuits:* Fragments of a parietal and an occipital, the pyramidal bones of the ear, and other unidentified skull fragments. Young adult. Possibly male, although very uncertain. Skull fragments consisting of a nearly complete frontal and the anterior two-thirds of the parietals Greater part of the left parietal of a skull. Part of a right parietal and left frontal. Two finds of unidentified skull fragments. The front portion and left side of a mandible A frontal and occipital, pieces of parietal, part of a right temporal, part of an upper jaw, all described as, "Definitely non-adult" (Curwen 1934: 126). Two right femora Three foot bones Two fibulae An unidentified finger bone A rib

	A radius A humerus **Pits and cut features:** *Between inner and second ditch:* Articulated adult male skeleton. Contracted. Head to east, face to north, hands in front of face. Found "Lying on the surface of the undisturbed chalk and covered only by a foot of topsoil", three metres inside the inner lip of the ditch. Associated with 3 sherds of Neolithic pottery, land molluscs, and 2/3 mussel shells near head. Mandible dated to 3625-3365 cal BC (Whittle *et al* 2011: 214, 222, Table 5.2). Probably buried in a grave cut into the ground surface (Whittle *et al* 2011: 214, Table 5.2). *On or close to causeway in the third ditch:* Articulated skeleton of a child. Circa 7 years of age. Curled up. Found at the bottom of a deep pit, described a "post- hole like feature" (Curwen 1936, 88), on or close to the edge of a causeway. 'in a post-hole like feature on or close to causeway in DIII". Skeleton associated with, 3 or 4 pot sherds. Above, in same fill, was s chalk piece with incised lines.
Offham Hill Drewett 1977	Geological context: Chalk Architecture: Two ditch circuits **Ditch:** "Both the inner and the outer ditches appear to have silted up naturally" (Drewett 1977: 205). Layers described by the excavator (from highest to lowest) as: 1. Modern ploughsoil. 2. Fine, brown, friable soil. 3. Small, rounded chalk lumps in light brown soil with some large, angular flints. 4. Angular chalk lumps in powdery chalk soil (Drewett 1977: 205). *Outer ditch:* Diaphysis femur. Segment 2; Layer 2. The anterior part of a mandible and a few teeth, uncertain sex. 30-35 years of age. Segment 2; Layer 3. Half a mandible, uncertain sex. 35-40 years of age. Placed on the bottom of the ditch terminal. Segment 2; Layer 4. Fibula. Segment 3; Layer 4. Articulated adult male skeleton. 20-25 years of age. Crouched, lying on side, facing east. Head crushed (Drewett 1977: 207, Fig 5, 209). "The head appears to have fallen forward after burial and was badly crushed" (Drewett 1977: 209). Buried in shallow pit cut into the base of the outer ditch. Proximal end of left femur dated to 3640-3350 cal BC (Whittle *et al* 2011: 229, Table 5.3). *Inner ditch:* Second Phalanx. Segment 4; Layer 2 Rib fragment. Segment 4; Layer 2.
Combe Hill Musson 1950	N/A

Drewett 1994	
The Trundle Curwen 1929; 1931 Bedwin and Aldsworth 1981	**Ditch:** *Outer ditch:* Articulated couched female, aged 25-30, buried under a cairn of chalk blocks (Curwen 1929: Plates. VI., VII.). Radiocarbon dated to 350-90 cal BC, the Iron Age (Whittle *et al* 2011: 235, table 5.5).
Bury Hill Bedwin 1981	Geological context: Chalk Architecture: One ditch circuit **Ditch:** Four phalanges of the foot, a metatarsal and part of the shaft of a tibia. No sign of articulation. Found close together in the same context. Found within the 'primary silts': defined as a 'loose, angular chalk rubble' layer, resting on the ditch base, and an overlying 'finer, gritty chalk fill mixed with brown soil', possibly derived from the collapse of an inner bank (Bedwin 1981: 71).No evidence of recutting (Bedwin 1981: 71). No stratigraphic drawing available in the published account.
Court Hill Bedwin 1984	N/A
Barkhale Leach 1983	N/A
Halnaker Hill Bedwin 1992	N/A
Eastern England	
Great Wilbraham Evans *et al* 2006	N/A
Haddenham Evans and Hodder 2006	Geological context: Gravels Architecture: One ditch circuit **Ditch:** Ditch I: Five refitting skull fragments: the left portion of the occipital bone and the adjoining anterior portions of the left and right parietals. Lesions indivcative of anaemia. Left posterior portion of an adult mandible. Possibly slightly younger than the above skull, at 25-35 years of age. Twenty cranial fragments, most of which refit: right and central portions of the frontal and parietal bones. Interior of the skull vault heavily concreted with iron panning. Interior highly polished, possibly as a result of water action (Evans and Hodder 2006: 306). Possibly female, young or sub adult.

	All the above fragments found in the fill of a recut, which took place as the second phase of digging after the initial digging and silting of the ditch. The recut was focused around the inner sides of the original ditch, leaving an upstanding mound in the centre. It was recut ovoid in character, flat-based, and often cut down onto the base of the original ditch. It had a sand and gravel primary fill. Deposit of clay and gravel, containing human bone and charcoal, bonded a heavy iron concretion. Bulk sample of charcoal from this context dated to 3640-3090 cal BC (95% confidence), or 3535-3085 cal BC (93% confidence) (Whittle *et al* 2011: 274: Table 6.3). The butt end of a Group VI polished axe may have been deposited on the top of the mound at this time (Evans and Hodder 2006: 253-255, Fig 5.13, 352-353, Fig 6.4). Ditch M: Thirty three skull fragments, most of which refit: large fragments from the back and top of cranium, and occipal and left and right parietals. Outer surface heavily abraded. Probable adult. Mid-shaft of a femur. Adult. Heavily iron panned. Ditch O: Three adult skull fragments, iron concreted: the right mastoid process, the inferior portion of the right parietal, and an unidentifiable fragment.
Briar Hill Bamford 1985	All human bone material "deformed by cremation'" and "finely crushed"; eroded and poorly preserved (Bamford 1985: 125). Probably twenty two individuals represented (Bamford 1985: 125). Two deposits dated. Charcoal from an adult cremation burial, possibly male, within the outer ditch dated to 2560-1690 cal BC. Accompanied by a calcined tanged arrowhead. (Whittle *et al* 2011: 240). Charcoal from the fill around a bucket urn containing an adult cremation, within the outer ditch, dated to 1620-1300 cal BC (Whittle *et al* 2011: 275, 296-297; Table 6.6).
Etton Pryor 1998	Geological context: Gravels Architecture: One ditch circuit **Ditch:** Segment 1: A left femur. Distal epiphysis broken, Proximal epiphysis almost completely destroyed by gnawing. Two left humeri. Both gnawed. On one, proximal shaft and epiphysis missing, distal epiphysis present but gnawed, "probably caused by domestic dog or red fox£ (Armour-Chelu 1998:271). Left and right scapulae of an adult. A femoral head, epiphysis only. Segment 3: A left femur. Distal portion missing, proximal epiphysis gnawed. Stained a deep brown colour. Segment 6: Cranium. Found in a complex linear deposit which was placed on the clean gravel of the ditch bottom. In a line along the central part of ditch, at the eastern end, was a deposit of charcoal and burnt bone. At the centre of the ditch butt end, placed rightside-up and 'facing'

	the causeway, was the cranium (Pryor 1998: 30). Placed with it was a red deer antler object "perhaps a 'baton'' and the bones of other animals. (Pryor 1998: Fig 24). 0.75m to the west of this, was a large stone of calcrete, and pot sherds, possibly in the Mildenhall style. Segment 8: Skull fragment. Found in a deposit in a recut, along with a fragment of polished stone axe, a decorated limestone fragment, a pitted crinoids, animal bones, flints, and pot sherds, and a broken piece of limestone, decorated by pecking and possibly daubed with ochre. Entire spread of material occupied less than one metre. (Pryor 1998: 34, 35, Fig 33). Segment 10: Frontal bone of a skull, cracked and broken. Butt-end deposit. Near to three flints, a plan bodysherd, and a decorated rim sherd. A linear spread of flints and pot sherds spread from this. (Pryor 1998: 41-44, Figs 43, 45). Segment 12: Left tibia, with broken shaft. Pale buff colour. Segment 13: Left femur. Proximal and distal portion missing. Slight gnawing at proximal end. Fragments of skull, with teeth. The right parietal of a skull. Segment 14: Fragments of the frontal bone of a skull.
Etton Woodgate Pryor *et al* 1985	N/A
Northborough Wessex Archaeology 2005	N/A
The Greater Thames estuary	
Lodge Farm, St Osyth Germany 2007	N/A
Orsett Hedges and Buckley 1978	N/A
Kingsborough 1 Allen *et al.* 2008	N/A

Kingsborough 2 Allen *et al.* 2008	N/A
The Thames Valley	
Staines Robertson-Mackay 1987 P. Bradley 2004	Geological context: Gravels Architecture: Two ditch circuits **Ditch:** *Outer ditch:* A male skull. 25-35 years of age. Two healed head injuries. Four unhealed injuries present on right side of head. The axis, atlas, two cervical vertebrae (numbers three and four), the mastoid process, and an unidentified fragment all show clean, transverse cuts. "Probably the result of a diagonal slash starting near the right ear and travelling downwards" (Robertson-Mackay 1987). A male mandible, 17-25 years of age. All teeth had dark staining. Lay near to the above male skull. A female skull, face and basal areas almost entirely missing. 18-25 years of age. Head and shaft of a right ulna and radius, three metacarpal shafts, possibly female. Over 17 years of age. The above bones all found in close proximity, "lying in the bottom of the ditch in a layer which had been rich in organic material"; this layer contained 121 flints, cattle, sheep/ goat, and pig bones, and 106 sherds of early Neolithic pottery. It overlay an initial silting, "and must therefore have been deposited soon after this segment of the ditch had been dug or entirely recut" (Robertson-Mackay: 36). Male lower jaw bone. "Deposited with 27 sherds of pottery, 83 flints and animal bones, comprising "cattle bone, ovicaprid and pig bones". "Showed a heavy, apparently internal, blue-black staining". *Inner ditch:* The distal half of a right humerus. Possibly female. Found with 19 sherds of pottery, 377 flints and a quantity of animal bone. The proximal end of an infant fibula. Probably pre/post-natal. **Pits and cut features:** *Interior:* An articulated adult female inhumation, in a shallow oval pit. Undated. Flexed body, lying on left side. Right arm lying straight down towards the knees, legs were lightly flexed, the left foot lying over the edge of the gravel. "All bones present except for some of the small bones from the extremities, but they were generally in a very fragmentary condition". A cremation in a recut posthole. Limbs and skull vault all that could be recognised. Adult, possibly female, aged 30 or over. Undated. However, charcoal samples from three pits, a gully, and a posthole, in the interior, originally thought of as possible Neolithic features, have been dated to the Anglo-Saxon period (Whittle *et al* 2011: 390-391; Table 8.1).

