

**Lithic scatters and landscape: the Mesolithic,
Neolithic and Early Bronze Age inhabitation of
the lower Exe valley, Devon**

Volume 1 of 2

by

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Abstract

This thesis examines the inhabitation of the lower Exe valley, between the Mesolithic and the Early Bronze Age through the evidence of a series of surface lithic scatters. Research draws on recent confident approaches to surface lithic scatters which view them as key data for understanding the inhabitation of prehistoric landscapes. Theoretically it draws on the dwelling perspective and proposes that both the *contents* of lithic scatters (the stone tools and debitage of which they are composed), and their *contexts* (the locations in which they are found) are inseparable parts of the same whole, and are implicated in the processes through which prehistoric populations came to be understood and create their worlds.

Research focuses on a small study area centred on the lower Exe valley, Devon. It is one of the most significant prehistoric landscapes in lowland southwest Britain and includes a large surface lithic collection spanning the Mesolithic to the Early Bronze Age. It also contains evidence for a number of contemporary monuments. Several methodologies are applied to the contents and contexts of the study area's lithic assemblages. Methodologies utilised include lithic analysis, landscape phenomenology, LIDAR and vertical aerial photography, extensive geophysical survey and targeted excavation.

Four themes are explored in relation to the study area's archaeological record:

- The character and composition of inhabitation
- The temporality of inhabitation
- Biographies of place
- Scales of mobility and contact

Results indicate the valley floor and its immediate western edge as a particular focus of activity during all periods. Against the background of increasing intensity and extent of inhabitation between the Mesolithic and Early Bronze Age, the repeated occupation of persistent places is noted. Repeated occupation of these locales is seen as key to the development of biographies of place which in turn act as anchors for subsequent acts of inhabitation and monument building.

This thesis combines the analysis and interpretation of previously unpublished surface lithic assemblages, with the results of new archaeological fieldwork. At a regional level it has enhanced understanding of the prehistory of lowland Devon. In a wider context it offers a new theoretical and methodological approach to studying surface lithic scatters, and contributes to on going debates in landscape archaeology.

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Chapter One: Introduction

This study examines the inhabitation of the lower Exe valley, between the Mesolithic and the Early Bronze Age through the evidence of a series of surface lithic scatters. The following chapter introduces the scope and nature of this thesis.

1.1 Lithic scatters

Lithic scatters comprise quantities of stone tools, and waste from their manufacture, brought to the surface by modern agricultural activity. The technology used in their manufacture and the almost indestructible nature of their raw materials means that stone tools, unlike many other classes of artefactual or structural evidence, form a numerous and durable archaeological signature of prehistoric activity. The landscape scale at which the various stages of the manufacture and use of stone tools took place means that from the beginning of the Mesolithic to the end of the Early Bronze Age they form one of the most prolific traces of human activity available to archaeologists studying prehistoric landscapes. Despite this potential lithic scatters are far from a perfect data source. By their very nature they represent a displaced, mixed, partial and taphonomically filtered fragment of a single aspect of prehistoric material culture.

A number of recent studies (Bond 2006; 2009; Chan 2003; Edmonds *et al.* 1999; Snashall 2002), have acknowledged that despite lithic scatters not necessarily offering easy answers, with rare exception, they are the only data set that archaeologists have for studying the inhabitation of prehistoric landscapes and as such they need to be engaged with. Key to these studies is the fact that scatters are not simply a blunt instrument with which to indicate the presence/absence of prehistoric activity (Thomas 1999, 18) or the distribution of such activity relative to natural resources (cf. Foley 1981), rather surface scatters can be used to address more subtle questions about the inhabitation of prehistoric landscapes.

1.2 Settlement, inhabitation, occupation, residence, dwelling?

Since the early 1990s interpretations of the Neolithic and Early Bronze Age have eroded the sharp division traditionally placed between what were seen as the 'mobile' hunter-gatherers of the Mesolithic and the settled, agricultural

communities of the Neolithic and Early Bronze Age. Several authors have suggested that far from being characterised by sedentism, settlement practice during both the Neolithic (Edmonds 1995; 1997; 1999; Pollard 1999; Thomas 1991; 1999; Whittle 1997) and Early Bronze Age (Brück 1999) was characterised by varying degrees of mobility. Whittle (1997: 21-22) proposes a spectrum of residential practices lying between mobility and complete sedentism that might be applicable in different times and places between the Late Mesolithic and the Early Bronze Age. As notions of varying degrees of settlement mobility have become accepted some authors have begun to use terms such as 'inhabitation' (Chadwick 2004), 'occupation' (Pollard 2000) or 'residence' (Snashall 2002), in place of 'settlement', to avoid "*notions of fixity, permanence and domesticity*" (Pollard 2000, 363) which seem increasingly inappropriate. In this thesis the terms occupation and inhabitation are used interchangeably.

1.3 The dwelling perspective

The approach taken in this study is that the inhabitation and activity evidenced by surface lithic scatters are inherently bound up in the process through which prehistoric landscapes were understood and became meaningful (Ingold 1993; Pollard 1999; 2000; 2005; Tilley 1994). This study is particularly informed by the work of Ingold (1993; 2000) and Thomas (2008) on the dwelling perspective. This work deals with the process through which landscape becomes meaningful. The argument that it puts forward is that rather than people attaching meaning to elements of the landscape, meaning is drawn out of the landscape through an interaction with a series of 'clues and keys' (Ingold 2000) embedded in it. In this thesis it is suggested that both the contents of lithic scatters (the stone tools of which they are comprised) and their contexts (the topographic and archaeological landscapes in which they are found) are elements of these clues and keys that survive into the present day, albeit in fragmentary form. This piece of research combines several distinct methodologies including lithic analysis, geophysical survey, excavation and landscape phenomenology to examine the contents and contexts of lithic scatters in the study area.

1.4 The study area

The study area comprises 16km² centred on the lower Exe valley, Devon. The study area contains one of the most significant prehistoric landscapes in

lowland south-west Britain (Fyfe 2005; Griffith and Quinnell 1999a; 1999b). It combines a large, well-recorded, surface lithic collection spanning the Mesolithic to Early Bronze Age (Silvester *et al.* 1987; Uglow unpublished), with cropmark (Griffith 1990; 1994; 2001) and earthwork (Alden 1981; Fyfe 2005) evidence for a number of contemporary ceremonial monuments. Monuments include a cursus, a possible mortuary enclosure, a very large potentially Neolithic enclosure, and numerous round barrows and ring ditches. The area also has a recently identified Holocene palaeoenvironmental sequence (Fyfe *et al.* 2003). It is hoped that this study area will provide an opportunity to improve understanding of prehistoric landscapes and regionality in lowland southern Britain (cf. Barclay 2009; Jones 2011).

1.5 Research questions

Four broad and overlapping research questions are referred to throughout this thesis:

1. How can lithic scatters be used to understand the character and composition of inhabitation?
2. How can lithic scatters be used to understand the temporality of inhabitation?
3. How can lithic scatters contribute to an understanding of biographies of place?
4. What can lithic scatters tell us about scales of mobility and contact?

1.6 Thesis structure

This thesis is comprised of a further nine chapters:

Chapter two reviews recent literature on theoretical landscape archaeology, with a particular focus on landscape phenomenology, taskscape and dwelling. Chapter three then provides a wider regional context for the detailed study area. It examines the physical character and Mesolithic to Early Bronze Age archaeology of Devon. In chapter four the landscape and prehistoric archaeology of the study area in the lower Exe valley are explored. It also introduces the Uglow lithic collection and evaluates its potential for analysis. Chapter five looks at the history and development of lithic analysis from its antiquarian beginnings to the present day. Particular attention is paid to

different approaches taken by archaeologists to the study of surface lithic scatters. The applicability of a range of lithic analyses to the study of surface lithic scatters is also considered. In chapter six the methodologies used to analyse the contents and contexts of the study area's lithic scatters are introduced. In addition to lithic analysis the methodologies for geophysical survey, excavation, landscape phenomenology and the use of LIDAR data are also detailed. Chapter seven presents the results of new archaeological fieldwork undertaken for this thesis. Extensive geophysical survey and targeted excavation are used to characterise and establish the chronology of two areas of archaeological cropmarks including a cursus and a large potentially Neolithic enclosure. Following on from this, chapter eight presents the results of a detailed analysis of surface lithic assemblages from the study area. Study area-wide trends in the distribution, character and composition of lithic scatters are discussed. Chapter nine divides the landscape of the study area into five topographically defined zones. These zones are then studied in two different ways. Surface lithic scatters are used to examine trends in occupation and traditions of practice within and between zones. A phenomenological approach is then used to characterise the landscape of each zone. Finally, chapter ten reviews the results of the research in relation to the initial research questions and offers recommendations for further research in the study area. The implications of this study for the analysis of lithic scatters and more widely for landscape archaeology are then considered.

Appendices: Additional information is included in a separate volume

1.7 A note on radiocarbon dates

Unless otherwise stated all radiocarbon dates in this thesis are expressed in calibrated years BC at 95% confidence.

Chapter Two: Archaeology, Landscape and Dwelling

“Rather than viewing surface scatters simply as evidence of landscape exploitation, they should be recognized as constituting a record of place-values constructed through the practice of occupation; they were formed as part of a process by which the landscape was ascribed meaning, symbolic value and historical significance” (Pollard 1999, 84)

As set out in the previous chapter this study aims to examine both the contents of lithic scatters and their wider landscape context. Several authors have remarked on the ambiguity of the word landscape, and the fact that it can mean very different things to different practitioners (Cobb 2008, 53; Gosden and Head 1994; Thomas 2001, 166). The following chapter does not attempt to define what landscape is, or to give a detailed history of the development of landscape archaeology. This has already been done in a number of recent publications (for example, Chadwick 2004a; Cobb 2008; Cummings and Whittle 2004; Darvill 2008; Hind 2004; McFadyen 2008a). Chapter two examines ideas from post-processual landscape archaeology, particularly landscape phenomenology, taskscape and dwelling, which provide the theoretical and, to a lesser extent, the methodological basis for this study.

2.1 Processual landscape archaeology

In British prehistory functionalist and processual approaches to landscape can be divided into two camps. Those that offer environmental interpretations, and those that offer social interpretations. Environmental interpretations equated landscape with environment, a space containing various resources and within which human activities occur. People live in, and move between, a series of sites each located to exploit a range of environmental resources (for example, Clark 1954; Foley 1981). Building on these ideas ‘site catchment analysis’ saw ‘sites’ as being at the centre of landscapes, and positioned for the optimal exploitation of a range of natural resources (for example, Barker and Webley 1978). Other interpretations have sought social explanations for the location and distribution of sites within the landscape. ‘Central place theory’ explicitly seeks to understand interaction and hierarchies of interaction between sites. A case in point being Renfrew’s (1973) use of polygons drawn around a succession of different monument types to suggest the concentration of political power during the course of the Neolithic in Wessex.

Both of these approaches conceptualise landscape in a similar way. Landscape is seen as an object, something to which things are done, and that stands apart from its inhabitants. Successive phases of cultural activity write and rewrite their trace on the landscape, which archaeologists can then decipher, record, map and study as a two dimensional representation. Landscape is a neutral space, a passive container for human activity, its agency limited to the natural resources it affords and the physical constraints that it imposes. The distribution of human activity in a landscape is explained in terms of environmental factors (soils, slope, climate and resource availability) or abstracted socio-economic explanations (demographic patterns, territoriality, transhumance patterns).

2.2 Post-processual landscape archaeology

A sea change in British landscape archaeology occurred in the early 1990s with the publication of several books and articles (Bender 1993 a & b; Hirsch and O'Hanlon 1995; Ingold 1993; Tilley 1994; Thomas 1993). These publications laid the foundations for a very different way of thinking about past landscapes. Drawing on post-processual archaeological theory, as well as ideas from other disciplines, such as cultural geography (Meinig 1979 a&b; Tuan 1979; Cosgrove 1984) and ethnography (Taçon 1991), these formative texts in post-processual landscape archaeology changed the discipline's scope of enquiry.

Post-processual landscape archaeology primarily developed as a critique of processual or 'orthodox' conceptualisations of landscape. It suggests that such ideas are the product of a modern, capitalist, mind-set, and are of limited use in understanding prehistoric landscapes (Thomas 1993; Tilley 1994). Instead a different way of thinking about landscape is proposed, in which landscape is viewed as the context for lived human experience, and as such attempts to understand how people in the past experienced, understood and inhabited their landscapes. In this approach landscape ceases to be a neutral backdrop to past human activity and becomes subjective, meaning-laden, contested and contradictory (Bender 1993a & b). Significantly such a meaningful landscape gained the potential to be a rich ideological and biographical resource that reflexively shapes, as well as being shaped by, its inhabitants; both a medium for and the outcome of human action (Brück 2005, 46-8).

2.2.1 Landscape phenomenology

“Put most simply, phenomenology involves the study and description of phenomena it involves a description of things as they are experienced in the world by a human subject ... [phenomenology is a] humanist approach that puts people and the manner in which they perceive and relate to the world at the centre of research” (Tilley 2005, 201-2).

“The physicality of the landscape grounds and orientates people and places within them; it is a physical and sensory resource for living and the social and symbolic creation of life-worlds” (Tilley 2010, 26).

Phenomenology is a philosophical tradition that seeks to understand the character of human experience and has been extremely important in post-processual landscape archaeology. Tilley's 1994 *A Phenomenology of Landscape* was the first publication to examine at length the archaeological implications of a phenomenological approach to archaeological landscapes (although see Bender 1993, Ingold 1993 and Thomas 1993 for shorter but simultaneous examples of similar work). Tilley (1994) has been hugely influential in British landscape archaeology over the last 15 years.

His point of departure was the question *“why were particular locations chosen for habitation and the erection of monuments as opposed to others?”* (Tilley 1994, 1). Drawing on a number of ethnographic case studies from present-day small-scale societies, in particular accounts of the native Australian concept of dreamtime, Tilley shows that it is possible for the topographic subtleties of a landscape (from trees to streams to cliffs to hills), to be full of cultural meaning and an intrinsic part of the cosmology and reproduction of a society. The implication of this approach is that the ‘qualitative’ significance (whether real or imagined) of a location might be as, or more, important in its use for a certain purpose, than any present day perception of its ‘quantitative’, objective or functional value.

For Tilley a phenomenological approach is both a philosophical tool for deconstructing and critiquing Cartesian concepts of space, and a methodological tool for interpreting how past landscapes were experienced (Brück 2005, 46-8; Cobb 2008, 69). He draws on the work of phenomenologists

Heidegger and Merleau-Ponty to suggest that the interaction between the conscious body and encultured space is key to the human understanding of landscape (Tilley 1994, 14). Implicit within *A Phenomenology of Landscape* is the idea that the experience of a human body moving through, or simply being in, a landscape today can provide a way into understanding how that landscape was experienced in the prehistoric past. Tilley goes on to suggest that elements of the physical form of the landscape itself are a constant. He argues that in inland areas of Britain, from the Mesolithic onwards, although the 'skin' (vegetation) of the landscape has gone forever, its 'bones' (landform/topography) are essentially the same today as they were in prehistory (Tilley 1994, 73). By extension the topographic bones of the landscape would constrain and shape the experience of a person in the past just as they would that of a present day archaeologist (Tilley 1994, 73).

On the basis of these observations Tilley developed a new type of archaeological fieldwork based on building up a detailed knowledge of the relationship between archaeological sites and topography of a study area. This is achieved through the repeated walking of a study area observing changing views and patterns of intervisibility. This repeated walking of a landscape is recorded by note-taking, photography and video (Bender 1998, 81; Tilley 2008; 2010).

2.2.2 Critiquing landscape phenomenology

Phenomenological approaches have been extremely influential within landscape archaeology over the last fifteen years (for example, Bradley 1998; Cobb 2008, Cummings 2002, Cummings and Whittle 2004, Richards 1996, Tilley 1995; 2001; 2004; 2008; 2010; Watson 2001). However, experiential landscape phenomenology has been, and continues to be, controversial and has been extensively criticised. Some of the potential problems and limitations of Tilley (1994) and subsequent landscape phenomenologies are summarised below. The ways in which archaeologists have attempted to deal with some of these issues are also addressed.

Subjective landscape experiences?

By their very nature phenomenological studies produce personal and subjective

accounts of landscapes, which can themselves be difficult to substantiate. Many of Fleming's (1999; 2005) increasingly vocal criticisms of Tilley's (1994) and Cummings and Whittle's (2004) phenomenological studies of Welsh megalithic chambered tombs stem from the fact that he disagrees with certain of their observations, or believes that they are not substantiated by the evidence. Brück (2005, 51) and Fleming (2005, 922) question whether apparent associations between past activity and topographic features may be accidental rather than causal.

Cummings in particular has attempted to develop recording methodologies to substantiate apparent relationships between monuments and the landscape. These range from conventional photography, hand-drawn panoramas, through animated Quicktime VR digital panoramas to Geographic Information System (GIS) generated viewsheds and digital virtual landscapes (Cummings 2008). In her study of Welsh chambered tombs (Cummings and Whittle 2004) field observations are supported by an annotated 360° schematic diagram and a photographic panorama depicting the viewshed from each site visited. In order to demonstrate the validity of claims made about the landscape setting of individual tombs a GIS viewshed was produced for each site and a series of control observations and viewsheds made at regular distances away from the site as well as from neighbouring monuments.

There is a tension between the explicitly anti-Cartesian agenda of phenomenological landscape archaeology and the totalising, 'god's eye view' of GIS. A number of GIS practitioners, for example, Cripps *et al.* (2006, 28) suggest that GIS provides a valid set of structured techniques for the controlled investigation of phenomena, essentially a way to quantify the qualitative aspects of a landscape. Thomas (2004, 198-202) suggests that GIS is too inherently bound up in modern rationalism to have any place in understanding past people's perception of landscape.

Universality of the body?

Several authors (including Brück 1998; 2005; Hamilakis *et al.* 2002, 8-9) have questioned whether the body can be used to give a universal point of access for understanding past landscapes. Brück suggests that at any one time the

experience of 'Being in the world' would have varied according to a range of factors including class, gender, age, health and (dis)ability. She goes on to argue that concepts of the body are culturally and historically constituted and would therefore have varied over time and across cultures. In short she questions whether the body and perspective of the average modern white male (Tilley) should be used as a universal yardstick with which to measure how the world may have been experienced and interpreted in the Neolithic (Brück 1998, 28).

An uncritical use of the modern human body to access prehistoric experiences of landscapes has become more difficult in the light of a new field of archaeological theory, personhood, which has emerged since the publication of *A Phenomenology of Landscape* (e.g. Fowler 2001; 2008). Fowler (2001, 138) suggests that the modern western individual represents a particular, rather than a universal, form of personhood, one that is the product of a particular set of relations both between people and with their material world/landscape. Fowler (2001, 138-40) draws on a range of ethnographic sources to highlight the potential variability in conceptions of personhood that may have existed in prehistory. He dispels any notion that our static, singular ideas of personhood, bounded by a single human body represent any given norm. Conneller (2004), Pollard (2004) and Ingold (2000) highlight the potential for aspects of non-human beings (animals), plants, and topographic features (landscape) (Ingold 2000, 57-8), to be intertwined with human identity and personhood.

Universality of landscape experience?

Brück also considers the universality of Tilley's experience of the physical landscape of his study areas and whether they can necessarily be seen as analogous with those of people in the Neolithic. She uses the example of Tilley's surprise at encountering the Pleistocene river cliff that cuts across the line of the Dorset Cursus and asks whether someone familiar with the Neolithic landscape of Cranborne Chase would necessarily have the same feelings of surprise as someone more used to moving around a modern city (Brück 1998, 30). Beyond differences of familiarity with/reaction to a landscape between people in the past and the modern phenomenological observer, Brück also questions the constancy of the physical landscape. She suggests that a

location could appear quite different within a very short time span in different seasons, weather conditions or even different times of day (Brück 2005, 56).

Although Tilley suggests that only the skin (vegetation) of the British landscape has changed since the Mesolithic this could still have an enormous effect on how locations were experienced in the past in comparison to the present. As so many phenomenological accounts are based on vision (although see below for a critique of the primacy of vision in phenomenological archaeology) it is worth considering how differences in tree cover and vegetation may have affected the visibility of/ views from specific places. Both Gell (1995) and Tilley (2007) propose that there are huge differences between the way people relate to densely wooded and cleared landscapes.

Rather than assuming a binary opposition between cleared landscapes = visible landscape and monuments and wooded landscapes = invisible landscape and monuments, Cummings and Whittle (2004, 69-72) consider the potential variability of tree cover in the predominantly wooded landscapes of Early Neolithic Wales. They suggest that due to variation in tree cover, caused by both natural and anthropogenic factors, a forested landscape need not have precluded visual references made between monuments and topography. Several studies (see Chapman 2006, 116-9) have investigated the use of GIS or virtual reality modelling to explore the effect of vegetation on visibility in particular landscapes.

Uninhabited, unchanging landscapes?

Tilley's case studies give a vivid sense of how features in a landscape might have been imbued with meaning and drawn upon by people in the past, however, the landscapes he describes are temporally static and somewhat two-dimensional. His accounts are based on his own bodily encounter with a range of landscapes and pay particular attention to the relationship between the subtleties of the topography and prehistoric monuments. People other than Tilley are missing from these landscapes (Brück 2005, 62). In these case studies there is little notion of the types of activity that might have given rise to 'landscape experience' in the past. Human activity, from the basics of subsistence to ritualised activity, is missing. Despite Tilley having stressed the

importance of not setting up a divide between economic and symbolic/cultural understanding of a landscape in the introduction to *A Phenomenology Of Landscape* (Tilley 1994, 2), it is undoubtedly the potential cultural/cosmological aspects of the landscape that are emphasised. Chadwick (2004b, 22) suggests that although not quite replicating the detached 'administrative gaze' of a landscape viewed through a painting or a map, Tilley's solitary voyeuristic walks through the landscape have to some extent still those of a distanced observer viewing the landscape as an object.

Brück (1998, 32) also suggests that Tilley emphasises space over time. As a result archaeological periods (Mesolithic and Early Neolithic) are dealt with as a series of homogenous landscape caricatures giving no sense of lived time or the gradual, piecemeal evolution of monuments and landscapes (Brück 1998, 34). This point is also picked up on by McFadyen (2008a, 127). She is critical of the way in which all the archaeological features from lithic scatters to monuments encountered by Tilley whilst walking along the Dorset cursus all exist at the same time and in a single state of being. There is little sense of monuments or lithic scatters being encountered during different stages of their existence, from building, active use and modification to abandonment. These features seem to exist simultaneously as pristine caricatures rather than having ever existed as works in progress changing over time.

Linked to this critique of uninhabited landscapes filled with static monuments, is McFadyen's (2008a) criticism of Tilley's use of the notion of 'site' (also picked up on by Ashmore and Knapp 1999, 4). She explores this with particular reference to his discussion of Mesolithic lithic scatters (Tilley 1994, 144-7). She suggests that they are reduced to locations, significant only for what they mark (2008a, 127). A different reading of these scatters would see them as being concentrations of activity that reached out across the entire landscape (McFadyen 2006, 2008a). This critique of the use of 'sites' can be extended beyond lithic scatters to Tilley's treatment of the landscape and monuments in general. Rather than human activity occurring across an entire landscape, it is almost as if it is reduced to occurring at a network of nodal locations or monuments at which past activity happened and the landscape was experienced. The relevance of time and action to the enculturation and

experience of landscape is returned to in the discussion of taskscape in section 2.6.

Sensing beyond seeing?

A key foundation of phenomenological thought is that people understand their world through a total sensual immersion in it, and that this immersion is a synaesthetic experience (made up of all the senses: Tilley 2004, 14). A widely made criticism of Tilley (1994) and other early landscape phenomenologies has been the primacy that they accorded to just one sense, vision (for example see Cummings and Whittle 2004, 8-9, Hamilakis 2002, 122, Rainbird 2008, Tilley 2004, 14). Several subsequent studies have tried to address this issue by explicitly exploring non-visual phenomenologies of landscape. For example, Hamilakis (2002) explores the significance of taste and food in Bronze Age Crete; several authors have explored soundscapes in various contexts including British Neolithic megalithic monuments (Watson and Keating 1999) and rock art sites in contemporary Polynesia and Early Bronze Age Britain (Rainbird 2008); Tilley (2004) examines the textural qualities of stones used as monuments in Neolithic Brittany, Neolithic Malta and Bronze Age Sweden. Ingold (2004) has also written about the potential significance of bare feet for sensing and perceiving the environment.

Phenomenological methodologies and archaeological methodologies

Beyond his damning criticisms of the subjectivity and potential to 'go beyond the evidence' Fleming's other issue with phenomenological archaeology is what he sees as its apparent abandonment of established archaeological field skills (2006, 270). Seemingly by Fleming's reading of what phenomenological archaeological field practice entails, out goes earthwork survey, aerial photography and excavation, the bread and butter techniques of his discipline, and in comes walking around the landscape with a video camera and notebook (Fleming 2006, 270).

Thomas's (2008) is critical of studies that use phenomenology as just another analytical technique. Effectively adding a layer of subjective, experiential interpretation on to what is otherwise an orthodox, objective landscape archaeology. He suggests that studies in which archaeologists attempt to

reconstruct the thoughts of past peoples via their own contemporary encounters with a landscape are “...*subjective [and] ultimately narcissistic*” (Thomas 2008, 301). He concludes by setting out how he sees ‘experiential’ phenomenological archaeologies working alongside traditional empirical archaeological field skills in a landscape archaeology informed by the dwelling perspective (Thomas 2008, 305). This tension between landscape methodology and interpretation is returned to in section 2.7.

2.2.3 The dwelling perspective

“The landscape, I hold, is not a picture in the imagination, surveyed by the mind’s eye; nor, is it alien and formless substrate awaiting the imposition of human order....neither is the landscape identical to nature, nor is it on the side of humanity against nature. As the familiar domain of our dwelling, it is with us, not against us, but it is no less real for that. And through living in it, the landscape becomes part of us, just as we are part of it” (Ingold 1993, 154).

“Dwelling is what happens when traditions of practice find themselves at home in a landscape, producing a climate of expectation and assumption within which future projects can be devised and carried forward. Archaeology imagines the past by placing contemporary observations and experiences into as complete as possible a reconstruction of the factors that informed their ancient counterparts” (Thomas 2008, 305)

Emerging in parallel with an experiential landscape phenomenology is the linked idea of the ‘dwelling perspective’ developed in the work of Ingold (1993 and 2000) and Thomas (1993, 1996 and 2008). The work of German philosopher Martin Heidegger has been significant in the development of both the ‘dwelling’ perspective and experiential landscape archaeologies.

Heidegger’s concept of ‘*dasein*’, literally ‘here being’ or ‘being-in-the-world’, describes a state of relating to the world in which the notions self and the world are combined; where body, mind, culture, nature and society form an inseparable whole (Thomas 1996, 19 and 54). The idea of dwelling stems from an article by Heidegger entitled *Building, Dwelling, Thinking* (Heidegger 1978). It deals with the relationship between the concepts of building and dwelling, and begins with an examination of the modern German verb *bauen* (to build). By identifying the etymological derivation of the verb Heidegger shows that *bauen* stems from the high German word *buan* meaning to dwell, as well as being linked to the concepts of caring and cultivation (Heidegger 1978, 348-9).

Heidegger goes on to invert the accepted idea that buildings (as structures) are

a necessary prerequisite for dwelling (as in inhabiting). Within Heidegger's framework a place must be dwelt in, or inhabited, before it can be built upon. By extension, all buildings (in the widest sense of the word) are to some extent a product of locales that are already understood and dwelt in (Heidegger 1978, 353-63). "*We construct the world around us as part of our dwelling*" (Heidegger 1978, 354).

Central to Ingold's work on the dwelling perspective is a critique of a set of Cartesian oppositions between subject and object, mind and body, culture and nature, building and dwelling, which underpin western thought (Ingold 2000, 15-6), and which are intrinsic to what Ingold dubs the '*building perspective*'. Within the building perspective the real, physical world (or landscape) is seen as existing separately to a cultural understanding of the world held in people's heads. In making sense of the world, or in 'building their world', people pin elements of their conceptual, cultural understanding of the world onto aspects of the real, natural world (Ingold 2000, 178-81).

Ingold proposes an alternative model, the '*dwelling perspective*', in which people understand their world through direct bodily engagement with it. No separate 'cultural' world exists to accord meaning to the 'real' world. People make sense of their world through the actions of everyday life. For Ingold information about the world exists in the world and not in the mind (Ingold 2000, 55). People learn about their landscape through what he calls a '*sensory education*' (Ingold 2000, 22), or an ongoing process of enskillment of people rather than enculturation of the landscape (Ingold 2000, 55). Using a series of ethnographic case studies he suggests that landscape based cosmologies, rather than cloaking the physical world in meaning, actually serve as a system of clues or keys which draw its inhabitants deeper into the detail of the landscape and involve them in both maintaining and creating meaning (Ingold 2000, 21-6, 53- 60). This underlines the idea that he revisits in his work on taskscape, that landscape, as "*the homeland of people's thoughts*" (Ingold 2000, 186), is always a work in progress never a finished form (Ingold 2000, 188).

2.2.4 Taskscape

Nested within his work on dwelling is Ingold's idea of taskscape. His (1993)

article '*The Temporality of Landscape*' has been a major influence on landscape archaeology. Taskscape deals explicitly with time and action, both of which are largely absent from the works of Tilley and other experiential phenomenologies of landscape. He defines taskscape as the entire ensemble of tasks or actions that a society, community, or individual performs (1993, 158). In relation to landscape as "*an array of related features*", Ingold describes taskscape as "*an array of related tasks*" (Ingold 1993, 158). Ingold (1993,162) suggests that at any one time landscape is a congealed form of taskscape. Essentially taskscape acknowledges that it is through the inter-related mesh of routine activities carried out as part of daily life that the landscape is encountered and understood. Landscapes develop their character through the experiences that their inhabitants have in them, and the nature of these experiences is therefore contingent upon the activities (tasks) that are being engaged in Ingold (1993,155). A further important element of the taskscape is that just as tasks take place in relation to the landscape they also take place in relation to other people. Thus the taskscape is inherently social as "*in the performance of their tasks, [people] also attend to one another*" (Ingold 1993, 160).

Linked to the idea that landscapes become meaningful through action (i.e. through doing things or tasks in them) is the fact that action takes place over time (Ingold 1993, 58). When viewed as taskscape, a landscape becomes a dynamic process and it becomes difficult to consider it as a static snapshot in time. Just as Ingold, and other authors, have discussed at length the difference between Cartesian, mapped space and experienced landscape, he goes on to discuss the potential variability and complexity of experienced time (i.e. social time) as opposed to linear time (i.e. chronological time). He draws a comparison between the complexity of the temporality of landscape/taskscape and an orchestral performance made up of different rhythms, cycles, changing tempos, resonances and tensions (Ingold 1993,160). He further explores this through an examination of the different temporalities present in a landscape painting (Bruegel's 1565 'The Harvesters'). The temporality ranges from the slow time of the incrementally changing and eroding topography, the shorter lived but still multi human generational life of a tree, the annual cycle of farming activities and the constantly maintained church with its accompanying graveyard full of ancestors (Ingold 1993, 164-70). Most significantly he talks

about how the lives, activities and social interaction of the people in the picture are caught up in these differing temporalities of activity (task) and the changing physical landscape.

Ingold's writing on taskscape has influenced the work of many archaeologists in particular prehistorians working on Mesolithic and Neolithic landscapes and lithic scatters (for example, Bender 1998, 72-4; Chan 2003; Conneller 2008; 2010; Edmonds 1997; McFadyen 2008a; 2008b). Taskscape provides a way of linking together evidence of technological practice that is dispersed at a landscape scale with an understanding of encounter with the landscape and social reproduction.

Ingold's work on taskscape has not been without its criticisms. Finlayson (2006, 179-80) cautions against the tendency of taskscape influenced studies to produce accounts that foreground functional or technological activity at the expense of the social and encultured aspects of landscape. Perhaps what is lacking from Ingold's definition of taskscape is an explicit acknowledgement that 'task' should be seen as encompassing the full suite of routine activities from the most practical technological and subsistence activities to the most ritualized. Bender (2000, 25) highlights that need to ensure that the taskscapes that archaeologists create are historically and specifically constituted. She cautions against what she sees in Ingold's (1993) original work on taskscape as a tendency to generalize about all labouring people's sense of 'being-in-the-world', the implication that they all have a similar, ahistorical relationship with place and time. In a similar vein Conneller (2010, 188-9) comments on the potential for taskscape informed landscape archaeologies to produce homogenised period-based taskscapes which stress continuity rather than change both between different regions and over time.

2.2.5 Dwelling, taskscape, phenomenology and landscape archaeology

Ingold (1993, 152-3) discusses the application of the dwelling perspective to anthropology and archaeology. He makes a distinction between the practices of anthropology and archaeology. The anthropologist can talk to the native dweller about their relationship with their landscape and receive first hand the words of the native dweller. However, for the archaeologist by definition there is no native dweller to question and as such no first hand accounts to study, only

fragmentary remains of material culture. Ingold continues by describing landscape as experienced by both the native dweller and the archaeologist as “*an enduring record of – and testimony to – the lives and works of past generations who have dwelt within it, and in so doing, have left something of themselves*” (Ingold 1993, 152). Ingold suggests that the practice of archaeology is a kind of dwelling, different to, but comparable with, that of a native dweller. He claims that essentially both are seeking/attending to clues in the landscape for past generations who formed the meaning and shape of the landscape. Despite the specific activities that they engage in (excavating, surveying or reading reports in a library vs. hunting and gathering), and the accounts that they tell (archaeological reports vs. myths/stories) being different, both are fundamentally engaged in a similar process. Ingold (1993, 171-2) goes on to suggest that archaeologists instead of adding layers of interpretation to the landscape should be probing more deeply in to the clues that they find. Each element of archaeological data being a clue or key to finding meaning rather than simply being a vehicle for carrying it.

“A new approach will still require that we identify and plot the traces of past activity in the countryside. But the uses to which these traces will be put will have to go beyond the reconstruction of economic regimes and speculations as to how the land may have been perceived by past people. In considering the ways in which the significance of the landscape gradually emerged, through practices of building, maintenance, tending, harvesting, and dwelling, we are constructing in the present an analogy for past worlds of meaning” (Thomas 2002, 181)

Thomas (2000; 2001; 2008) emphasises the point that the dwelling experience of the contemporary archaeologist is not and will never be the same as that of the native dweller in the past. Rather, for him, the value of the archaeologist’s dwelling in the landscape is that though it is possible to construct present day analogies for “*past worlds of meaning*” (Thomas 2002, 181). Viewed in such a way the role of the landscape archaeologist is not to try to recreate past experience or thoughts, but to use the material evidence of past acts of dwelling to develop an understanding of how they may have differed from our own (Thomas 2002, 181). Peterson (2007, 140-41) further underlines this by suggesting that archaeologists need to move beyond trying to grasp the words and thoughts that resulted in different ways of past dwelling, and their resultant forms of building. Instead he suggests that archaeologists should focus on what

they do have, i.e. material culture – fragmentary evidence for different ways of building in the past – and use it to explore how this may have resulted from different ways of dwelling in the past.

A series of tensions emerge from Thomas's (2008) paper between 'orthodox' and post-processual landscape archaeologies, and between the theoretical and the methodological application of phenomenological thought to landscape archaeology. Both experiential phenomenologies of landscape, and the dwelling perspective, offer theoretical tools for deconstructing and critiquing the normative conceptions of landscape that have defined orthodox landscape archaeologies. Their application has forced landscape archaeology to look beyond the conventional frame of empirical data, to explicitly consider the qualitative aspects of landscape, monuments and material culture, and how they may have been drawn upon in the past. However, whilst both approaches open up theoretical space for dealing with prehistoric landscapes in a potentially much more dynamic and interesting way, these approaches differ in terms of practical methodology. Landscape phenomenology has developed a distinctive set of field methodologies based on the landscape experiences and observations of contemporary archaeologists. The dwelling perspective is different in that, although it leads to a different and arguably more holistic theoretical framework within which to think about past landscapes, it does not in its self propose a new methodological approach. Thomas's (2008) paper is somewhat unsatisfying, in that having pulled apart the theoretical underpinnings of orthodox landscape archaeology and heavily criticised the application of experiential phenomenology to landscape archaeology, he remains slightly unclear as to what an archaeological practice informed by the dwelling perspective should look like. He is slightly more explicit in an earlier paper. In his 2002 paper *Archaeologies of place and landscape* he seems to suggest that neither traditional nor phenomenological fieldwork techniques need to be abandoned. He suggests, what needs to change is the way archaeologists think about the information, both empirical and experiential, that they collect. Within such a framework landscape archaeology's objective changes from the identification of a chronological sequence of things that were done to the landscape, to attempting to understand how the landscape provided the context for past modes of dwelling. Experiential landscape phenomenologies have a

place within such a framework, but only in so much as they are explicitly recognised as being analogous to, rather than equivalent to, past human experience. A way of reanimating past landscapes rather than of recreating what went on inside the heads of those that dwelt in them.

2.3 Conclusion: dwelling and lithic scatters

The dwelling perspective offers a potentially new approach to considering lithic scatters in relation to the landscapes in which they are found. Within such a perspective it becomes possible to link together taskscape – in this instance evidence of technological practice dispersed at a landscape scale (the stone tools that are the *contents* of lithic scatters) - with an understanding of encounter with landscape (the physical location or *context* of a lithic scatter). Approached in this way lithic scatters become locales full of Ingold’s “*clues and keys*” or Thomas’s “*expectations and assumptions*” (2008, 305) and as such cease to be spatially or temporally static, being understood through their associations with past events, future expectations and with other places. These *clues and keys* would have been implicit in the process through which those who dwelt in these places drew out meaning from the world around them. Similarly elements of both the *context* and the *contents* of lithic scatters are available to us as archaeologists as the *clues and keys* through which we develop our own analogous understandings of these places.

Chapter two has summarised themes in post-processual landscape archaeology, in particular landscape phenomenology, taskscape and the dwelling perspective. Some of these ideas are returned to in chapter five, which looks at how archaeologists have thought about stone tools and lithic scatters, and in chapter 6 in which the methodologies used in this study are outlined.

Chapter Three: Prehistoric Devon, a regional context

Chapter three establishes the regional and temporal context of the prehistory of the lower Exe valley, Devon. It focus on the physical and archaeological attributes of a wider area, essentially that of the modern county of Devon. Authors (for example, Durrance and Lamming 1982b, 3-6), have commented that Devon makes little sense as a distinct geological or topographical entity in its own right. Neither of the county's land boundaries are marked by a significant change in landform or underlying geology. The county boundary would certainly have had no significance in prehistory (Jones 2005, 123; Quinnell 1988, 3). For this reason reference will occasionally be made to areas of neighbouring counties, in particular the western fringe of Cornwall and the Somerset portion of Exmoor.

The temporal scope of this chapter is defined by the archaeology of the study area. Research focuses on a series of lithic scatters and monuments in the lower Exe valley that span the Early Mesolithic to the Early Bronze Age (c. 9500 BC to c. 1500 BC) in date. In Devon this period begins with the ephemeral traces of post-glacial hunter-gatherers and ends with the monumental burial mounds and extensive coaxial field systems of the Bronze Age. Although it is likely that the activity that created both lithic scatters and monuments in the Exe valley may have continued into the later second millennium BC, it is intended that this time span encapsulates the majority of their use.

3.1 Physical context

3.1.1 Topography, geology and climate

Devon is situated across the width of the south-west peninsula, to the east of Cornwall and to the west of Somerset and Dorset (see Figure 3.1.1). Although it is placed in Fox's (1938) highland zone, it is a topographically diverse area combining extensive coastlines with both upland and lowland areas. Devon has one of the longest coastlines of any British county (Durrance and Lamming 1982b, 1), with the sea never being more than 40km away (Todd 1987, 1).

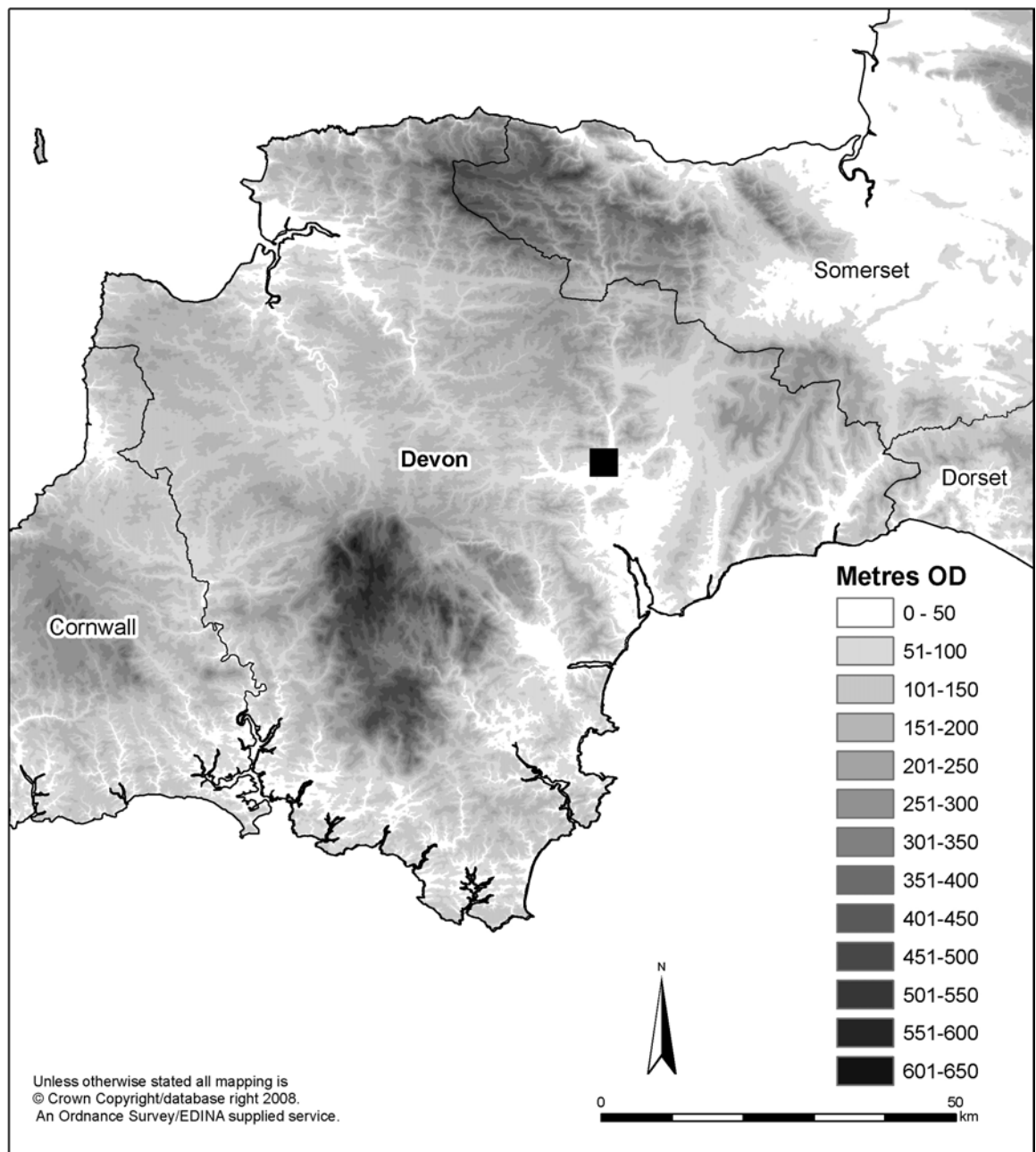


Figure 3.1.1 Devon location and topography. Location of detailed study area indicated by the black square.

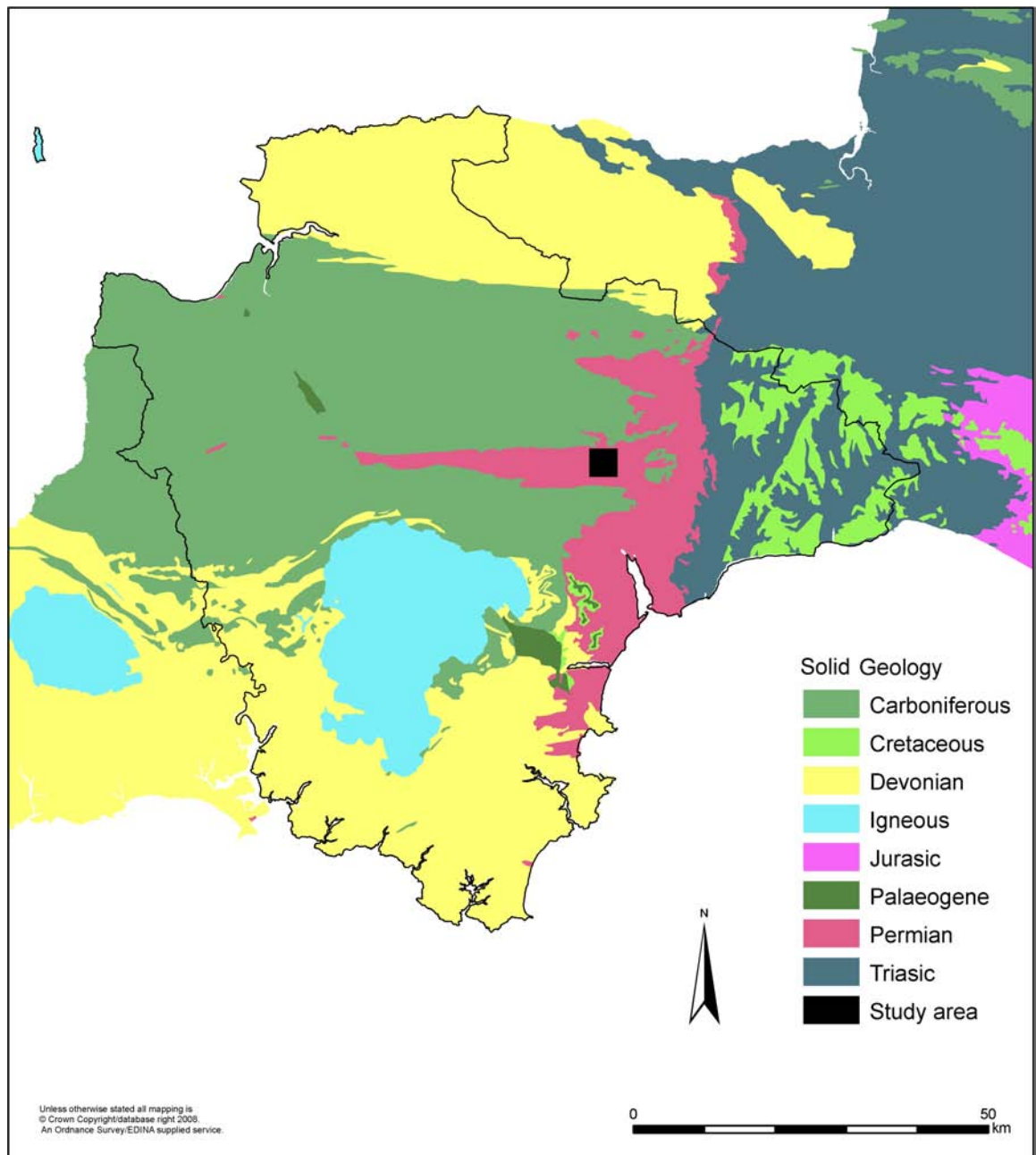


Figure 3.1.2 Devon geology. Location of detailed study area indicated by the black square. (Based upon data provided by British Geological Survey © NERC. All rights reserved)

Its diverse topography is due to its complex geology (Durrance and Lamming 1982, 1). Durrance and Lamming (1982, 3) describe the county as occupying parts of two different '*geological kingdoms*', that of the older harder igneous and metamorphic geologies of Cornwall, and that of the more recent, softer geologies of the majority of southern Britain. All geological epochs from the Devonian onwards are represented in Devon. Figure 3.1.2 illustrates the surface extent of each geological unit.

Devon's climate is shaped by its southerly latitude and projection into the Atlantic Ocean (Webb 2006, 30). On average the county's climate is warmer and wetter than much of the British Isles (Webb 2006, 30). There is a large degree of variation in the county's climate due to its range of altitudes. For example, there is a difference of 1200mm average rainfall between Torbay on the south coast and eastern side of Dartmoor, a distance of less than 20km (Caseldine 1999, 32).

Natural England divide Devon into six countryside character zones broadly defined by topography, climate, soils and underlying geology (Natural England 2009). These zones are the upland areas of Dartmoor, Exmoor and the Blackdown Hills, and the lower lying areas of the Culm Measures, the Devon Redlands and South Devon. Figure 3.1.3 shows the location and extent of each zone and table 3.1.1 summarises their characteristics.

3.1.2 Archaeological visibility

The nature of modern soils, and the resultant differences in their present day exploitation, has had a marked influence on the visibility and subsequent discovery of prehistoric archaeological features in the Devon landscape. The prehistoric archaeology of Dartmoor, characterised by stone built monuments on what is today agriculturally marginal land, has had a long history of high profile archaeological research (for example, Butler 1991; 1993 1997; Fleming 1988; Proceedings of the Devon Archaeological Society 1979; 1994). Consequently it has had a raised profile compared to that of the surrounding lowlands.

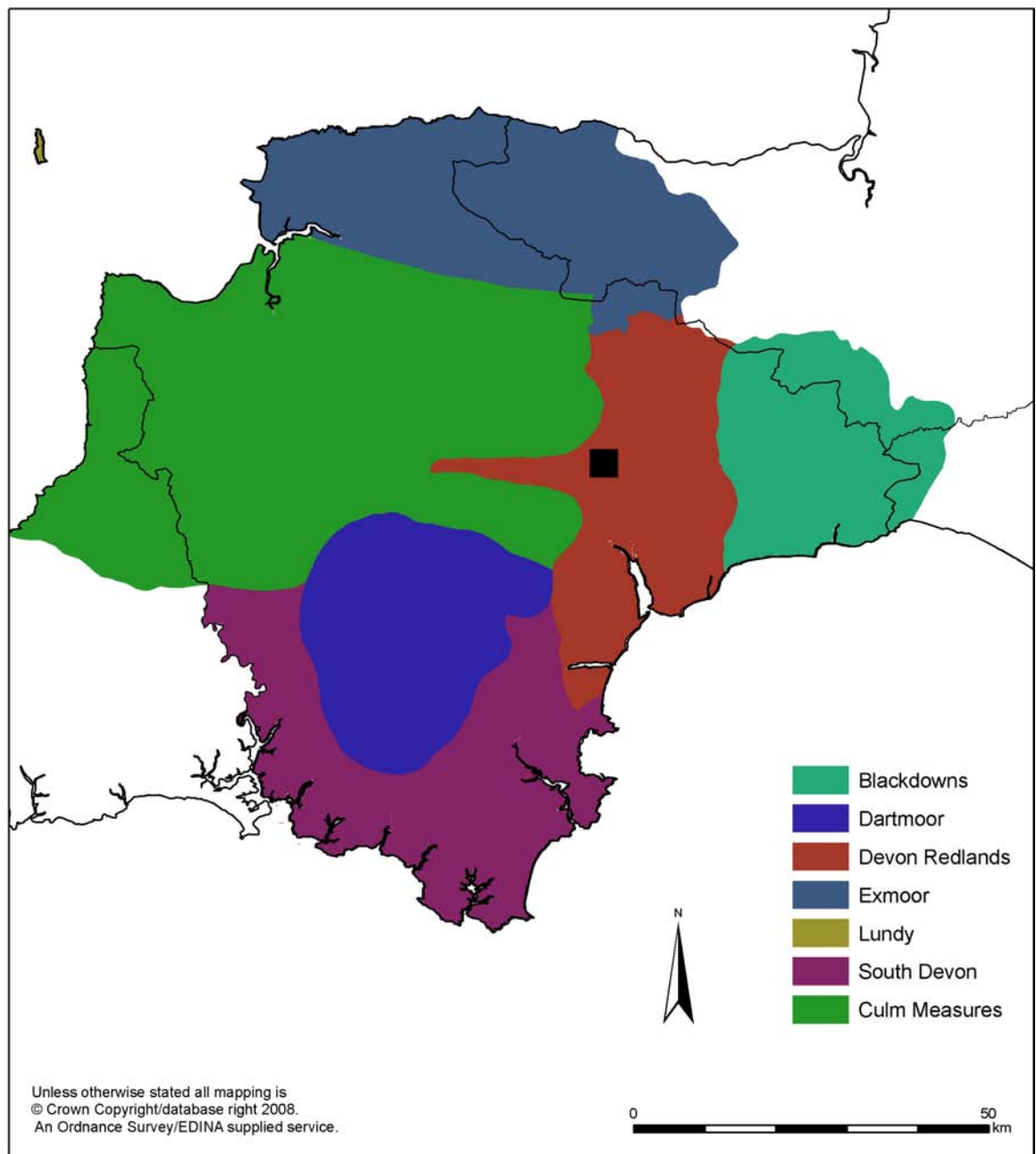


Figure 3.1.3 Devon topographic zones. Location of detailed study area indicated by the black square (after Natural England 2009)

Zone	Character
Dartmoor	Granite uplands up to 650m OD. High plateau comprising granite outcrops (tors) spreads of granite rubble (clitter), and areas of blanket peat bog. High rain fall, rivers valleys form deeply incised gorges on moorland edge. Very marginal land, moorland and rough grazing.
Exmoor	Devonian geology up to 519m OD. High plateau with extensive areas of peat bog cut by a series of valleys. High rainfall, very marginal land, moorland and rough grazing. Tall cliffs on north coast. Extensive beaches and dunes on north-west coast.
Blackdown Hills	Greensand and chalk upland up to 300m OD. Flat topped plateaus with steep sided scarps and valley sides. Small areas of heath, mixed pasture and arable agriculture. Tall cliffs on the south coast, especially chalk cliffs in Beer area.
Culm Measures	Series of Carboniferous sandstone and shale ridges up to 200m OD cut by complex network of incised valleys. Relatively high rainfall and marginal clay soils. Mixed pasture and arable with small areas of moorland/rough grazing. North coast comprised of tall cliffs, some beaches in association with Taw/Torridge estuary on north coast.
Devon Redlands	Pronounced, and often steep sided, rolling hills up to 230m OD high. Underlain by Permian sandstone and fertile, well-drained red soils. Predominantly arable agriculture with some grazing. Beaches and red cliffs interrupted by rias estuaries on the south coast.
South Devon	Coastal plateau comprising smooth rounded hills at approximately 150m OD cut by a series of rivers. Underlain by Devonian geology and soils of moderate quality. Mixed grazing and arable agriculture. Beaches and cliffs and several rias estuaries on the south coast. Several inland caves exist in limestone areas.

Table 3.1.1 Devon topographic zones (after Natural England 2009)

Essentially Dartmoor's archaeological remains tend to be relatively robust and have been subjected to lesser agricultural erosion in the later prehistoric and historic period. By contrast the prehistoric archaeology of lowland Devon is characterised by less robust, timber and earth built structures, constructed on land that has been exploited with an increasing intensity since late prehistory. As a result the prehistoric archaeology of lowland Devon is less visible and it is only in the last 25 years that anything like the density of activity seen on Dartmoor has begun to be recognised in lower lying areas (Griffith 1994).

Differences in archaeological visibility occur between lowland areas too. A combination of extensive areas of arable agriculture and the propensity of the soils of the Devon Redlands to produce archaeological crop marks has resulted in a marked concentration of later prehistoric sites. By contrast the surrounding Culm Measures are characterised by a combination of poorly drained soils and a present day predominance of pasture, rough grazing and forestry, all of which combine to make the area unproductive in terms of archaeological crop marks. It remains to be seen to what extent the level of prehistoric activity seen on the Devon Redlands is 'real', and reflects a preferential use of the lighter soils, or is simply the product of differential visibility, with similar levels of activity existing, but as yet invisible, on the Culm Measures (Griffith 1985, 314).

3.2 Mesolithic Devon

The following section reviews the current state of palaeoenvironmental and archaeological knowledge for Mesolithic Devon. For the purposes of this section the Mesolithic will be taken to be the period c. 9500 - c. 3800 BC (Tolan-Smith 2008, 132) and will be sub-divided into an earlier period (c. 9660 – c. 7500 BC) and a later period (c. 7500 – c. 4000 BC) (Hosfield *et al.* 2007, 40). The beginning and end of the British Mesolithic is often defined technologically by the presence in the archaeological record of microliths (Tolan-Smith 2008, 132). The Early Mesolithic period being characterised by microliths made on larger, broader blades, and the later period being characterised by microliths made on smaller, narrower blades (Tolan-Smith 2008, 132). The end of the Mesolithic at c. 4000/3800 BC is a nominal date for the beginning of the Early Neolithic.

3.2.1 Mesolithic sea-level, environment and subsistence

The modern coastline of Devon is the result of significant changes in sea-level

during the Holocene. At approximately 19,000 -16,000 BC sea levels were around 130-140m lower than today (Hosfield *et al.* 2007, 40), and large areas of coastal plain would have existed on both the north and south Devon coasts. As temperatures rose during the early Holocene so to did sea levels. By the start of the Holocene/ beginning of the Mesolithic (c. 10,000 BC) sea levels were at around 40-35m below present levels (Caseldine 1999, 28; Hosfield *et al.* 2007, 41). At the beginning of the Late Mesolithic period (approximately 7500 BC) sea levels were at roughly 20m below present levels (Caseldine 1999, 28). By the beginning of the Neolithic (4000-3800 BC) sea levels would have been at approximately 5m below modern levels (Hosfield *et al.* 2007, 41) and by 1000BC they had stabilised at around current levels (Caseldine 1999, 28). Figure 3.2.1 showing the 10 and 40 metre submarine contours relative to the modern coastline of Devon gives an approximation of the Mesolithic, and to a lesser extent Neolithic, coastal land surfaces that have been lost to rising sea levels. This does not take into account subtle localised variation caused by isostatic effects or subsequent marine erosion (Hosfield *et al.* 2007, 27). Holocene sea level rise was also responsible for the drowned river valleys, or rias, of the south Devon coast (Caseldine 1999, 28), for example, the Tamar/Plym estuary, the Kingsbridge estuary, Dart, Teign, and Exe. What would have been broad flat valleys carrying relatively small rivers were transformed into large tidal bodies of water reaching far inland.

The Mesolithic period, which spans over 6,000 years from the end of the last glaciation to the beginning of the Neolithic, sees enormous environmental change due to a warming climate, rising sea levels and an increasing anthropogenic influence on the environment. Knowledge of the Mesolithic, Neolithic and Early Bronze Age palaeoenvironmental sequence for Devon is almost entirely based on pollen analysis. The acidic nature of the majority of Devon's soils means that other palaeoenvironmental evidence, as well as faunal remains, are only preserved in exceptional circumstances. The large and topographically diverse nature of Devon, in combination with the uneven distribution of palaeoenvironmental investigation, has necessarily produced a series of windows of varying clarity into the palaeoenvironmental history of the county, and not a single homogenous interpretation.

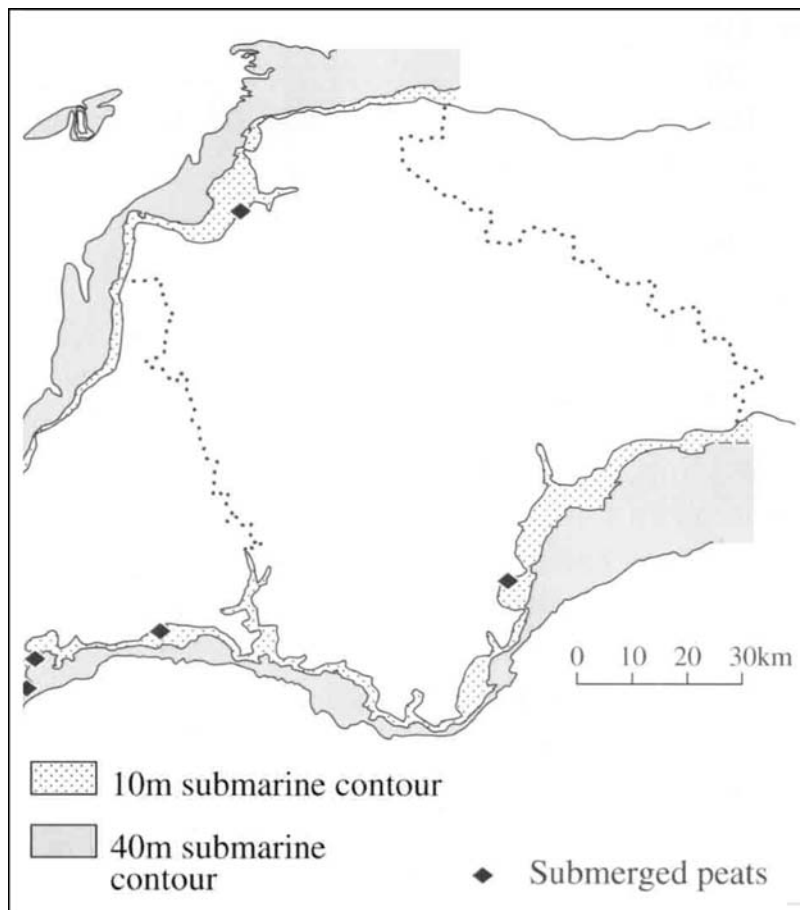


Figure 3.2.1 Holocene coastlines. 40m contour marks approximate extent of the coastline at the start of the Holocene. 10m contour marks approximate extent of Late Mesolithic coastline (after Caseldine 1999, 28).

The first signs of human impact on the environment in Devon occur in the Late Mesolithic. Research on Dartmoor suggests that Late Mesolithic communities were actively altering tree cover by c.5700- 4300 BC (Caseldine and Hatton 1994, 40-2; Simmons *et al.* 1983). This has been interpreted as a strategy for attracting game animals for hunting and Caseldine and Hatton (1994, 40-2) implicate this process in the beginnings of the formation and expansion of blanket peat on the moor. Other short-lived Late Mesolithic burning/clearance events have been identified in lower lying locations at Sourton Down on the northern edge of Dartmoor (Reed and Weddell 1997, 108), Exebridge to the south of Exmoor (Fyfe *et al.* 2003, 174-6) and Bolham in the Blackdown Hills (Hosfield *et al.* 2007, 47).

The coastal midden at Westward Ho! and Three Holes Cave, Torbryan have produced the only securely dated Mesolithic faunal assemblages in Devon.

The faunal assemblage from the Late Mesolithic midden at Westward Ho! on the north coast shows that both terrestrial and coastal resources were exploited. Red and roe deer bone and antler make up the majority of the animal bone assemblage, with smaller quantities of aurochs bone (Balaam *et al.* 1987, 223). The marine molluscan assemblage is dominated by mussel and peppery furrow shell (Balaam *et al.* 1987, 199-02). Small quantities of coastal fish bones were also recovered (Balaam *et al.* 1987, 180). At Three Holes cave, Torbryan, located midway between the south coast and the southern edge of Dartmoor, the Late Mesolithic faunal assemblage includes red deer, roe deer, wild pig and unidentified bird bones (Roberts 1996b, 202). The bones in the Three Holes assemblage show evidence of human activity, including cut marks from stone tools and burning (Roberts 1996b, 202).

3.2.2 Mesolithic archaeology (figure 3.2.2)

In comparison with its neighbouring counties Devon has a relatively poorly investigated Mesolithic archaeological record (Hosfield *et al.* 2007, 53). The record is dominated by Mesolithic material found as surface lithic scatters. A much smaller amount of material has been recovered from the excavation of *in-situ* Mesolithic deposits at the following sites: Three Holes cave, Torbryan (Roberts 1996a and b); the coastal sites at Westward Ho! (Balaam *et al.* 1987) and Yelland (Rogers 1946); and from the inland occupation site at Hawkcombe Head (Riley and Wilson-North 2001; Gardiner 2007; Hosfield *et al.* 2007, 52).

Caves

In addition to the faunal assemblage, the excavation of later Mesolithic contexts at Three Holes cave produced 32 perforated/modified periwinkle and cowrie shells, interpreted as having an ornamental function (Roberts 1996b, 201-2). A later Mesolithic lithic assemblage was also recovered. The assemblage is struck from beach pebble flint and is dominated by the production of small blades and waste from microlith manufacture. It includes a number of microliths (small scalene triangle and narrow-rod forms) and a tranchet axe resharpening flake (Roberts 1996b, 201). Roberts (1996b, 201) highlights the potential contacts between the coast (pebble flint lithic raw material) and the uplands (the similarity between the Three Holes assemblage and several found on the eastern fringe of Dartmoor) evidenced by the lithic assemblage. Mesolithic

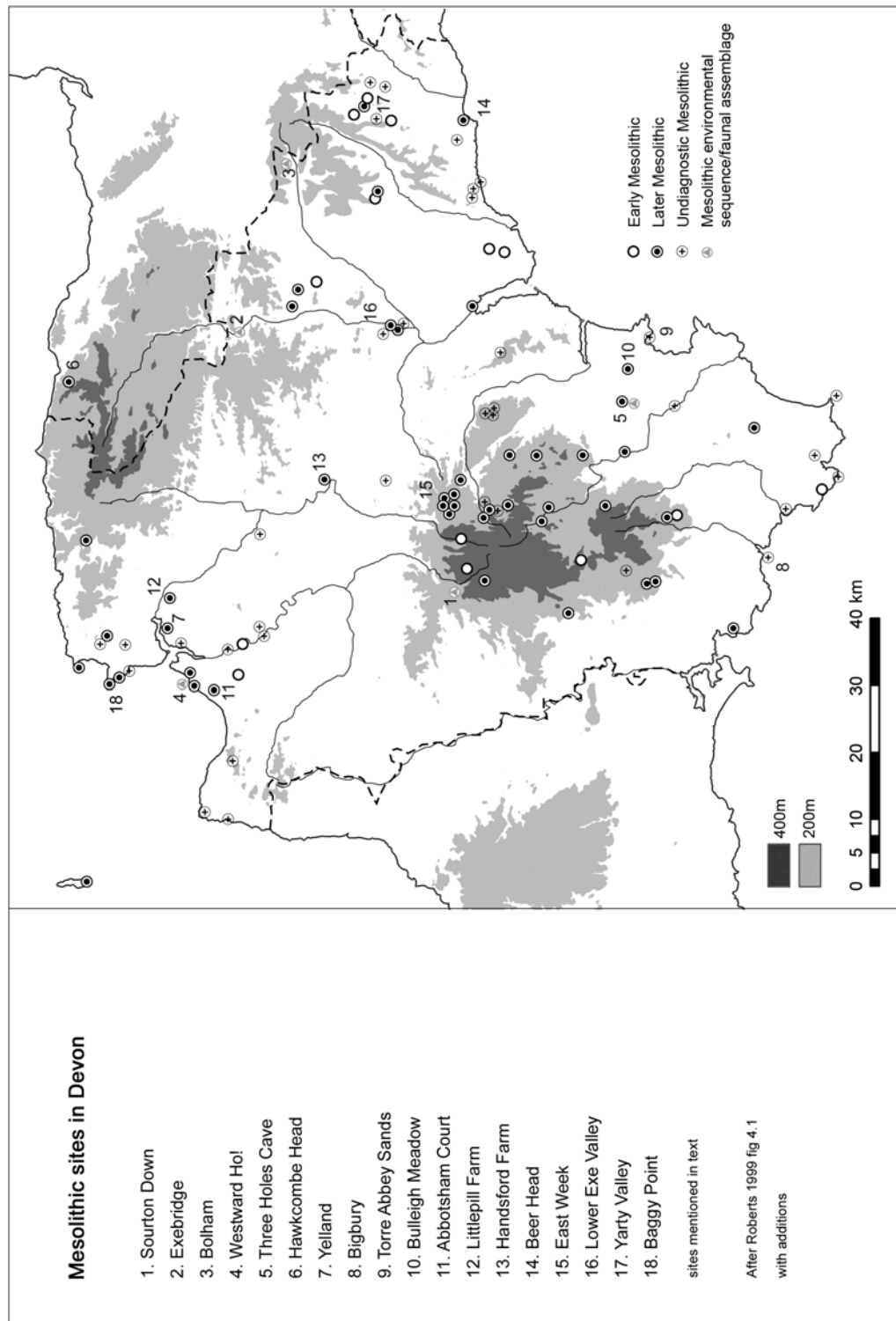


Figure 3.2.2 Mesolithic Devon

material has also been recovered from other south Devon cave sites including Kent's Cavern (Chamberlain *et al.* 2001).

Coastal sites

Submerged Mesolithic land surfaces have been identified in the Bideford Bay area of the north Devon Coast at Westward Ho! (Balaam *et al.* 1987; Churchill and Wymer 1965; Rogers 1946) and at Yelland (Rogers 1946). Further submerged Mesolithic deposits have been identified at Porlock in west Somerset (Boyd Dawkins 1872; Riley and Wilson-North 2001, 17-9) and potentially on the south coast at Bigbury (Winder 1923, 122-3) and Torre Abbey Sands (Wymer 1977, 65). Apart from the midden itself no other Mesolithic anthropogenic features/structures were recorded at Westward Ho! Several stratified Late Mesolithic lithic assemblages were recovered in association with the midden. The lithic assemblages are all struck from locally available pebble flint and chert, and are dominated by evidence for microlith manufacture (Balaam *et al.* 1987, 253-9).

A sealed Mesolithic land surface was identified during the excavation of an overlying double stone row of presumed Late Neolithic/Early Bronze Age date in the intertidal zone at Yelland to the east of Westward Ho! Large amounts of Mesolithic lithics were recovered from this layer (Rogers 1946, 128-32). At Bigbury Bay, Thurlestone, remains of a wooden dug out canoe were found in association with possibly Mesolithic flint work and a submerged forest (Winder 1923, 122-3). At Torre Abbey Sands, Torbay a tranche axe was found in association with a submerged forest (Wymer 1977, 65).

Excavated scatters

In addition to the coastal and cave sites mentioned above comparatively few Mesolithic sites in Devon have been excavated. A small number of Mesolithic lithic scatters have been excavated: at Bulleigh Meadow (Berridge and Simpson 1992); Abbotsham Court (Newberry and Pearce 2005) and Little Pill Farm (Leivers 2007). At each of these sites no definitely *in situ* Mesolithic material, or features, were encountered.

At Bulleigh Meadow near Torquay, south Devon, (5km east of Three Holes Cave), Mesolithic lithics were recovered during the excavation of a multi-period

lithic scatter and underlying later prehistoric features. On the basis of microlith morphology Berridge and Simpson (1992, 12-13) suggest a later Mesolithic date for the assemblage. The majority of the Mesolithic assemblage is struck from pebble flint (available locally from beach and river gravel sources as well as from the flint gravels on Haldon Ridge). A single microlith (an obliquely blunted point) is struck from greensand chert, which is available from a similar range of sources to the pebble flint (Berridge and Simpson 1992, 6-7). A shallow curving gully containing two microliths was given a tentative Mesolithic date by the excavators (Berridge and Simpson 1992, 2-3).

A multi-period lithic scatter was excavated at Abbotsham Court on the Culm Measures less than 100m inland from the modern cliff line on the north coast (Newberry and Pearce 2005). The scatter lies approximately 2km south-west of the midden site at Westward Ho! (see above). Limited surface collection and the subsequent excavation produced 1785 pieces of worked stone. Whilst the assemblage contains small amounts of possible upper Palaeolithic material and Neolithic material the majority of the scatter is comprised of Mesolithic material (Newberry and Pearce 2005, 1). The Mesolithic assemblage includes scrapers, awls/piercers (including one made from a sandstone pebble), several microliths, micro-burins and micro-denticulates, blade segment tools and a chopper. On the basis of microlith morphology the authors suggest a later Mesolithic date for the Mesolithic component of the assemblage. The majority of the assemblage is struck from pebble flint available from local beach deposits as well as a local inland flint gravel deposit at Orleigh Court (Simpson and Rogers 1937). Very small quantities of raw material from more distant sources including greensand chert, Portland chert and nodular flint are also present within the assemblage (Newberry and Pearce 2005, 7).

A series of test pits was excavated in the area of a predominantly later Mesolithic lithic scatter at Little Pill farm near Barnstaple, North Devon (Leivers 2007, 1). The site lies on the Culm Measures, close to the Taw estuary. A total of 621 pieces of worked stone were recovered from the excavation of what is interpreted as a slightly disturbed, rather than *in situ*, lithic scatter (Leivers 2007, 1 and 11). The Mesolithic component of the assemblage is interpreted as later Mesolithic on the basis of microlith morphology (Leivers 2007, 11). A smaller Neolithic/Early Bronze Age component is also present in the

assemblage. Diagnostically Mesolithic artefacts include a small number of microliths and micro-burins (Leivers 2007, 8-9). The majority of the assemblage is struck from pebble flint of variable quality (probably from similar sources to Abbotsham Court) and much smaller quantity of greensand chert (Leivers 2007, 6). Although not regarded as being truly *in situ*, spatial analysis of the material from each test pit suggested the presence of three diffuse clusters of knapping activity possibly associated with hearths (Leivers 2007, 10-11).

Although just over the county boundary in the Somerset portion of Exmoor, recent work on the later Mesolithic site of Hawkcombe Head is of regional significance. Geophysical survey and the targeted excavation of a previously known lithic scatter close to a series of spring heads on northern edge of the moor has led to the discovery of several Late Mesolithic features as well as *in situ* lithic material. Excavated features included a clay floor associated with a number of post holes interpreted as a temporary structure (Gardiner 2007, 84-7) and a hearth (Gardiner 2007, 88). The hearth produced a radiocarbon date of 6390-6220 cal BC (GU-11979) and an isolated posthole with a date of 6770-6510 cal BC (GU-11978). The excavated lithic assemblage comprises nearly 2500 pieces of worked stone including a range of microlith forms, (backed blades, isosceles and elongated triangles and lanceolates) as well as micro-blade cores and thumbnail scrapers (Gardiner 2007, 91-92). The majority of the assemblage was struck from pebble flint, available from beaches c. 40km further west on the north Devon coast, as well as small quantities of greensand chert from the Blackdown Hills c. 40km to the south-east (Gardiner 2007, 92). Several bevelled pebble tools were also recovered (Gardiner 2007, 91-92). Geophysical survey of a Mesolithic surface lithic scatter at Handsford Farm, Chawleigh immediately to the east of the Taw valley on the Culm Measures has revealed a series of anomalies comparable in form to some of the later Mesolithic features excavated at Hawkcombe Head (Hosfield *et al.* 2007, 54 and J. Daynes *pers comm.*).

Surface scatters

Very few Mesolithic surface scatters in Devon have been thoroughly examined or published in any detail. As a result the majority of these scatters are classed as “*undiagnostic Mesolithic material*” (Roberts 1999, 48). Material from scatters by its very nature is difficult to interpret being unstratified and frequently

representing mixed, multiple phases of activity. On the basis of lithic scatter evidence, it is not uncommon in Devon to find evidence of the same locale being utilised from the Early Mesolithic until the Early Bronze Age (for example, Miles 1976; Quinnell 1994, 50; Silvester *et al.* 1987).

A small number of diagnostically Early Mesolithic scatters have been identified in Devon, the majority of which cluster in east Devon, with a smaller number found throughout the rest of the county including several on Dartmoor. Diagnostically later Mesolithic material has a wider distribution, occurring in a range of upland, lowland and coastal settings. Major published Mesolithic scatters from Devon include Beer Head (MacAlpine-Roberts 1929-32), a series of scatters from East Week (Greig and Rankine 1953; Collop 1973), Baggy Point (Plumber and Plumber 2002), the lower Exe valley (Silvester *et al.* 1987) and the Yarty valley (Berridge 1985).

The East Week collection was made in the 1950s on the Culm Measures immediately to the north of Dartmoor in the parishes of Throwleigh, South Tawton and Drewsteignton. The collection covers an area of over 1.6km² and comprises over 26000 artefacts from several discrete concentrations of material, which span the Mesolithic to the Late Neolithic/ Early Bronze Age in date. The published article on the collection (Greig and Rankine 1953) does not differentiate between earlier and later Mesolithic material. Several high-density Mesolithic scatters are identified within the collection against a low-density background Mesolithic presence across much of the collection area. High-density Mesolithic scatters are located close to springheads or streams (Greig and Rankine 1953, 15). Mesolithic lithic material from the collection comprises a range of debitage from microlith manufacture including partially finished microlith forms as well as micro-blades, micro-burins and micro-cores (both single and opposed platformed). Finished microliths include obliquely blunted forms as well as scalene triangle and sub-triangle forms (Greig and Rankine 1953, 13) potentially suggesting both earlier and later Mesolithic activity. Blade segment implements, scrapers and burins/gravers are also present in the Mesolithic assemblages (Greig and Rankine 1953, 12-15). The majority of the Mesolithic material is struck from flint (from both nodular and pebble sources), with a smaller component of greensand chert (2-3%) and a very small amount of Portland Chert (Greig and Rankine 1953, 23-4). A number of quartzite

pebble hammerstones and a single quartzite pebble macehead were also identified in association with the Mesolithic material. Greig and Rankine (1953, 23-4) on the basis of the raw materials utilised suggest that the Mesolithic inhabitants of the East Week area had a range of movement of at least 30-40 miles.