Eton Wick Ford 1993	N/A
Gatehampton Farm, Goring Allen 1995	Geological context: Gravel terrace Architecture: Undetermined from limited extent of survey and excavation **Ditch:** Articulated child burial. 8-9 years of age. Crouched, lying on right side, facing NW along the ditch. Hands on knees, which were pressed up against the face. Feet not drawn up tight against the pelvis, and no indication of binding. Dated to 3095-2890 cal BC and 3100-2890 cal BC (Whittle *et al* 2011). No cut grave distinguished; according to the excavator, it was, "Presumably deposited during the infilling and rapidly covered with more clean silty clay" (Allen 1995: 26). However, it may be deposited some way above an apparent recut (Whittle *et al* 2011: 404-407), and so "The burial may relate to occupation of the site by users of Peterborough Ware" (Whittle *et al* 2011: 407).
Abingdon Leeds 1927; 1928 Case 1956 Avery 1982	Geological context: Gravel terrace/ river gravels Architecture: Two ditch circuits **Ditch:** *Outer ditch:* Fragments of a pelvis *Inner ditch:* Two finds of skull fragments; "on two occasions fragments of human skulls were found, both from quite young persons" (Leeds 1928: 476). Found with animal bone, flint, and pottery in a loamy context. *Undetermined ditch circuit (Outer or Inner):* A reported articulated skeleton, "at the bottom" of a ditch. Undated, and no details provided by Leeds. (Leeds 1928: 476). **Pits and cut features:** *Between inner and outer ditch:* Articulated adult male skeleton. Crouched. 40-50 years of age. Found on gravel surface; was possibly buried in a shallow grave dug into loam. Ankles contracted to the pelvis. Skull wrenched from vertebrae, collarbones disturbed (probably by later stripping and ploughing). Found with three struck flints. Undated. A reported articulated adult female burial. Around 18 years of age. "It lay in a small square hole, doubled up with the head on the legs" (Leeds 1928: 476). Undated, but suggested Neolithic by Leeds, based on skeletal "development" and "build" (Leeds 1928: 476). Location uncertain from Leeds' description, but possibly in the same inner ditch segment as the two cranial fragments, or, more likely, in a pit the interior or between the ditch circuits.

The Cotswolds	
Crickley Hill Dixon 1988 Dixon 1994 Whittle *et al* 2011	N/A
Peak Camp Darvill 1981; 1982; 2011	Geological context: Limestone Architecture: Two ditch circuits **Pits and cut features:** *Between outer and inner ditch:* 11 pieces of human bone, all recovered from the same context. All adult foot bones. Left foot bones: tatlus, navicular, calcaneus. Right foot bones: navicular, 4th metatarsal, proximal fragment of 5th metatarsal. Side undetermined: shaft of a metatarsal, proximal end of a metatarsal, two fragments of a proximal metatarsal/ phalange (not first). Evidence of post-mortem erosion. Found in the fill of a recut of a rock-cut ditch or elongated pit, cut into the peneplained bedrock surface. The recut cut into an earlier fill "on more or less the same alignment to create a land-cut of about the same width but less than half the depth" (Darvill 2011: 150).The fill, forming the middle fill of the feature, contained abundant rock fragments within a brown humic soil matrix. It contained flint, pottery, animal bone, and the human bones. A cattle metatarsal from the fill dated to 3970-3370 cal BC. A single fragment of unidentified animal bone from the fill dated to 3800-3380 cal BC
The south-west peninsula	
Membury Tingle 2006	N/A
Hembury Liddell 1935 Todd 1984	N/A
Raddon Hill Gent and Quinnell 1999	N/A
Helman Tor Mercer 1997	N/A
Carn Brea Mercer 1981	N/A

Appendix 2: The dates of construction, length of primary use, and end of primary use, of twelve causewayed enclosure sites

The table in this appendix shows the dates of construction, length of primary use, and end of primary use, for the twelve causewayed enclosure sites at which Early Neolithic human remains are present. The data used to construct this table is drawn from *Gathering Time* (Whittle *et al* 2011). Whittle *et al* use the Bayesian statistical analysis of radiocarbon dates to produce models of site chronology, expressed as absolute dates. These models are probalistic only (for fuller discussion, see Whittle *et al* 2011). For some sites, they have produced multiple models. This table shows their preferred models, but makes reference to others where relevant.

Site and references	**Dates**		
	Construction dates	**End dates**	**Length of period of primary use**
The North Wiltshire Downs			
Windmill Hill (Whittle *et al* 2011: 91, 92: Fig. 3.17., 93: Fig. 3.18., 95)	Inner ditch construction: 3685-3635 cal BC (95% probability), probably in 3670-3645 cal BC (68% probability) Outer ditch construction: 3685-3610 cal BC (95% probability), probably in 3670-3635 cal BC (68% probability) Middle circuit construction: 3655-3605 cal BC (95% probability), probably in 3640-3615 cal BC (68% probability) All three ditches were dug in the 37th century cal BC over a period of 5-75 years, or 20-55 years. It is 69% probable that the inner ditch was dug first; 88% probable that the middle ditch was dug last; and 59.9% probable that the circuits were constructed in the order of inner-outer-middle.	The middle decades of the 34th century cal BC (for all three ditch circuits).	290-390 years (94% probability), or probably for 305-350 years (68% probability). Whittle *et al* also propose an alternative model, in which each circuit is constructed, used, and ended in separate phases of activity, and effectively treated as separate monuments. This is however not their preferred model (Whittle *et al* 201l: 93, Fig. 3.19, 94).
Knap Hill (Whittle *et al* 2011: 99, 101: Fig. 3.25., 103: Fig. 3.26.)	Ditch circuit construction: 3530-3375 cal BC (91% probability), or 3510-3435 cal BC (53% probability).	Accumulation of primary fill by: 3525-3220 cal BC (92%), or probably by 3445-330 cal BC (66%).	1-460 years (95%), more probably for either 1-65 years (23%), or 115-280 years (45%). A short duration, probably of well under a century, and perhaps only a

			generation or two, is considered more plausible.
South Wessex			
Hambledon Hill (Main Enclosure and Stepleton Enclosure) (Whittle *et al* 2011: 131-148)	Main Enclosure construction: 3675-3630 cal BC (95% probability), probably in the 3650s or 3640s BC (68% probability). Stepleton Enclosure construction: 3640-3565 cal BC (95% probability)	Main Enclosure: 3355-3310 cal BC (95% probability), probably in 3345-3325 cal BC (68% probability). Stepleton Enclosure: 3425-3375 cal BC (95% probability)	Main Enclosure: 290-350 years (95% probability), or probably 300-335 years (68% probability). Stepleton Enclosure: 165-255 years (95% probability), probably for 195-250 years (68% probability). More than 99% probable that the Stelpleton Enclosure was built after the Main enclosure. Either 5-90 years after it (95% probability), or 10-60 years (68% probability).
Maiden Castle (Whittle *et al* 2011: 187-189)	Inner ditch construction: 3575-3535 cal BC (95% probability), probably in 3560-3540 cal BC (68% probability). Outer ditch construction: 3580-3525 cal BC (95% probability), or probably 3560-3535 cal BC (68% probability). Enclosure in place within a single generation.	Both ditches filled by: 3555-3520 cal BC (95% probability), probably by 3550-3530 cal BC (68% probability).	Inner ditch filling: 1-35 years or 1-20 years Outer ditch filling: 0-20 years, or less than 1 year Between the cutting of the first ditch and the filling of the last ditch: 1-50 years (95% probability), or 1-20 years (68% probability).
Sussex			
Whitehawk Camp (Whittle *et al* 2011: 219-226)	Ditch I (inner ditch) construction: 3635-3560 cal BC (95% probability), probably 3635-3580 cal BC (68% probability). Ditch II (second ditch) construction: 3675-3630 cal BC (72% probability), or 3675-3635 cal BC (67% probability). The dates for the following two ditch circuits (III and IV), almost certainly apply to recuts of the ditches, rather than the original construction of the ditch circuits (Whittle *et al* 2011: 225): Ditch III (third ditch): construction: 3660-3560 cal BC (95% probability), probably 3650-3600 cal BC (68% probability).	End of primary use: Lack of suitable samples for dating	Length of period of primary use: 75-260 years (95% probability), probably for 100-115 years (4% probability) or 155-230 years (64% probability)

	Ditch IV (fourth ditch) construction: 3650-3505 cal BC (95% probability), or 3635-3620 cal BC (18% probability)		
Offham Hill (Whittle *et al* 2011: 228-230, Fig. 5.14.)	Inner ditch construction: Lack of suitable samples for dating Outer ditch construction: 3635-3555 cal BC (66%), or probably 3630-3585 cal BC (56% probability).	Inner ditch filling: 3645-3490 cal BC (73%), or 3640-3500 cal BC (22%), or 3640-3500 cal BC (68%). Outer ditch filling: Lack of suitable samples for dating	A probably short period of use in the middle centuries of the fourth millennium cal BC (Whittle *et al* 2011:231, 704)
Bury Hill (Whittle *et al* 2011: 240, 242: Fig.5.25.)	Ditch circuit construction: 3775-3650 cal BC (95% probability), or probably in 3760-3740 cal BC (4% probability) or 3715-3660 cal BC (61% probability).	End of primary use: Lack of suitable samples for dating	Absence of suitable dating samples from higher levels argues for a short period of use followed by abandonment.
Eastern England			
Haddenham (Whittle *et al* 2011:276-278) Whittle *et al* propose two models, both imprecise and providing an inadequate understanding of the chronology of the site, due to the limited and poorly preserved material available for dating. Their second model, which they prefer, is detailed here, with reference to the first model where indicated.	Ditch circuit construction: 3960-3125 cal BC (95% probability), or probably 3725-3365 cal BC (68% probability).	Ditch circuit filled by: 3265-2490 cal BC (95% probability), or probably by 3035-2825 can BC (68% probability). Both models agree in placing the final use of the ditch circuit in the centuries around 3000 BC.	First model: 1-1095 years (95% probability), or 0-400 years (68% probability). Second model: 60-1290 years (95% probability), or 335-910 years (68% Probability).
Etton (Whittle *et al* 2011:322-325, Table 6.33)	First dated material, from the bottom of segment 1, suggests that the ditch circuit was cut in: 3710-3645 cal BC (95% probability).	End of primary use: 3330-3095 cal BC (95% probability), probably in 3310-3210 cal BC (68% probability).	345-635 years (95% probability), probably for 380-510 years (68% probability).

The Thames Valley			
Staines (Whittle *et al* 2011: 392: Fig. 8.3., 393)	*Terminus ante quem* for the construction of the inner ditch: 3525-3380 cal BC (89%), or probably 3520-3380 cal BC (68%). *Terminus ante quem* for the construction of the outer ditch: 3465-3375 cal BC (55%)	End of primary use: Lack of suitable samples for dating	Length of period of primary use: Lack of suitable samples for dating
Abingdon (Whittle *et al* 2011:412: Fig. 8.12, 417-421)	Inner ditch construction: 3655-3630 cal BC (55% probability), or 3560-3535 cal BC (37% probability), probably in the 3640s or 3630s (44% probability), or the 3540s (24% probability). Outer ditch construction: 3660-3630 cal BC (55% probability), or 3560-3535 cal BC (37% probability), probably in the 3640s or the 3630s cal BC (42% probability), or in 3550-3525 cal BC (26% probability). The above estimates are strongly bimodal; the ditch circuits were constructed and in use either during the third quarter of the 37th century cal BC or during the third quarter of the 36th century cal BC. The length of time between the construction of the inner and outer ditch circuits is 15-10 years (95% probability), probably 3-4 years (68% probability).	Inner ditch filling: Estimates not possible because of recutting. Outer ditch filling: 3635-3620 cal BC (14% probability), or 3595-3515 cal BC (81% probability), probably by 3540-3520 cal BC (42% probability).	0-40 years (57% probability), or 65-145 years (38% probability), or probably between 0-30 years (54% probability), or 85-110 years (14% probability).
The Cotswolds			
Peak Camp (Whittle *et al* 2011: 457)	Outer ditch construction: 3650-3550 cal BC (95% probability), probably in 3640-3620 cal BC (30% probability), or 3605-3570 cal BC (38% probability). No suitable samples were found from the lower part of Area II, the ditch or pit which contained the human remains from this site. The construction date of this ditch or pit is uncertain.	End of primary use of site: 3360-2965 cal BC (95% probability), probably in 3330-3215 cal BC (68% probability).	

Appendix 3: Annotated plans showing the location and character of the human remains at eight causewayed enclosure sites

This appendix presents annotated plans of eight causewayed enclosure sites and their Early Neolithic human remains. The sites are: Windmill Hill, The Main Enclosure at Hambledon Hill, Offham Hill, Bury Hill, Haddenham, Etton, Staines, and Peak Camp. A key to the annotated plans is given here:

KEY:

Human remians by area of the body and mode of deposition:

Area of the body:

S: Skull
M: Manidible
T: Tooth
A: Axial body (vertebrae, rib, clavicle, patella)
U: Upper body (Upper long bone, scapua)
H: Hand
P: Pelvis
L: Leg
F: Foot

AS: Articulated skeleton

Mode of deposition:

: Recut in ditch fill

:Cairn in ditch fill

: Ditch fill

: Cairn on ditch base

: Ditch base

: Pit

: Indicates that a deposit of huamn remains is in association with other materials

Human remains by age and sex:

Age:

I: Infant (6 months- 4 years)
C: Child (Imprecise term. Below 18 years/ non-adult)
IJ: Infant/ Juvenille (6 months-12 years)
J: Juvenille (c 5-12 years)
S: Sunadult (c 13-18 years)
SA: Subadult/ Adult (c13 years +)
A: Adult (18 years +)
Y: Young adult (c 19-25 years)
M: Mature adult (c 26-45 years)
O: Older adult (c 45 years +)

Sex:

: Male

or : Female

: Undetermined

Modifications on human remains:

: Cut marks

: Gnaw marks

: Charring

: Trauma

: Staining

Miscellaneous:

: North arrow

N

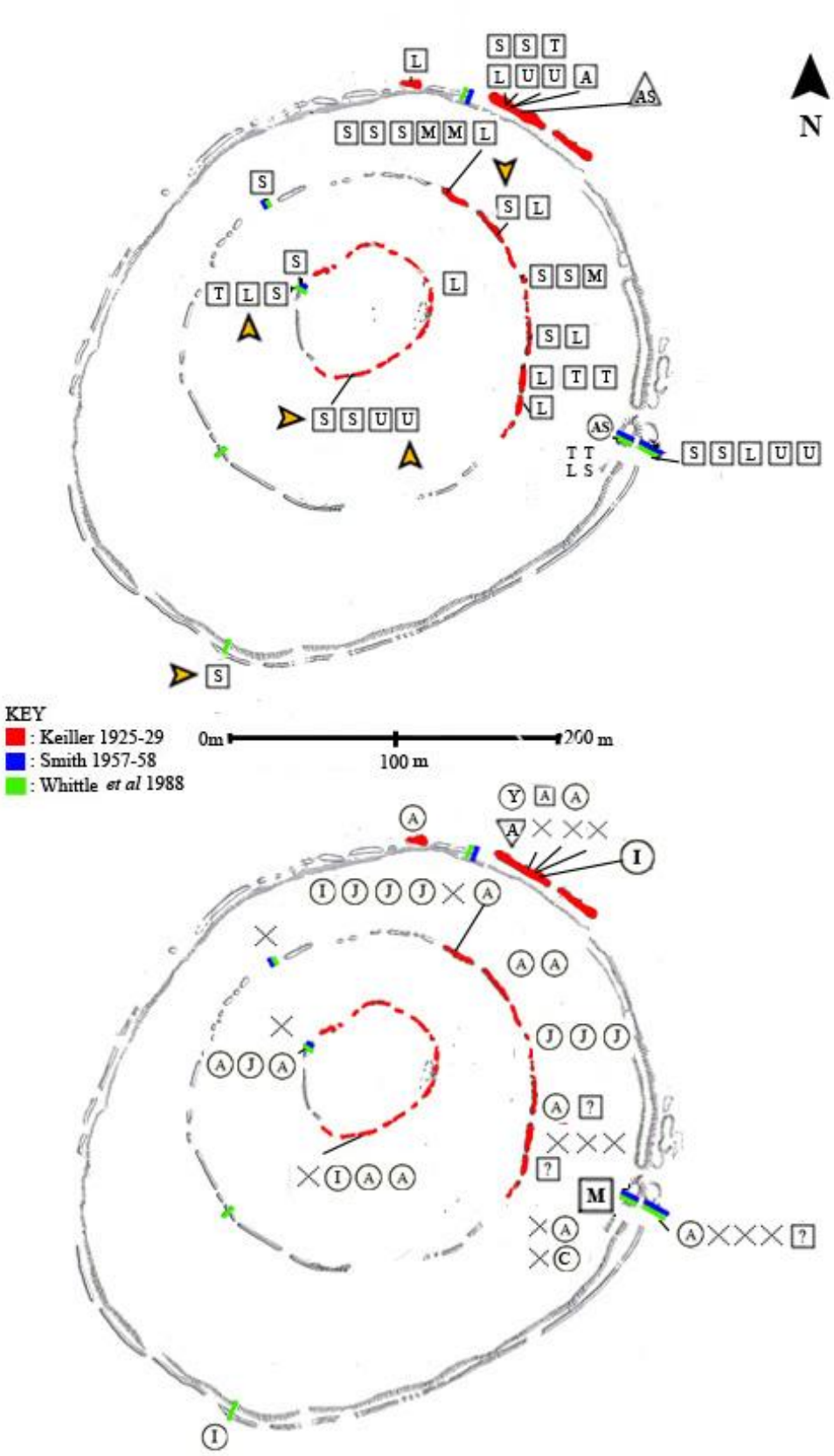


Figure 25: The distribution of human remains at Windmill Hill by area of the body and mode of deposition (top), and age and sex (bottom).