Berridge's 1985 paper focuses chiefly on three Early Mesolithic scatters, Telegraph Cottage, Crandons Cross and Aller Farm, from the Yarty valley on the greensand geology of the southern fringe of the Blackdown hills. With the exception of the Telegraph Farm scatter, which contains a small Neolithic component, the scatters are considered to represent relatively unmixed, single period (although potentially multi-episodic) activity (Berridge 1985, 17). Berridge suggests an Early Mesolithic date for the sites on the basis of microlith form, essentially larger microliths dominated by obliquely blunted forms (1985, 5-11). Based on the proportion of obliquely blunted microliths relative to other forms he suggests that the Telegraph Farm site is earliest (eighth millennium BC), Crandon's Cross next at c. 7000 BC and Aller Farm at c. 6500 BC (Berridge 1985, 17-8). In addition to flake/blade based tools each of the assemblages contains several axes and adzes (core tools). Berridge (1985, 11-7) suggests that large number of core tools at Crandon Cross (23) is indicative of these tools being manufactured rather than just used on the site. Unsurprisingly due to their location on the greensand all of the assemblages contain a much larger greensand chert component (between 40 and 70%) than scatters found elsewhere in Devon (Berridge 1985, 4).

Baggy Point is a narrow peninsular rising to c.100m OD on the north Devon coast. Although now surrounded on three sides by the sea, during the Mesolithic it would have overlooked extensive areas of either coastal plain or intertidal zone (Griffith 1988, 21). Mesolithic surface lithic scatters have been recognised there since the late nineteenth century (Gardner 1957, 162-3). Fieldwalking in 1992 produced 2526 pieces of worked stone predominantly of Mesolithic date with a smaller Early Neolithic component (Plumber and Plumber 2002). Both early and Late Mesolithic material has been identified in the assemblage mostly struck from locally available beach pebble flint and smaller quantity of more distantly available greensand chert (Plumber and Plumber

2002). Within a broad, low-density scatter Mesolithic material is concentrated in the area of a small level platform (Plumber and Plumber 2002).

A series of Mesolithic lithic scatters have been identified in the Uglow collection from the lower Exe valley. These scatters include both early and Late Mesolithic material. One dense scatter (Nether Exe 1) has been subject to systematic gridded surface collection (Silvester *et al.* 1987, Bayer 2008). See chapter 4.1.4 below for a fuller discussion of the Exe valley material.

Material culture

With the exception of a number of perforated shells from Three Holes cave (Roberts 1996b, 201), Mesolithic material culture from Devon is comprised solely of lithic finds. The dating of Mesolithic lithic assemblages is generally based on variation in the size and form of microliths. A number of different typological models have been proposed for south-west England, including Devon (Jacobi 1979). The most recent model (Roberts 1996b; 1999, 50) proposes a sequence for south-west England, that views earlier Mesolithic microlith assemblages as being dominated by curved backed forms and oblique points, replaced by assemblages dominated by small scalene triangles and straight backed pieces by c. 7000 BC, themselves superseded by assemblages dominated by micro scalene triangles and rod forms.

A range of raw materials were utilised in Mesolithic lithic assemblages, including flint from beach pebbles, inland gravel sources and *in-situ* chalk flint (Newberry 2002; Newberry and Pearce 2005). Greensand chert was also extensively utilised. Berridge proposes a model for Mesolithic raw material usage in east Devon and west Somerset that sees Early Mesolithic assemblages being dominated by Greensand chert with the use of flint becoming increasingly important from the later Mesolithic onwards (Silvester *et al.* 1987, 18-9).

Several sandstone tools have been found on coastal sites such as Elmscott (Gardner 1957) and Abbotsham (Newberry and Pearce 2005). A sandstone piercer from Abbotsham has been interpreted as a tool for removing shellfish from rocks (Newberry and Pearce 2005).

3.3 Neolithic and Early Bronze Age Devon

The following section reviews the current state of palaeoenvironmental and archaeological knowledge for Neolithic and Early Bronze Age Devon. For the purposes of this section the Neolithic will be taken to span the period c. 4000 BC to c. 2500 BC. The beginning of the Neolithic is marked by a nominal date for the transition between the Late Mesolithic and Early Neolithic. The Neolithic is subdivided into an earlier and later phase at approximately 3000 BC and followed by the Early Bronze Age spanning the period c. 2500 BC to c.1500 BC. The beginning of the Early Bronze Age at c. 2500 BC is a nominal date marking the arrival of the first metals in Britain.

The inception of the British Neolithic is marked by the appearance in the archaeological record of ceramics, new forms of stone working (for example, polished stone axes and leaf-shaped arrowheads), the first domesticated crops and animals, and the first monuments (for example long barrows and causewayed enclosures). The end of the Late Mesolithic and beginning of the Early Neolithic are not securely dated in Devon. Whilst better data exists further in neighbouring Dorset and Somerset (Pollard and Healy 2007, 75), in Devon the picture is less clear. Three Holes Cave, Torbryan has a dated stratigraphic sequence, which spans the period of the transition. However, there is a substantial gap between the latest dates associated with diagnostically Late Mesolithic material (5480-5070/5290-4840 cal BC: OxA-4491/OxA-492: Roberts 1996b, 202) and the earliest Neolithic material 3990-3670 cal BC (OxA-4493: Berridge 1996, 203)

Whittle *et al.* (2011, 516) in a wide-ranging review of Early Neolithic radiocarbon dates in south-west England suggest a date of 3940-3735 cal BC for the earliest Neolithic activity in Devon and Cornwall. This date range is based on dates from a range of different contexts including, unenclosed occupation sites/pits, cave deposits and causewayed enclosures.

3.3.1 Neolithic and Early Bronze Age environment and subsistence

Sea level.

There is evidence for continued sea level rise into the Neolithic and Early Bronze Age. At c. 4500 BC sea levels would have been c. 5m below present

levels and by c. 1500 BC would have been with 1-2 m of present levels (Heyworth and Kidson 1982, 94; Wilkinson and Straker 2007, 63). Although occurring at a slower pace than during the Mesolithic, the inundation of coastal areas in Devon would have continued during the Neolithic and Early Bronze Age. This flooding of Neolithic land surfaces is illustrated by the stone row at Yelland on the north Devon coast. Presumably built on dry land, the monument is today only visible at low tide (Rogers 1946).

Palaeoenvironmental record.

Whilst there are growing bodies of palaeoenvironmental evidence for both the Mesolithic (mostly wooded with short-term clearance events), and later prehistoric (open grass lands and cereal cultivation, see Fleming 1988, 106; Reed 1999, 3) environments, there is comparatively little direct evidence for the development of Neolithic and Early Bronze Age environments in Devon.

A regional model for the beginning of the Neolithic proposed by Wilkinson and Straker (2007, fig 7) sees the majority of Devon as being dominated by oak, with Dartmoor and Exmoor being dominated by birch and a small area between the lower Exe valley and Haldon ridge being dominated by alder. Wilkinson and Straker (2007, 69) suggest that on Dartmoor woodland manipulation and clearance continued into the Neolithic but was generally confined to the fringes of the moor. Caseldine and Hatton (1996) suggest that the major disappearance of trees from Dartmoor occurred during the Late Neolithic and Early Bronze Age and was due to the expansion of peat caused by a damper climate and browsing animals preventing re-growth of tree cover. Fleming (1988) suggests that the moor would have been clear of trees before the building of the Reaves at the end of the Early Bronze Age. Recent work at Shovel Down shows the establishment of heathland at c. 3630-3370 cal. BC, followed by a reestablishment of scrub in the Early Bronze Age and then the establishment of sustained grassland and grazing by c.1480 BC (Fyfe *et al.* 2008, 2250). On Exmoor it is much less clear, whilst there are some possible indications of Neolithic activity, substantial human impact on the environment is not seen until c. 1000 BC (Wilkinson and Straker 2007, 69-70). The work of Fyfe *et al.* (2003) in the lower Exe valley is currently the only published lowland palaeoenvironmental sequence for Neolithic Devon. Evidence for sustained clearance and cereal cultivation occurs after c. 3500 BC, which Fyfe *et al.*

(2003, 179) associate with Neolithic and Early Bronze Age monument building on the valley floor.

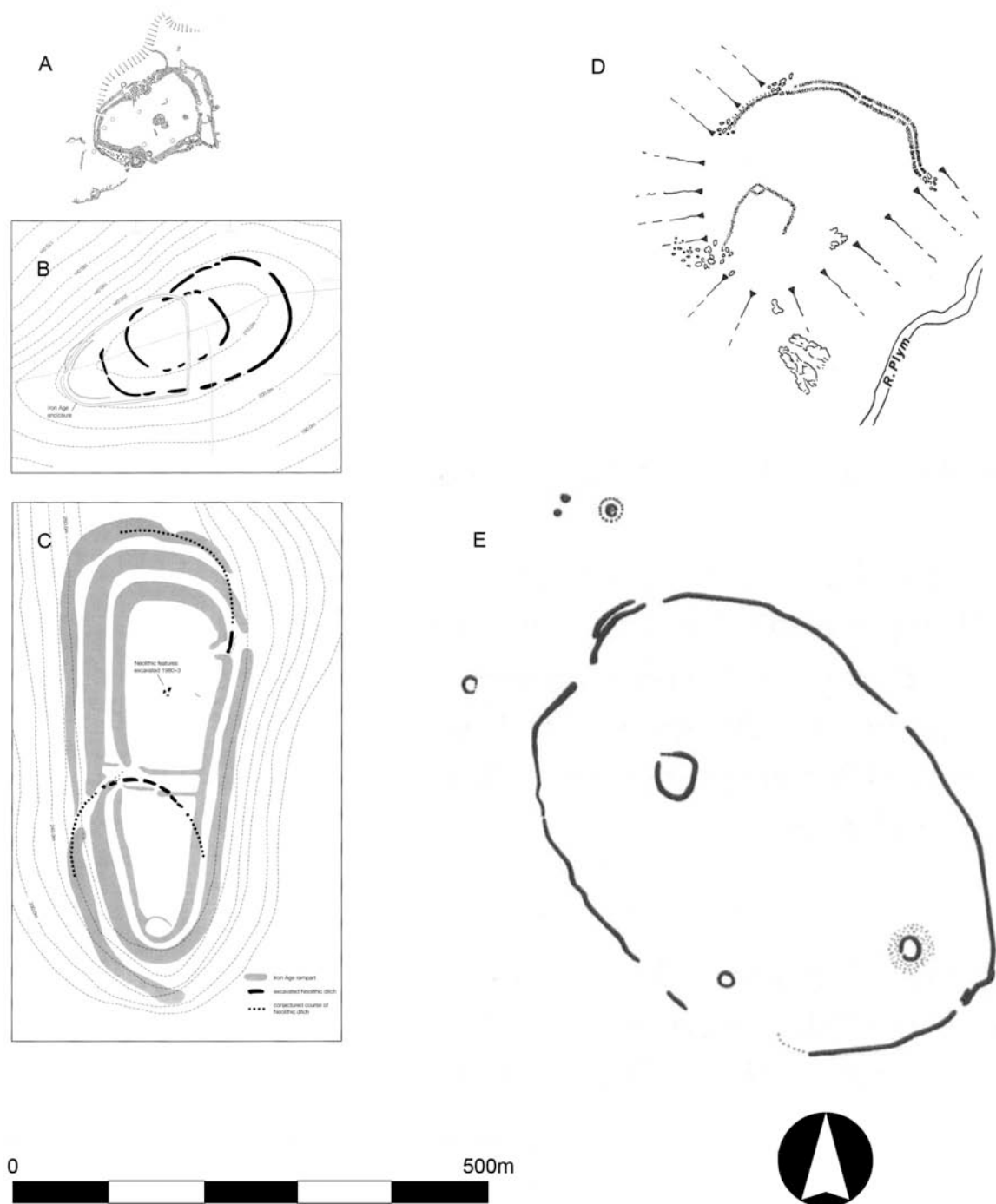
Stable isotope analysis has been conducted of human bone from Broadsands chambered tomb, and Happaway and Cow caves, all in south Devon. Results indicate that despite the proximity of the sea (particularly at Broadsands) the Early Neolithic population of south Devon consumed an almost entirely terrestrial diet (Sheridan *et al.* 2008, 10-11).

3.3.2 Neolithic and Early Bronze Age monuments

Early Neolithic enclosures (see Figures 3.3.1 and 3.3.2 and Table 3.3.1)

Devon spans the junction between two seemingly different traditions of Early Neolithic enclosure. Devon is the western limit of the distribution of classic earth cut causewayed enclosures analogous with those found across the rest of mainland Britain. All the known examples in Devon occupy prominent hill-top positions in the east of the county. Devon is also the eastern most limit of stone built tor enclosures often incorporating/enclosing naturally occurring rock outcrops, analogous with a number of other examples primarily found further to the west in Cornwall. In Devon causewayed and tor enclosures have a mutually exclusive distribution. Causewayed enclosures occur in the east of the county and tor enclosures occupying hill-top positions on Dartmoor in the west of the county.

Causewayed enclosures - Two definite causewayed enclosures, with segmented ditches and Early Neolithic dates, have been confirmed by excavation at Raddon Hill and Hembury (Oswald *et al.* 2001). Two more enclosures at High Peak and Membury have been excavated and have produced Early Neolithic dates, however, neither site has produced conclusive evidence of segmented ditches. Both sites are considered to be possible causewayed enclosures by Oswald *et al.* (2001). All four sites are in the east of the county and all occupy prominent hill-top locations with extensive views. On excavation all sites have produced Early Neolithic lithics, ceramics and axes. Recent radiocarbon dates range from 3715-3650 cal. BC (Whittle *et al.* 2011, 491) at Hembury, to 3670-3535 cal. BC (Whittle *et al.* 2011, 497) at Raddon.



- A. Whittor (after Silvester 1979)
 B. Raddon Hill (after Oswald *et al.* 2000)
 C. Hembury (after Oswald *et al.* 2000)
 D. Dewerstone (after Silvester 1979)
 E. Nether Exe (after Griffith 2001)

Figure 3.3.1 Plans of Early Neolithic enclosures in Devon

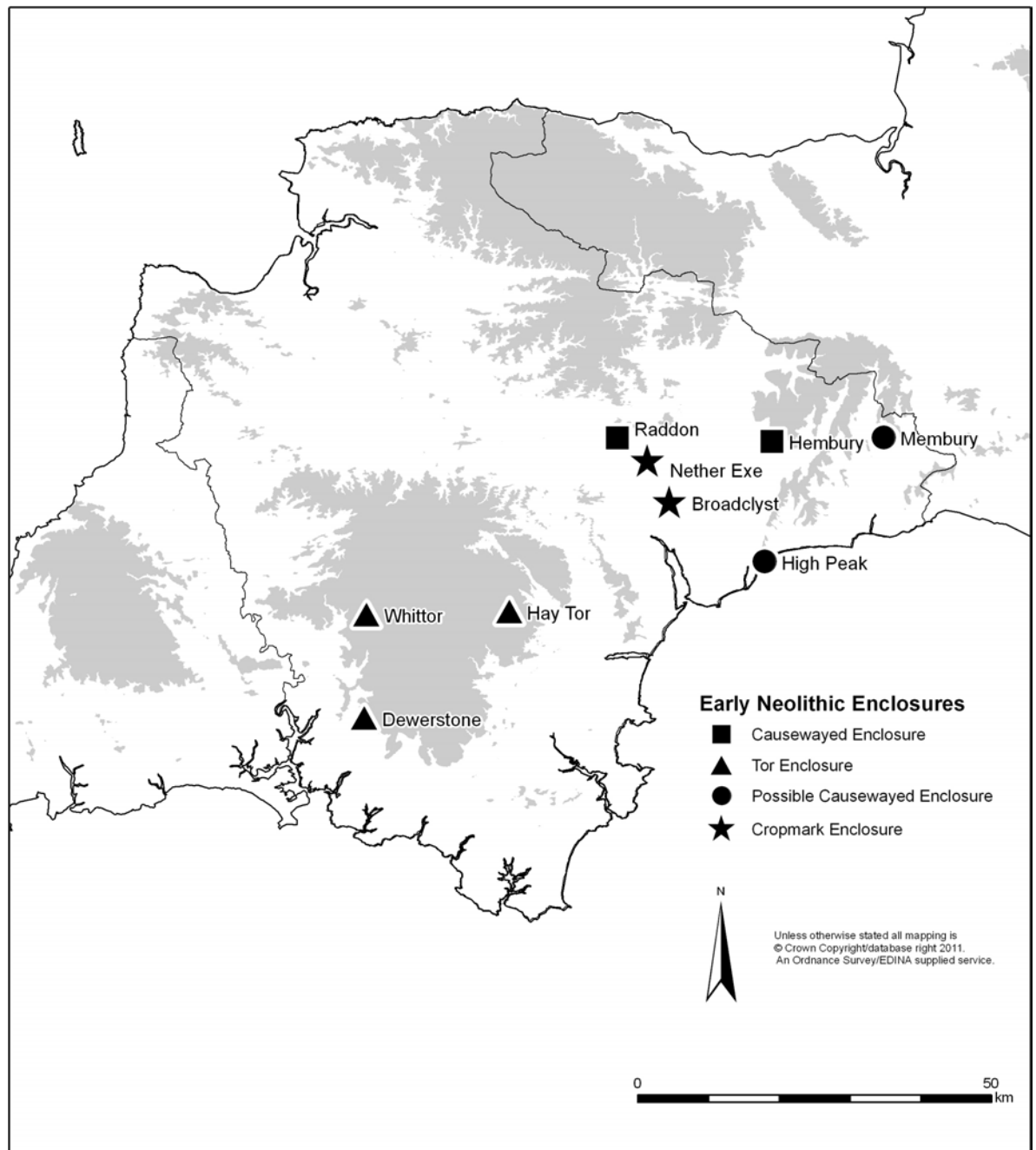


Figure 3.3.2 Distribution of Early Neolithic enclosures in Devon

Site	Type	Date	Altitude	Reference
Hembury	Causewayed	3620-3485 cal. BC	255 m OD	Liddell (1930; 1931; 1932; 1935) Todd (1984) Whittle <i>et al.</i> (2011)
Raddon	Causewayed	3670-3535 cal. BC	210 m OD	Gent and Quinnell (1999a); Whittle <i>et al.</i> (2011)
Membury	?Causewayed?	Early Neolithic artifacts	170 m OD	Tingle (2006)
High Peak	?Causewayed?	3130-2830 BC	160 m OD	Pollard (1966; 1967)
Nether Exe	Cropmark	None	30 m OD	Griffith (2001, 73) Chapter 7
Broadclyst	Cropmark	None	15 m OD	Griffith (2001, 73)
Dewerstone	Tor	None	230 m OD	Oswald <i>et al.</i> (2001, 85-90)
Whittor	Tor	None	460 m OD	Oswald <i>et al.</i> (2001, 85-90) Butler (1991, 90-2) Silvester (1979, 187-8)
Hound Tor	Tor	None	415 m OD	Oswald <i>et al.</i> (2001, 85-90)

Table 3.3.1 Early Neolithic enclosures in Devon.

Large quantities of burnt material within both the inner and outer ditches at Hembury have been interpreted as evidence for an attack on the causewayed enclosure (Mercer 1999, 150-1).

Crop mark enclosures - An Early Neolithic date has been suggested for two enclosures identified by aerial photography at Nether Exe and Broadclyst (Griffith 2001, 73). In contrast to other sites both enclosures occupy low-lying valley floor locations and enclose extremely large areas. No conclusive dating evidence has been recovered from either enclosure.

Tor enclosures - At least three Tor enclosures of probable Early Neolithic date have been identified in Devon. These enclosures belong to a group of stone built enclosures on the granite uplands of Devon and Cornwall. These enclosures are characterised by stone banks, often interrupted by multiple entrances, which either link together, or incorporate, natural rock out crops or tors. Tor enclosures are suggested to be upland equivalents of lowland

causewayed enclosures, possibly the product of the similar ideas of monumentality being played out on hard, igneous geology which precludes the digging of ditches, but facilitates the building of banks (Oswald *et al.* 2001, 85). The Devon tor enclosures are all on Dartmoor, at Dewerstone on the southern fringe of the moor, Whittor on the western fringe of the moor and Hound Tor towards the eastern edge of the moor (Oswald *et al.* 2001, 85-90). Only one of these enclosures has been excavated (Whittor in the 1890s) and their Early Neolithic date has been suggested on the basis of their similarity to the excavated Cornish examples at Carn Brea (Mercer 1981) and Helman Tor (Mercer 1997). Both of these Cornish sites have produced Early Neolithic substantial quantities of Early Neolithic lithics, including polished stone axes, and ceramics. Whittle *et al.*'s (2011, 509) review of existing a new radiocarbon dates for Early Neolithic enclosures in Devon and Cornwall shows that the range of dates for tor and causewayed enclosures is indistinguishable.

Early Neolithic funerary monuments (see Figure 3.3.3 and Table 3.3.2)

As with Early Neolithic enclosures, Devon spans the distributions of a range of potentially Early Neolithic funerary structures. These monuments are located in both upland and lowland areas. They survive as extant structures and as crop marks, and include earthen long barrows, crop marks of oblong ditched enclosures, and stone built long cairns and chambered tombs. Stone built and earthen monuments have a mutually exclusive distribution with stone structures occurring on Dartmoor and earthen structures in lowland locations. Very few of these monuments have seen extensive excavation and their Early Neolithic date and mortuary function is almost entirely based on their morphological similarity to excavated examples elsewhere in Britain.

Earthen Structures - A small number of extant earthen long barrows are known in Devon and both as extant mounds and crop marks. Two examples at Uplozman Road (Smith 1990) and Woolley (Higginbotham 1976) have been confidently identified as long barrows. Both of these long barrows have been partially excavated under modern conditions but produced no dating evidence.

Site	Type	Altitude	Reference
Upplowman Road	Long barrow	85m OD	Smith (1990)
Woolley	Long barrow	220m OD	Higginbotham (1976)
Castle Hill (218)	Oblong ditch	70m OD	Butterworth (1999a)
Castle Hill (219)	Oblong ditch	70m OD	Butterworth (1999a)
Nether Exe	Oblong ditch	26m OD	Griffith (1990; 1994)
North Tawton 1	Oblong ditch	150m OD	Griffith (1985)
North Tawton 2	Oblong ditch	145m OD	Griffith (1985)
North Tawton 3	Oblong ditch	140m OD	Griffith (1985)
Cuckoo Ball	Long cairn	290m OD	Butler (1993)
Butterdon Hill	Long cairn	320m OD	Fletcher <i>et al.</i> (1974) Butler (1993)
Corringdon Ball	Long cairn	310m OD	Butler (1993)
Gidleigh North	Chambered cairn	310m OD	Turner (1980)
Gidleigh South	Chambered cairn	360m OD	Turner (1980)
Spinsters Rock	Chambered tomb	230m OD	NMR 445766
Broadsands	Chambered tomb	30m OD	Radford (1958)

Table 3.3.2 Early Neolithic funerary monuments in Devon.

Oblong ditched enclosures - Several oblong ditched enclosures, analogous to those found elsewhere in the country (Loveday and Petchey 1982), have been found in mid and east Devon, generally as crop marks. All are found in low-lying situations. Two examples (218 and 219) were excavated at Castle Hill overlooking the Otter valley in east Devon (Butterworth 1999a, 23-26). Quantities of Peterborough ware were recovered from the ditch of 218. Enclosure 219 produced two radiocarbon dates of 3610-3140 cal BC (AA-30670) and 2920-2600 cal BC (Beta 78183).

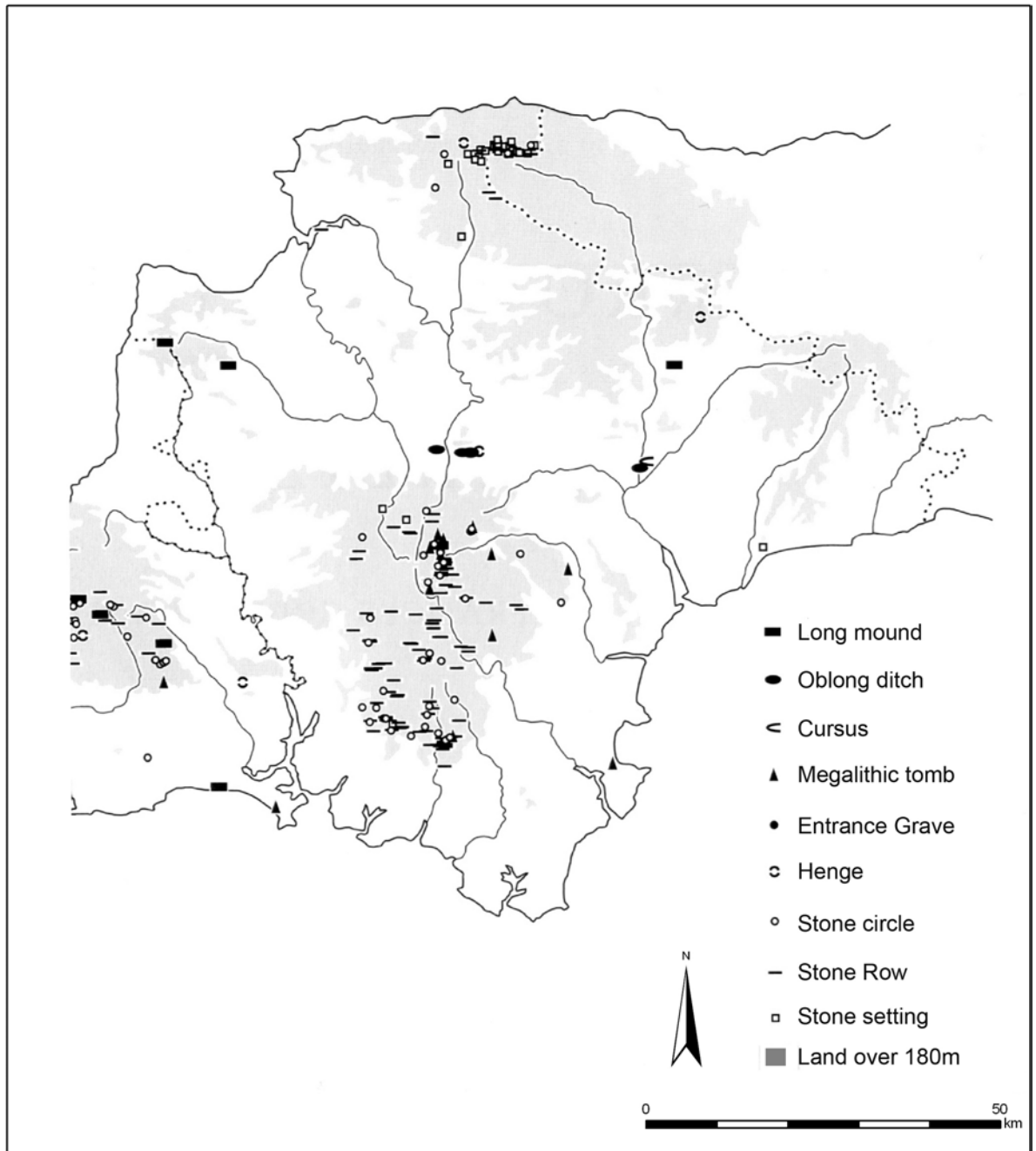


Figure 3.3.3 Neolithic funerary and ritual monuments in Devon (after Griffith and Quinnell 1999b, 56)

Stone built structures - Seven stone built Early Neolithic mortuary structures are known on Dartmoor: a cluster of three long cairns on the south-eastern fringe of Dartmoor at Butterdon Hill (Fletcher *et al.* 1974; Butler 1993), Cuckoo Ball (Butler 1993) and Corringdon Ball (Butler 1993 94-95); two chambered cairns of very different size at Gidleigh on the north of the moor (Turner 1980); and a further chambered tomb with no surviving traces of an enclosing mound or cairn on the north-east of the moor at Spinster's Rock (see Figure 3.3.4).



Figure 3.3.4 Spinster's Rock chambered tomb

The Broadsands chambered tomb close to the south Devon coast consists of a round stone built mound approximately 10m in diameter with a central stone-lined chamber capped with a series of sandstone slabs. The site was excavated in the late 1950s (Radford 1958). Four inhumations, early (Carinated Bowl), mid (Peterborough Ware), and late (Beaker) Neolithic/ Early Bronze Age ceramics and lithics were recovered (Radford 1958, 160-163). A recent program of dating the human and pig bone from Broadsands confirms the protracted use of the site. Results suggest three phases of deposition an initial phase of deposition in the earliest Neolithic (3845-3726 cal BC), a second

phase several centuries later (3517-3356 cal BC) and a final phase in the Early Bronze Age (2036-1887 cal BC) (Sheridan *et al.* 2008, 15-6).

Later Neolithic ritual monuments

Cursus monuments - A single cursus monument is known in Devon on the gravel terraces of the lower Exe valley. The site, first recorded as a cropmark (Griffith 1990), is located immediately to the north of the Nether Exe mortuary enclosure. It is aligned south-west/north-east and measures approximately 20m wide. 160 metres of its south-western end are known including the squared terminus at its south-western end.

Henges - A single henge monument has been confidently identified as a cropmark at Bow in the Devon Redlands (Griffith 1985; Figure 3.3.5). The site occupies a hill slope location, encloses an area of c. 40 by 45m and measures c. 50 by 60m across the outer edges of its ditch (Griffith 1985, 311). The henge has two entrances and has a central oval setting of 19 pits or post holes (Griffith 1985, 311). It lies within a concentration of Neolithic and Early Bronze Age monuments including the oblong ditched enclosures at North Tawton, a large number of ring ditches and smaller number of extant round barrows.

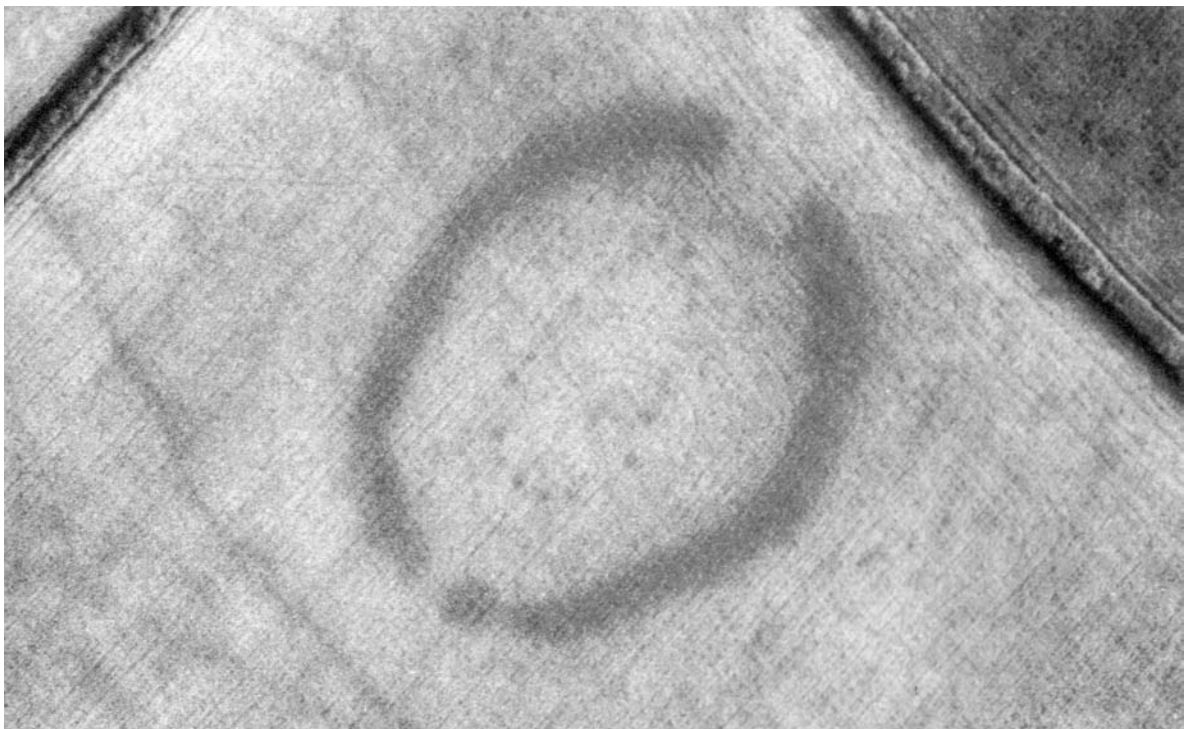


Figure 3.3.5 Cropmark of a henge with internal post settings at Bow (after Griffith 1988, 25)

Turner (1984) suggests that an oval earthwork enclosure with two entrances at Teignhead on northern Dartmoor as a possible henge. Further possible examples of henges have been identified at Parracombe common on Exmoor (Grinsell 1970, 127) and at Welsford Moor on the high area of the Culm Measures near Hartland Point (Allden 1981, 7; Clare 1986, 156; Grinsell 1970, 98; Pearce 1983). A section of a substantial ditch found at Bulleigh Meadow has been suggested as a possible henge (Berridge and Simpson 1992). Associated cremation burials gave dates of 2900-2410 cal BC (HAR 10193) and 2860-2290 cal BC (HAR 1094) (Berridge and Simpson 1992, 3-4).

Upland monuments and monument complexes - Apart from the Bow henge, and numerous round barrows and ring ditches (see below) very few examples of Late Neolithic and Early Bronze Age ritual monuments have been identified in lowland Devon. However, significant numbers of stone built monuments and monument complexes exist on Dartmoor and Exmoor.

Sixteen large stone circles are known in Devon, fourteen on Dartmoor (Butler 1997, 145; Figure 3.3.6), and a further two examples exist on Exmoor (Riley and Wilson-North 2001, 24). Although several of the Dartmoor circles were excavated in the late nineteenth and early twentieth centuries no reliable dating evidence was recovered (Butler 1997, 153). Devon circles are dated by analogy to examples elsewhere in the country to the early second millennium BC (Quinnell 1994, 56). Quinnell (1994, 56) suggests that stone circles are not necessarily analogous to henges and are likely to be slightly later in date.

The Dartmoor circles range in size from 38m in diameter at Mardon Down, to 17.7m at Shovel Down (Butler 1997, 151). Barnatt (1989, 193) divides the Dartmoor circles into three groups according to size, form, landscape setting and association. The larger monuments, are further divided into large symmetrical circles, such as Langstone moor, found at high altitudes, and large irregular circles, such as Scorhill, found at lower altitudes in river valleys. The smaller of these circles sometimes have multiple circuits (Robinson and Cosford 1986), such as Shovel Down, and are often found within wider monument complexes associated with stone rows and cairns (Jones 2005, 127). Numerous other much smaller stone circles exist on Dartmoor often at the ends of stone

rows or surrounding cairns (Jones 2005, 126). The two circles on Exmoor at Withypool and Porlock are comparable to the larger Dartmoor circles and measure 36m and 24.5m in diameter respectively (Riley and Wilson-North 2001, 24).



Figure 3.3.6 Merrivale stone circle with a standing stone in the distance

Stone rows in Devon are an almost exclusively upland feature, with 76 examples known on Dartmoor (Butler 1997, 210) and a further eight examples on Exmoor (Riley and Wilson-North 2001, 24). A single lowland row is known at Yelland on the Culm Measures coast and is situated on the modern intertidal zone (Rogers 1946). No dating evidence exists for Devon stone rows despite two, at Cholwich Town on Dartmoor (Eogan and Simmons 1964) and Lanacombe on Exmoor (Gillings *et al.* 2007; 2010), having been subject to modern excavation. Various dates for the rows have been suggested (Quinnell 1994, 54), however, it seems likely that they were constructed at the end of the Neolithic and that they continued in use until at least the end of the Early Bronze Age. On Dartmoor the end of their use overlapped with Reave construction (Quinnell 1994, 55). Quinnell (1994, 55) suggests that the rows

may have had a protracted multi-phase construction with a potential timber phase preceding the stone alignment at Cholwich Town.



Figure 3.3.7 One of two double stone rows at Merrivale

Stone rows are generally situated on sloping ground with terminal cairns at their higher ends and standing stones at their lower ends (Jones 2005, 127). The rows range in size from under 50m at Sharpitor N.E., to over 500m at Stalldown (Butler 1997, 236). They have a variety of forms including single, double, triple and multiple rows (Jones 2005, 127). On both Dartmoor and Exmoor stone rows often form part of monument complexes with sometimes several rows being found in association with stone circles, standing stones, cists and cairns, for example at Merrivale (see Figure 3.3.7), Fernworthy, Shovel Down and Porlock (Butler 1997; Riley and Wilson-North 2001, 24).

There is a huge disparity in the size of stones used in the Exmoor and Dartmoor stone rows. On Dartmoor the stones often stand 0.5m or more above ground level, where as with the '*mini-lithic*' rows on Exmoor, such as Whiteladder, many

of the stones only protrude a few centimetres above the ground surface (Riley and Wilson-North 2001, 23).

An anomalous row of very large recumbent stones has recently been discovered on Cut Hill, which, at over 600m OD, is one of the highest points on Dartmoor (Greeves 2004, Fyfe and Greeves 2008). The six stones if erected would have measured up to 2.3m in height. Dating of peat stratified above and below one of the Cut Hill stones indicate that it was in its final position (i.e. recumbent) by 3700-3540 cal BC (SUERC-10211 and 10212 combined), and was sealed by peat by 2476-2245 cal BC (UBA-8855) (Fyfe and Greeves 2008, 62-3). It is unclear whether the stones were ever upright. Fyfe and Greeves (2008, 66) suggest that the monument may belong to a separate Early Neolithic tradition of stone row construction, and that the dates for this anomalous alignment need not necessarily change the later Neolithic/Early Bronze Age date assumed for most stone rows on Dartmoor.