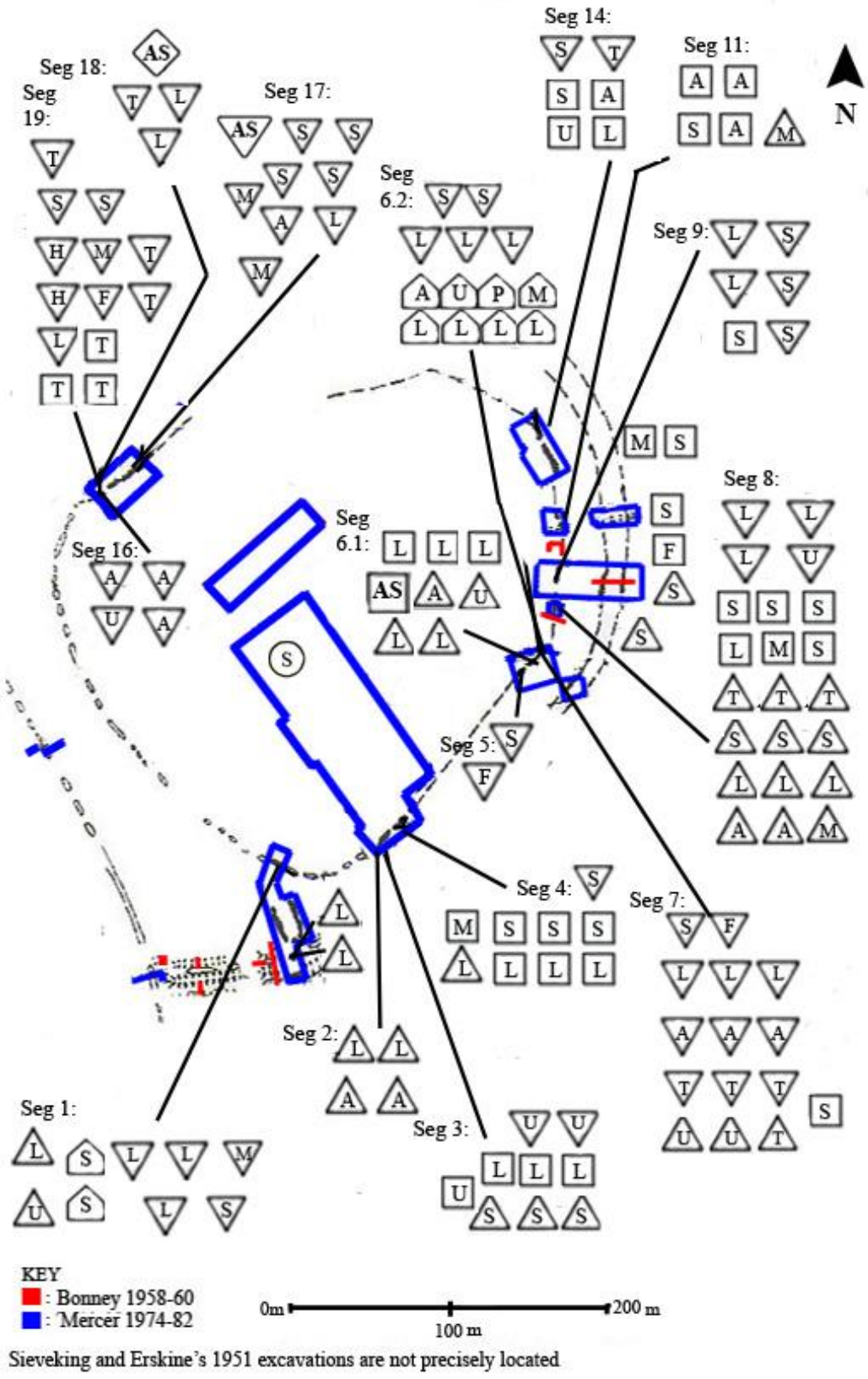


Figure 26: The distribution of human remains at the Main Enclosure at Hambledon Hill by area of the body and mode of deposition.

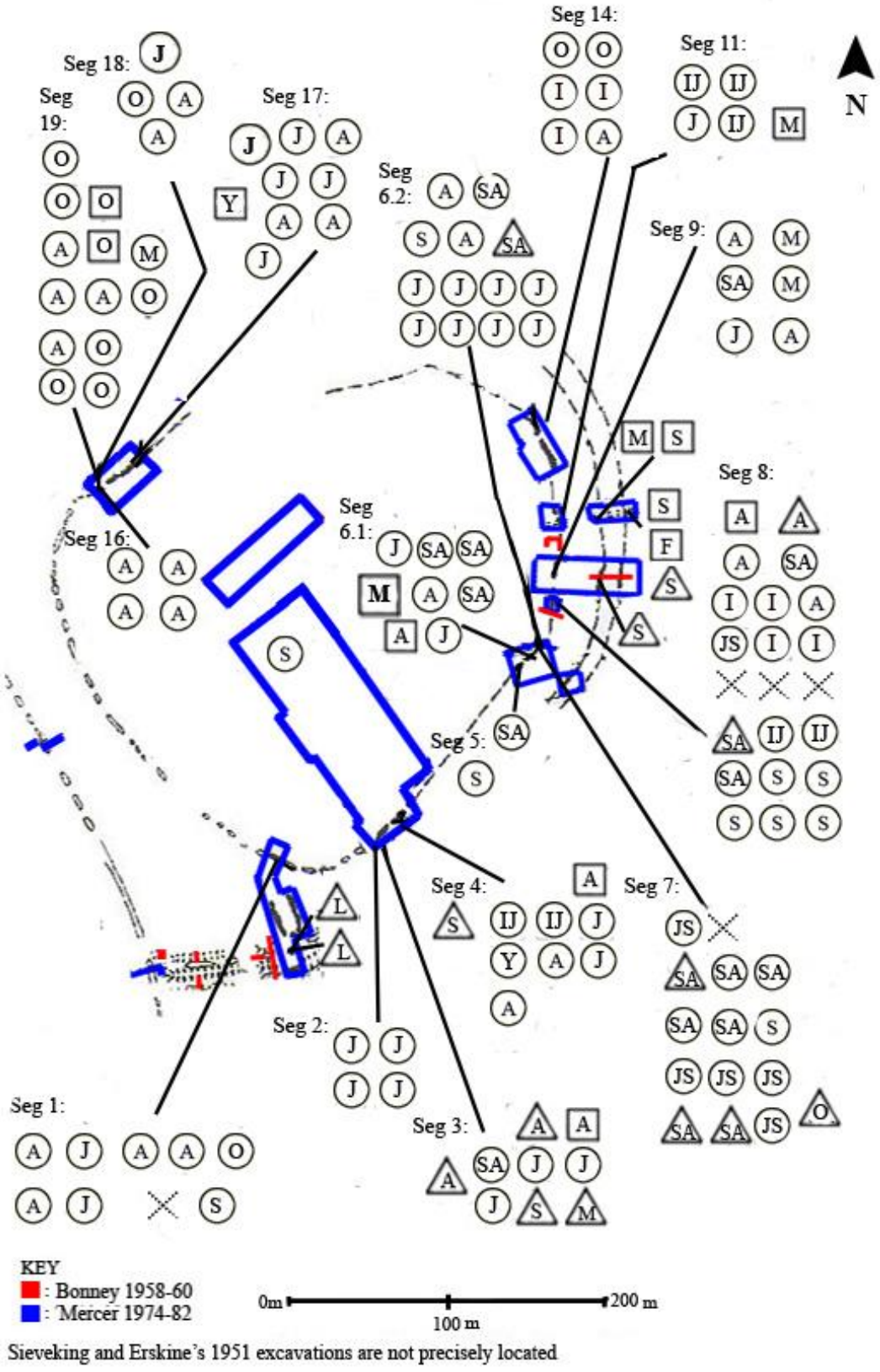


Figure 27: The distribution of human remains at the Main Enclosure at Hambledon Hill by age and sex.

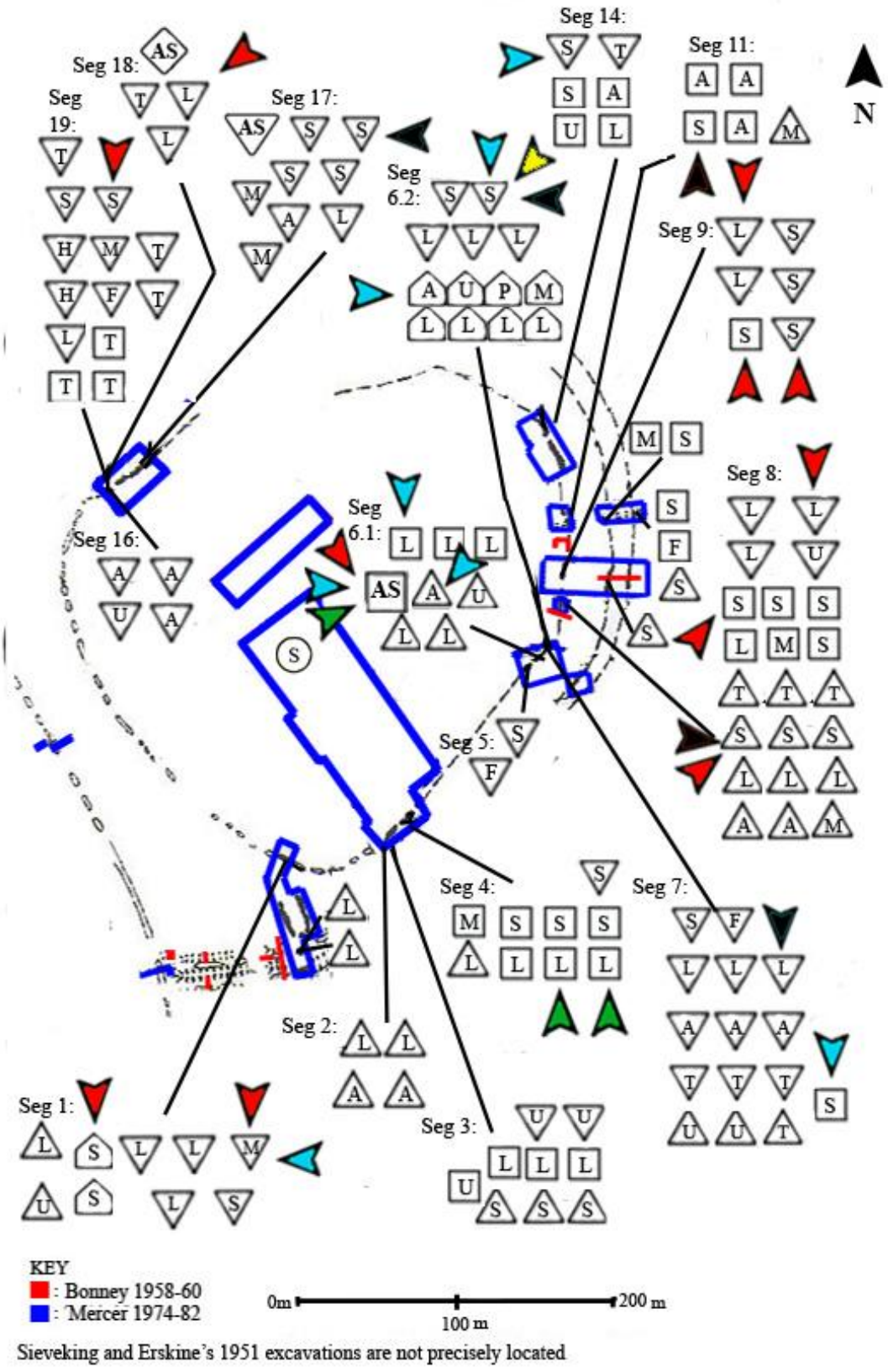


Figure 28: The distribution of human remains at the Main Enclosure at Hambledon Hill, with modified remains indicated.

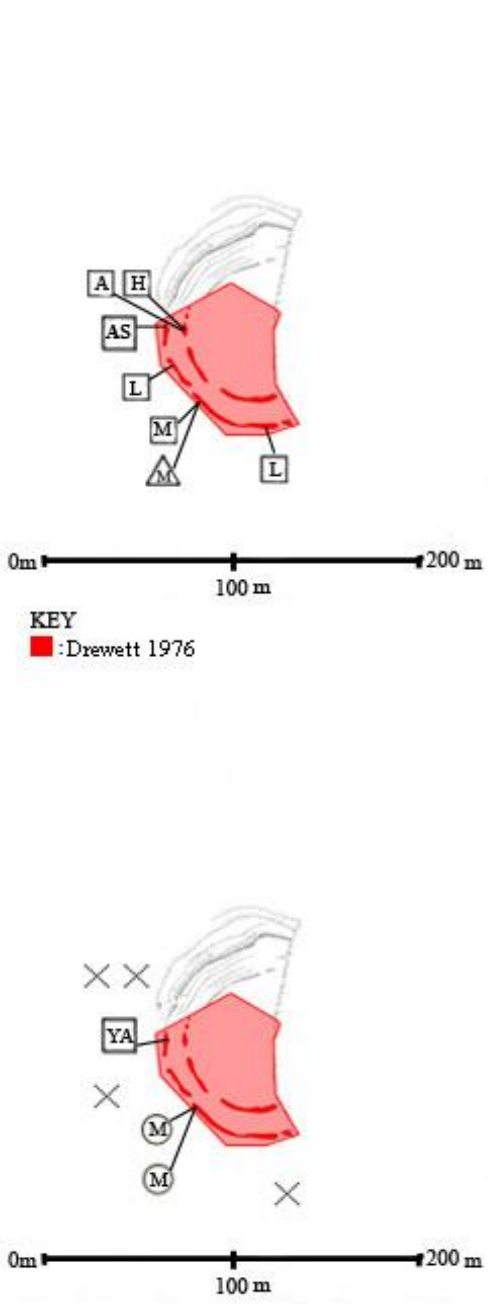


Figure 29: The distribution of human remains at Offham Hill by area of the body and mode of deposition (top), and age and sex (bottom).

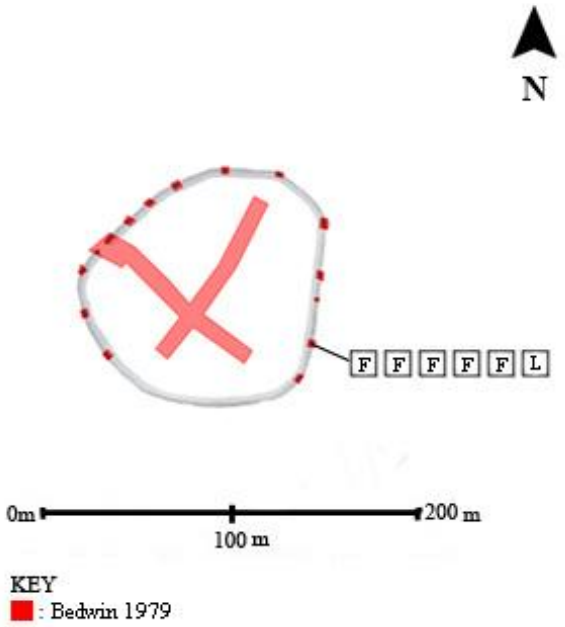


Figure 30: The distribution of human remains at Bury Hill by area of the body and mode of deposition.

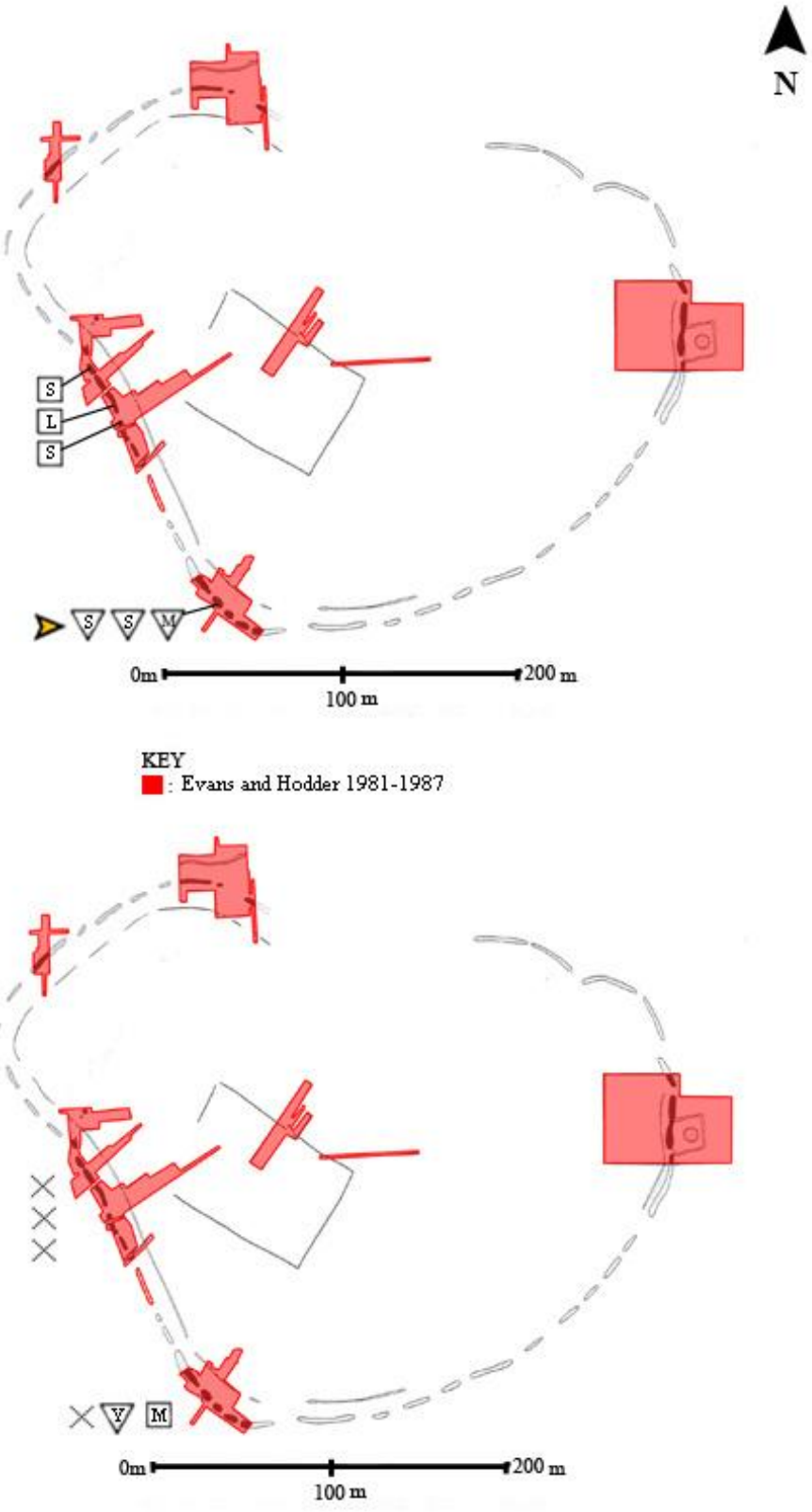


Figure 31: The distribution of human remains at Haddenham by area of the body and mode of deposition (top), and age and sex (bottom).

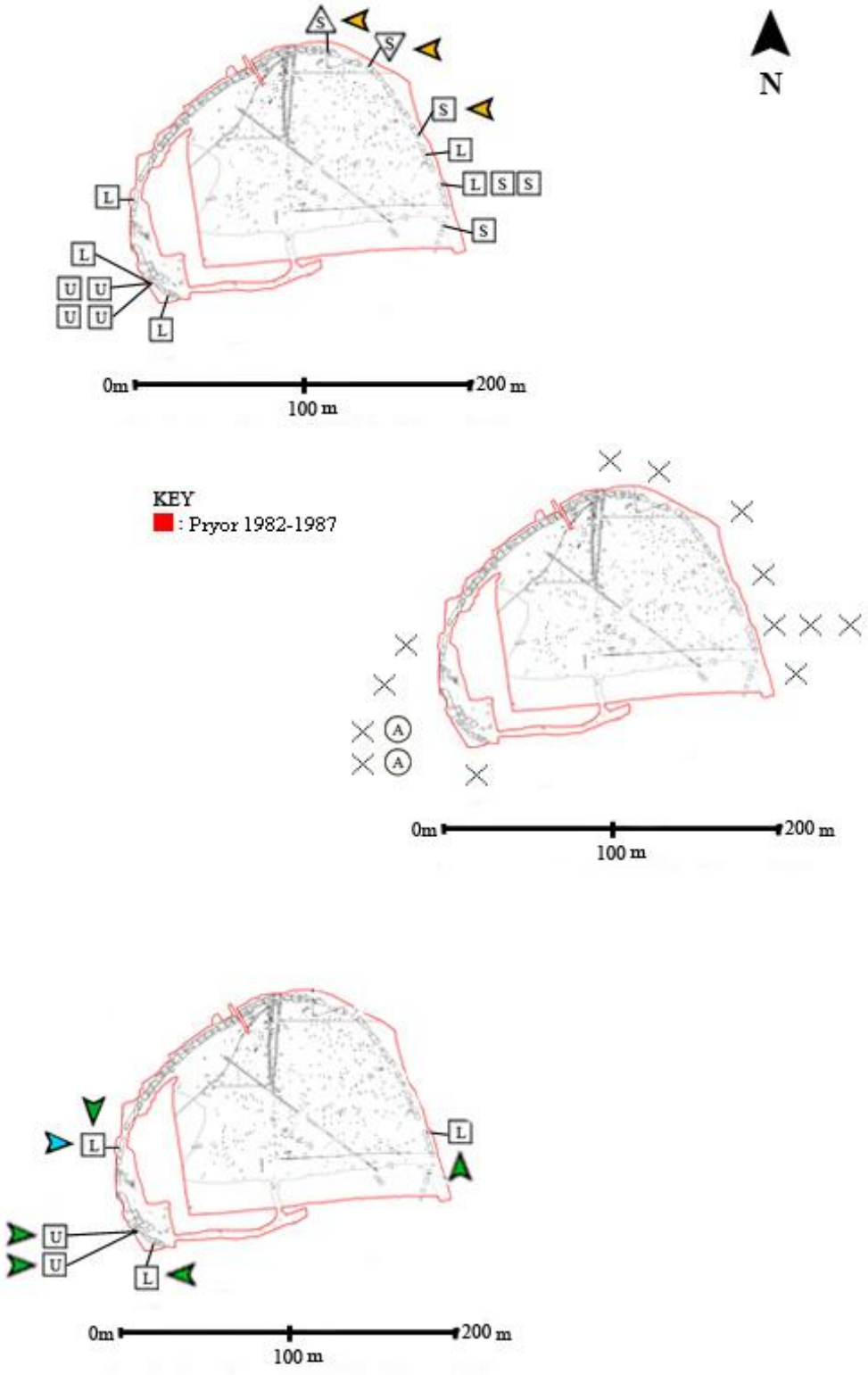


Figure 32: The distribution of human remains at Etton by area of the body and mode of deposition (top), age and sex (middle), and modified remains (bottom).