In addition to stone rows and circles a range of other stone settings, both 'mega' and 'mini' lithic, exist on Exmoor and Dartmoor. Butler (1997, 220) lists only three surviving examples of isolated standing stones on Dartmoor. Many others exist within wider monument complexes such as at Merrivale. A small number of isolated standing stones are known on Exmoor, for example the 3m high Longstone, near Challacombe (Riley and Wilson-North 2001, 30).

Riley and Wilson-North (2001, 27-9) list 57 examples of stone settings on Exmoor. These monuments consist of roughly geometric arrangements of small upright stones and are unparalleled elsewhere in Britain (Riley and Wilson-North 2001, 30). The recent excavation of two of the stones within the Lanacombe stone setting produced no dating evidence (Gillings *et al.* 2007, Gillings *et al.* 2010).

Early Bronze Age funerary monuments

Round barrows and ring ditches are the most prominent funerary monuments in Early Bronze Age Devon. Comparatively few radiocarbon dates exist for Devon barrows. On the basis of those dates, and by association with artifacts recovered from barrows, it is assumed that Devon barrows fall within the period c. 2200 BC to 1500 BC, with some producing dates continuing into the later half

of the second millennium BC (Griffith and Quinnell 1999b, 59). The term 'round barrow' is used here to encompass a range of monument types including stone-built cairns and ring cairns, as well as earthen round barrow mounds (see Figure 3.3.9). Ring-ditches are small circular ditched enclosures typically discovered as cropmarks. These features are generally assumed to represent the plough damaged remains of round barrows; the barrow mound having been eroded and spread by ploughing, leaving the circular quarry ditch as the only remaining feature.

A series of comprehensive gazetteers of extant Devon round barrows was published by Grinsell (1970, 1978 and 1983). The number and distribution of round barrows and ring ditches has subsequently been significantly increased by the aerial reconnaissance (Griffith and Quinnell 1999b, 60) and to a lesser extent by ground based investigation (for example, Bayer 1996). Traditionally the distribution has been confined to higher areas of the county typically above 150m OD (Bayer 1996), however, increasingly numbers of both round barrows and ring ditches are now being discovered at lower altitudes (Griffith 1985). Round barrows do occur in isolation but are more often found clustered into cemetery groups both in prominent ridge top positions (for example, Five Barrows on Exmoor, Farway in east Devon and Welsford Moor on the Culm Measures), and in lower lying river valley locations (for example at North Tawton and the lower Exe valley). These cemetery groups are frequently located to reference other, often earlier, classes of monument. Figure 3.3.8 shows the current known distribution of round barrows and ring ditches in Devon. As illustrated by the excavated examples in Table 3.3.3, Devon round barrows are disparate in size and form. They range from between 3m and 30m in diameter, 0.1m to 5m in height and encompass both rounded and flat-topped forms, both with and without external ditches and banks (Griffith and Quinnell 1999b, 59). Their final form is often the end result of a protracted and multi-phased construction and use (Jones and Quinnell 2008 46-8). Most Devon round barrow and cairn excavations were carried out during the nineteenth century. A handful of Devon round barrows and ring-ditches have been excavated and published to modern standards the results of which are summarised in Table 3.3.3.

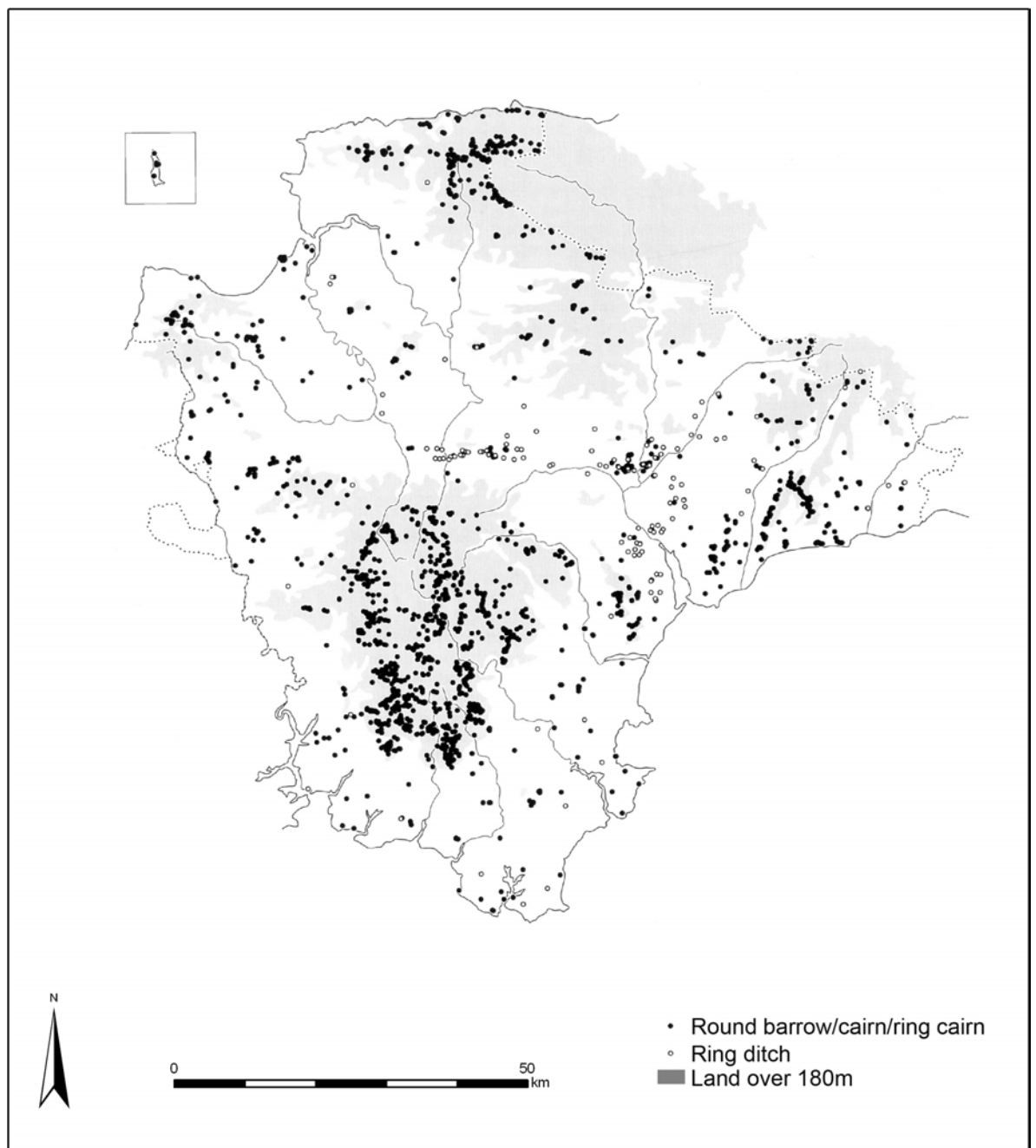


Figure 3.3.8 Distribution of Devon round barrows and associated monuments (after Griffith and Quinnell 1999b, 59).



Figure 3.3.9 Round barrow in Upton Pyne parish immediately south-west of the study area

Recent work has revisited material held in museum collections from a series of barrows and related structures near Farway, east Devon (Jones and Quinnell 2008). Nine samples of cremated bone or charcoal from seven barrows produced dates spanning 2210 and 1660 cal BC (Jones and Quinnell 2008, 27).

Two recent reviews of Devon round barrows (Griffith and Quinnell 1999b; Jones 2005, 123-134) have stressed that although round barrows/cairns/ ring ditches are frequently associated with the deposition of human remains, both as inhumations and cremations, they should be seen as having a broader ceremonial/ritual role rather than as exclusively funerary monuments. Jones (2005, 134) under-lines the frequent presence of barrows in Devon with no burials, or only small, 'token' deposits of human remains.

Site	Type	Date	Diameter	Height	Internal Structure	Burial	Other deposits	Reference
Wrangworthy Cross 1	Round barrow	None	23m	1m	Ditched with turf central mound with redeposited subsoil capping	Central inhumation in wooden mortuary structure	Flint flakes and corroded bronze dagger	Radford and Rogers (1947)
Wrangworthy Cross 2	Round barrow	None	12m	N/A	Unditched turf mound	7 inhumations in hollowed tree trunk coffins inside wooden mortuary structure	N/A	Radford and Rogers (1947)
Upton Pyne 248b/Brampford Speke 1	Round barrow	1780-1490 cal BC (BM 402)	20m	0.75	Unditched, central sand mound covered by turf layer, covered by sand, covered by red clay capping.	6 cremations beneath/within central sand mound. (3 in inverted Trevisker urns on old ground, 1 in Trevisker Urn inside stone kist cut into old ground surface, 1 cremation in scoop in ground surface, 1 in body of central sand mound)	3 discrete oak charcoal deposits from within the body of central sand mound	Pollard and Russell (1969) Wickstead (2008, 188).
Shaugh Moor 1	Ring cairn	2040-1660 cal BC (HAR-2216)	c. 10m internal, c. 12m external	0.4m	Low stone built ring	None	Charcoal deposit in central pit	Wainwright <i>et al.</i> (1979) Wickstead (2008, 188).

Site	Type	Date	Diameter	Height	Internal Structure	Burial	Other deposits	Reference
Shaugh Moor 2	Ring cairn	1960-1510 cal BC (HAR-220) from central pit. 1700-1370 cal. BC (HAR-224) from under ring.	c. 10m internal, c. 12m external	0.5m	Low stone built ring	None	Charcoal deposit in central pit with faience beads	Wainwright <i>et al.</i> (1979) Wickstead (2008, 188).
Shaugh Moor 126	Round cairn	1940-1520 cal. BC (HAR-2285) charcoal from central pit	N/A	N/A	Low stone mound with external kerb	None	Central pit including charcoal deposit	Wainwright <i>et al.</i> (1979) Wickstead (2008, 188).
Shaugh Moor 70	Round cairn	1940-1520 cal. BC (HAR-2219) from central pit	N/A	N/A	Low stone mound with external kerb	None	Central pit including charcoal deposit	Wainwright <i>et al.</i> (1979) Wickstead (2008, 188).
Shaugh Moor 71	Round cairn	1940-1520 cal. BC (HAR-2213) from central pit	3.5m	N/A	Low stone mound with external kerb	None	Charcoal deposit and ceramics in central pit.	Wainwright <i>et al.</i> (1979) Wickstead (2008)

Site	Type	Date	Diameter	Height	Internal Structure	Burial	Other deposits	Reference
Shaugh Moor 4	Round cairn	N/A	N/A	N/A	Low stone mound with external kerb	None	N/A	Wainwright <i>et al.</i> (1979) Wickstead (2008, 188).
Braton Down	Round barrow	1111-896 cal BC (BM-1148)	8/5m	N/A	Low stony soil mound surrounded by c. 10m diameter ring ditch	Cremation associated with Trevisker ware sherds in wood lined kist in centre of mound	N/A	Quinnell (1997)
Shallowmead	Ring cairn	1501-1187 cal BC (HAR 2829)	8.5m	N/A	Low stone ring with external kerb	None	N/A	Quinnell (1997)
Markham Lane	Ring ditch	N/A	9m	N/A	N/A	2 cremations cut into fill of ring ditch associated with possible Deverul Rimbury urn	N/A	Jarvis (1976)

Table 3.3.3 Excavated round barrows in Devon

3.3.3 Neolithic and Early Bronze Age occupation

Pits and unenclosed occupation sites (see Figure 3.3.10)

Extensive traces of Early Neolithic occupation have been identified on the ridge top site of Haldon Belvedere. In addition to the 'house' structure' discussed below, excavations in the 1930s revealed several small stone heaps, hearths and small pits in association with large quantities of Early Neolithic ceramics and lithics (Willock 1936; 1937). Further similar activity was encountered in the early 1990s during rescue excavations approximately 250m south of Willock's excavation (Gent and Quinnell 1999b, 100). A single radiocarbon date of 3370-2910 cal BC (AA-34137) was obtained from a pit (Gent and Quinnell 1999b, 100).

A series of pits, post holes, hearths, ditches and depressions associated with large quantities of Early Neolithic ceramics, lithics and polished stone axes were identified during the excavation of a lithic scatter and crop mark at Hazard Hill, South Devon, in the early 1950s (Houlder 1963). Charcoal from a hearth and an occupation level on the site produced radiocarbon dates of 4040-3360 cal BC (BM-149) and 3790-3020 cal BC (BM-150) respectively (Barker and Mackey 1968). A number of lower lying Early Neolithic pits and unenclosed occupation sites have been found predominantly in south and east Devon. A single pit found in association with Early Neolithic pottery at Bulleigh Meadow produced a radiocarbon date of 4050-3700 cal BC (HAR-10192, Berridge and Simpson 1992, 3). A single pit containing Early Neolithic lithics and sherds of possible carinated bowl was found at Long Range near Honiton in east Devon (Butterworth 1999b, 138 and 148). Further examples of isolated Early Neolithic pits include Crediton (Martin Dyer *pers comm*), Cullumpton (Hugo Ladmin-Whymark *pers comm.*), Tiverton (Leverett and Tyler 2007), all in mid-Devon, and Strete in south Devon (Bayer 2000).

Despite their being widespread lithic scatter evidence for later Neolithic and Early Bronze Age occupation in Devon, very few features relating to this activity have been excavated. A number of pits containing later Neolithic lithics and ceramics were identified at Topsham (Jarvis and Maxfield 1975). A sub-rectangular stone and clay structure measuring 7m long by 3m wide located in an exposed

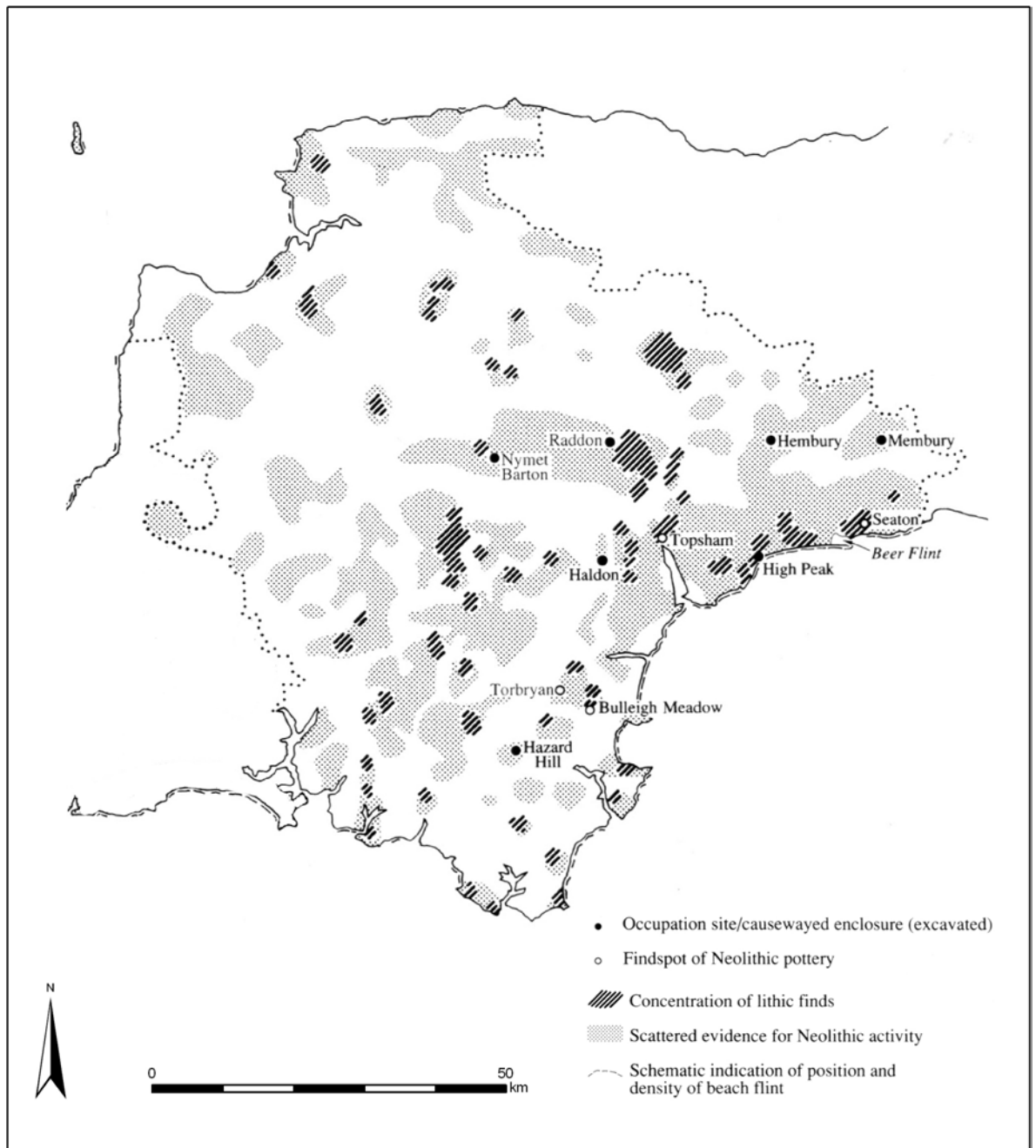


Figure 3.3.10 Evidence for Neolithic occupation in Devon (after Griffith and Quinnell 1999a, 52)

ridge top position at Haldon Belvedere has been interpreted by its excavator as a Neolithic house (Willock 1936, 249). The structure would have consisted of a timber frame with daub walls, resting on a stone and clay foundation with a gabled roof supported by a ridgepole. Artefactual material from the area of the house included both early and Late Neolithic lithics and ceramics. There is evidence for Neolithic and Early Bronze Age activity in a number of cave sites in Devon, including Three Holes (Berridge 1996), Kitterly Caves, Yealmpton, Kent's Cavern (Chamberlain and Williams 2001), Cow Cave and Happaway Cave, Chudleigh (Sheridan *et al.* 2008, 8-10).

Lithic scatters

Surface lithic scatters are by far the most prolific type of evidence for Neolithic and Early Bronze Age occupation in Devon. Because of the tendency for scatters to be multi-period and mixed, early and Late Neolithic scatters will be discussed together. Very few scatters in Devon have been subject to the level of detailed spatial and technological analysis needed to tease apart discrete phases of activity in scatters of this nature. Publications of lithic scatters in Devon tend to identify early or Late Neolithic activity on the basis of a small number of easily identifiable chronologically distinctive artefacts, such as arrowheads, rather than a more detailed analysis of entire surface assemblages. Figure 3.3.10 shows that extensive areas of Devon saw a degree of occupation during the Neolithic. It also highlights areas of more intense activity. However, to some degree this map is as much a product of the distribution and intensity of archaeological fieldwork. Certainly blank areas on the map may well reflect an absence of investigation rather than an absence of prehistoric activity (Griffith and Quinnell 1999a, 51). Table 4 summarises the details of major published Neolithic and Early Bronze Age scatters in Devon.

Site	Mesolithic	Early Neolithic	Late Neolithic	Early Bronze Age	Reference
Uglo collection, numerous sites in lower Exe valley	Yes	Yes	Yes	Yes	Miles (1976) Silvester <i>et al.</i> (1987). Bayer (2008)
East Week	Yes	Yes	Yes	Yes	Greig and Rankine (1953), Tingle (1998)
Carrapit Farm, Bridford	Yes	Yes	Yes	Yes	Hamlin (1972) Bayer (1999)
Hedgemoor Farm, Bridford	Yes	Yes	Yes	Yes	Berridge (1984)
Beer Head	Yes	Yes	Yes	Yes	MacAlpine-Roberts (1929-32), Tingle (1998)
Fursdon Farm, Lustleigh	?	?	?	?	Miles (1976, 12)
Carter Collection, Otterton	?	?	?	?	Miles (1976, 13)
Baggy Point	Yes	Yes			Plumber and Plumber (2001)
Batworthy corner, Gidleigh	Yes	?	Yes	Yes	Johnson <i>et al.</i> (2003) Brück <i>et al.</i> (2004)
Pearce collection, numerous sites in Yarty valley area	Yes	Yes	Yes	Yes	Berridge (1985) Tingle (2006)
Landcross	?	?	?	?	Mead (1983)
Churston		Yes		Yes	Parker Pearson (1981)

Table 3.3.4 A selection of major Neolithic and Early Bronze Age lithic scatters in Devon

Field systems

The early to mid Bronze Age boundaries, or 'Reaves', which cover thousands of hectares on Dartmoor are perhaps the most well known feature of prehistoric Devon. The field systems, defined by stone and earth banks, and take a variety of forms. These include simple large scale arrangements of 'contour', 'watershed' and 'terminal' Reaves which according to Fleming (1988) divide the unenclosed high moorland from its lower lying moorland edges, which are then divided into a series of radial territories. These territories often feature smaller areas of coaxial field systems consisting of large blocks of small fields following a common alignment. Whilst Reave systems have been surveyed across Dartmoor (Fleming 1988), detailed survey and excavation has only been carried out in three locations at Shaugh Moor (Wainwright *et al.* 1979), Holne Moor (Fleming 1988) and Shovel Down (Johnson *et al.* 2003; Brück *et al.* 2004; Fyfe *et al.* 2008; Wickstead 2008).

A combination of new radiocarbon dates from recent excavations at Shovel Down and the recalibration of existing radiocarbon dates suggests that the Reaves span c. 1850 cal BC to c. 1150 cal. BC in date (Wickstead 2008, 42). Fleming (1988) interpreted the Reaves as representing the imposition of a planned layout overseen by a central authority over a short period of time. More recent interpretations have suggested that their process of construction was not planned but emerged gradually from earlier traditions of land use (Johnson *et al.* 2003; Brück *et al.* 2004; Wickstead 2008). Smaller areas of field system of similar date have begun to be identified in lowland east Devon at Castle Hill (Butterworth 1999a) and at Exeter Airport (Yates 2007, 66).

3.3.4 Neolithic and Early Bronze Age material culture

Axes

Ground and polished axes are first found in Devon in the Early Neolithic and continue in circulation at least throughout the Neolithic. Of those axes with a petrological provenance the vast majority are made from stone from west Cornwall (groups I, Ia, II, III, and XIX), mid Cornwall (groups XVI and XVII) and east Cornwall (IV and IVa). Much smaller quantities of axes come from further afield including Cumbria (group VI), Northern Ireland (group IX), and west

Wales (group VIII). Of the ungrouped axes the majority are made from raw materials likely to have been sourced in Devon or Cornwall such as Greensand.

Early Neolithic ceramics

Whittle *et al.* (2011, 517-19) suggest that three small assemblages of possible carinated bowls represent the earliest Neolithic pottery in Devon from Nymet Barton (Caseldine *et al.*, 2000, 68-9), Long Range (Butterworth 1999b 138 and 143) and possibly from the Broadsands chambered tomb (Radford 1958, 160-1). This assertion is made on typological grounds, none of these assemblages have been securely dated. These assemblages are characterised by thin walled, light rimmed carinated bowl forms. The predominant form of Early Neolithic pottery in Devon, known as Hembury ware (Fox 1964, 33; Peacock 1969; Todd 1987, 84) or South-Western style (Whittle 1977, 77-82), is characterized by a range of wide mouthed, baggy, round based vessels (Fox 1964, 33). Perforated, horizontal lugs with flared ends or 'trumpet lugs' (Fox 1964, 33) and smoothed/burnished surfaces (Gent and Quinnell 1999a, 49) are also common features of these pots. Pottery of this style is wide spread across the south-west peninsula and first appears in both unenclosed occupation sites and causewayed enclosures in the early 38th century BC (Whittle *et al.* 2011, 518-19) and remains in use through out the mid to late fourth millennium BC.

Later Neolithic ceramics and Early Bronze Age ceramics

Few mid and later Neolithic ceramic assemblages have been found in Devon. Small quantities of Peterborough ware have been found at Topsham (Jarvis and Maxfield 1975, 246-7), Castle Hill (Butterworth 1999a, 44-5), Beer Head (Tingle 1998, 28), Broadsands chambered tomb (Radford 1953 160-163), Westward Ho! (Quinnell and Taylor 2007) and Brayford (Quinnell and Taylor 2007, 232). Both Mortlake (Castle Hill, Westward Ho! and Brayford) and Fengate (Castle Hill, Topsham, Broadsands and Beer) Peterborough ware sub-styles have been recognised. Even smaller quantities of possible Grooved ware have been found at Topsham (Jarvis and Maxfield 1975, 246-7) and at Haldon Belvedere (Willock 1937 Fig. 2).

A slightly larger quantity of Beaker pottery has been found in Devon. A recent review of Beaker pottery from Devon lists at least 55 vessels from 18 different

locations and a range of burial, pit and other contexts (Quinnell 2003, 1). These finds are chiefly from south Devon (Elburton, Broadsands, Kent's Cavern) and east (Beer, Seaton, Castle Hill, Topsham) Devon, and Dartmoor (Chagford, Fernworthy), with two outlying finds in north Devon at Westward Ho! and Bray valley (Quinnell 2003, 2). Trevisker ware urns, with their distinctive chevron decoration, dominate post Beaker, Early Bronze Age ceramic assemblages in Devon. They are often found in association with cremation burials under round barrows, for example, at Upton Pyne (Pollard and Russell 1969).

Early Bronze Age metal work

Small quantities of Early Bronze Age metalwork have been identified in Devon. The majority of this material is made up of daggers found associated with burials in round barrows for example, at Darracot Moor (Doe 1875), Wrangworthy Cross (Radford and Rogers 1947) and the bronze dagger with gold and amber pommel from Hameldown (Jones 2005, 128). Although both tin and copper are available in Devon and Cornwall, Pearce (1999, 69) suggests that much of the raw material for these artefacts is likely to have originated in continental Europe.

3.4 Conclusion

Devon is a large topographically and geologically diverse county, and it is difficult to treat it as a single region. This heterogeneity produces a very variable backdrop against which to identify and understand the county's archaeological record. A combination of variation in underlying geology, differing historic and modern cultivation regimes, and very differing intensities of archaeological investigation, all combine to produce a very uneven state of knowledge about Devon's prehistory. As a result Devon's prehistory is characterised by a series of windows of varying clarity into the past, rather than a single homogenous narrative.

As well as being the meeting point between two different geological kingdoms (Durrance and Lamming 1982, 3), Devon is arguably a meeting point between two different prehistories. Its archaeological record combines traditions of monument building and material culture common to wider areas of lowland southern Britain and beyond, with distinctively regional trends found

predominantly in Devon and Cornwall (for example tor enclosures and causewayed enclosures, cursus monuments and stone rows). The question remains as to whether these regional traditions reflect more extensively held 'templates' expressed through locally available resources, or reflect elements of one of many distinct and different regional prehistories. Arguably the prehistory of Devon provides an interesting if (for the reasons set out in the previous paragraph), not necessarily straightforward context in which to explore issues of regionality in British prehistory, away from the heartlands of research in Wessex and the Thames valley.

Narrowing down from a broad focus on prehistoric Devon chapter four now introduces the lower Exe valley, the detailed study area for this thesis.

Chapter Four: Introducing the study area

Chapter four introduces the lower Exe valley, the detailed study area on which this thesis focuses. The first section summarises the rationale behind the selection of the study area, its geological and topographic context, the nature of its archaeological record, and the history of its investigation. The second section introduces the John Uglow lithic collection. It summarises the different methodologies used in its collection and discusses the opportunities and constraints that this places on working with the collection.

4.1 The lower Exe valley

The study area is in the lower Exe valley in mid Devon, south-west England (Figure 4.1.1). It covers an area of 16 km² of lowland Devon, at the northern edge of the Devon Redlands. It includes parts of the parishes of Nether Exe, Rewe, Silverton and Thorverton. The study area is approximately three quarters of the way along the course of the river Exe, c. 70km from its source on Exmoor and c. 20km from its mouth on the south Devon coast. It lies immediately upstream of the confluence of the Exe and Culm, and 5 km upstream of the confluence of the Exe and Creedy.

As set out in chapter three the distribution of archaeological investigation, and consequently levels of knowledge about Devon's prehistory, is uneven. The increase in aerial reconnaissance from the mid 1980s, and development led archaeology since the late 1970s, has done much to address the historic research imbalance that resulted in differing perceptions of prehistoric archaeology in upland and lowland Devon. However, current distribution maps of prehistoric activity in the county still need to be read critically. They are probably as much a reflection of differing levels of archaeological investigation and archaeological visibility, as they are of any sort of objective prehistoric 'reality'. Areas with a history of previous archaeological investigation, and areas with soils and/or modern agricultural regimes that are favourable to revealing archaeology, offer a series of windows of relative clarity into the somewhat foggy prehistory of the Devon landscape. The lower Exe valley represents an overlap between several of these 'windows of clarity' (figure 4.1.2). The area is unique in lowland Devon in that it combines three different but complementary datasets:

- The John Uglow collection. One of the largest, and best recorded, surface lithic collections in Devon, spanning the Early Mesolithic until at least the Early Bronze Age.
- One of the most productive, and intensively studied, areas of archaeological cropmarks in the county. Aerial photography has produced evidence for an extensive Neolithic and Early Bronze Age monument complex in the lower Exe valley. This is complemented by limited earthwork evidence for prehistoric monuments.
- One of the only Holocene palaeoenvironmental sequences from lowland Devon. The lower Chitterley sequence (Fyfe 2000; Fyfe *et al.* 2003) spans the later glacial period to the Bronze Age.

The extent of the study area is principally determined by the extent of the core of the John Uglow lithic collection (here after referred to as the Uglow collection). As such it relates directly to the extent of the known archaeological resource. It is not, as with some scatter studies (for example, Bond 2006; Hind 2000; Snashall 2002; Waddington 1999), an attempt to sample scatters across a representative range of geological or topographic zones. By focusing on an sub-region of 16km² the study area is comparable in scale to those of Chan (2003), Tingle (1998) and Waddington (1999), being larger than the site-based investigations of Bayer (1999), Durden (1995) and Edmonds *et al.* (1999), but considerably smaller than the regional studies of Bond (2006), Hind (2000) and Snashall (2002).

4.1.1 Geology, topography and land use

Carboniferous sandstones and shales underlie the northern edge of the study area. This harder bedrock forms the Raddon ridge, which is cut through by the river Exe forming a steep sided, narrow valley. The land to the south is formed by Permian sandstone. This softer bedrock forms the gently rolling hills of the Crediton Trough. Here the river Exe forms the shallower sided, wider valley of the lower Exe basin.

The lower Exe valley dominates the study area. Here the valley forms a wide flat basin up to 1.5km across. Solid geology is overlain by a series of three

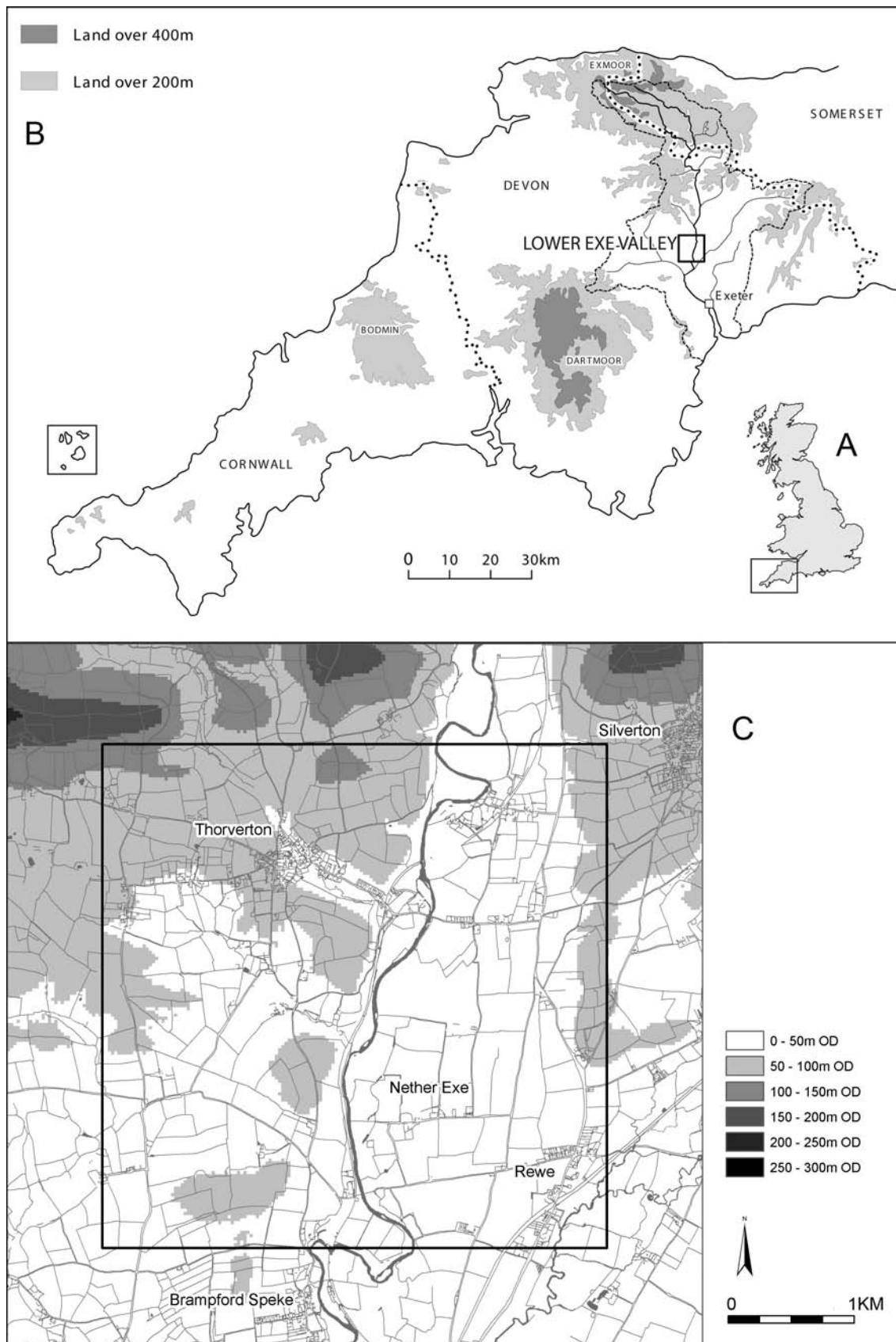


Figure 4.1.1 Location of study area (after Fyfe 2005, Fig. 1)

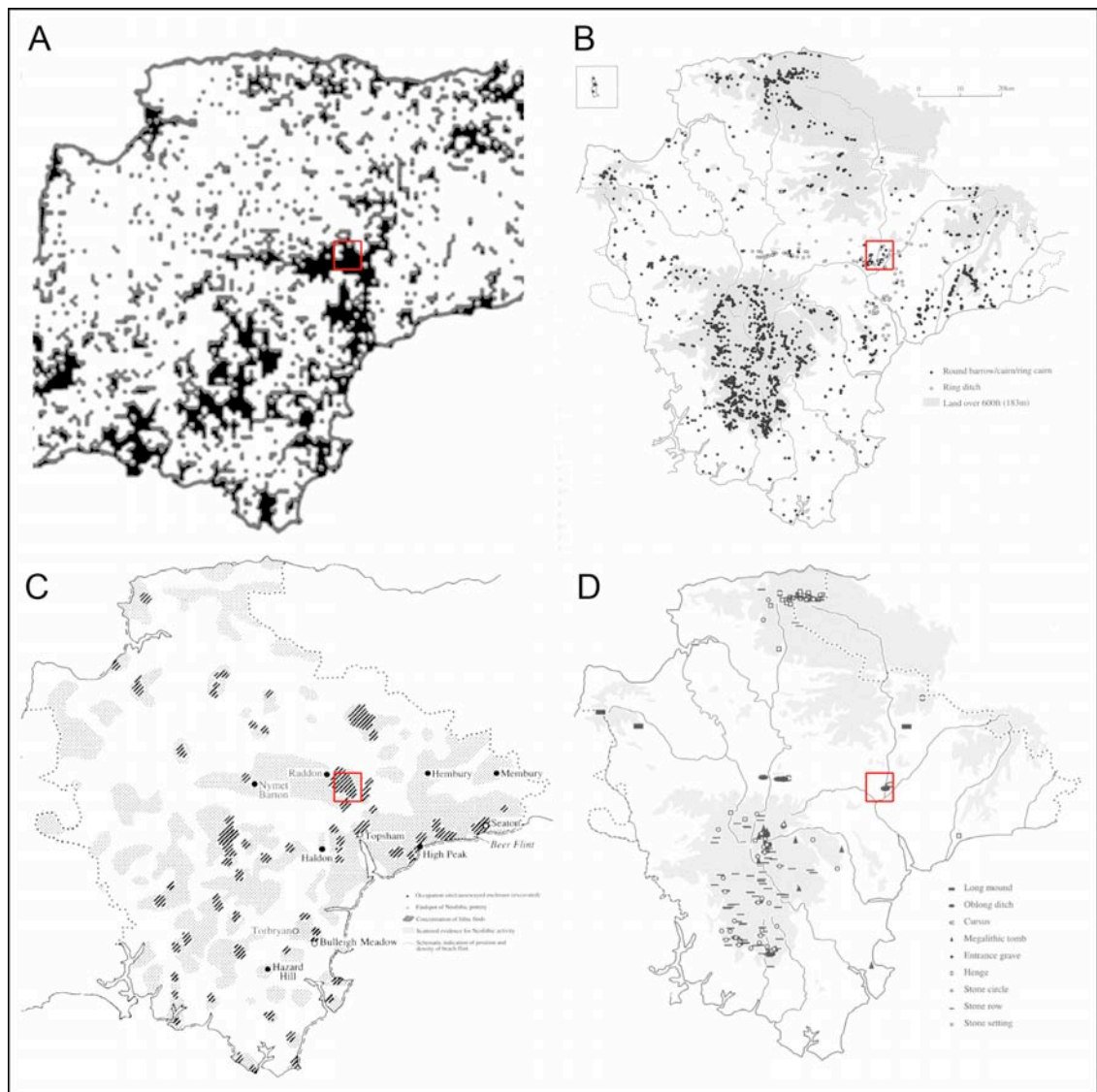


Figure 4.1.2 Location of the study area relative to the prehistoric archaeological resource in Devon. **A.** Distribution of oblique archaeological aerial photographs (after Oswald *et al.* 1999. 84). **B.** Distribution of round barrows and ring ditches (after Griffith and Quinnell 1999b. 59). **C.** Distribution of evidence for Neolithic occupation/lithic scatters (after Griffith and Quinnell 1999a. 52). **D.** Distribution of Neolithic monuments (after Griffith and Quinnell 1999b. 56).