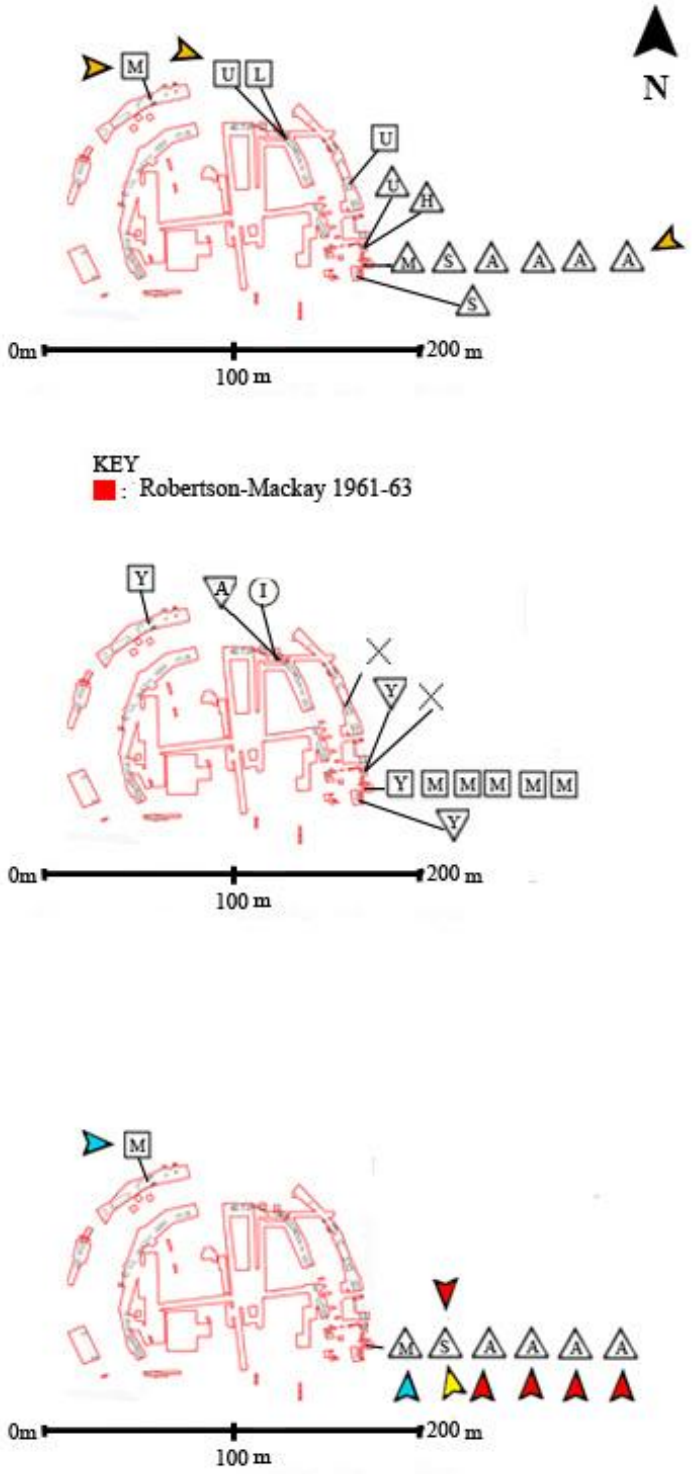


Figure 33: The distribution of human remains at Staines by area of the body and mode of deposition (top), age and sex (middle), and modified remains (bottom).

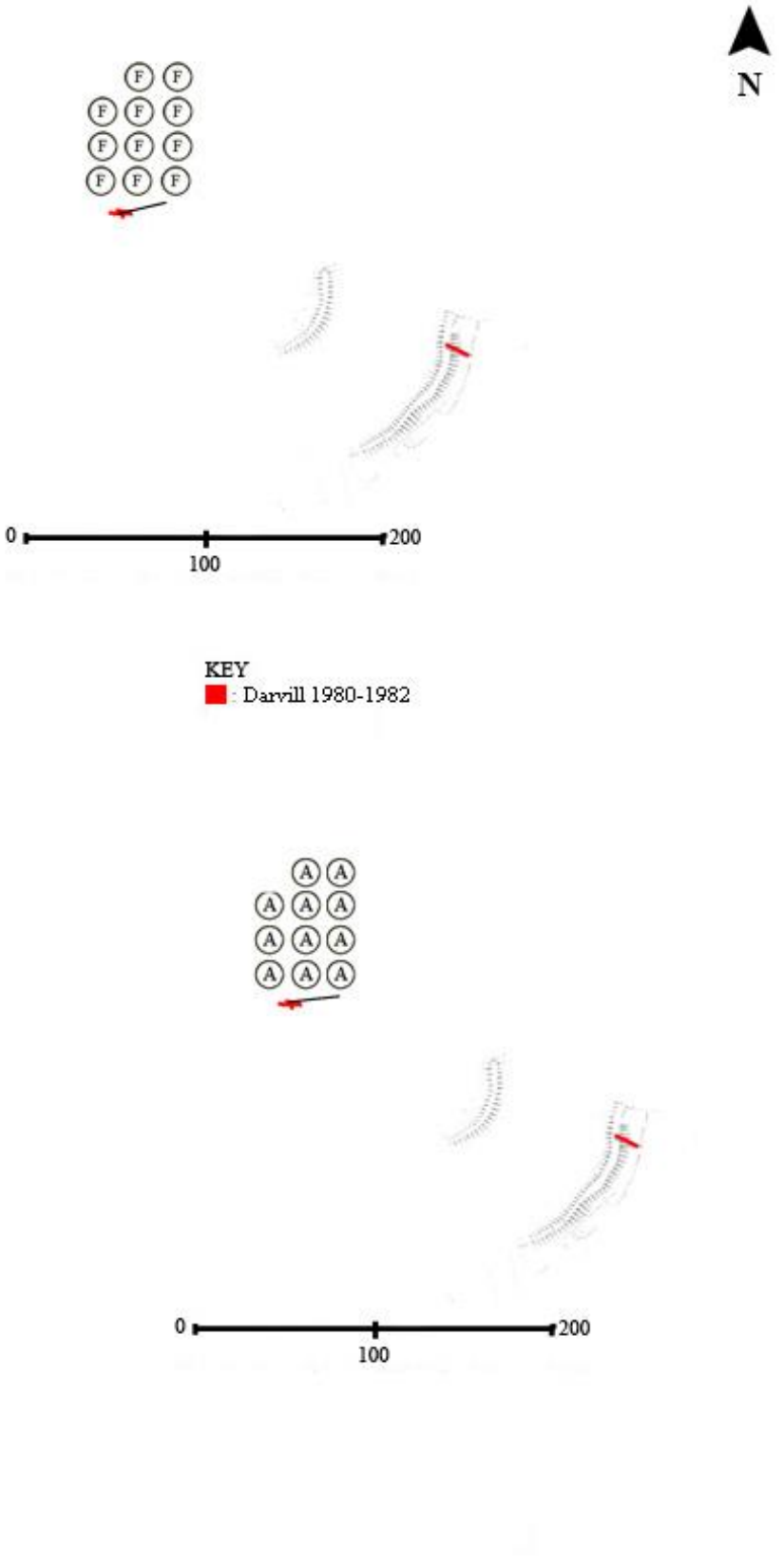


Figure 34: The distribution of human remains at Peak Camp by area of the body and mode of deposition (top), age and sex (bottom).

Bibliography

Allen, M.J. 1995.'The prehistoric land-use and human ecology of the Malling-Caburn Downs', *Sussex Archaeological Collections* 133, 19-43.

Allen, M.J. *et al*. 2008. 'Neolithic Causewayed Enclosures and Later Prehistoric Farming: Duality, Imposition, and the Role of Predecessors at Kingsborough, Isle of Sheppy, Kent, UK', *Proceedings of the Prehistoric Society* 74, 235-322.

Anderson-Whymark, H.L. and Thomas, J. 2012. *Regional Perspectives on Neolithic Pit Deposition: Beyond the mundane.* Oxford.

Armour-Chelu, M. 1998. 'The human bone', In Pryor, F. *Etton: Excavations at a Neolithic causewayed enclosure near Maxey Cambridgeshire, 1982-7*. London. 271-272.

Avery. M. 1982. 'The Neolithic causewayed enclosure, Abingdon', in Case, H. J., and Whittle, A. *Settlement patterns in the Oxford region: excavations at the Abingdon causewayed enclosure and other sites*. Oxford. 10-50.

Bamford, H. 1985. *Briar Hill: Excavations 1974-1978*. Northampton.

Barber, M. 2008. 'The Blank Country? Neolithic enclosures and landscapes in the West Midlands', in Garwood, P. (Ed.) The Undiscovered Country: The Earlier Prehistory of the West Midlands. Oxford. 79-96.