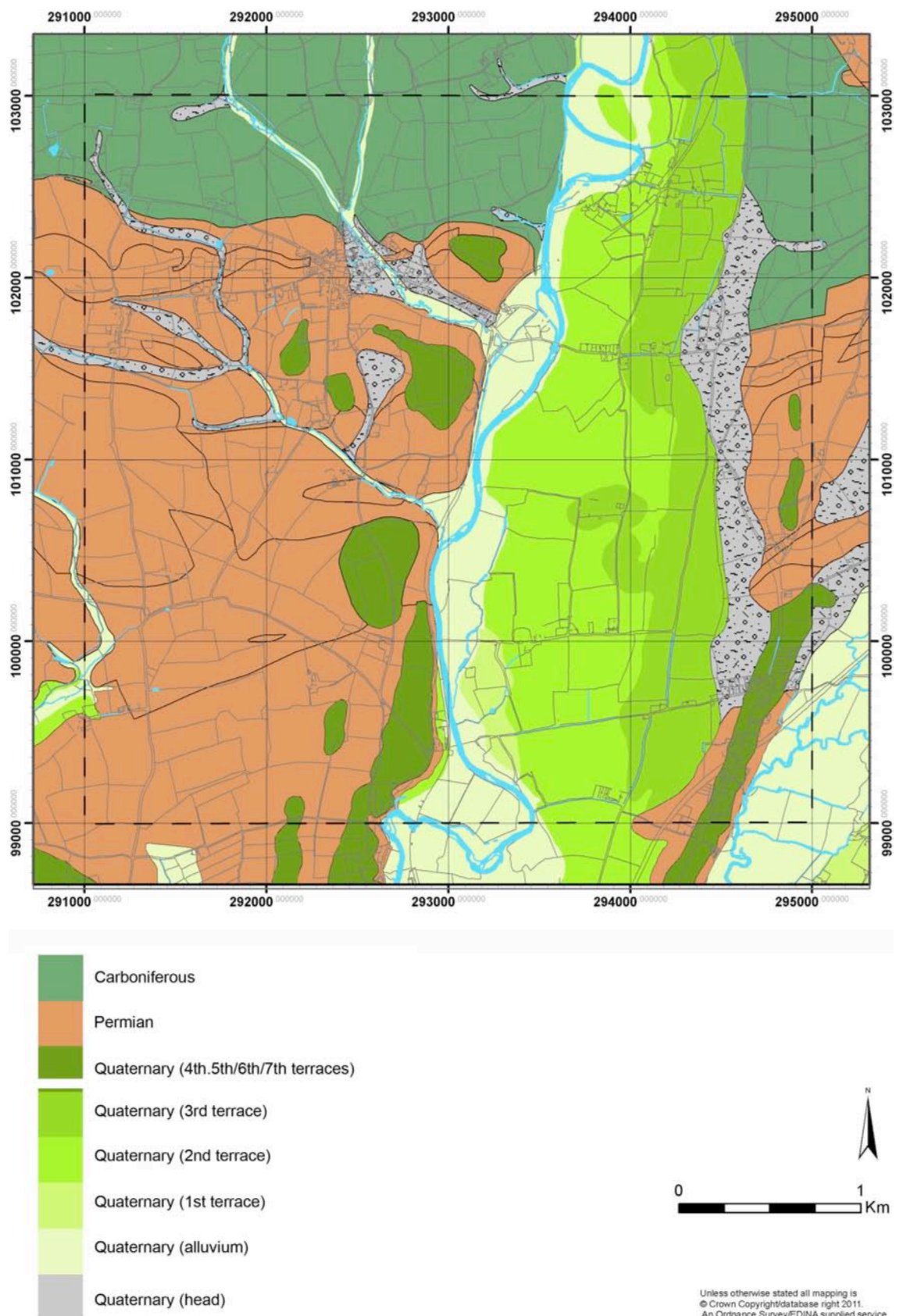


Figure 4.1.3 Solid and drift geology for the study area (Based upon data provided by British Geological Survey © NERC. All rights reserved)

gravel terraces (terraces 1-3) and localised areas of alluvium (Brown *et al.* 2010. 903: see also figure 4.1.3). At between 23 and 35m OD the basin is relatively flat, with a slight north-south slope reflecting the gradient of the river (a fall of approximately 10m in 4km). There is an approximately 6m difference in height between the riverbank on the western edge of the basin and the third terrace on its eastern edge. This generally flat landscape is interrupted by a series of subtle topographic features caused by the edges of the gravel terraces, as well as a series of palaeochannels of unknown date. For the majority of the study area the river flows close to, and almost parallel with, the western edge of the valley floor. At the northern and southern limits of the study area are two large meanders where the course of the river projects east into the valley floor.

Immediately to the west of the river Exe the land climbs sharply to a series of low rolling hills at approximately 60m OD. They rise in height to approximately 140m OD in the north-west of the study area on the southern slopes of Raddon ridge (figure 4.1.1). Some of the hilltops closest to the Exe are capped with remnants of earlier river terrace deposits (terraces 4-7). The valleys of two small tributaries of the Exe cut into this landscape. In their lower reaches alluvial deposits overlie solid geology. In their upper reaches, head deposits overly solid geology.

Geologically and topographically the interfluvium between the Exe and Culm mirrors the western bank of the Exe. Carboniferous geology forms higher, steeper hills to the north, giving way to a gentler landscape formed by Permian geology to the south. On the southern part of the interfluvium localised areas of early terrace deposits, and more extensive areas of head deposit overly Permian bedrock.

Today most of the study area is used for agriculture. The majority of which is under arable cultivation (cereals, oil seeds and fodder crops). Both the alluvial deposits of the Exe valley and the Permian sandstone to the west produce highly fertile soils (Griffith 1994, 89). A smaller portion of the study area, particularly those lower lying areas of the lower Exe valley prone to flooding, is

used for grazing.

4.1.2 History of archaeological research

The lower Exe valley is widely recognised as having a rich prehistoric archaeological landscape (Fyfe 2005; Griffith 1994; Griffith and Quinnell 1999a; 1999b; Jones 2005; Pollard and Healy *et al.* 2007, 81, 95; Rippon 2007).

Evidence of prehistoric activity has been recognised in the area since at least the late nineteenth century when several extant barrow mounds on the higher ground to the west of the Exe in Thorverton and Upton Pyne parishes were excavated by local antiquarians (Kirwan 1869; 1871; Parfitt 1880). Immediately to the south-west of the study area barrow Upton Pyne 284b was excavated in the 1960's (Pollard and Russell 1969). Activity on the valley floor has been recognised since the 1930s both as extant barrow mounds (Alden 1981; Fox 1969; Griffith 1988; 30-31; Grinsell 1983), and as surface lithic finds ranging in date from the Early Mesolithic to at least the Early Bronze Age (Bayer 2008; Fyfe 2000; Griffith and Quinnell 1999; Miles 1976, 13-4; Shaw 1934; Silvester *et al.* 1987; Uglow unpublished; see also figure 4.1.4).

Since the 1950s aerial reconnaissance has added further detail to our knowledge of later prehistoric archaeology on the valley floor. This was initially undertaken by J. K. St Joseph (Cambridge University) and has been continued by Frances Griffith (Devon County Council) since the mid 1980s (Griffith 1988). Repeated reconnaissance under varying conditions has built up a detailed picture of archaeological crop marks of Neolithic and later date in the study area (Fyfe 2005; Griffith 1988, 30-31; 1990; Griffith and Quinnell 1999a; 1999b; figure 4.1.5). Trial excavations of several crop mark enclosures have produced ceramics of Iron Age (Uglow *et al.* 1985) and Romano British (Uglow 2000) date.

More recently palaeoenvironmental examination of a peat core from a palaeochannel on the floor of the Exe valley has produced a pollen sequence spanning the late glacial period to the Bronze Age (Fyfe 2000; Fyfe *et al.* 2003).

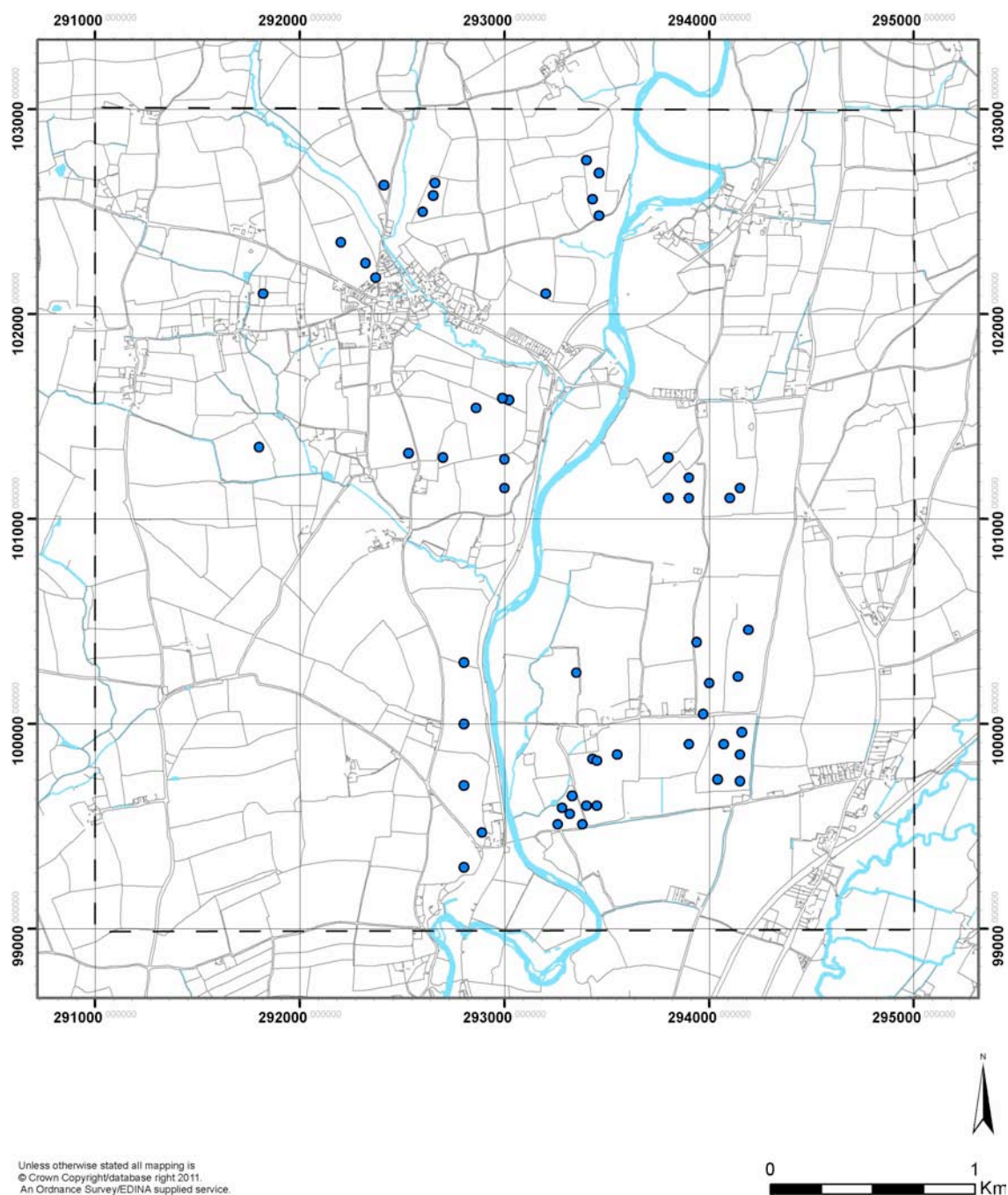


Figure 4.1.4 Distribution of lithic scatters from the study area (after Fyfe 2005, uglow_lithics GIS layer)

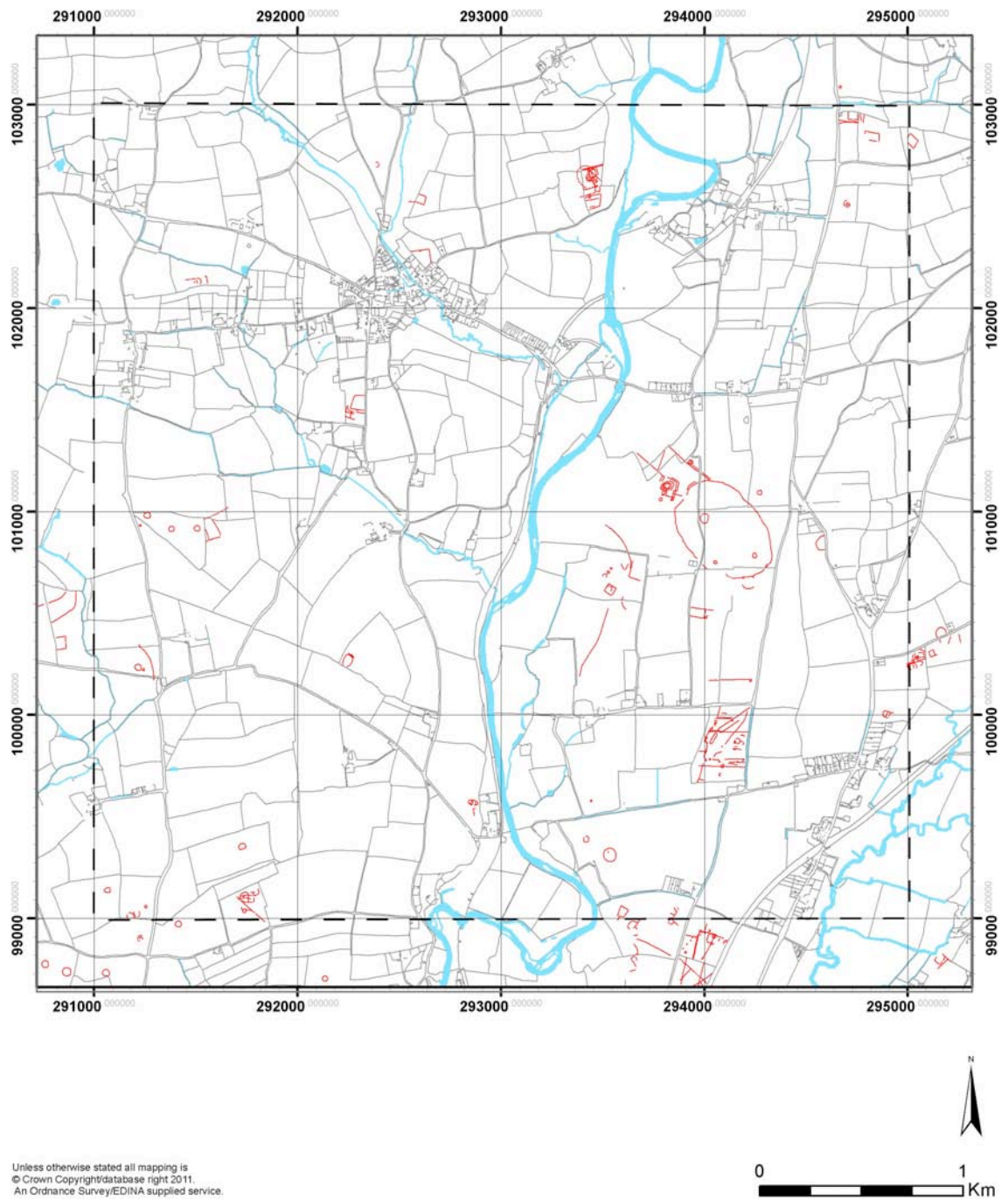


Figure 4.1.5 Transcribed cropmarks from the study area (After Devon Aerial Photograph project/ Fyfe 2005, transcribed cropmarks GIS layer)

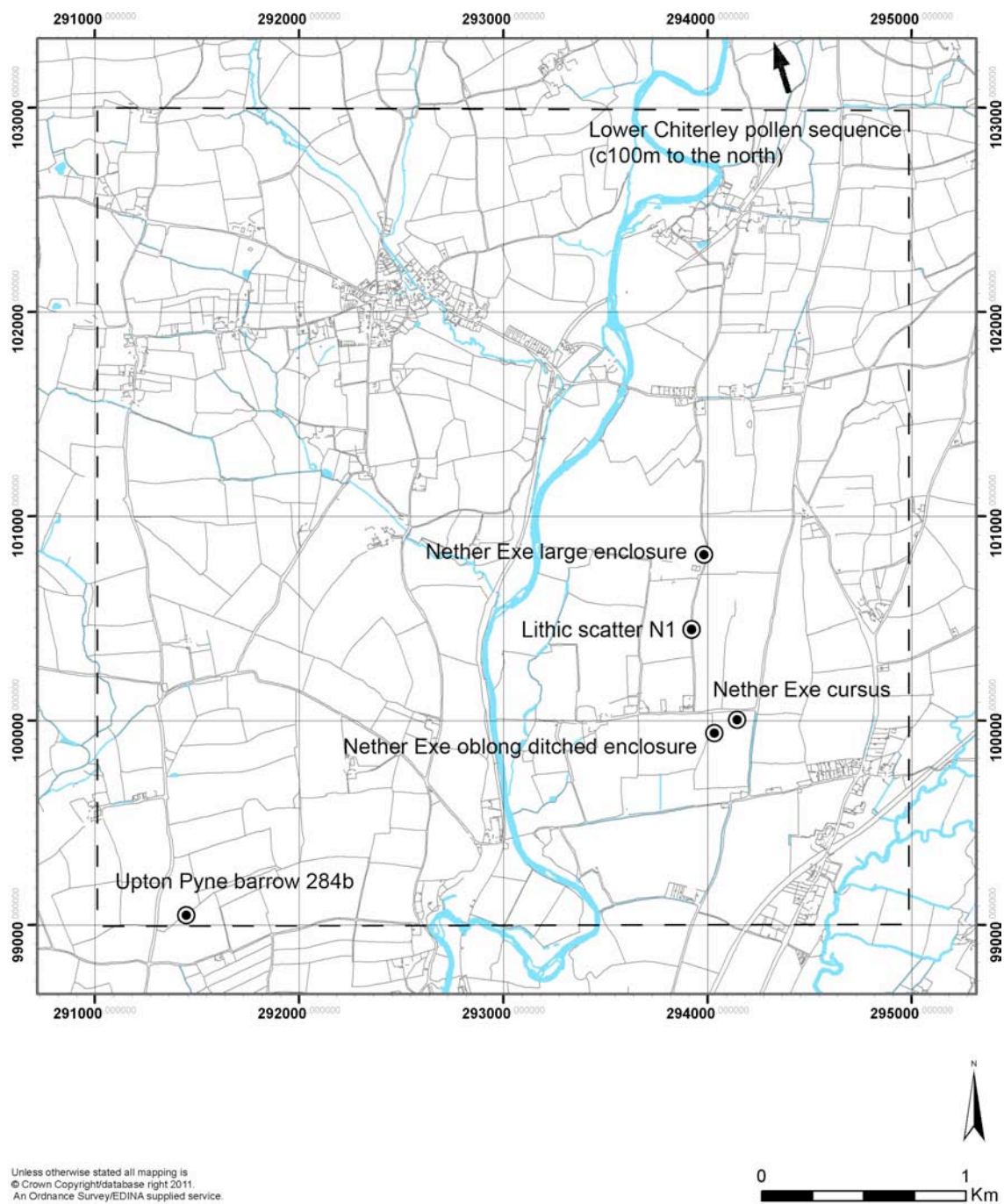


Figure 4.1.6 Location of sites mentioned in current state of archaeological knowledge section

4.1.3 Current state of archaeological knowledge.

The following section summarises the state of archaeological knowledge for the lower Exe valley from sources published prior to 2006. The location of all sites mentioned below is shown in figure 4.1.6.

Mesolithic

Mesolithic lithic material has been recovered from surface scatters on the valley floor and on the higher ground overlooking its western edge (Fyfe 2000, 52, Silvester *et al.* 1987, 20). Berridge (in Silvester *et al.* 1987, 13-6) identifies both earlier and later Mesolithic components in scatter N1 on the western edge of the third terrace on the valley floor. Diagnostic material includes microliths and a flaked axe (figures 4.1.7 and 4.1.8). He suggests that the majority of this material, characterised by the use of greensand chert, is Early Mesolithic in date and forms a marked concentration c. 100m in diameter in the southern area of scatter N1 (figure 4.1.9). By comparison he suggests that later Mesolithic material, characterised by the use of flint, forms a less focussed area of activity to the north of the scatter (Silvester *et al.* 1987, 16).

The Lower Chitterley pollen sequence shows early post-glacial vegetation to be a mosaic of woodland (pine, birch, hazel) and grassland, with willow flanking the river (Fyfe *et al.* 2003, 171-4). Later Mesolithic vegetation is characterised by closed canopy woodland dominated by lime on the valley terraces, alder in the wetter areas of the valley floor, and oak and elm on the valley sides. There is also evidence of some damp grassland vegetation probably from areas adjacent to the river (Fyfe *et al.* 2003, 174). The first of a series of disturbances to woodland vegetation occurs at c. 5500 BC. This is characterised by a decline in elm and oak accompanied by a small rise in ash pollen (Fyfe *et al.* 2003, 176). It is uncertain as to whether this event is anthropogenic or natural in origin (Fyfe *et al.* 2003, 177).

Neolithic

Early and Late Neolithic activity is evidenced by lithic scatters on the valley floor, and on the higher ground overlooking its western edge (Fyfe 2000, 52; Miles 1976, 13-4; Silvester *et al.* 1987). At scatter N1 Berridge (in Silvester *et al.* 1987, 16) identified early and Late Neolithic material including leaf-shaped,

chisel and oblique arrowheads, and polished axe fragments (figure 4.1.10). All of these artefacts are struck from flint and come from both the northern and southern concentrations with the scatter (figure 4.1.11).

Several potentially Neolithic cropmarks have been identified on the valley floor. This includes a massive (c. 500mx300m) sub-oval enclosure straddling the second and third terraces. Griffith (2001, 73) suggests a possible Early Neolithic date for this feature. A potentially mid Neolithic oblong ditched enclosure, or mortuary enclosure, associated with the terminal of a cursus monument has also been identified on the edge of the third terrace (Griffith 1990; 1994). This enclosure is discussed further as area B in chapters seven and nine)

The lower Chitterly pollen sequence shows a further disruption to tree cover at 3640-3370 cal. BC (UtC-8502). This event is accompanied by a rise in ash and grass pollens, as well as the appearance of oat/wheat cereal pollen grains (Fyfe *et al.* 2003, 176). This is interpreted as a deliberate clearance event accompanied by evidence for arable agriculture (Fyfe *et al.* 2003, 177).

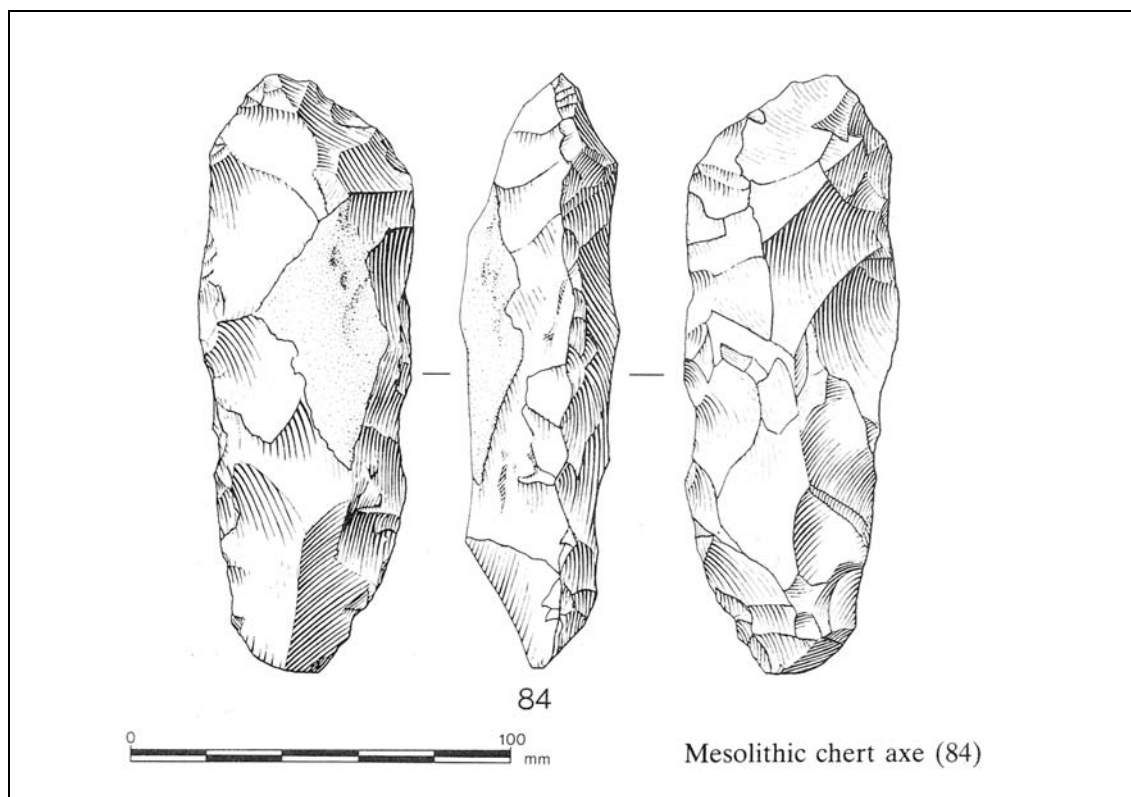


Figure 4.1.7 Mesolithic chert axe from scatter N1 (after Silvester *et al.* 1987. Fig. 9)

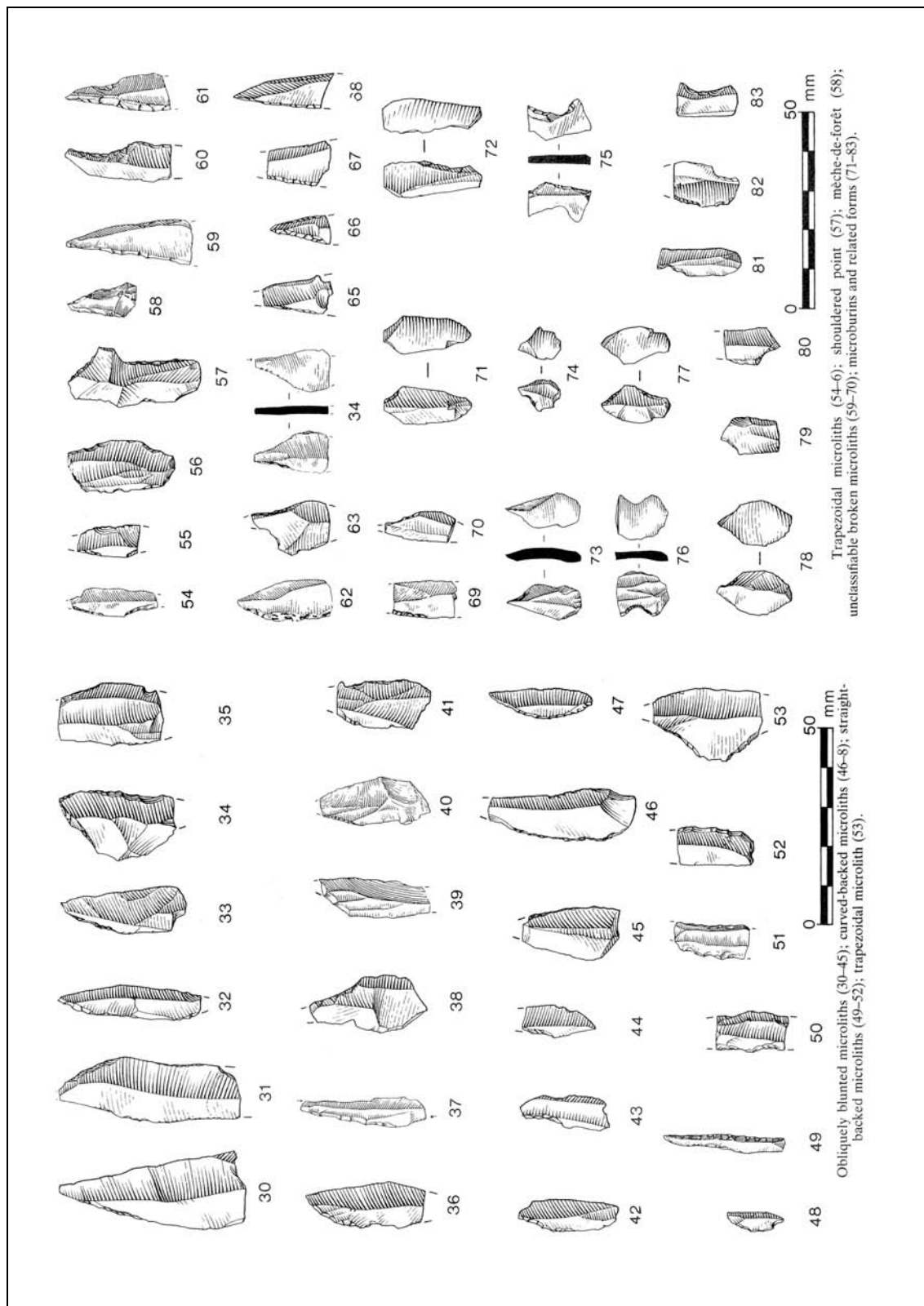


Figure 4.1.8 Mesolithic artefacts from scatter N1 (after Silvester *et al.* 1987, Figs 7-8)

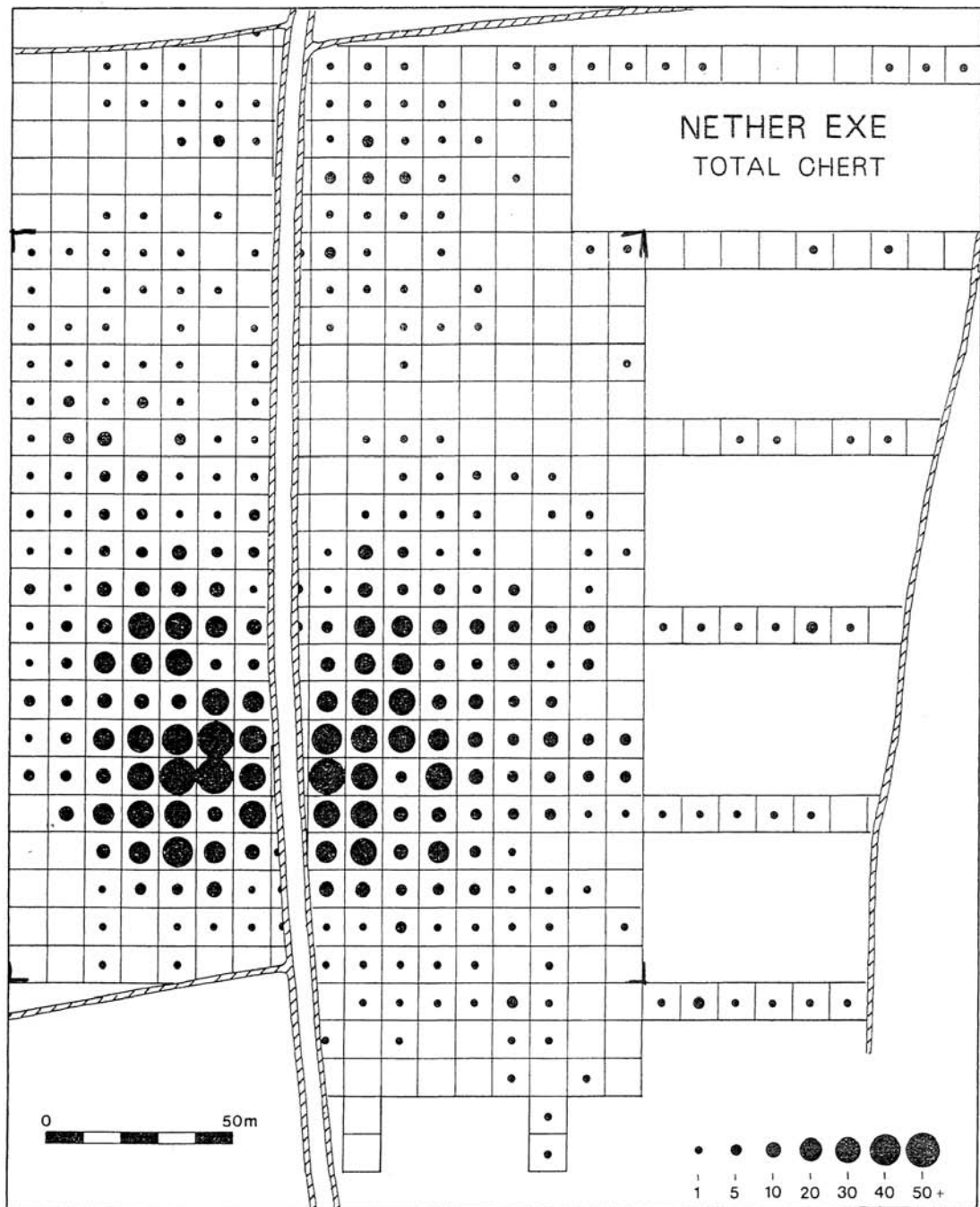


Figure 4.1.9 Extent of chert finds from scatter N1 (after Silvester *et al.* 1987, Fig. 2). Berridge in Silvester *et al.* 1987 (13-6) makes an explicit link between the use of chert and Mesolithic activity, in particular Early Mesolithic activity.

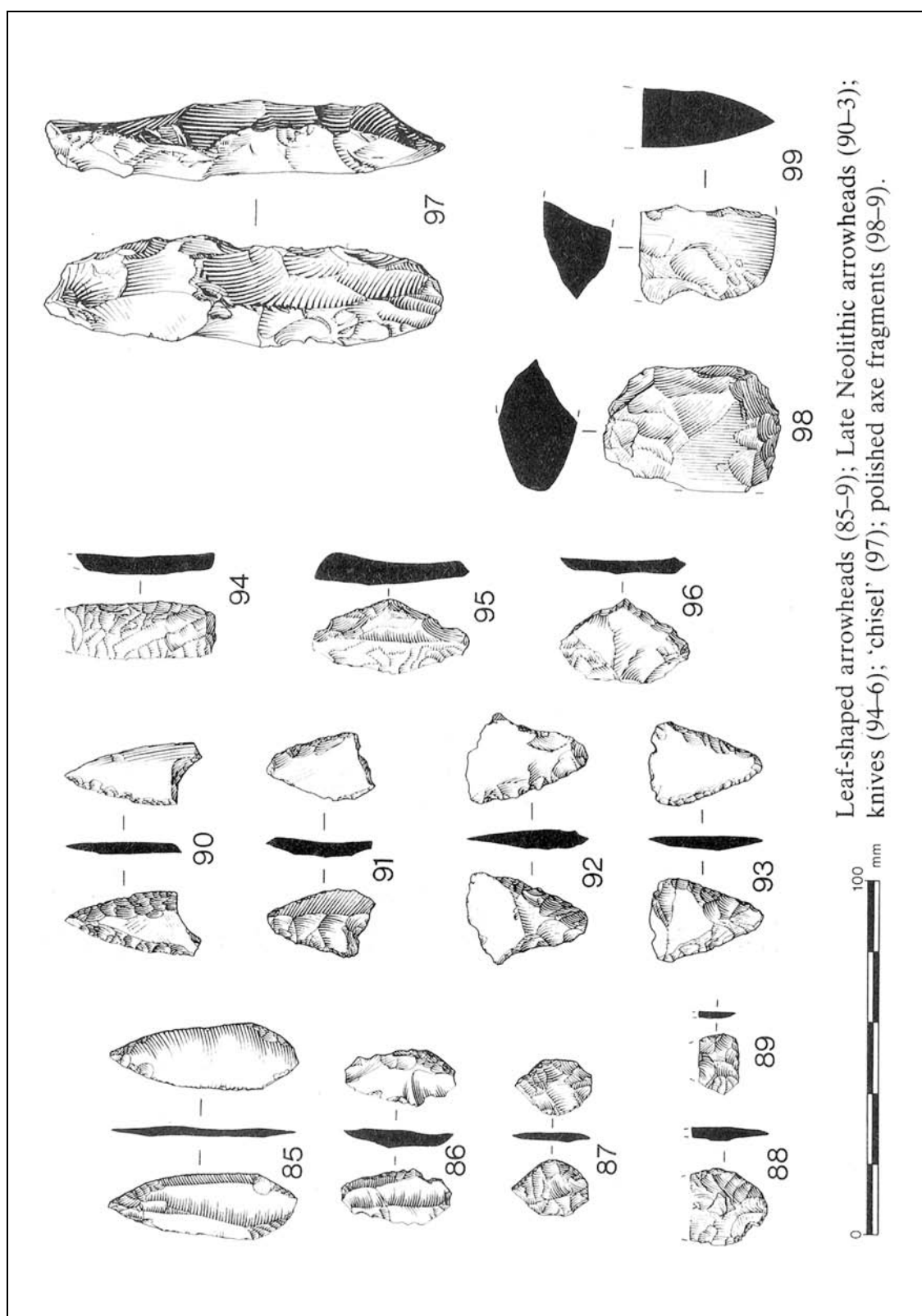


Figure 4.1.10 Neolithic and Early Bronze Age lithics from scatter N1 (after Silvester *et al.* 1987, Fig. 9).

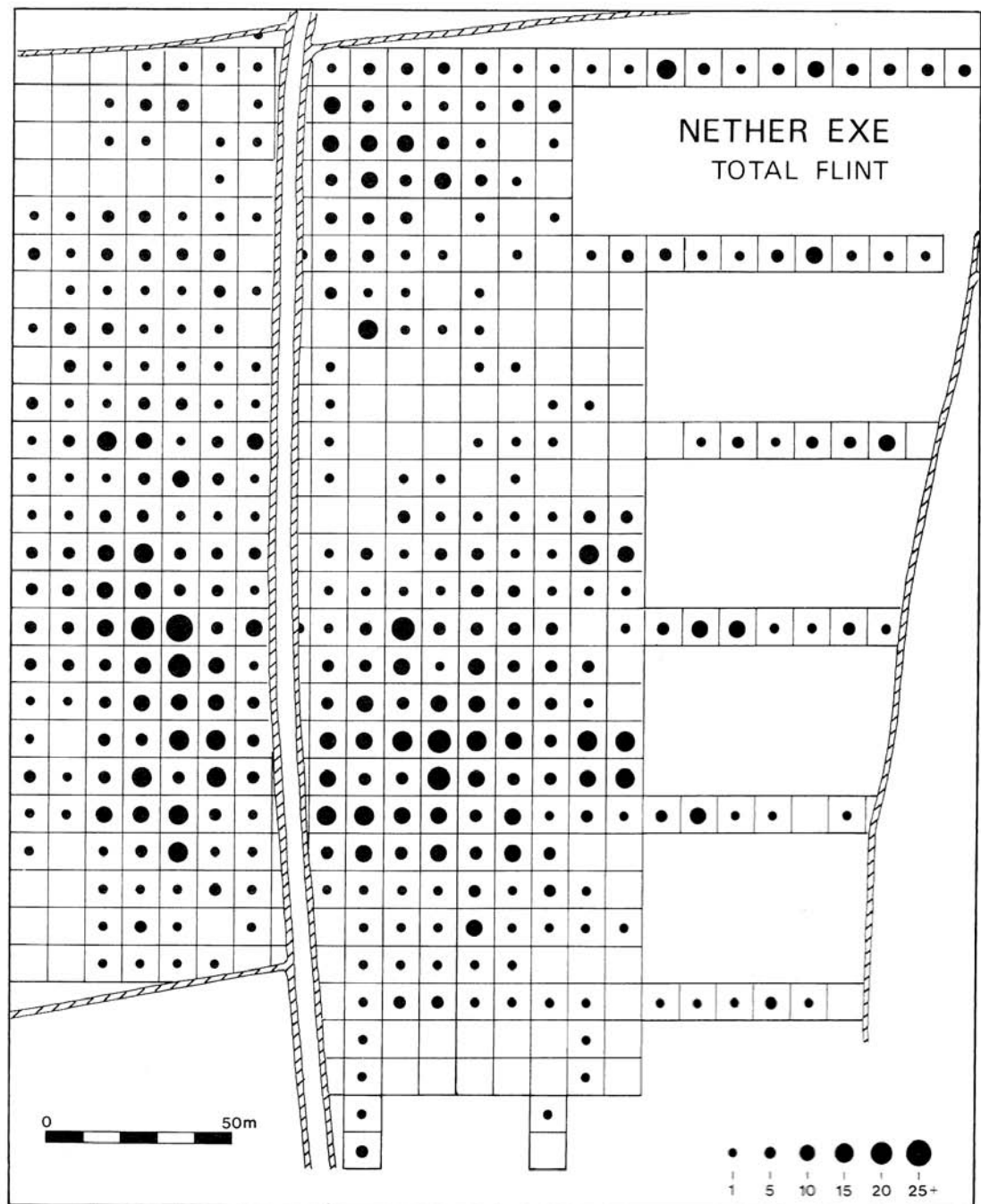


Figure 4.1.11 Extent of flint finds from scatter N1 (after Silvester *et al.* 1987, Fig. 3). Berridge in Silvester *et al.* (1987, 16) suggests that the use of flint is predominantly Neolithic and Early Bronze Age and some Late Mesolithic.

Early Bronze Age

Early Bronze Age activity is evidenced by lithic scatters on the valley floor and on the higher ground on its western edge (Fyfe 2000, 52; Miles 1976, 13-4; Silvester *et al.* 1987). Early Bronze Age activity is evidence at scatter N1 by a fragmentary barbed and tanged arrowhead and a plano-convex knife (Silvester *et al.* 1987, 16). Extant round barrows and cropmark ring ditches form a series of cemetery groups spanning the floor of the Exe valley and the higher ground to the west (Allden 1981; Fox 1969; Grinsell 1983) (figure 4.1.12). Only one of these monuments (Upton Pyne 284b), in the south-west corner of the study area, has been excavated to modern standards (Pollard and Russell 1969). This contained a series of cremations, some in urns, from within the body of the barrow mound, on the old ground surface beneath the mound, and in a stone kist cut into the old ground surface (Pollard and Russell 1969, 58-62). The remains of two infants have been identified amongst the cremated bone assemblages, the rest is too fragmentary to allow identification (Pollard and Russell 1969, 68). Charcoal from one of the urns produced a radiocarbon date of 1780-1490 cal BC (BM 402) (Wickstead 2008, 283).

A final undated decline in woodland pollen in the lower Chitterley pollen sequence is accompanied by the establishment of species rich grassland, and a proliferation in cereal pollens (Fyfe *et al.* 2003, 178). Fyfe *et al.* (2003, 177-8) suggest that this event took place at the end of the third millennium BC and is caused by an intensification of land use linked to round barrow construction and possibly field systems.

4.1.4 Implications for working in the study area

The lower Exe valley is one of the most intensively investigated landscapes in lowland Devon. The concurrence of several disparate archaeological data sets in a single small area, means that it provides a good opportunity to explore the issues linking lithic scatters, landscape and inhabitation identified in the research questions. However, the nature of its pre-mid Bronze Age archaeological record, predominantly comprising surface lithic scatters and unexcavated archaeological cropmarks, brings with it certain limitations. The lack of excavation means that there is no internally derived evidence with which to date the study area's monuments and artefacts. As such there is a

dependency on information derived from external sources, often at some distance from the lower Exe valley, to date and characterise its archaeology.

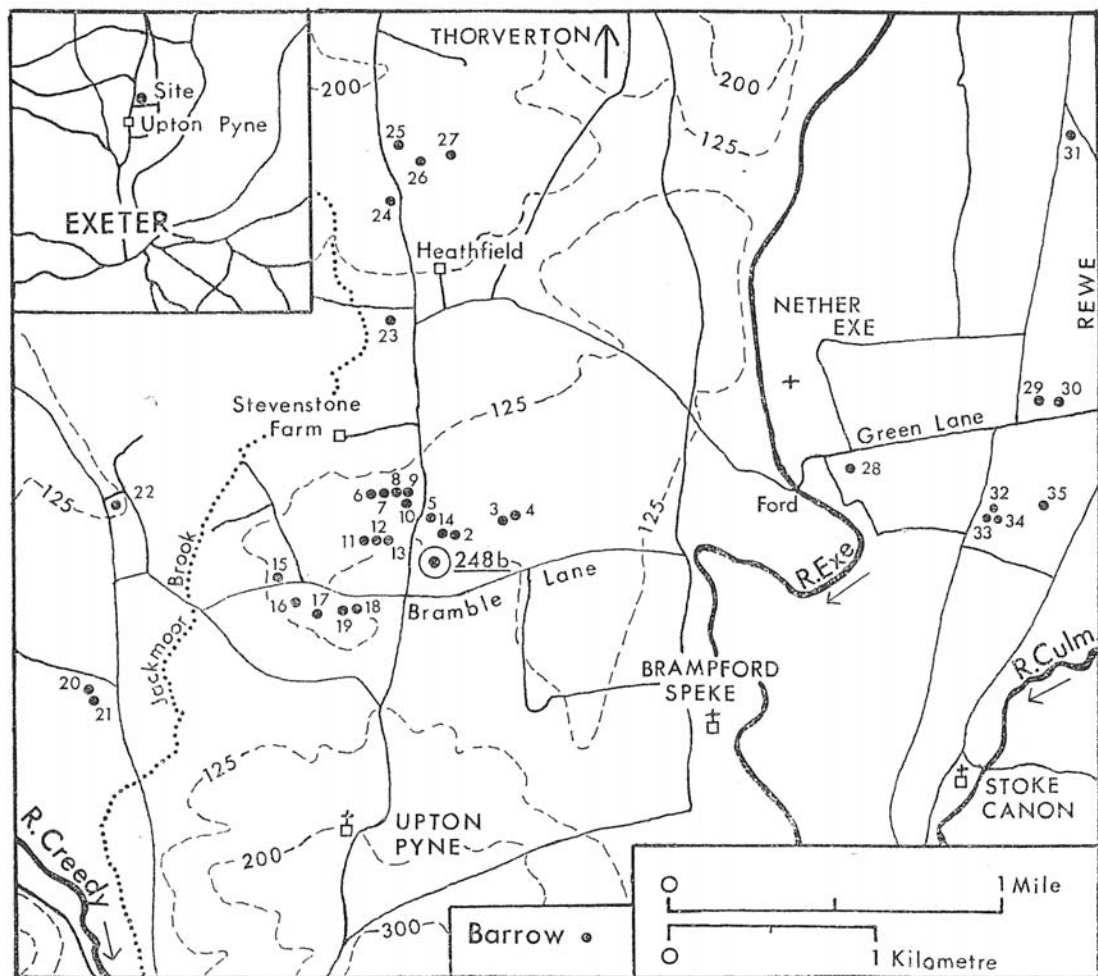


Figure 4.1.12 Round barrows in the lower Exe valley (after Pollard and Russell 1969, Fig. 1).

4.2. The John Uglow collection

The John Uglow collection contains over 19,000 pieces of worked stone, from over 190 separate collection units and includes artefacts ranging in date from the Early Mesolithic to at least the Early Bronze Age (Bayer 2008). The collection is of regional significance due to its size and the accuracy of its recording (Bayer 2008; Griffith 1994).



Figure 4.2.1 John Uglow (1921-2007)

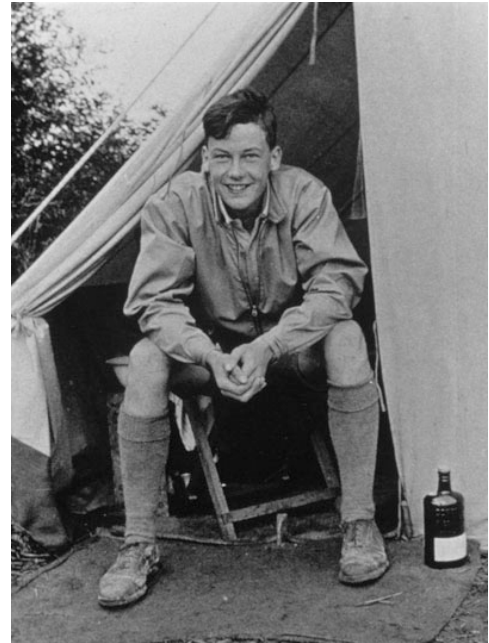


Figure 4.2.2 Thurstan Shaw (photo taken in 1932 whilst excavating at Hembury, reproduced with permission of Thurstan Shaw)

4.2.1 History of the collection

John Uglow (figure 4.2.1) was an amateur archaeologist who was born and lived most of his life in the village of Thorverton. His research, which included both surface collection (Silvester *et al.* 1987; Uglow unpublished), and excavation (Uglow 2000; Uglow *et al.* 1985), made a significant contribution to understanding of the archaeology of the lower Exe valley and beyond. A slightly older contemporary in the village prompted his interest in archaeology, and the initial impetus for his lithic collection. A teenage Thurstan Shaw (figure 4.2.2), the son of the local vicar inspired by an article on 'flint hunting' in the first edition of the *Proceedings of the Devon Archaeological Exploration Society* (Moysey

1930), began collecting stone tools from the surface of fields in Thorverton and surrounding parishes (Shaw 1990, 206; Shaw pers. comm.; Smith 2009, 182). Shaw continued this collection throughout the early and mid 1930s assisted by several boys from the village, one of who was John Uglow (Smith 2009, 182). Shaw went on to study archaeology at Cambridge, subsequently becoming professor of archaeology at University of Ibaden, Nigeria (Shaw 1990; Smith 2009).

The majority of the collection was made by John Uglow between the mid 1970s and 2000 (Bayer 2008). Much of this part of the collection was made single-handedly, however, some was carried out with other local archaeologists both amateur and professional (Silvester *et al.* 1987, 1; Silvester *pers. comm.*; Stoye *pers. comm.*). The majority of the collection is previously unpublished. Some elements are briefly listed in Miles' inventory of flint scatters in Devon (1976, 13-14). The results of a systematic survey of scatter N1 are published in Silvester *et al.* (1987). A plot of lithic scatters found by John Uglow and recorded in the Devon HER is included in the GIS database associated with Fyfe (2005).

The Uglow collection and archive is deposited in the Royal Albert Memorial Museum (RAMM), Exeter, under two accession numbers. The material published in Silvester *et al.* (1987) from scatter N1, as well as a collection from scatter N3c (see comments on Allden below) were deposited in 1990 (RAMM ref 203/1990). The bulk of the collection was deposited shortly after John Uglow's death in 2008 (Bayer 2008; RAMM ref 165/2008).

Records and finds from three other lithic collections have been merged with the Uglow collection.

- Professor Thurstan Shaw gave a large lithic collection made during the 1930s to John Uglow in 1984. The Shaw collection is predominantly from the higher ground immediately to the west of the Exe valley.
- A lithic collection made by E. J. Edworthy of Thorverton between 1933 and 1936, was left to John Uglow. The Edworthy collection comes from

the floor of the Exe valley as well as the higher ground immediately to the west.

- A single gridded surface collection (N3C) made in 1981 by Alison Alden on the floor of the Exe valley.

Today the collection consists of a series of archive boxes containing individually bagged and numbered lithic assemblages. Each assemblage has a unique code identifying the parish, scatter and, where appropriate, the sub-scat­ter collection unit from which it was recovered. The accompanying archive consists of John Uglow's original paper and digital records, as well as a summary of the archive and collection made immediately prior to its deposition in the RAMM (see level one lithic analysis in chapters six and eight, appendices A and B, and Bayer 2008). As a minimum the archive for each lithic assemblage contains detailed records of the location, collector and date/method of collection.

4.2.2 Working with the collection: opportunities and constraints

There is a tension between the potential and the nature of lithic scatters. Assemblages derived from museum collections introduce a further set of potential issues to the already complicated world of analysing surface lithic scatters. When working with such material ascertaining exactly how surface assemblages were collected, and the constraints that this may impose on their interpretation, is a particularly important issue (Gardiner 1987).

After Bond (2006, 85) and Gardiner (1988, 42) the intention had been to address this issue by interviewing John Uglow about the history and context of his collection. However, this was prevented by his deteriorating health. It was possible to glean some information during informal conversations with him in late 2005 and early 2006. Otherwise records and correspondence in the Uglow collection archive have provided much information. Conversations in 2010 with Frances Griffith, Ross May, Prof. Thurstan Shaw, Bob Silvester and Prof. Mark Stoy­le (all of whom knew, and/or worked with, John at various stages), and in particular John's wife, Barbara, have provided answers to some of the questions that it was not possible to ask him. The picture that emerges from this research is one of over 60 years of methodical collection and recording.

However, several significant variables have been identified which have implications for the analysis of the collection.

Different collection methodologies

The range of different methodologies used in the collection is perhaps its most significant variable. This has two principle implications for the analysis of the collection's lithic assemblages, variability in the intensity of collection, and variability in the degree of precision with which scatters and individual artefacts can be located.

Non-systematic collection

The majority of the material in the Uglow collection (185 assemblages) was collected using two non-systematic collection strategies (i.e. strategies in which the relative position of individual artefacts within a scatter is not recorded and standard intensities of collection across an area are not ensured). Material collected during the 1930s was located only by Ordnance Survey field number, which has subsequently been converted to a central grid reference for each field. Material collected from mid 1970s onwards, was located as sub-field scatters with at least an eight-figure grid reference being given for the centre point of each scatter, as well as an estimated extent of the scatter. Plans locating the extent and location of some of the scatters are in the collection archive (figure 4.2.4).

Non-systematic collection methodologies place some restrictions on the types of question that can be asked of the resultant lithic assemblages (Bond 2006, 63; Snashall 2002, 9). Due to the fact that no internal spatial data is recorded, detailed, intra-scatter spatial analysis of such assemblages is not possible. However, spatial analysis of such material at a wider, inter-scatter scale is still possible. Non-systematic assemblages can be used to understand patterns of scatter composition, function and chronology at a landscape scale. It had been hoped that non-systematically collected assemblages for which an approximate extent has been recorded (for example, see scatter N3 in figure 4.2.4) would have the potential to give additional information about the size of scatters. However, the experimental recollection of scatter N1f (figure 4.2.3) suggests that these 'blocks on maps' should be treated with caution. When recollected,

using a systematic collection methodology based on a 10x10m grid, a very different distribution of lithic artefacts was revealed than that indicated on the original sketch map. It is suggested that such sketch plans should only be used to roughly locate assemblages and should not be taken to be an accurate representation of scatter location and extent.

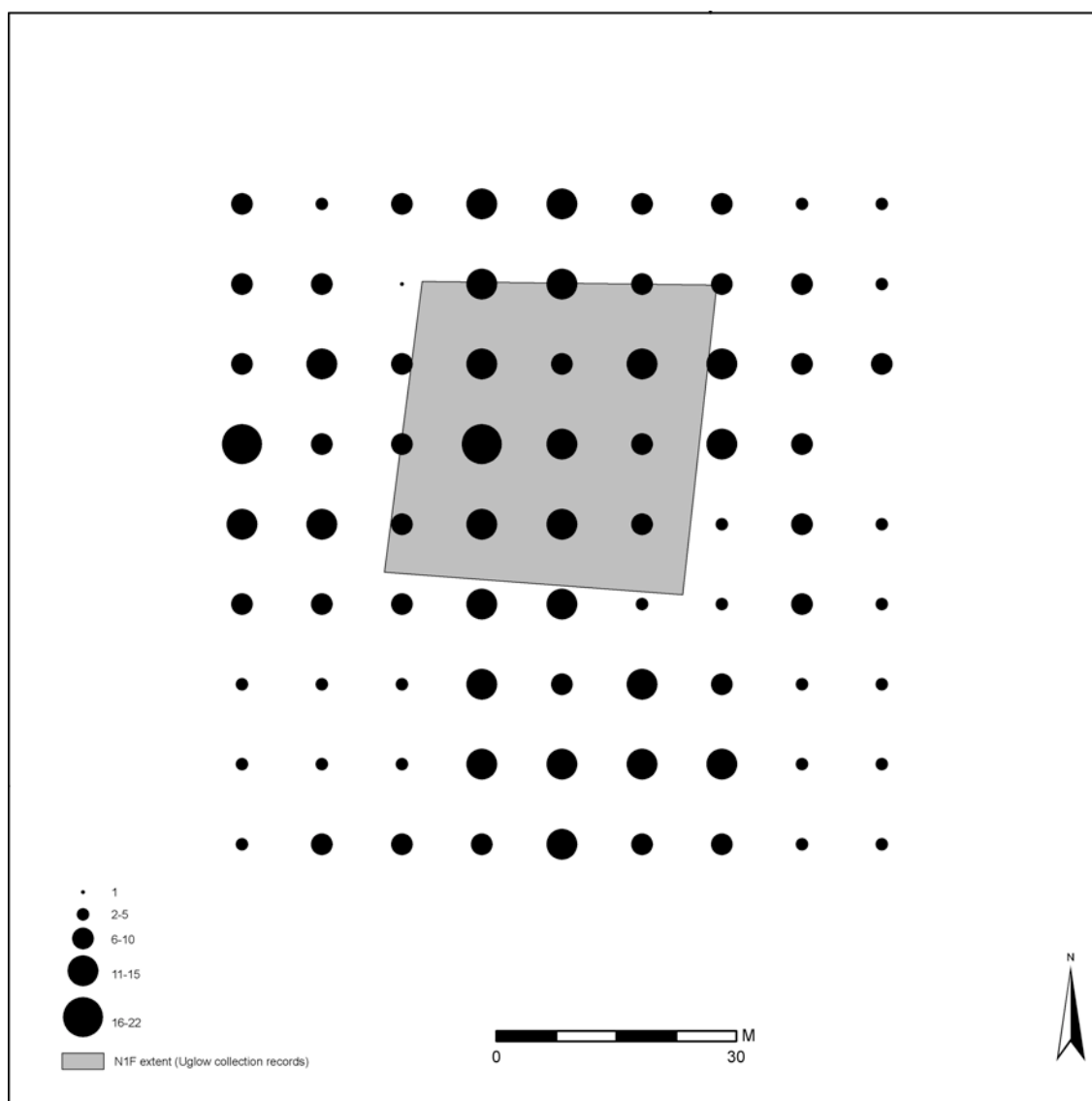


Figure 4.2.3 Systematic recollection of scatter N1F. Grey block indicates the extent of the scatter from John Uglow's field notes (collected non-systematically). Weighted dots show the distribution of all lithic finds from systematic total collection within a series of 10x10m grids

Non-systematic collection methodologies by definition do not ensure a standard intensity of collection across a survey area. This combined with the fact that many of the non-systematic assemblages are the result of two or more episodes of collection makes it difficult to make a simple inference between the number of finds in an assemblage and the intensity of occupation that

generated it. This is potentially particularly problematic when trying to make comparisons between non-systematically collected assemblages. However, it is possible in many cases to use the collection archive to identify where multiple collection episodes are likely to have occurred.

Systematic collection

A much smaller portion of the collection (6 assemblages), was collected using several systematic methodologies. During the early 1980s, influenced by collection methodologies developed elsewhere in the UK (Drewett 1979; Woodward 1978), John Uglow and members of the Tiverton Archaeological Group used several systematic methodologies.

- Scatter N1 was collected using a series of 10x10 metre grids (figure 4.2.5). Each grid was walked with a standard number of traverses to ensure an even rate of coverage across the site (Silvester *et al.* 1987, 1).
- Smaller gridded surveys were carried out at N3c, N4a and N5 using 20x20m grids (figure 4.2.6).
- Scatters N12 and T3a were walked in a series of 10m spaced traverses with finds from each traverse being bagged separately and the edges of major artefact concentrations being marked on a plan (figure 4.2.7).

Systematically collected assemblages and their associated distribution plans give an accurate representation of the size and shape of scatters. The fact that such assemblages record the position of individual artefacts within a scatter (with varying degrees of accuracy) means that they also have the potential to be used for more fine grained intra-scatter spatial analysis. It is still possible to aggregate such assemblages into a single collection unit so that they can be analysed on equal terms with non-systematically collected assemblages. The fact that systematic collection methodologies were specifically designed to maintain a consistent rate of collection across a survey area mean that they are very good at recording relative densities of activity within and between lithic scatters. It is considered likely that a systematic survey will result in a higher density of recovery (i.e. will recover more finds) than a non-systematic survey of the same area. This should be considered when comparing artefact densities from systematic and non-systematically collected assemblages.

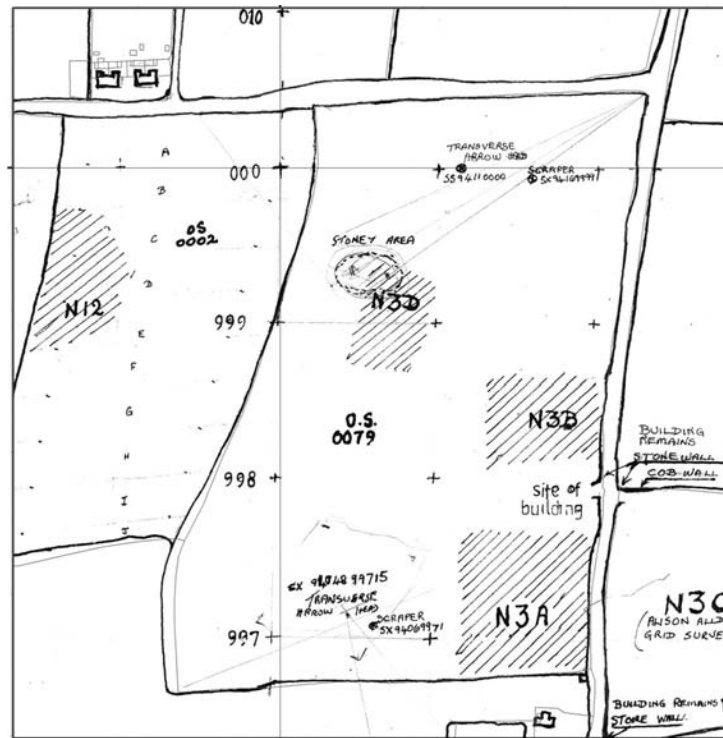


Figure 4.2.4 Scatter N3 an example of a series of non-systematically collected assemblages (after Uglow unpublished).

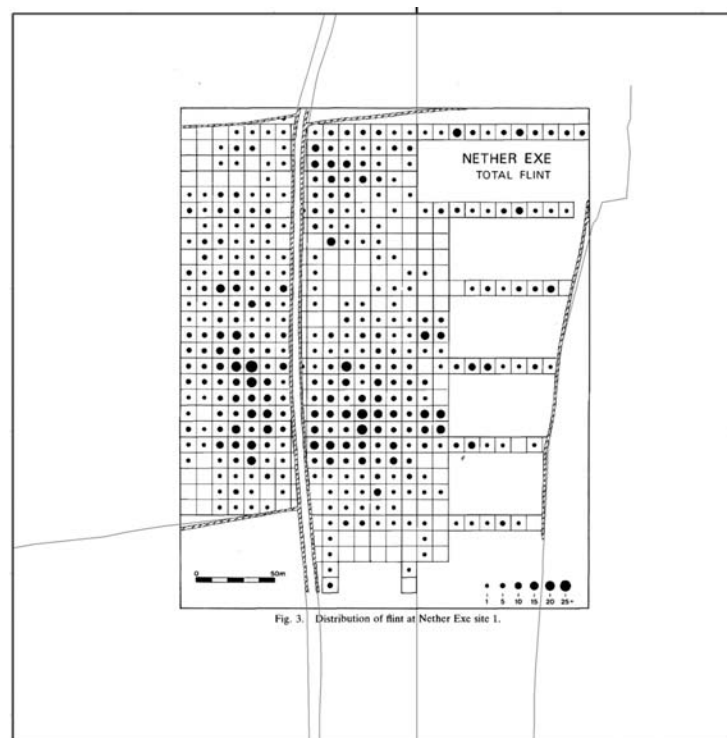


Figure 4.2.5 Scatter N1 an example of a systematically collected assemblage using a 10x10m grid (after Silvester *et al.* 1987).

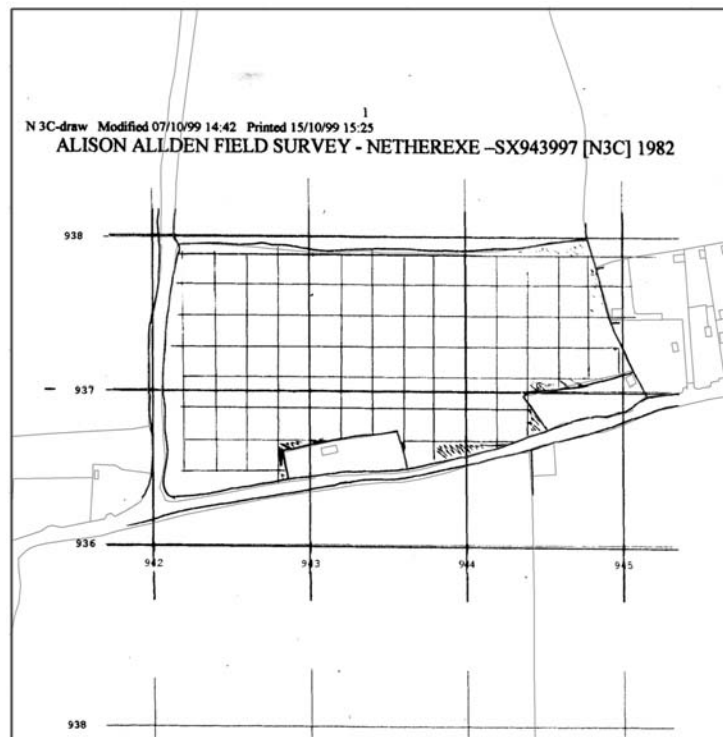


Figure 4.2.6 Scatter N3c an example of a systematically collected assemblage using a 20x20m grid (after Uglow unpublished)

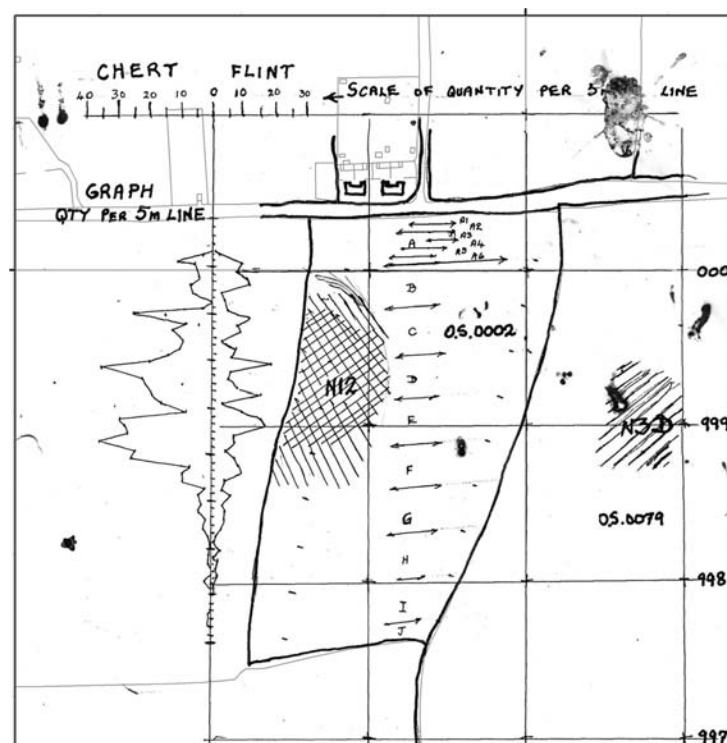


Figure 4.2.7 Scatter N12 an example of a systematically collected 'line-walked' assemblage (after Uglow unpublished).

Collection methodology	Potential	Constraint
Non-systematic	<ul style="list-style-type: none"> • Allows inter-scatter spatial analysis • Allows general location and extent of scatter 	<ul style="list-style-type: none"> • Does not allow intra-scatter spatial analysis • Inconsistent density of collection within and between scatters • Potentially lower density of collection • Poor definition of scatter size and shape
Systematic	<ul style="list-style-type: none"> • Allows both inter-scatter and intra-scatter spatial analysis • Consistent density of collection within and between scatters • Potentially higher density of collection • Good definition of scatter size and shape 	<ul style="list-style-type: none"> • Large amounts of data • Difficult to analyse

Table 4.2.1 Potentials and constraints caused by different collection strategies used in the Uglow collection

Coverage of the collection

Linked to the issue of differing intensities of collection between assemblages, is the question of what the gaps in the distribution of lithic scatters mean? Figure 4.2.8 shows the distribution of assemblages that form the Uglow collection. Whilst it is clear that there are areas with higher intensities of activity, there are also areas that have produced few or no finds. Although the Uglow collection archive provides detailed information about each of its constituent lithic assemblages, it provides no information about these negative areas. No information on these blank areas was forthcoming from any of the people interviewed about the collection. It remains unclear whether these areas represent a genuine absence of prehistoric activity or, possibly more likely, an absence of archaeological investigation. This issue is addressed more fully in chapter eight.

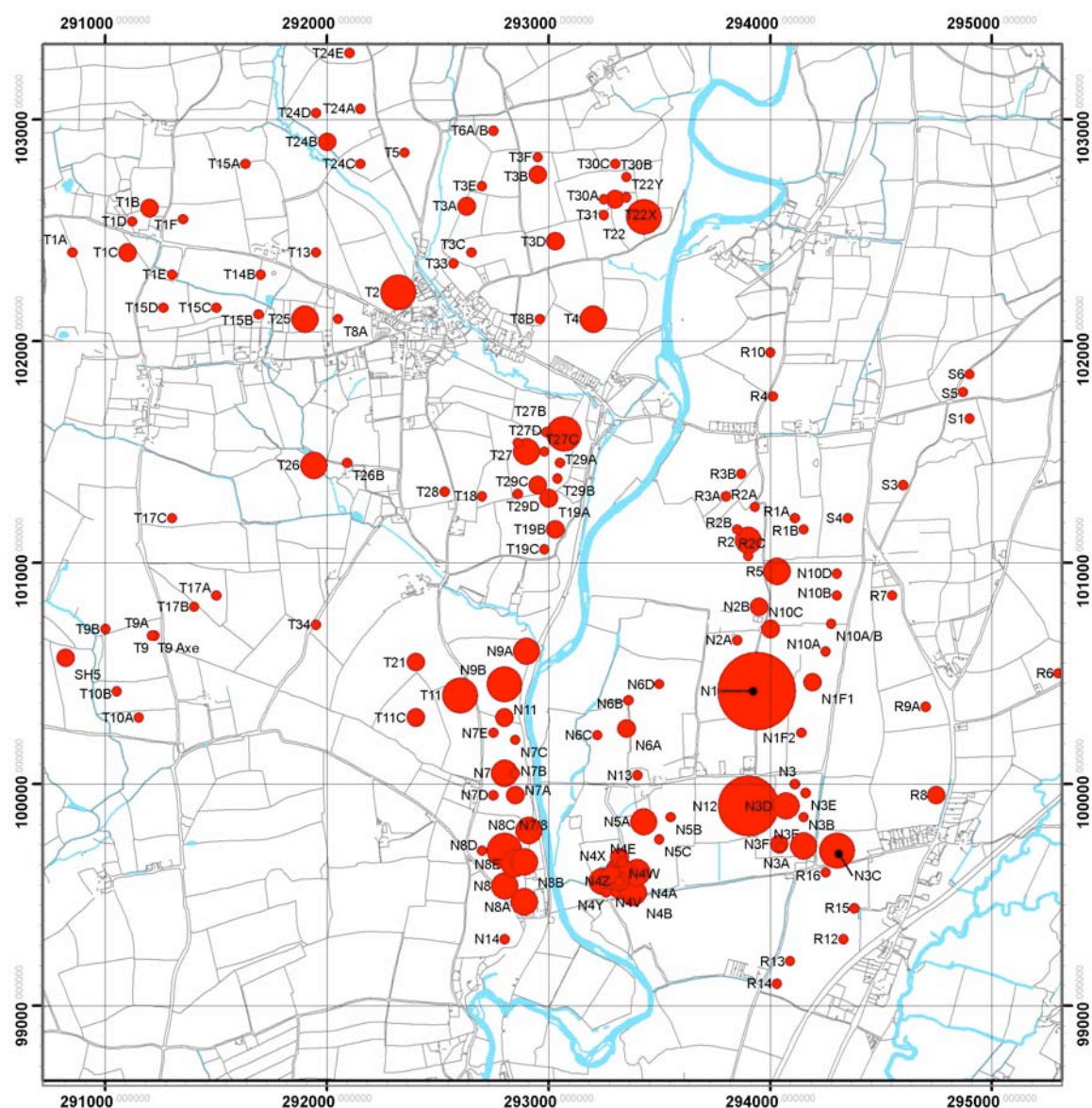


Figure 4.2.8 Uglow collection: distribution of all assemblages

Selective collection/retention of artefacts

Conversations with John Uglow and observations made during phase one analysis of his collection suggest that for most assemblages in the collection all lithic artefacts including both diagnostic tools and debitage were collected and retained. There is, however, some doubt as to whether elements of the Shaw and Edworthy collections from the 1930s, as they are now incorporated into the Uglow collection, are actually a representative sample of lithics from particular scatters, or are biased towards diagnostic/retouched pieces. Although Shaw comments that he initially kept everything that he found “*not just the implements and the belles pieces*” (1990, 206), it is unclear whether the entire collection has survived. Correspondence in the collection archive between Shaw and John

Uglove suggests that a large quantity of flakes from Thorverton were not retained, and were dumped in an old air raid shelter in Silverton. Similarly a large quantity of lithics from the Shaw collection from which identification/location numbers had worn off (predominantly debitage) were not deposited with the Uglove collection.

The number of assemblages for which this may be an issue is relatively small. In most cases the same areas have subsequently been rewalked in the 1970s by John Uglove. This allows comparisons to be made between the compositions of assemblages from successive phases of surface collection and collection/retention biases to be identified and accounted for in interpretation.

4.2.3 Implications for studying the Uglove collection

The Uglove collection is the cumulative result of nearly 70 years of fieldwork, undertaken by several different people and using a range of different collection methodologies. It is not a homogenous, systematic, research design led investigation of a landscape and cannot be treated as such. Early in research a decision was made to work with the existing collection whatever its limitations. This decision was partly pragmatic as rewalking substantial parts of the study area, using a systematic collection methodology, whilst based in a university at the opposite end of the country, was not a viable option. Alongside practical considerations was an acknowledgement (after Gardiner 1987, 1988; Snashall 2002, 29; Bond 2006), that amateur lithic collections, such as the Uglove collection, form a huge and valuable resource for understanding past landscapes, which should not be ignored. Whilst the variability within and between elements of the Uglove collection does impose limits on its analysis, it does not mean that it necessarily constitutes 'bad data'. The amount of information contained in the collection archive makes it possible both to identify biases introduced by collection methodology, and to inform choices about appropriate methodologies for its analysis.

4.3 Conclusion

Chapter four has introduced the archaeology of the study area. It has also attempted to assess the problems and potentials inherent in working with it. Undoubtedly the lower Exe valley is one of the windows of clarity into the

prehistory of lowland Devon. It is one of the few locations in Devon where a study of this nature could be conducted. However, the nature of its archaeological record, dominated by amateur lithic collections and undated cropmark enclosures, brings with it some several constraints. Issues raised in this chapter are returned to in establishing methodologies for this study (chapter six), and in the presentation and discussion of its results (chapters seven, eight and nine).

Chapter Five: Stone tools and lithic scatters

Assemblages of stone tools, and in particular surface lithic scatters, are one of the most valuable sources of information available to archaeologists studying the Mesolithic, Neolithic and Early Bronze Age. Chapter five looks at how archaeologists have sought to understand stone tools, the analyses they have used to do this, and how this has changed over time. The chapter is divided into two sections. The first outlines the development of lithic analysis from its origins in the nineteenth century through to the present day. Alongside tracing the conceptual frameworks within which stone tools have been understood, and the development of specific types of lithic analysis, this chapter examines the way in which archaeologists have understood the spatial/landscape context of stone tools, in particular surface lithic scatters. The second section summarises the lithic analyses routinely used on lithic assemblages. It considers the types of question that these analyses can address, as well as their applicability to lithic assemblages derived from surface scatters.

It is acknowledged that different traditions of lithic analysis have developed elsewhere in the world, for example, in North America (Holmes 1894; Odell 2004; Andrefsky 2005). Similarly different traditions of research exist in Palaeolithic lithic analysis (Wenban-Smith 2004). The primary focus of this chapter is the analysis of post-glacial flaked stone artefacts in Britain. However, where relevant reference is made to work outside these parameters.