Barrett, J.C. 1988. 'The living, the dead, and the ancestors: Neolithic and Early Bronze Age mortuary practices', in Barrett, J.C., and Kinnes, I. (eds.) *The archaeology of context in the Neolithic and Bronze Age*. Sheffield. 30-41.

Barrett, J.C. 1994. *Fragments from antiquity*. Oxford.

Bedwin, O. 1981. 'Excavations at the Neolithic enclosure on Bury Hill, Houghton, West Sussex, 1979', *Proceedings of the Prehistoric Society* 47, 69-86.

Bedwin, O. 1984. 'The excavation of a small hilltop enclosure on Court Hill, Singleton, West Sussex, 1982', *Sussex Archaeological Collections* 122, 13-22.

Bedwin, O. 1992. 'Prehistoric earthworks on Halnaker Hill, West Sussex, excavations 1981-1983, *Sussex Archaeological Collections* 130, 1-12.

Bedwin, O., and Aldsworth, F. 1981. 'Excavations at The Trundle, 1981', *Sussex Archaeological Collections* 119, 208-14.

Bloch, M. and Parry, J. (eds). 1982. *Death and the Regeneration of Life*. Cambridge.

Booney, D. 1964. 'All Cannings: Rybury Camp', *Wiltshire Archaeological and Natural History Magazine* 59, 185.

Bradley, P. 2004. ‘Causewayed enclosures: monumentality, architecture, and spatial distribution of artefacts- the evidence from Staines, Surry’, in J, Cotton. and D, Field. (eds.) *Towards a New Stone Age: aspects of the Neolithic in south-east England*, 115-23. York.

Bradley, R. 1982. ‘Position and possession: assemblage variation in the British Neolithic’, *Oxford Journal of Archaeology* 1, 27-38

Bradley, R. 1984. *The Social Foundations of Prehistoric Britain: Themes and Variations in the Archaeology of Power*. Harlow.

Bradley, R. 1992. ‘The excavation of an oval barrow beside the Abingdon causewayed enclosure, Oxfordshire’, *Proceedings of the Prehistoric Society* 58, 127-42.

Bradley, R. 1998. *The significance of monuments: on the shaping of human experience in Neolithic and Bronze Age Europe*. London and New York.

Bradley, R. 2006. ‘Can archaeologists study prehistoric cosmology?’, in Andrén, A., Jennbert, K. and Rautvere, C. (eds.) *Old Norse Religion in Long-term Perspective*, 16-20. Lund.

Bradley, R. 2007. *The Prehistory of Britain and Ireland*. Cambridge.

Brett, M, Mudd, A. and Collard, M. 2009. *Ilchester to Barrington Gas Pipeline, Somerset: Post-Excavation Assessment.* Unpublished Cotswold Archaeology report No: 9022.

Brothwell, D. 1971. ‘Forensic aspects of the so-called Neolithic skeleton Q1 from Maiden Castle, Dorset’, *World Archaeology* 3 (2), 233-241..

Canterbury Archaeological Trust. 2012. ‘List of unpublished field reports held by Canterbury Archaeological Trust’, http://www.kentarchaeology.ac/GreyReports/CATgrey01.pdf (accessed 2 September 2014).

Connah, G. 1965. ‘Excavations at Knap Hill, Alton Priors’, *Wiltshire Archaeological and Natural History Magazine* 60, 1-23.

Cunnington, M.E. 1909. ‘On a remarkable feature in the entrenchments of Knap Hill Camp, Wiltshire’, *Man* 9, 49-52.

Cunnington, M.E. 1912. ‘Knap Hill Camp’, *Wiltshire Archaeological and Natural History Magazine* 37, 42-85.

Curwen, E. 1934. ‘Excavations in Whitehawk Neolithic Camp, Brighton, 1932-3’. *The Antiquaries journal* 14, 99-133.

Curwen, E. 1936. ‘Excavations in Whitehawk Camp, Brighton, third season, 1935’. *Sussex Archaeological Collections* 77, 60-93.

Darvill, T. 1981. ‘Excavations at the Peak Camp, Cowley: an interim report.’ *Glevensis. The Gloucester and District Archaeological Research Group Review* 15, 52-6.

Darvill, T. 1982. ‘Excavations at the Peak Camp, Cowley, Gloucestershire. *Glevensis. The Gloucester and District Archaeological Research Group Review* 16, 20-5.

Darvill, T. 2004. *Long Barrows of the Cotswolds and Surrounding Areas*. Stroud.

Darvill, T. 2010. *Prehistoric Britain*. Abingdon.

Darvill, T. 2011. ‘Excavations at a Neolithic Enclosure at The Peak, near Birdlip, Gloucestershire’, *Proceedings of the Prehistoric Society* 77, 139-204.

Dixon, P. 1988a. ‘The Neolithic settlements on Crickley Hill’, in Burgess, C., Topping, P., Mordant, C., and Maddison, M. (eds), *Enclosures and defences of the Neolithic of western Europe*, 75-88. Oxford.

Dixon, P. 1988b. ‘Crickley Hill. 1969-1987’, *Current Archaeology* 110, 73-8.

Dixon, P. 1994. *Crickley Hill. Volume 1. The hillfort defences.* Nottingham.

Dixon, P. 2005. ‘Thirty-five years at Crickley’, *Current Archaeology* 200, 390-5.

Dorling, P. 2007. *The Lugg Valley, Herefordshire: archaeology, landscape change and conservation*. Hereford.

Drewett, P. 1977. ‘The excavation of a Neolithic Causewayed Enclosure on Offham Hill, East Sussex’, *Proceedings of the Prehistoric Society* 43, 201-41.

Drewett, P. 1994. ‘Dr V. Seton Williams’ excavations at Combe Hill, 1962, and the role of Neolithic causewayed enclosures in Sussex’, *Sussex Archaeological Collections* 132, 7-24.

Driver, T. 2006. ‘A good year for cropmarks in Wales’, *AARGnews* 33, 41-42.

Driver, T. 2009. ‘A possible Neolithic Causewayed enclosure at Flemingston, St Athan, Vale of Glemorgan, in the Context of Known and Possible Examples in Wales’, *Archaeology in Wales* 49, 3-10.

Edmonds, M. 1993. ‘Interpreting causewayed enclosures in the past and present’, In Tilley, C. (Ed.) *Interpretive archaeology*. Oxford. 99-142.

Edmonds, M. 1999. Ancestral geographies of the Neolithic: landscapes, monuments and memory. London and New York.

Edmonds, M. 2006. ‘The axe and the mound’, in Evans, C. and Hodder, I. *The Haddenham Project. Volume 1. A Woodland Archaeology: Neolithic sites at Haddenham*. Cambridge. 352-353.

English Heritage. 2011. ‘Causewayed Enclosures’, https://www.english-heritage.org.uk/publications/iha-causewayed-enclosures/causewayedenclosures.pdf (accessed 1 April 2014).

Evans, C. and Hodder, I. 2006. *The Haddenham Project. Volume 1. A Woodland Archaeology: Neolithic sites at Haddenham*. Cambridge.

Evans, C. 2011. ‘Writing into land- Haddenham and the Lower Ouse environs’, in Schofield, J. (ed.) *Great Excavations: Shaping the Archaeological Profession*, 148-167. Oxford.

Ford, S. 1986. ‘A newly-discovered causewayed enclosure at Eton Wick, near Windsor, Berkshire.’ *Proceedings of the Prehistoric Society* 52, 319-320.

Fowler, C. 2010. ‘Pattern and diversity in the Early Neolithic mortuary practices of Britain and Ireland: contextualising the treatment of the dead’, *Documenta Praehistoria* 37, 1-22.

Fowler, C. 2003. ‘Rates of (Ex)change: Decay and growth, memory and the transformation of the dead in Early Neolithic Southern Britain’, in Williams, H. (Ed.) *Archaeologies of remembrance: Death and memory in past societies.* 45-65.

French, C. and Pryor, F. 2005. ‘Archaeology and environment of the Etton landscape’, *East Anglian Archaeology Reports* 109

Garrow, D. 2010. ‘Rethinking Etton: Space, Time and Material Culture within a Causewayed Enclosure in Cambridgeshire’, *Proceedings of the Prehistoric Society* 76.

Garrow, D. 2012. ‘Odd deposits and average practice: A critical history of the concept of structured deposition’, *Archaeological Dialogues* 19 (2), 85-115.

Garton, D., Howard, A., and Pearce, M. 1997. ‘Archaeological Investigations at Langford Quarry, Nottinghamshire 1995-96’, *Tarmac Papers* 1, 29-40.

Gent, T.H. and Quinnell, H. 1999. ‘Excavation of a causewayed enclosure and hillfort on Raddon Hill, Stokely Pomeroy’, *Proceedings of the Devon Archaeological Society* 57, 77-104.

Germany, M. 2007. *Neolithic and Bronze Age monuments and Middle Iron Age settlement at Lodge Farm, St Osyth, Essex*. Chelmsford

Harding, J. and Healy, F. (eds.). 2007. *The Raunds Area Project: A Neolithic and Bronze Age Landscape in Northamptonshire*. London.

Harris, O. 2011. ‘Constituting childhood: Identity, conviviality and community at Windmill Hill’, in Lally, M. and Moore, A. (Eds.) *(Re) Thinking the little ancestor: New perspectives on the archaeology of infancy and childhood*. Oxford. 122-132.

Harris, O. 2010. ‘Emotional and Mnemonic Geographies at Hambledon Hill: Texturing Neolithic Places with Bodies and Bones’, *Cambridge Archaeological Journal* 20, 357-371.

Harris, O. 2009. Making places matter in Early Neolithic Dorset. *Oxford Journal of Archaeology* 28, 2. 111-123.

Healy, F. 2004. 'Hambledon Hill and its implications', in Cleal, R., and Pollard, J, (eds.) *Monuments and material culture: Papers in honour of an Avebury archaeologist, Isobel Smith*. Salisbury. 15-39.

Hedges, J. and Buckley, D. 1978. 'Excavations at a Neolithic causewayed enclosure, Orsett, Essex, 1975', *Proceedings of the Prehistoric Society* 44, 219-308.