5.1 A history of lithic analysis

5.1.1 Origins

Stone tools, and the debitage associated with their manufacture, are the earliest form of human material culture. Although their limited use for specific tasks continued into the post-medieval period, for example as gun-flints (Butler 2005, 192; Ruhe 1997, 2), the vast majority of lithic material in Britain relates to prehistoric activity prior to the introduction of metal. Ever since they ceased to be in general usage, and whether explicitly recognised as ancient artefacts, or as natural/supernatural phenomena, "*elf-shot or thunderbolts*" (Bahn 1996, 13), people have encountered and interpreted stone tools. During the eighteenth and nineteenth centuries the study of stone tools played a key role in the emerging discipline of archaeology. Discoveries, such as that made by Father

John MacEnery at Kents Cavern, Devon in 1825 (White and Pettit 2009), of stone tools in association with the bones of extinct animals, were important in establishing the antiquity of humans. Stone tools were also significant in establishing a relative chronology for prehistory. The 'Three Age' system proposed by Mahudel in eighteenth century France (Trigger 2006, 105) and later refined by Thomsen in early nineteenth century Denmark (Rowley-Conwy 2007, 20-47) recognised stone tools as the earliest form of human artefact, predating those made of bronze and iron.

5.1.2 Taxonomy and typology

In Britain lithic analysis began to emerge as a distinct discipline in two late nineteenth century publications: Sir John Evans' (1872) 'Ancient stone implements' and Sir John Lubbock's (1865) 'Pre-historic times'. Both authors, influenced by contemporary trends in natural history (Brown and Edmonds 1987, 1), as well as by similar research elsewhere in Europe (Evans 1872, 1), took a taxonomic approach to studying stone tools: building complex artefact typologies. Evans (1872) and Lubbock (1865) discuss the basic principles of stone tool technology drawing on contemporary British gun-flint manufacture and ethnographic studies of contemporary stone-using societies. In both publications detailed wood-cut illustrations accompany a type-by-type review of stone artefacts, in which artefact form, function, variation and distribution are discussed. In particular, Evans (1872) is virtually a catalogue of known examples of British stone tools, with numerous examples used to illustrate each class of artefact. Lubbock's work is significant in that in it he coins the terms Palaeolithic and Neolithic (1865, 60). Both he and Evans (1872, 12-3) use the terms to distinguish between glacial and post-glacial lithic artefacts.

The collection of stone tools from surface lithic scatters has its origins in the late nineteenth century. Bowden (1999, 125), for example, describes Pitt-Rivers' practice of 'flint hunting' for artefacts to create museum collections and build artefact typologies (see also Bowden 1991, 70-1; Thompson 1977, 48).

5.1.3 Culture history

The 'morpho-taxonomic' approach to lithic analysis fitted comfortably with the 'culture historical' interpretative models that dominated British archaeology in the first part of the twentieth century. The primary concerns of the culture

historic paradigm were to place archaeological artefacts and sites into chronological order, to plot their distribution and ultimately to group sets of associated evidence into spatially and temporally bounded 'cultures' (Childe 1969, 1-11). In part due to this concern with reducing the complexities of the archaeological record to discrete, datable cultures a much finer degree of relative chronological resolution for stone tools was established during the first half of the twentieth century. Rather than Evans and Lubbock's crude division of stone tools into Palaeolithic or Neolithic, chronologies of stone tools were identified within the Neolithic (for example, Piggott 1954), as well as the recognition of a separate Mesolithic with its own distinct material culture (Childe 1927, 2; Clark 1932; 1934).

Concerned with the questions of what, where and when, culture historical archaeologists used material culture including lithic artefacts as indicators/signatures of the presence/absence of particular cultural groups. The assumption being that a particular 'culture' will share particular types of artefacts or material culture. This is reflected in two lithic reports from key Neolithic sites excavated in the 1930s close to the study area: Liddel's (1935, 159-62) work at the causewayed enclosure at Hembury and Willock's (1936, 252-4) work at the Neolithic 'house' at Haldon Hill. Both reports describe a selection of lithic artefacts, the affinities of which, alongside those of their accompanying ceramic assemblage, are then used to link the sites with local and national cultural type-sites, in this case the 'Windmill Hill' and the 'Hembury' cultures. In both reports discussion of material culture is dominated by ceramics. This trend in culture historical accounts of British Neolithic material culture is also reflected in the work of Piggott (1954). Despite the subtitle of his study of British Neolithic cultures specifically mentioning "*stone-using*" communities (Piggott 1954) his use of lithic artefacts is minimal when compared with the emphasis placed on monument and ceramic typologies. In a similar vein Clark's (1949, 57) account of excavations at the Mesolithic site at Star Carr devotes little attention to the lithic assemblage in comparison to that given to the animal bone and antler assemblages.

Culture history and lithic scatters

During the early twentieth century there was a shift away from the importance attached solely to artefacts themselves, towards an acknowledgement that their

location and context are of equal importance. This period saw the beginnings of the collection of surface lithic scatters in Britain. This surface collection was characterised by non-systematic fieldwalking which focused on the identification of discrete settlement 'sites' or 'chipping floors'. The work of Greig and Rankine (1953) provides a good example of this type of work. Their study considers a major multi-period lithic collection from a series of surface scatters spanning several parishes on the northern fringe of Dartmoor. Although the majority of the report comprises a detailed period by period typological study of the collection, these typologies are also displayed as distribution maps alongside a discussion of the location and distribution of Mesolithic and post-Mesolithic sites.

Hurst Fen and Windmill Hill

The work of Clark *et al.* (1960) at the Neolithic pit group at Hurst Fen, and of Smith (1965) at the Neolithic causewayed enclosure at Windmill Hill, marks a watershed in British lithic studies. Both reports have had a lasting influence on the structure and content of subsequent British lithic reports (Brown and Edmonds, 1987,1; Brown 1995, 27, Saville 2008, 648). Both reports sit within a culture historical framework, being heavily reliant on typological analysis (Clark *et al.* 1960, 216-25; Smith 1965, 91-109), drawing upon selected affinities with other lithic assemblages to make assertions about cultural associations and dating (Clark *et al.* 1960, 226; Smith 1965, 92). However, they differ from previous lithic analyses in several key respects. Major innovations include:

- An examination of the type and origin of raw materials utilised in the assemblage (Clark *et al.* 1960, 125-6; Smith 1965, 85-6).
- Analysis being expanded to the entire assemblage including debitage and cores (Clark *et al.* 1960, 219; Smith 1965, 86-91, 93-6),
- Typological analysis is extended to characterise core and scraper morphology (Clark *et al.* 1960, 216-7, Smith 1965, 87-9). Clark *et al.*'s (1960) core typology remains influential today (for example, Chan 2003, 55; Snashall 2002, 44)
- Metric analysis is used firstly to characterise elements of each assemblage (scraper morphology at Hurst Fen, waste flake and scraper

morphology at Windmill Hill) and then to make comparisons with other assemblages (Clark *et al.* 1960, 219; Smith 1965, 89, 96).

- Charts are used alongside artefact illustrations to display statistical data about the assemblage (Clark *et al.* 1960, 214-15, 219; Smith 1965, 89).

Despite both reports marking a significant change in the content, presentation and format of lithic reports, it is almost as if each lithic report is a separate addition to, rather than an integral part of, its parent publication. The findings of the lithic reports are barely, in the case of Clarke *et al.* (1960), if at all, in the case of Smith (1965), integrated into the overall interpretation of each of the sites. Perhaps the most important aspect of the Hurst Fen lithic report, beyond the new analyses and their presentation, is the minor role that it plays in the site's interpretation. Discussion of the site focuses on its use (a settlement), its economy (mixed farming) and its cultural affinities (the Mildenhall group) (Clark *et al.* 1960, 241-3). However, the only role of the lithic assemblage in this discussion, beyond that of identifying site's cultural affinities, is in the interpretation of the site's economy. Clark *et al.* (1960, 241) suggest that the high numbers of arrowheads in the lithic assemblage indicate the importance of hunting at the site. Brown (1995, 27) suggests that this interpretative focus on economy has had a profound and lasting influence on the scope and interpretative remit of British lithic analysis.

5.1.4 Processualism

Increasingly influential in archaeological thought from the 1960s onwards, processual archaeology asked a different type of question of the archaeological record. Rather than simply seeking to describe, catalogue and divide it into cultural groupings, processualism began to ask the questions how? and why? of the archaeological record (Sabloff 2005, 214). Processualism was founded on the idea that through the application of rigorous scientific method it was possible to go beyond simply describing the archaeological record. Instead it aimed to explain the long-term process that shaped the lives of those who created it (Binford 1962).

The impact of processualism on lithic analysis has been three-fold.

Firstly: it expanded the analytical and interpretive remit of lithic analysis to encompass the function of artefacts and their role in prehistoric economies.

Processual archaeologists such as Binford (1962; 1973; Binford and Binford 1966) and Torrence (1989) saw stone tools as essentially a utilitarian 'hardware' that enabled people to exploit their particular environments with varying degrees of efficiency (Edmonds 1995, 13). Within such a framework, variation between lithic assemblages was seen as the product of variation in tool function, ecological setting or people's degree of adaptation to it, rather than indicating different cultural groupings.

Secondly: processualism's tendency to produce over-arching, cross-cultural explanations, in combination with its utilitarian interpretation, has had a lasting impact on the interpretation of entire lithic assemblages. Binford tested his early ideas on inter-assemblage variation, originally proposed to explain French Mousterian lithic assemblages (Binford and Binford 1966), by conducting ethno-archaeological research with Nunamiut communities in Alaska. At a landscape scale he developed idealised models of hunter-gatherer mobility between residential base camps and task specific camps (see Figure 5.1.1), and the variation in tool assemblages associated with each location (Binford 1980). At a much smaller scale he made observations about the spatial arrangement of different activities within a camp and the patterns of artefact discard that might result (Binford 1978). The idea of attempting to match lithic assemblages with a series of idealised activity or site types remains influential today (for example, Andrefsky 2008, 210-3).

Thirdly: beyond changing the way in which lithic artefacts are thought about, processual archaeology also introduced new approaches to lithic analysis. It aspired to be more scientific and objective, and became increasingly concerned with quantifying and qualifying aspects of lithic assemblages. A result of this trend was an interest in site formation processes (Schiffer 1983) and sampling strategies (Cherry *et al.* 1978). A further result of this trend towards a more scientific lithic analysis has been the development of a series of new types of lithic analysis including technological analysis, chronometric analysis and use-wear analysis (see section on analyses below).

Although initially slow to have an impact, processualism has had a lasting influence on lithic analysis in Britain. The continuing influence of Clark *et al.* (1960) and Smith (1965) combining with the emerging theoretical and analytical

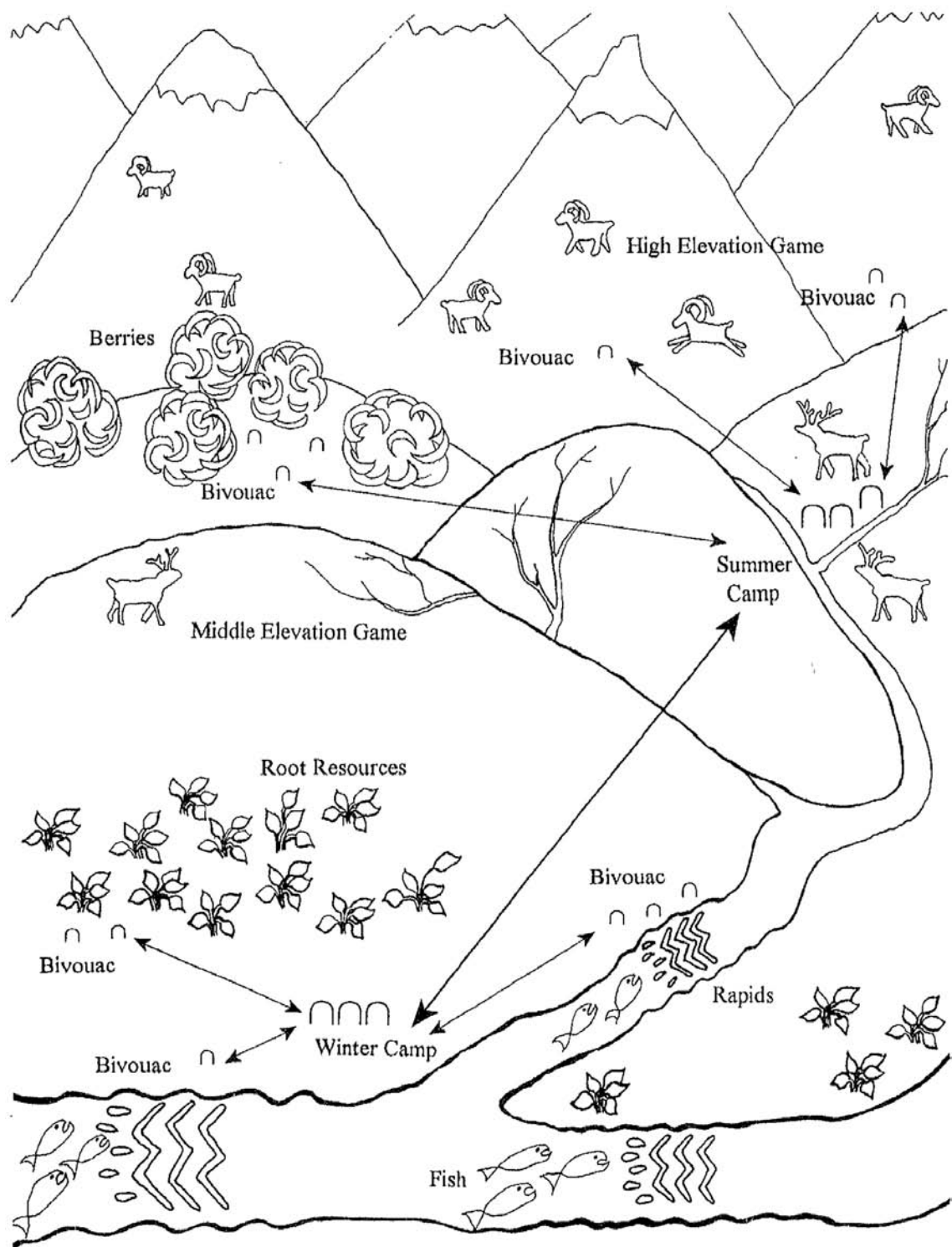


Figure 5.1.1 Idealised activity or site types (after Andrefsky 2004, 213/Binford 1980)

influences of processualism is illustrated by Brown's (1995, 28-9) selection of three major lithic reports spanning the early 1970s to the late 1980s: Bradley's 1970 report on the Early Bronze Age site at Belle Tout; Saville's 1981 lithic report from the Early Neolithic enclosure at Carn Brea; and Healy's 1988 lithic report from the Neolithic pit group at Spong Hill. To a greater or lesser extent each of these reports mirrors the "*Hurst Fen formula*" (Brown 1995, 29). Each beginning with an analysis of raw material followed by debitage and artefact typology, and then a discussion of affinities with other lithic assemblages. However, several new trends emerge within these reports. They reflect the increasingly functionalist and economically/environmentally determined interpretative frameworks of processualism and the adoption of ever more scientific techniques.

A more complex and progressively technological consideration of lithic debitage is apparent in these reports. Bradley (1970, 346-9) continues in the vein instigated by Smith (1965, 89-91) by undertaking metrical analysis of unmodified flakes. However, this is done in combination with an acknowledgement of the stages of stone working present in the assemblage. The terms primary, secondary and tertiary to describe differing amounts of cortex surviving on the dorsal faces of flakes are introduced (Bradley 1970, 346). Saville (1981, 112-6) and Healy (1988, 140-1) also adopt these analyses. Healy (1988, 141) adds a further analysis with an examination of striking platform preparation.

A significant conceptual break is made with the culture-historical notion that variation in artefact form equates with a variation in cultural group. Bradley (1970, 365) interprets variation in artefact form (in this instance scrapers) as being a product of variation in artefact function. Functionalist interpretation is more evident in Saville's (1981, 142-6), overall interpretation of the Carn Brea lithics. For example: a large number of leaf-shaped arrowheads reflects the importance of warfare; a high frequency of edge-trimmed flakes reflects the importance of cereals; the low numbers of scrapers reflect the non-importance of animals; and the large quantities of flint from distant sources reflects the importance of long distance trade. Similarly Healy's limited interpretative comments on the Spong Hill lithic assemblage are restricted to a processualist concern with economy and site function. "....a *full range of domestic*

activities...” were carried out at the site (site = settlement) and undated arrowhead manufacture (limited industrial activity: Healy 1988, 46-7).

As the most recent of the three reports several additional processualist traits are apparent in the Spong Hill report. This includes the utilisation of more scientific analyses, in this instance use-wear analysis (Healy 1988, 36-9), a consideration of factors influencing taphonomy/site formation process within the lithic assemblage (Healy 1988, 47-8) and also a detailed consideration of the contextual and particularly the spatial aspects of the assemblage, much of which is presented in plan or chart form (Healy 1988, figures 29-36).

Processualism and lithic scatters

At a conceptual level processualism began to deal with spatial data and distributions in a more complex way than simply treating them as evidence of the geographic extent of a particular culture. At a landscape scale the ‘Off-Site’ approach advocated by Foley (1981) challenged the assumption that a high density of surface finds = ‘site’ = settlement. Foley (1981, 157) argued that artefact discard is continuous and occurs at a landscape scale and not at a series of discrete ‘sites’. He suggested that artefacts, including stone tools, are discarded in many contexts other than domestic sites, and that domestic sites need not be marked by high concentrations of material. He also stressed that over time the periodic relocation of settlement and other activities will lead to a blurred and continuous spread of artefacts across favoured habitats (Foley 1981, 158-60). The implicit assumption in Foley’s work is that the overall distribution of surface finds is environmentally determined, reflecting the availability of resources.

A series of new methodologies for the collection of surface scatters was also developed in Britain in the late 1970s and 1980s. This was rooted in processual archaeology’s interest in the acquisition of statistically valid, regional data sets and the modelling of past settlement patterns. This resulted both in the development of systematic methodologies for sampling surface scatters at a landscape scale, and in the inception of large scale systematic fieldwalking projects (see Figure 5.1.2), including the East Hampshire Survey (Shennan 1985), the South Dorset Ridgeway Survey (Woodward 1991) and the Stonehenge Environs Project (Richards 1990). Although at a more focused

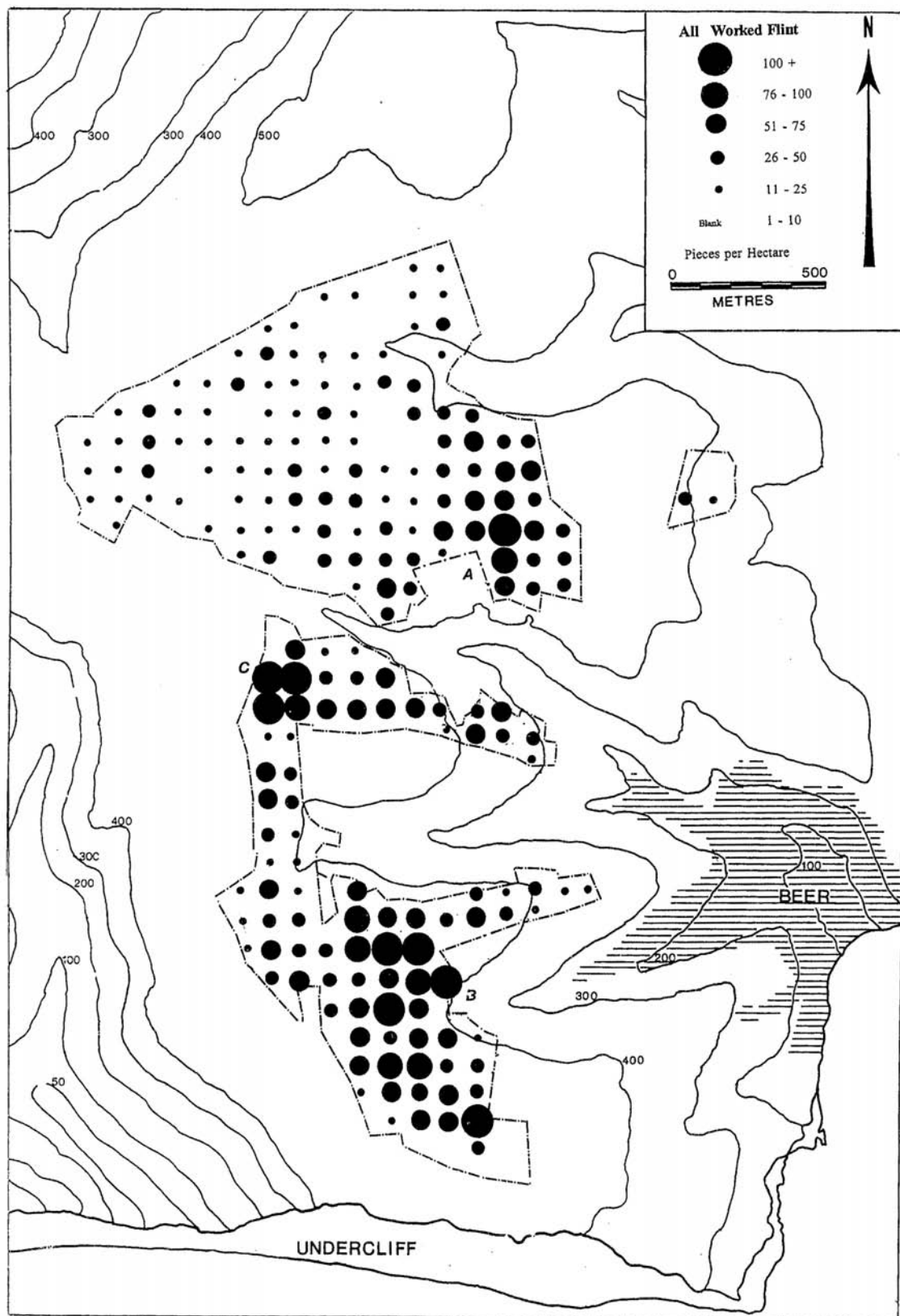


Figure 5.1.2 Landscape scale systematic surface collection (after Tingle 1998, 46)

scatter specific scale, the systematic, gridded collection of scatter Nether Exe 1 in the current study area (Silvester *et al.* 1987) is an early example of this type of research.

Reflecting another of processual archaeology's concerns a significant number of studies in the late 1980s and early 1990s focused on site formation processes, taphonomy and other methodological difficulties inherent in working with lithic scatters (Haselgrove *et al.* 1985; Schofield 1991; Shennan 1985). Attempts were made to identify and calibrate the variables in the relationship between the original archaeological position of artefacts and their subsequent spatial position in surface scatters (Allen 1991; Clark and Schofield 1991); to understand the numeric relationship between plough soil and surface artefact populations (Gaffney and Tingle 1989; Parker Pearson 1981; Silvester *et al.* 1987; Tingle 1998); and to understand the relationship between original depositional context and plough soil artefact populations (Healy 1987).

5.1.5 Post-processualism

Post-processualism, developed initially in reaction to the generalising, objective and 'scientifically' tested explanations of the past put forward by processual archaeology, has shaped archaeological theory since the early 1980s. Its principle impact on lithic analysis in Britain has been to shift emphasis away from the description and functional/economic explanation of stone tools towards developing an understanding of their social context. The work of Brown (1989; 1991; 1995) and particularly Edmonds' (1989; 1995; Edmonds and Thomas 1987) has been influential in this respect. Rather than regarding stone tools as simply utilitarian hardware requiring common sense functional explanation Edmonds (1995, 17-9) emphasises the way in which stone tools as active material culture would have been caught up in wider frames of reference and meaning, and as such require theorisation and interpretation.

An early example of a post-processual approach to lithic analysis is Brown's (1991) report on the lithic assemblages from a series of excavations on Cranborne Chase. Brown sets out to not only discuss the manufacture of lithic artefacts but to also consider their 'uses' in social reproduction as opposed to simply their utilitarian function (Brown 1991, 101). He stresses the need to view lithic assemblages in their context as just one part of entire suites of active

material culture (Brown 1991, 101; 1995, 31). His approach combines metrical analysis, refitting exercises to understand site specific examples of reduction sequences, and a modified typological analysis which as well as recording standard 'morpho-taxonomic' tool types also records a range of different classes of flake and other debitage. This is combined with a contextual analysis of the each lithic assemblage both in terms of its immediate associations with other classes of artefactual and faunal evidence, as well as the nature of its deposition (for example, pit or ring ditch). This approach provides a rare example of a conscious attempt to adapt standard analytical practice (essentially an uncritical application of a series of analyses inherited from morpho-taxonomic, culture-historical and processual traditions of lithic analysis) to answer questions informed by post-processual theory.

A single example of the application of this type of analysis is the work on the lithics from a series of Grooved Ware associated pits at Firtree Field. In these pits Brown is able to demonstrate that different classes of raw material (gravel flint as opposed to fresh nodular flint), displayed evidence of different reduction sequences, were kept separate, and were ultimately deployed differentially in a series of structured deposits (Brown 1991, 110). For example, a seemingly deliberate association is made between flakes and cores struck from nodular flint, and certain types of artefact including axes, arrowheads and serrated flakes (Brown 1991, 111). Brown uses a series of such observations from the Cranborne Chase lithic assemblages to trace the social 'currency' of flint working throughout the Neolithic and Early Bronze Age (1991, 131).

Cummings (2010, 68) applies phenomenological ideas about the materiality of stone to lithic analysis. Informed by ethnographic accounts of the significance of colour in lithic raw material selection, she conducts a detailed analysis of artefact colour on several lithic assemblages. The results of this study suggest that raw materials with certain colours were preferentially selected for the manufacture of certain artefacts, for example, orange-brown flint for making barbed and tanged arrowheads (Cummings 2010, 71). Ironically although applied here in a very much post-processualist, interpretive context, Clark *et al.* (1960, 215-6) observed a similar association in the Hurst Fen assemblage, although he offered no interpretation of its meaning.

Post-processualism and lithic scatters

With the advent of post-processual landscape archaeology in the mid 1990s, studies of prehistoric landscapes begun to ask questions about how people perceived, used, shaped and were shaped by the landscapes they inhabited (for example, Barrett 1994; Bender 1993; Thomas 1993; Tilley 1994). The majority of these and subsequent studies have focused on the place of monuments within prehistoric landscapes, however, a smaller number of studies have asked similar questions of non-monumental aspects of landscapes, including lithic scatters (for example, Edmonds 1997, 1999; Pollard 1999, 2000).

Some studies (for example, Edmonds 1989; Snashall 2002) have been influenced by the work of Bourdieu (1977) and Barrett (1987; 1994). Culture-historical and processual studies place emphasised patterns of similarity, or functional aspects in lithic assemblages, and with it an implicit stability. These newer studies instead emphasised patterns of contrast and change, within and between lithic assemblages. In this context lithic assemblages become a way into understanding how the prevailing norms of living, 'knowing how to go on' or 'habitus' were maintained or transformed (Edmonds 1989, 37-8).

For many recent studies Ingold's (1993) concept of taskscape has been particularly influential. The locations occupied by lithic scatters, and the activities that generated them, have begun to be seen as a series of potentially dynamic, meaning-laden locations/actions and provided the context in which people's relationships with each other and their surroundings were created, maintained and transformed. This has also been accompanied by a shift away from Foley's (1981) view that the location of lithic scatters was purely determined by the availability of natural resources. Edmonds (1999, 26) and Pollard (2000, 363) have suggested that the particular cultural, historic or biographic associations of a place may have been important in determining whether it saw repeated occupation.

More recent studies of lithic scatters have been informed by these ideas (for example, Bond 2006; Chan 2003; Edmonds *et al.* 1999; Snashall 2002). Although conscious of the limitations and difficulties of working with such material these studies have taken an optimistic approach to working with

surface scatters. However, these studies have not necessarily seen methodological innovation. Rather there has been a tendency to subject scatter derived lithic assemblages to a much more thorough level of analysis than has previously been the case in order to maximise their interpretative potential. Chan (2003), Durden (1995), Edmonds *et al.* (1999) and Snashall (2002) all use a wide-ranging combination of typological, (chrono) metric and technological analyses to establish variation in scatter composition at a range of different spatial and temporal scales.

5.1.6 Summary

This section has traced the development of lithic analysis from its origins in late eighteenth and nineteenth century antiquarianism to its present day relationship with post-processual archaeology. It shows how changing theoretical paradigms have had a profound effect on the way in which archaeologists have thought about stone tools, as artefacts, assemblages and as surface scatters. The questions that post-processual archaeologists might ask about the social context of stone tool deposition, or of the place of a lithic scatter within a taskscape, show little resemblance to the questions of typology and date asked by Lubbock and Evans at the end of the nineteenth century. However, almost in contrast to these major theoretical shifts in thinking about stone tools is the aggregated nature of lithic analysis itself. It is a relatively easy task to unpick a contemporary study of a surface lithic scatter to discover a range of analyses whose roots are in morpho-taxonomic, culture historical, and processual schools of archaeological thought. This underscores the need to think critically about lithic analysis, and to tailor analytical methodologies to fit the requirements of research questions

5.2 Lithic analyses

The following section summarises the principle types of lithic analysis routinely used on lithic assemblages in Britain today. It considers the types of question that these analyses can be used to answer, as well as their applicability to lithic assemblages derived from surface scatters.

5.2.1 Typological analysis

As outlined in the previous section the roots of lithic analysis in Britain (Evans 1872; Lubbock 1865), and elsewhere in the world (Holmes 1894), are in the

creation of artefact typologies. This approach aimed to make an otherwise incomprehensible mass of individual lithic artefacts understandable by dividing them into categories of related artefacts/tool forms, and ultimately arranging them chronologically. The questions that this approach asks of an artefact are simple, what does this artefact look like? does it fit into a recognisable class of artefact?, and how old is it? In essence the “*morpho-taxonomic*” (Brown and Edmonds 1987, 4) approach of Lubbock and Evans, although now based on much refined typologies with finer chronological resolution (see for example Clark 1934, Clark *et al.* 1960, Green 1980, Butler 2005), remains a cornerstone of lithic studies. The initial phase of analysis of almost any lithic assemblage, whether scatter derived or excavated, seeks to identify recognisable artefacts with which to date and characterise an assemblage.

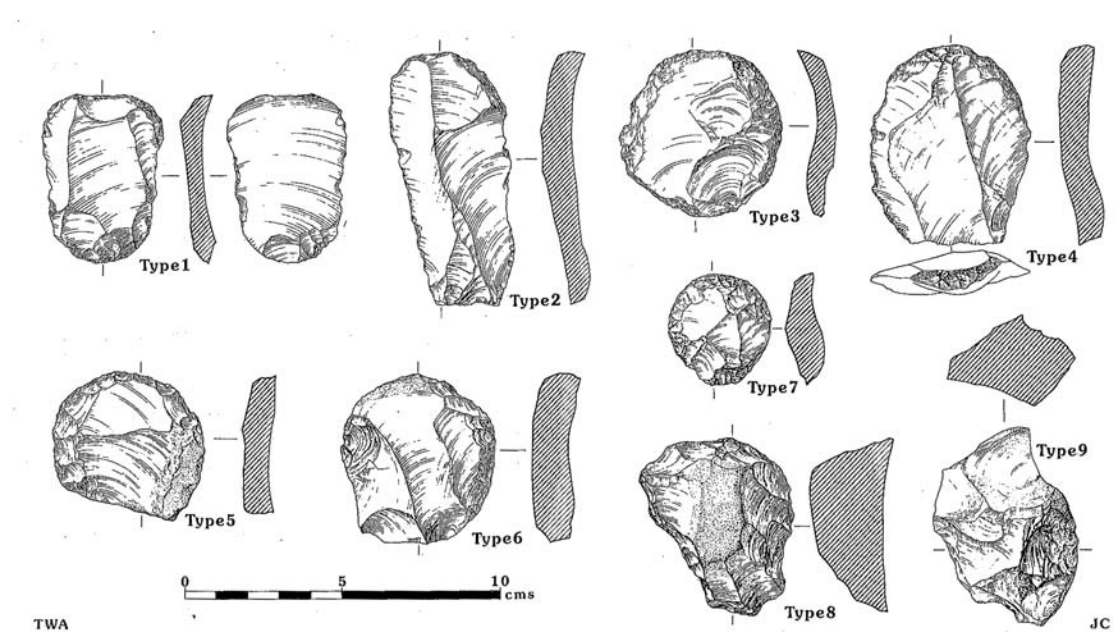


Figure 5.2.1 Scrapper typology from the Stonehenge Environs Project (after Richards 1990, 18)

5.2.2 Raw material analysis

Raw material analysis is routinely undertaken on lithic assemblages including those derived from surface scatters. Raw material analysis attempts to identify both the materials from which stone tools are made and their parent sources. The results of these analyses have been used to suggest long distance trade

(Saville 1981, 142-6), exchange patterns (Bradley and Edmonds 1993; Edmonds 1995 55-9) or more generalised patterns of mobility or contact (Conneller and Schadla-Hall 2003, 100).

In Britain the analysis of stone tool raw materials has followed two very different trajectories. The majority of stone tools are made from flint and chert, raw materials whose sources are often widely distributed and frequently difficult to differentiate both visually and chemically. Unlike with non-flint axes where it has proved possible to match particular axes to particular raw material sources, analysis of these materials has tended to be limited to their macroscopic characterisation. Most flints and cherts are characterised according to cortical condition (suggesting either a primary geological source or a secondary beach pebble/river gravel source), colour and texture. These attributes are then used to associate archaeological material with possible raw material sources some of which may have a considerable geographic extent. There are some exceptions, which include some visually distinctive materials such as Bullhead flint (Butler 2005, 21), Portland chert (Palmer 1970) and Arran pitchstone (Ballin *et al.* 2009); all of which can be sourced to a relatively restricted geographic area.

Variation in the raw materials used in flaked stone tools has long been recognised (for example, Mann, 1919; Pengelly 1874, 149). However, it was not until the mid-twentieth century that the systematic macroscopic characterisation of raw materials and discussion of their sources became an integral part of lithic analysis. Although earlier examples of raw material analysis do exist (for example, Greig and Rankine 1953, 23-4) its introduction is generally attributed to Clark *et al.* (1960) and Smith (1965). Both reports have provided an enduring influence on the structure and content of future macroscopic raw material analyses by discussing colour, cortical surface and likely source of raw materials. The work of Bush and Sieveking (1979, 97; 1986) established the potential of using geochemical analyses to link flint axes to particular flint mines. However, analysis of this kind has not been widely applied to flint and chert assemblages in Britain. Whilst the macrofossil and geochemical signature of flint varies vertically (between different layers of flint), its composition is very uniform horizontally (a single layer with a homogenous chemical and fossil signature can stretch for hundreds of kilometres), (Rosemary Stewart *pers. comm.*). As such whilst it is potentially possible to use

scientific techniques to identify when in the geological sequence a particular flint originated, it is almost impossible to identify its source geographically.

A much smaller proportion of stone tools are made from 'non-flint' raw materials (for example, jadite and volcanic tuffs) whose sources are more narrowly distributed geographically and are easier to distinguish visually and chemically. Accordingly tools made from these materials are easier to source and have a longer history of macroscopic, microscopic and chemical analysis. During the early and mid-twentieth century it was recognised that the stone axes found as stray finds, and in increasing numbers during the excavation of Neolithic sites were made of non-local stones (Thomas and Passmore 1929; Piggott 1935). In parallel increasing numbers of raw material extraction and stone axe manufacturing sites were also being discovered. For example, as quarries, primarily for non-flint rocks, such as Graig Lwyd, Caernarvonshire (Hazeldine Warren 1919) and Great Langdale (Bunch and Fell 1949) and mines for flint, such as Harrow Hill in Sussex (Curwen and Curwen 1926) and Grimes Graves, Norfolk (Clarke 1915). The 1920s and 1930s saw initial attempts, with macroscopic and microscopic analyses of thin-section samples, to petrologically link particular stone axes with particular stone sources (Grimes 1979, 1). This process was formalised in the 1940s and 50s with the instigation of regional and national systematic programs of petrological study of stone axes and their sources (Grimes 1979, 2). As a result non-flint axes are now widely attributable to a specific source (Clough and Cummins 1979; 1986; Edmonds 1995, 52).

Several types of geochemical analysis, all capable of characterising the chemical composition of rocks, have been applied to lithic studies in recent years. These techniques include Neutron Activation Analysis (NAA), X-Ray Fluorescence Analysis (XRF) and Proton induced X-ray emission (PIXE) (Ordell 2004, 33-5). These techniques have the potential to revolutionise archaeologist's ability to identify the source of raw materials encountered in lithic assemblages. However, these techniques are reliant on the sampling and identification of a range of potential raw material sources. The work of Evans *et al.* (2007) is one of the few examples of this type of research in Britain. They use geochemical analysis to isolate different 'Black chert' sources in the Pennines as a step towards understanding patterns of Mesolithic raw material procurement and mobility.

5.2.3 Metric analyses

Metric analysis of lithic assemblages is carried out for two main reasons, firstly to enable the objective description and characterisation of lithic assemblages, and secondly as a crude chronological indicator. The majority of almost all lithic assemblages are comprised of unmodified debitage as opposed to retouched tools. Nineteenth and early twentieth century lithic analyses tended to ignore this material in favour of typologically identifiable tool types. Clark *et al.* (1960) and Smith (1965) are among the first British lithic analyses to acknowledge and analyse lithic debitage. Clark *et al.* (1960, 216) introduces a system of typological classification for cores. Smith (1965, 96), uses metrical analysis of flake length to width ratios to characterise and distinguish between early and Late Neolithic assemblages at Windmill Hill and Avebury. Smith's use of metrical analysis was inspired by the work of Bohmers (1956) who proposed metrical analysis, the statistical study of the results and their presentation in graph form as a way of making information about large lithic assemblages readily available and to enable inter assemblage comparisons to be made. Metrical analysis has become increasingly formalised with standardised methodologies for taking measurements to ensure compatibility of results between assemblages (Andrefski 2008, 98-102; Saville 1980).

Following on from observations made by Smith (1965, 96) and Bradley (1970) about differences between early and Late Neolithic debitage, several authors, including most notably Ford (1987); Ford *et al.* (1984) and Pits and Jacobi (1979), have suggested that the shape and dimensions of post-glacial tools and debitage are chronologically sensitive. They note changing trends in artefact and artefact blank morphology from long, narrow blade-based forms in the Mesolithic, to shorter, broader flake-based forms by the Bronze Age.