Hodder, I. 1992. *Theory and practice in archaeology*. London.

Huntingdon, R. and Metcalf, P. 1979. *Celebrations of Death*. Cambridge.

Jones, A. 2011. 'Burning matters: Memory, violence and monumentality in the British Neolithic', in Lillios, K.T., and Tsamis, V. (eds.) *Material mnemonics: Everyday memory in prehistoric Europe*. Oxford. 85-102.

Jones, A. 2008. 'How the dead live: mortuary practices, memory and the ancestors in Neolithic and Early Bronze Age Britain and Ireland', in, Pollard, J. (ed.) *Prehistoric Britain.* Oxford, 177-201.

Jones, N. 2009a. 'Womaston Neolithic causewayed enclosure, Powys: survey and excavation 2008', *Archaeologia Cambrensis* 158, 19-42.

Jones, N. 2009b. 'Womaston Causewayed Enclosure: Survey and Excavation 2008', *CPAT Report* 959.

Kinnes, I. 1992. 'Non-Megalithic Long Barrows and Allied Structures in the British Neolithic', *British Museum Occasional Paper* 52. London.

Leach, P. 1983. 'The excavation of a Neolithic causewayed enclosure on Barkhale Down, Bignor Hill, West Sussex', *Sussex Archaeological Collections* 121, 11-30.

Leeds, E.T. 1927. 'A Neolithic site at Abingdon, Berkshire', *Antiquaries Journal* 7, 428-64.

Leeds, E.T. 1928. 'A Neolithic site at Abingdon, Berkshire (second report)', *Antiquaries Journal* 8, 461-77.

Leeds, E.T. 1929. 'The Neolithic site at Abingdon', *Antiquaries Journal* 9, 37.

Lewis, M. 2011. 'The osteoarchaeology of infancy and childhood: Misconceptions and potential', in Lally, M. and Moore, A. (Eds.) *(Re) Thinking the little ancestor: New perspectives on the archaeology of infancy and childhood*. Oxford. 1-13.

Lewis, R. and Huckfield, P. 2008. 'Trial excavations at the Norton Causewayed Enclosure and Church Farm Barrow Cemetery', *Glamorgan Gwent Archaeological Trust* 2008/027.

McKinley, J. 2008. 'Human remains', in Mercer, R. and Healey, F. *Hambledon Hill, Dorset: excavation and survey of a Neolithic monument complex and its surrounding landscape*. Swindon. 477-521.

Meadows, J. 2003. Dating Briar Hill: Interpreting controversial results from the Neolithic causewayed enclosure at Briar Hill, Northamptonshire.

Mercer, R. 1977. Department of the Environment Summary Reports. *Proceedings of the Prehistoric Society* 43, 393-394.

Mercer, R. 1980. *Hambledon Hill: A Neolithic Landscape*. Edinburgh.

Mercer, R. 1981. 'Excavations at Carn Brea, Illogan, Cornwall, 1970-1973: a Neolithic fortified complex of the third millennium bc', *Cornish Archaeology* 20.

Mercer, R. 1990. *Causewayed Enclosures.* Oxford.

Merecr, R. 1997. 'The excavation of a Neolithic enclosure complex at Helman Tor, Lostwithiel, Cornwall', *Cornish Archaeology* 36, 5-61.

Mercer, R. and Healey, F. 2008. *Hambledon Hill, Dorset: excavation and survey of a Neolithic monument complex and its surrounding landscape*. Swindon.

Oswald, A., Dyer, C. and Barber, M. 2001. *The Creation of Monuments: Neolithic Causewayed Enclosures in the British Isles.* Swindon.

Palmer, R, 1976. 'Interrupted ditch enclosures in the British Isles: the use of aerial photography for contemporary studies', *Proceedings of the Prehistoric Society* 42, 161-86.

Piggott, S. 1952. 'The Neolithic Camp on Whitesheet Hill, Kilmington Parish', *Wiltshire Archaeological and Natural History Magazine* 54, 404-415.

Piggott, S. 1962. *The West Kennet Long Barrow*. London.

Pollard, J. 2001. 'The aesthetics of depositional practice', *World Archaeology* 33 (2), 315-333.

Pryor, F *et al*. 1985. 'An interim report on excavations at Etton, Maxey, Cambridgeshire, 1982-1984', *The Antiquaries Journal* 65, 275-311.

Pryor, F. 1998. *Etton: Excavations at a Neolithic causewayed enclosure near Maxey Cambridgeshire, 1982-7*. London.

Renfrew, C. 1973. 'Monuments, mobilization and social organisation in neolithic Wessex', In Renfrew, C (ed.) *The explanation of culture change: models in prehistory*. London. 539-558.

Renfrew, C. 1976. 'Megaliths, territories and populations', In De Laet, S.J. (ed.) *Acculturation and continuity in Atlantic Europe*. Brugge. 198-220.

Renfrew, C. 1979. *Investigations in Orkney.* London.

Reynolds, F. 2014. 'Early Neolithic shamans: performance and healing at Hambledon Hill, Dorset', in McInnes E, Gemi-Iordanou E, Gorden S, Matthew R, Petitt R,(eds.) *Medicine, healing and performance: beyond the bounds of science?* Oxford. 6-24.

Richards, C. and Thomas, J. 1984. 'Ritual Activity and Structured Deposition in Later Neolithic Wessex', in Bradley, R, and Gardiner, J, (eds.) *Neolithic Studies: A Review of Some Current Research*, 189-218. Oxford.

Russel, M. and Rudling, D. 1996. 'Excavations at Whitehawk Neolithic enclosure, Brighton, East Sussex: 1991-93', *Sussex Archaeological Collections* 134, 39-63.

Robertson-Mackay, R. 1987. 'The Neolithic causewayed enclosure at Staines, Surrey: excavations 1961-63', *Proceedings of the Prehistoric Society* 53, 23-128.

Schulting, R. 2009. 'Non-monumental burial in Neolithic Britain: a (largely) cavernous view', in "Larsson, L., Lüth, F. and Terberger, T. (eds.) *Non-Megalithic Mortuary Practices in the Baltic – New Methods and Research into the Development of Stone Age Society*".581-603.

Scott, J.G. 1992. 'Mortuary Structures and Megaliths', in N. Sharples and A. Sheridan (eds.) *Vessels for the Ancestors*. Edinburgh. 104-119.

Shand, G. 1998. 'A Neolithic causewayed enclosure in Kent', *PAST* 29, 1.

Shand, G. 2001. *Archaeological excavations at Chalk Hill, Ramsgate Harbour approach road 1997/8*. Canterbury.

Shanks, M. and Tilley, C. 1982. 'Ideology, symbolic power and ritual communication: a reinterpretation of Neolithic mortuary practices', In Hodder, I. (Ed.) Symbolic and structural archaeology. Cambridge. 129-154.

Sharples, N. 1991. *Maiden Castle: Excavations and field survey 1985-6*. London.

Smith, I. 1965. *Windmill Hill and Avebury: Excavations by Alexander Keiller, 1925-1939*. Oxford.

Smith, I. 1966. 'Windmill Hill and its implications', *Palaeohistoria* 12, 469-81.

Smith, M. 2006. 'Bones Chewed by Canids as Evidence of Human Excarnation: A British Case Study', *Antiquity* 80, 1-15.

Smith, M. and Brickley, M. 2009. *People of the Long Barrows: Life, Death and Burial in the Earlier Neolithic*. Stroud.

Somerset Historic Environment Record. 2009. '28378', http://webapp1.somerset.gov.uk/her/details.asp?prn=28378 (accessed 1 September 2014).

Teather, A. 2011. 'Interpreting hidden chalk art in southern British Neolithic flint mines', *World Archaeology* 43 (2). 230-251.

Tilley, C. 1994. *A phenomenology of landscape: places, paths and monuments*. Oxford.

Tingle, M. 2006. 'Excavations of a possible causewayed enclosure and Roman site at Membury 1986 and 1994-2000', *Devon Archaeological Society Proceedings* 64, 1-53.

Thomas, J. 2000. 'Death, identity and the body in Neolithic Britain', *Journal of the Royal Anthropological Institute* 6 (4), 653-668.

Thomas, J. 1996. *Time, culture and identity: An interpretive archaeology*. London.

Thomas, J. 1999. *Understanding the Neolithic*. London.

Thrope, I, J. 1984. 'Ritual, Power and Ideology: A Reconsideration of Earlier Neolithic Rituals in Wessex', in: Bradley, R. and Gardiner, J. (eds.) *Neolithic Studies*. Oxford. 41-63.

Todd, M. 1984. Excavations at Hembury, Devon, 1980-3: a summary report', *Antiquaries Journal* 64, 251-68.

Wessex Archaeology. 2005. 'Northborough Neolithic causewayed enclosure, Peterborough, Cambridgeshire: Archaeological evaluation and assessment of the results', www.wessexarch.co.uk/system/files/55761_Northborough.pdf (accessed 2 September 2014).

Wheeler, R.E.M. 1943. *Maiden Castle, Dorset*. London.

Williamson, R. 1930. 'Excavations in Whitehawk Neolithic Camp, near Brighton', Sussex Archaeological collections 71, 57-97.

Whittle, A. 2006. 'The temporality of enclosure', *Journal of Iberian Archaeology* 8, 15-24.

Whittle, A. 2007. 'Building memories', in D, Benson. and A, Whittle. (eds.) *Building memories: the Neolithic Cotswold long barrow at Ascott-under-Wychwood*, 361-4. Oxford.

Whittle, A. and Bayliss, A. 2007. 'The times of their lives: from chronological precision to kinds of history and change', *Cambridge Archaeological Journal* 17, 21-8.

Whittle, A, Healey, F. and Bayliss, A. 2011. *Gathering Time: Dating the Early Neolithic Enclosures of Britain and Ireland.* Vol 1 and 2. Oxford.

Whittle, A,. and Pollard, J. 1998. Windmill Hill causewayed enclosure: the harmony of symbols ', in Edmonds, M,. and Richards, C. (Eds.) *Understanding the Neolithic of north-western Europe*. Glasgow. 231-247.

Whittle, A., Pollard, J. and Grigson, C. 1999. *The harmony of symbols: the Windmill Hill causewayed enclosure, Wiltshire.* Oxford.