Metric analysis, specifically the comparison of length/width/breadth ratios of complete blades and flakes can be used to suggest an approximate date for a lithic assemblage. This is particularly useful in the absence of diagnostic artefacts and can also be used to separate phases within a multi-period assemblage. Chronometric analysis can be applied to both stratified and unstratified surface lithic assemblages. Snashall (2002) uses the chronometric analysis of a series of stratified and independently dated lithic assemblages

from her study area to provide 'bench marks' against which to compare the results of the chronometric analysis of a series of surface lithic scatters which form the bulk of her research.

5.2.4 Reduction sequence and refitting analysis

'Reduction sequence' analysis aims to understand the process by which a piece of unmodified raw material is 'reduced' to a series of flakes, cores and finished tools. At its simplest reduction sequence analysis attempts to identify the stages of the stone working process present within a lithic assemblage. This involves recording the proportion of cortex surviving on the dorsal surfaces of artefacts and debitage. Pieces with a higher percentage of cortex on their dorsal faces are likely to represent earlier stages in the stone working sequence, pieces with little or no dorsal cortex the later stages. An early example of this type of analysis in British lithic analysis is Bradley (1970, 346). He divides waste flakes into three classes according to the extent of dorsal cortex, primary (wholly cortical), secondary (partially cortical) and tertiary (non-cortical). This model has been widely adopted into lithic analysis, and is used for both excavated and surface assemblages. More recently some lithic analysts have adopted the use of a more finely graded set of percentage classes to describe the extent of dorsal cortex (for example, Snashall 2002, 44).

Refitting analysis takes a three-dimensional approach to understanding reduction sequences. It exploits the subtractive nature of flint knapping (i.e. a larger piece of raw material is flaked into smaller finished tools and debitage). Refitting analysis attempts to reverse this process and reform the original parent block of raw material by piecing together the tools and debitage that have been struck from it. In so doing a fuller picture of the reduction sequence, or *chaine operative*, used in the working of a core can be revealed, potentially giving an insight into both the technology of stone working used, as well as its spatial configuration at a site or landscape scale (Conneller 2008, 164).

Refitting analysis on assemblages from the Vale of Pickering (Conneller and Schandla-Hall 2003) have revealed both complete sequences of refits, as well as partial refitting sequences with voids indicating cores or tools removed from the location. More limited sequences of refits were identified within an *in-situ* scatter associated with arrowhead manufacture excavated at Eton Rowing Lake (Lamdin-Whymark 2001, 28-29). Brown (1991) makes extensive use of refitting

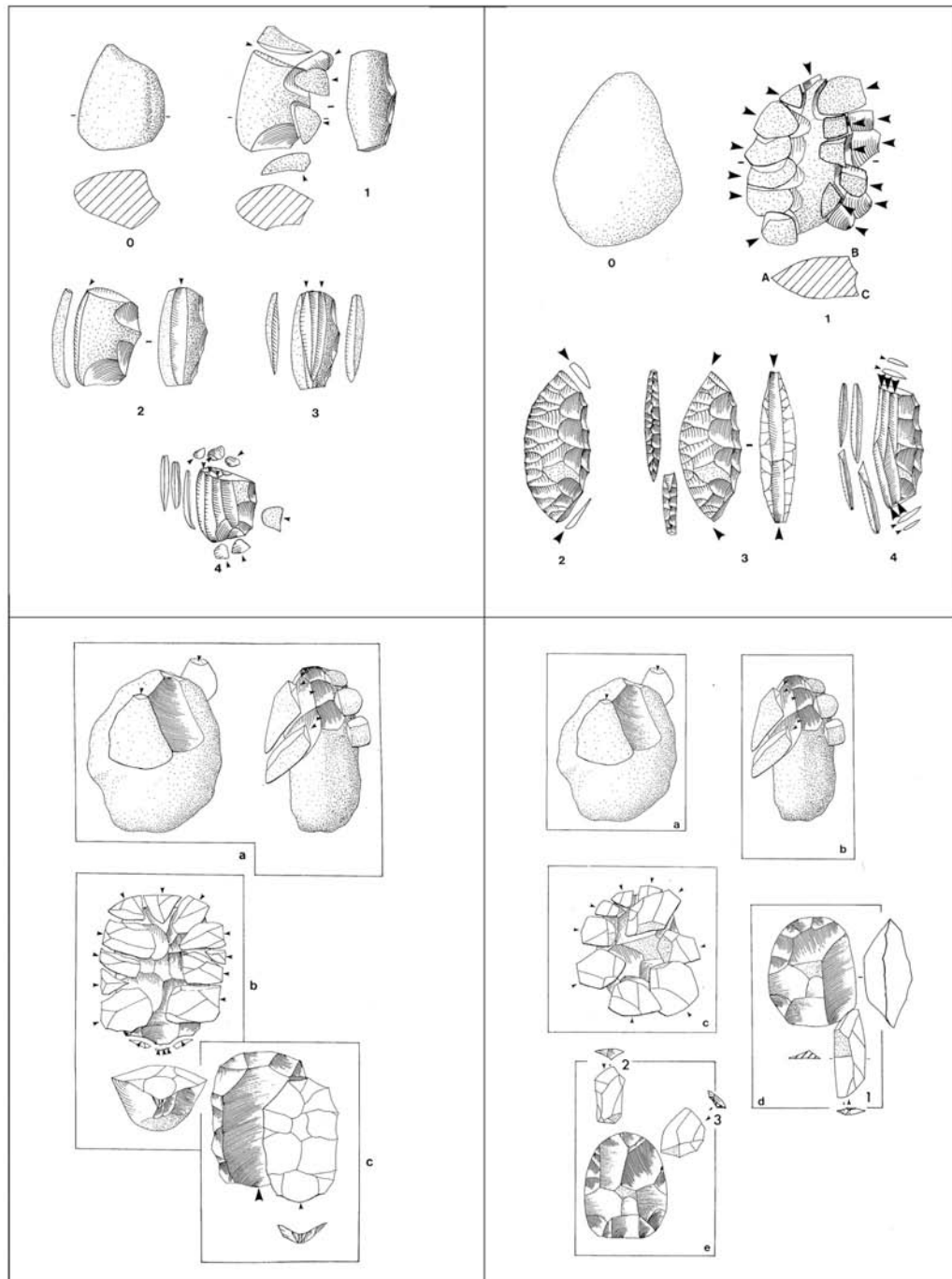


Figure 5.2.2 Simplified lithic reduction sequences (after Inizan *et al.* 1999, 40-41, 66-67)

sequences to establish typical reduction sequences amongst excavated lithic assemblages from Cranborne Chase. Given the low percentage of the original archaeological assemblage that is represented in a surface assemblage (Gaffney and Tingle 1989; Parker Pearson 1981; Silvester *et al.* 1987; Tingle 1998) the chances of a meaningfully large sequence of refits being recovered from a surface scatter are remote. As a result refitting is only really practical on assemblages derived from excavated *in-situ* deposits.

5.2.5 Technological analyses

Technological analysis attempts to understand the techniques and processes involved in the production and use of a lithic assemblage. The present day technological analysis of lithic artefacts has been informed both by ethnographic observation of modern day, or recent historic, stone using societies (for example, Binford 1978), as well as the experimental replication of lithic artefacts by archaeologists (for example, Whittaker 1994). Both areas of research stimulated an interest in how lithic artefacts were produced, as well as focusing attention on to the debitage component of lithic assemblages rather than just identifiable tool forms. Variables analysed in a technological analysis might include hammer type, striking platform/butt type, termination type, artefact size and weight, extent/character of retouch, and type/direction of dorsal scars (Andrefsky 2008, 85-200).

Technological analyses have tended only to be used on excavated assemblages. However, several recent studies have successfully applied it to assemblages from surface scatters (see Bond 2006; Brown 1996; Chan 2003; Durden 1995; Edmonds *et al.* 1999; Snashall 2002). In this context it has been used to identify spatial variation in stone working as well as chronologically sensitive variables in stone working.

5.2.6 Use-wear analysis

Use-wear analysis is the study of patterns of wear and abrasion found on or near the cutting edges of stone tools. Use wear analysis sets out to answer questions about how a particular tool was used. Although wear on stone tools had long been noted (for example Evans 1872; Curwin 1930), the microscopic studies made by Semenov in Russia during the 1930s (1964) are the most influential early work in this area. Today two distinct schools of analysis exist:

low-power analysis (under 100x magnification) which can be used to determine the type of action a tool was used for (cutting, boring, scraping whittling etc), as well as the relative density of material that it was used on (hard or soft); high-power analysis (over 100x magnification) is used to determine the type material that a tool was used on (wood, bone, cereals etc: Andrefsky 2008, 7).

Use-wear analysis is generally only used on excavated assemblages from *in-situ* contexts. For example, its use on in-situ lithic scatters within a Neolithic midden at Eton Rowing Lake has been used to identify different activity areas (Lamdin-Whymark 2001, 29-30). Donahue and Burrioni (2004) use use-wear analysis to suggest differences in use between lithic assemblages associated with Grooved Ware pits and Peterborough Ware pits. There is a debate as to whether damage caused to artefacts by post-depositional agricultural disturbance and collection/storage, precludes the application of use wear analysis to lithic assemblages derived from surface scatters. Steinberg (1996, 374) suggests that the impact of these post-depositional factors is too great to make use wear analysis a worthwhile venture. Brown (1996) suggests that different types of modern agricultural practice will have differing impacts on artefacts in surface scatters. He makes a convincing case for the application of use wear analysis to answer specific questions about surface scatter assemblages which on initial assessment do not show high levels of post depositional damage.

The extent of post-deposition damage caused to the Uglow collection's lithic assemblages by modern agriculture is likely to vary across the study area. However, most of the collection's assemblages have been stored in large bags containing tens of lithic artefacts. It is considered likely that post-collection artefact on artefact abrasion will have considerably reduced their potential to yield meaningful results from use-wear analysis.

5.2.7 Summary

This section has outlined a range of analyses commonly applied to lithic assemblages. It is clear that some are more suited to the analysis of surface lithic assemblages than others. Due to the nature of its storage, the scale and intensity of its collection, and the nature of its raw materials; use-wear, refitting and chemical raw material analyses are considered to be of limited utility for the

study of the Uglow collection. The specific use of typological, metrical, technological, reduction sequence and visual raw material analyses in relation to the Uglow collection are discussed more fully in the following chapter.

5.3 Conclusion

Chapter five has traced the analytical and theoretical development of lithic analysis from the nineteenth century to the present day. It has also outlined a range of lithic analyses and discussed their applicability to the analysis of surface lithic assemblages in general, and the Uglow collection in particular. Two important themes emerge from this chapter. Firstly the need to think critically about lithic analysis, and to select analyses appropriate to the questions asked of a particular lithic assemblage. Secondly the need to consider the constraints that a particular assemblage may place on the range of analyses it is possible to conduct on it, and the types of questions that it is possible to ask of it. These themes are returned to in chapter six which outlines the methodologies used in this study.

Chapter Six: Methodology

As outlined in the preceding chapters this study focuses on understanding the nature of landscape inhabitation in the lower Exe valley during the Mesolithic, Neolithic and Early Bronze Age through the study of a series of surface lithic scatters. It draws on the work of Bond (2006), Chan (2003), Edmonds *et al.* (1999), Hind (2000) and Snashall (2002) all of whom have taken a confident approach to working with lithic scatters. It also draws on theoretical approaches to landscape archaeology, including work on landscape phenomenology (Cummings and Whittle 2004; Tilley 1994; 2010), taskscape (Edmonds 1997; Ingold 1993; and the dwelling perspective (Ingold 2000, Thomas 2008). This piece of research sees the *contents* and *context* of lithic scatters as being inseparable parts of the same whole. Methodologically it seeks to integrate the detailed analysis of the *contents* of a series of lithic scatters (lithic analysis) with a detailed consideration of their *context* in relation to monuments (archaeological analysis) and topographic features (landscape analysis). The following chapter outlines the methodologies used and the rationale behind their use.

6.1 Lithic analysis

Analysis of the Uglow collection was carried out in two phases

6.1.1 Level one lithic analysis

The first phase of lithic analysis involved the rapid assessment of the entire Uglow collection, approximately 19,000 lithic artefacts (Bayer 2008). This assessment was carried out when the collection was being reboxed prior to deposition in the Royal Albert Memorial Museum, Exeter (RAMM). The analysis was intended to quickly quantify and characterise each of the collection's assemblages, and summarise key information from the collection archive. The basic unit of analysis was the subfield scatter. Criteria recorded for each scatter were location, collector, date of collection, method of collection and raw material. A brief visual assessment of each assemblage was undertaken to identify chronologically and technologically distinctive artefacts and traits. This information was summarised in a data-base (see appendix A), which was integrated into a GIS to produce a series of distribution maps (see appendix B). The results of level one analysis were then

	Research Question	Related questions
1	How can lithic scatters be used to understand the character and composition of inhabitation?	<p><i>What types of activity does it reflect?</i></p> <p><i>How intense is occupation?</i></p> <p><i>Nucleated/dispersed? Dense/ Low-level?</i></p> <p><i>Foci of activity/background noise?</i></p>
2	How can lithic scatters be used to understand the temporality of inhabitation?	<p><i>When does occupation occur?</i></p> <p><i>What is the duration of occupation?</i></p> <p><i>Sustained/episodic? Single event/ accreted?</i></p>
3	How can lithic scatters contribute to biographies of place?	<p><i>What is there before, during and after occupation?</i></p> <p><i>What do scatters tell us about the prehistory, use and afterlife of monuments/locales?</i></p> <p><i>How do scatters relate to monuments or topographic features?</i></p>
4	What can lithic scatters tell us about scales of mobility/contact?	<p><i>Where do raw materials come from?</i></p> <p><i>What state do raw materials arrive/leave in?</i></p> <p><i>Is the scatter balanced?</i></p> <p><i>What is there and what is missing?</i></p> <p><i>How do the scatters in the study area relate to each other/places within the study area?</i></p> <p><i>How do the scatters in the study area relate to places outside the study area?</i></p>

Table 6.0.1 Research questions

used to inform decisions about the extent of the study area and the methodologies used in subsequent analyses.

6.1.2 Level two lithic analysis

The second phase of analysis constitutes the major phase of lithic analysis conducted as part of this research. It consisted of a more thorough analysis of the majority of the Uglow collection, approximately 16500 lithic artefacts. This material consisted of scatters from Nether Exe, Rewe, Silverton and Thorverton parishes. The non-systematically collected portion of scatter N1 was excluded. For this level of analysis sub-field lithic scatters were grouped together into 63 field-level assemblages. The field-level assemblage then provided the basic level unit of analysis for subsequent phases of analysis.

A range of factors determined the methodology utilised in this phase of analysis

- The nature of material under analysis (variability in method of collection and size assemblages)
- Availability of local, independently dated reference assemblages
- Applicability to the research questions

A corollary to a more confident approach to lithic scatters has been a desire to extract as much interpretative potential from them as possible (for example, Chan 2003, 48; Snashall 2002, 54). There has been a marked tendency in recent lithic scatter studies to apply a wide range of technological and metrical analyses to surface assemblages (for example, Bond 2006; Chan 2003; Durden 1995; Edmonds *et al.* 1999; Hind 2000; Snashall 2002 and also see Table 6.1.3). As a result surface assemblages have been subjected to a level of analysis previously restricted to excavated assemblages.

In the past I have applied a similar approach to the analysis of a lithic assemblage from Carrapit Farm, Bridford, approximately 20km from the current study area (Bayer 1999). That assemblage is comparable in size, composition, chronology and collection methodology to many in the Uglow collection. At the time the results of the analysis were frustrating in that they seemed to offer more of a description of the assemblage's artefacts than they gave interpretive potential for understanding the people who created and used them (Bayer 1999,

68). This experience may well be one of the 'inconvenient truths' about archaeology in general, and working with surface scatters in particular. However, in the context of this piece of research it prompts questions about the suitability of the blanket application of such detailed analyses, particularly when attempting to address specific research questions.

On a purely pragmatic level is the issue of efficiency. The detailed metrical and technological analysis of a large surface assemblage is a substantial undertaking. Prior to embarking on such analysis, it is worth questioning the extent to which the time invested actually produces useful information, or simply generates descriptive data for limited interpretive gain? Secondly at a more theoretical level is a question of applicability and relevancy. Lithic analysis is itself a cumulative tradition with many individual analytical techniques owing more to the types of questions posed by previous schools of archaeological thought than they do to those asked by post- processual and interpretative archaeology. In short, the important question to ask when constructing a methodology for lithic analysis is not how many analyses is it possible to conduct on an assemblage (how hard can I make the material work)? rather which analyses are relevant to a particular assemblage/collection, and the specific research questions that are asked of it (which analyses will answer my questions)?

In the context of defining a methodology for the current project an informal exercise was conducted to inform choices about the range of analysis to be used. Two different levels of analysis were conducted on 510 lithic artefacts from assemblage N12 (non-systematic). Analysis A was a simple characterisation of typology, raw material, burning and reduction sequence. Analysis B was a more detailed metrical and technological analysis (see Table 6.1.4). The time taken for each level of analysis and the information obtained relative to the research questions asked was considered and was used to inform decisions about the types of analyses undertaken on the wider collection.

In the end a hybrid approach combining elements of analysis A and B was decided upon for level two lithic analysis. The basic unit of analysis was the individual artefact enabling the assemblage to be interrogated at a range of scales. The individual analyses conducted on each artefact as part of this

analysis is summarised in Table 6.1.5. The rationale for each of the analyses, and their relationship to the research questions, is outlined below. A full list of the criteria and variables recorded is given in appendix C.

Spatial analysis

To analyse the Uglow collection as anything other than a single assemblage it was necessary to record the location in which the each artefact was found. Artefact location is at some level crucial to answering each of the research questions as they are concerned with understanding the relationship between lithic scatters, inhabitation and landscape. In order to facilitate this, the location of each artefact was recorded at the most detailed level assigned by John Uglow (see chapter 4.2 for a discussion of collection methodologies and resultant spatial resolutions in the Uglow collection). Sub-field assemblages were then grouped together at a field-level for analysis. An analysis of the distribution of all lithic material was conducted at a study area wide scale. Despite the lack of homogeneity within the collection (i.e. variation in collection methodology, intensity/density of collection and retention of material, and gaps in collection coverage, see chapter 4.2 and chapter 8.1) it was thought likely that meaningful patterns of continuity and change would be evident between the collection's assemblages when considered at this scale.

Quantitative analysis

At an assemblage level the quantity of lithic material present can be used to give a rough indication of the scale/intensity of inhabitation. As well as a simple count of artefact types/raw materials/reduction sequence each artefact was also weighed. Artefact weight gives an alternative to artefact count for quantifying the amounts of raw material, stages in reduction sequence and breakage/damage present in an assemblage. Artefact weight was measured to the nearest gram. All pieces weighing less than one gram were rounded up to one gram. Figure 6.1.1 illustrates how artefact count and weight can be used to quantify an aspect of the same assemblage in different ways.

Lithic analysis	What information does it give?	Related research question
Spatial	Location of each lithic scatter	1. Character and composition of inhabitation 2. Temporality of inhabitation 3. Biographies of place
Quantitative	Artefact count and artefact weight- at an assemblage level a crude indication of scale/intensity of inhabitation.	1. Character and composition of inhabitation
Typological	Date and function of each artefact. More specific for a small range of chronologically distinctive artefacts. Less specific for other artefacts and debitage.	1. Character and composition of inhabitation 2. Temporality of inhabitation 3. Biographies of place
Condition	Burning- crude indicator of inhabitation, specifically of accidental burning associated with hearths	1. Character and composition of inhabitation
Reduction sequence	Relative position of each artefact within the stone working process. What stone working activities were carried out at a scatter? – What is missing and by implication happened elsewhere?	1. Character and composition of inhabitation 4. Scales of mobility/contact
Technological	Dorsal scar type- crude chronological indicator (blade-scars early/ flake-scars late)	1. Character and composition of inhabitation 2. Temporality of inhabitation
Raw material	How are different types of raw material used? Where do raw materials come from? How far have they come?	4. Scales of mobility/contact

Table 6.1.1. Relationship between level 2 lithic analyses and research questions

Analysis	Durden 1995	Edmonds et al. 1999	Bayer 1999	Hind 2000	Snashall 2002	Chan 2003	Bond 2006
1. Spatial	1	1	1	1	1	1	1
2. Typological	1	1	1	1	1	1	1
3. Raw material	1	1	1	1	1	1	1
4. Condition (burning/breakage)	0	1	1	1	1	0	1
5. Reduction sequence	1	1	1	1	1	1	1
6. Metric/chronometric	1	1	1	1	1	1	1
7. Technological	1	1	1	1	1	1	1

Table 6.1.2. Range of analyses conducted in recent lithic scatter studies

Class of analysis	Analysis A	Analysis B
Spatial	Location	Location
Typological	Artefact type	Artefact type
Raw material	Raw material (type only)	Raw material (type + colour + tone)
Condition	Presence/absence of burning	Presence/absence of burning
Condition		Presence/absence of breakage
Metric		Artefact size (length/width/thickness)
Metric		Artefact weight
Reduction sequence	Reduction sequence	Reduction sequence
Technological		Platform type
Technological		Termination type
Technological		Dorsal scar orientation
Technological		Dorsal scar type
Technological		Presence/absence/extent of retouch
<i>Time taken</i>	<i>4.5 hrs for 510 artefacts</i>	<i>9 hrs for 510 artefacts</i>

Table 6.1.3 Experimental analyses of scatter N12

Class of analysis	Actual analysis undertaken
Spatial	Location
Typological	Artefact type
Raw material	Raw material (type + colour + tone)
Condition	Presence/absence of burning
Condition	Presence/absence of breakage
Metric	Artefact weight
Reduction sequence	Reduction sequence
Technological	Dorsal scar type

Table 6.1.4 Level 2 analysis

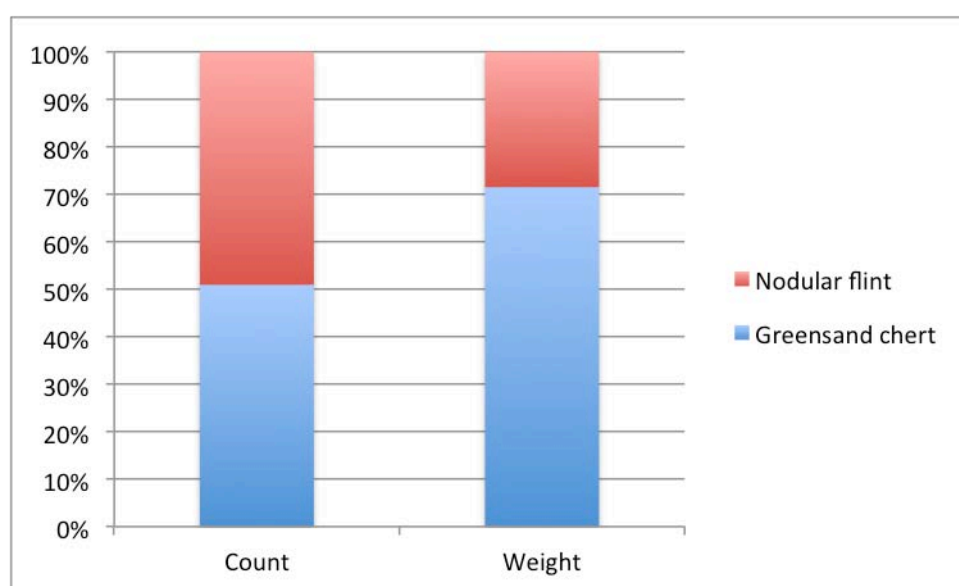


Figure 6.1.1 Scatter N1 proportions of raw material shown as artefact count and artefact weight

Typological analysis

In the context of this project typological analysis was undertaken for two purposes. Firstly to identify chronologically distinctive artefacts with which to date assemblages, and secondly, by identifying the range of artefacts present, to suggest the types of activity that might have generated particular assemblages. Artefact typology has implications for each of the research questions, in particular those addressing the character and temporality of occupation.

All artefacts were classified by type. Where possible the definitions set out in the unpublished draft of the Lithic Society's *'Post Glacial Lithic Artefacts'*:

Introduction and Glossary have been adhered to. Where these definitions proved inadequate for the categorisation of the material, new type classes have been given, as far as possible based on the definitions applied by Berridge in Silvester *et al.* (1987) to artefacts in scatter N1. Where both proved insufficient new terms have been created. Unidentifiable debitage was described using the terms '*Chunk*' (unidentifiable debitage with a dimension of more than 10mm) and '*Chip*' (unidentified debitage with no dimensions over 10mm). All artefacts, including unmodified debitage, as well as modified, utilised and retouched tools, were initially recorded using a detailed typological classification (see appendix D). This information was then synthesised into a shorter interpretive Table for each assemblage (see Table 6.1.5).

Raw material analysis

Raw material type was recorded primarily as a way into understanding the distances over which workable stone was transported to a particular scatter. By implication this also offers a way into understanding the scales of mobility, interaction, and trade/exchange of the communities who created a scatter. This is particularly relevant in an area such as the lower Exe valley that contains little or no naturally occurring stone capable of conchoidal fracture. Almost all flint or chert found in the study area was imported during prehistory. Chapter 8 includes a fuller discussion of raw material sources in Devon and the difficulties inherent in trying to link artefacts to specific raw material sources.

A further goal of raw material analysis was to determine whether different types/colours of raw material were treated in particular ways, or were preferentially selected for the manufacture of certain artefacts (Cummings 2010).

In the specific context of the lower Exe valley raw material was also analysed as a potential chronological indicator. Norman (1975) and Berridge (in Silvester *et al.* 1987, 18) suggest that in east Devon/west Somerset the presence of Greensand chert is chronologically sensitive, dominating Early Mesolithic assemblages and becoming less common in later assemblages. Berridge (in Silvester *et al.* 1987, 18) suggests that flint becomes more prevalent during the late Mesolithic and is the dominant raw material in the Neolithic and later periods.

Type	Date	Activity	Total
Unmodified debitage			
Blades	early	stone tool manufacture	61
Flakes	late	stone tool manufacture	239
Blade cores (including fragments)	early	stone tool manufacture	30
Flake cores (including fragments)	late	stone tool manufacture	29
Undifferentiated waste	uncertain	stone tool manufacture	13
			372
Retouched tools			
Retouched blades	early	cutting/scraping	32
Retouched flakes	late	cutting/scraping	53
Scrapers (including fragments)	uncertain	scraping/cutting	45
Awl	uncertain	piercing	5
			135
Chronologically distinctive artefacts			
Thumbnail scraper	Late Neo/EBA	scraping/cutting	1
Microburin	Mesolithic	microlith manufacture	1
Pick	Mesolithic	digging/cutting	1
			3
Total			510

Table 6.1.5 Level 2 analysis: interpretive typology, chronology and activity for scatter N12 (non-systematic)

Due to the difficulties inherent in characterising lithic material from individual Devon raw material sources (Newberry 2002, 27-8) it was decided to take a descriptive approach to raw material analysis. Rather than trying to match lithic artefacts to specific raw material sources, artefacts were instead more loosely characterised according to the type, colour and tone of raw material utilised (see Table 6.1.6). Raw material type, colour and tone was determined for each artefact by a macroscopic visual assessment of both unpatinated flaked surfaces and, where present, cortical surfaces. Colour and tone was recorded to identify variation within each raw material type class. The description of colour and tone is inherently subjective. To ensure consistency of recording all artefacts were analysed under a standard light source and descriptive terms were bench marked against a Natural Colour System chart. The Natural Colour

System is similar to the Munsell soil colour chart, but spans a wider range of colours (Cummings 2010).

Flint artefacts were attributed to one of three type classes determined by the presence/absence of cortex and, where present, an assessment of the freshness of cortical surfaces. All flint displaying unabraded cortical surfaces was classified as nodular flint. This includes Newberry's (2002, 1) 'primary flint' (i.e. derived from in-situ flint nodules taken directly from chalk deposits) and 'residual flint' (i.e. derived from *in-situ* flint nodules from which the surrounding chalk has been removed- e.g. clay-with-flints). Following Newberry's (2002, 28) comments about the similarity between the cortex on primary and residual flint, no attempt was made to distinguish between the two. All flint with an abraded/water-worn cortex was classified as pebble flint. This is equivalent to Newberry's (2002, 1) 'secondary flint'. Following Newberry's (2002, 28) comments about the similarity between the cortex of river and beach derived, water-worn flint, no attempt was made to distinguish between the two types of material.

Raw material	Colour	Tone
Nodular flint	Black/Grey/White range	Darkest (black)
Pebble flint	Brown	Dark
Non-cortical flint	Orange	Mid
Portland chert	Pink	Light
Greensand chert	Red	Lightest (white)
Quartz		
Other stone		

Table 6.1.6. Level 2: raw material analysis criteria

Condition analysis (burning)

The presence/absence of burning was recorded for each artefact. It has been suggested that distributions of burnt stone, in conjunction with the distribution of other tools, can be used as an indicator of domestic activity (Edmonds *et al.* 1999, 54; Richards 1990), or at least the presence of hearths.

Metric/chronometric analysis

In the context of this research, the analysis of a number of mixed multi-period

surface lithic assemblages, the size and shape of lithic debitage has the potential to elucidate assemblage chronology. Several authors (for example, Smith 1965; Pitts and Jacobi 1979; Ford 1987; Ford *et al.* 1984 and Edmonds 1995) have suggested that certain aspects of lithic debitage, principally the shape of artefact blanks, are chronologically sensitive. They propose a change from proportionally long, narrow, thin blades during the Mesolithic to proportionally shorter, wider, thicker flakes by the end of the Early Bronze Age. Within this framework the presence of a significant blade-based component in an assemblage is seen as indicative of early, probably Mesolithic, activity. Similarly a significant flake-based component is likely to reflect later, potentially Neolithic/Early Bronze Age, activity. This recognition of a chronological shift in artefact blank morphology has important implications for establishing chronology within surface lithic scatters which are generally dominated by debitage, frequently chronologically mixed, and by definition unstratified.

The chronometric analysis of debitage has become an increasingly common component in the analysis of surface lithic assemblages (Durden 1995; Ford 1987; Gardiner and Shennan 1985). Such analyses involve the measurement of blade and flake length/ breadth/width ratios, and their statistical analysis, in order to determine assemblage chronology. However, in the context of the current project, issues of regionality are a limiting factor. The majority of the seminal studies on chronometric analysis (Ford 1987; Ford *et al.* 1984; Pitts and Jacobi 1979) are based on lithic assemblages from chalkland 'raw material rich' areas of southern England. There is some suggestion that the variables in artefact size and shape observed amongst these assemblages may be directly related to the availability of raw material (Ford 1987,73; Snashall 2002, 48), namely that traditions of stone working in raw material rich areas may have a different metric signature to those in areas of less plentiful raw material supply where a more frugal approach to stone working is likely to have prevailed (Hind 2000,153; Snashall 2002,48-9). Equally socially driven factors are likely to have contributed to regional variation in stoneworking traditions.

Publication	Area	Number of assemblages studied	Size of assemblages studied (average)	Proximity to study area
Snashall (2002)	Cotswolds	5	9-176 (90) artefacts	All within study area
Bond (2006)	Central Somerset	15	1-26 (10) artefacts	Majority within /within 10km of study area. 1 site c.60km distant from study area

Table 6.1.7 Number and size of chronometric reference assemblages used by Bond (2006) and Snashall (2002).

Recent research by Bond (2006) in Somerset, and Snashall (2002) in the Cotswolds, has tested the potential of chronometric analysis on surface assemblages from areas that are peripheral to raw material sources. The first step in their analyses was to conduct chronometric analysis on a series of closed and independently dated (excavated, non-residual, stratified assemblages with C¹⁴ determinations), lithic assemblages from within, or close to, their respective study areas (see Table 6.1.7). These ‘bench mark’ assemblages provided a regionally specific framework with which to interpret surface assemblages. Each took a slightly different approach to this analysis. Snashall’s (2002, 48) analysis consisted of the identification chronologically sensitive patterning in artefact length, width and breadth. Bond (2006, 90-108) augmented this analysis by also identifying chronologically sensitive technological and typological traits with which to establish a series of regionally specific chronological filters to apply to surface assemblages.

Chronometric and ‘chrono-technological’ analyses were considered for level two analysis of the Uglow collection. An attempt was made to identify a minimum of ten reference lithic assemblages spanning the Early Mesolithic to mid Bronze Age within a 20km radius of the lower Exe valley. A literature review and conversations with local archaeologists identified only six potential assemblages covering the early to mid Neolithic, Early Bronze Age and mid Bronze Age (see Table 6.1.8). No suitable Mesolithic or late Neolithic assemblages were identified. Given the incomplete nature of this sequence, and the time implications of such an analysis, it was decided against using chronometric/chrono-technological analysis. Instead a

Site	Publication	Context	C14 date	Distance to study area	Number of lithics	Period
Raddon Hill	Gent and Quinnell (1997a)	611 (ditch IV of causewayed enclosure)	3370-3080 BC (AA-29723)	6km	217	Early Neolithic
Hembury	Healy <i>et al.</i> (forthcoming)	Various features associated with causewayed enclosure	multiple dates c3700-c3100BC	20km	? Low 100s?	Early Neolithic
Haldon Belvedere	Gent and Quinnell (1997b)	543 (fill of pit)	3370-2910 BC (AA-34137)	16km	12	Early/mid Neolithic
Castle Hill	Butterworth (1999)	219 (single fill of oblong ditched enclosure)	3610-3140 BC (AA-30670) 2920-2600 BC (Beta 78183)	18km	23	Early/mid Neolithic
Upton Pyne	Pollard and Russell (1969,69) & Wickstead (2008, 187)	Charcoal fill of Urn 4, placed on old ground surface below barrow	1750-1500 BC (BM 402)	1km	21 (6 plough soil, 13 mound, 2 old ground surface)	Early Bronze Age
Castle Hill	Butterworth (1999)	5026 (fill of enclosure ditch)	1510-1260 BC (AA-30675) 1420-1130 BC (AA-30674) 1400-1050 BC (AA-30673)	18km	45	Mid Bronze Age

Table 6.1.8. Potential reference lithic assemblages for the lower Exe valley.

more pragmatic approach was taken to assessing debitage chronology. Debitage was roughly characterised visually using the following criteria for blades/blade scars and flakes/flake scars respectively.

- Blades: removals with a length to width ratio of more than 2:1, parallel sides and parallel dorsal scarring patterns.
- Flakes: removals with a length to width ratio of less than 2:1, irregular sides and dorsal scarring.

This resulted in a distinction between early (Mesolithic/Early Neolithic) and late (Neolithic/Bronze Age) phases of debitage (for example see Table 6.1.5).

Reduction sequence analysis

The manufacture of flaked stone tools uses a subtractive technology in which a larger parent block of raw material is flaked into a smaller tool. The end product of this process is generally one or more tools and a large quantity of waste or debitage. The terms reduction sequence and '*chain opératoire*' are both used to describe the series of events/actions that constitute the stone working process. From quarrying/extraction; tool manufacture, use and maintenance; through until discard or loss, the different stages of the stone working process all leave behind a recognisable trace in the archaeological record (Care 1982, 269).

In the context of this piece of research the stage of reduction sequence for each artefact was inferred from the extent of cortex (the original outer surface of a nodule/pebble of flint or chert) on its dorsal face. This surface layer, modified by physical and or chemical action, is more difficult to work than the 'fresh' material in the centre of a nodule (Andrefsky 2008, 103). Based on the assumption that the first stage in the reduction of any block of raw material would have been the removal of the cortex, the amount of cortex on the dorsal face of an artefact can be used to indicate the stage of the stone working process or reduction sequence that it represents (Andrefsky 2008, 103). Crudely put, the more cortex remaining on the dorsal surface of an artefact, the earlier in the stone working process it belongs.

Rather than following the traditional tri-partite (primary, secondary and tertiary) system for classifying the stages of reduction sequence (for example, Bradley 1970, 346; Tingle 1999, 37), the percentage of cortex on the dorsal face of each

artefact was recorded (after Chan 2003, 330; Snashall 2002, 338). Each artefact was accorded one of the following six dorsal cortex classes (see Table 6.1.9).

When individual artefacts are aggregated into assemblages an analysis of the extent of dorsal cortex can be used to indicate the stages of the stone working process that occurred in a particular location, and by implication those that are missing, and occurred elsewhere in the landscape. Figure 6.1.2 shows the different reduction sequences for the chert and flint assemblages at scatter N12.

Tingle 1999	Percentage dorsal cortex	Stage in reduction sequence	Interpretation
Primary	100%	Early	Core preparation ↓ Core reduction ↓ Tool production/use/discard
	76-99%		
	75-51%	Middle	
Secondary	50-26%		
	25-1%		
Tertiary	0%		

Table 6.1.9 Stages in the reduction sequence

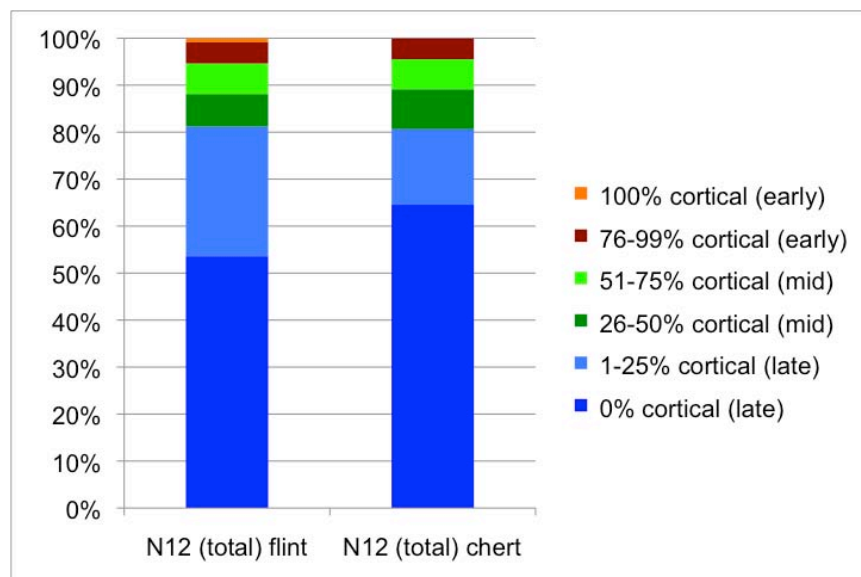


Figure 6.1.2 A comparison between chert and flint reduction sequences for scatter N12



Figure 6.1.3 Blades, blade cores and blade scars



Figure 6.1.4 Flakes, flake cores and flake scars

The high frequency of pieces with little or no dorsal cortex implies that both elements of the assemblage principally reflect core reduction and tool manufacture and use, rather than the primary stages of raw material extraction and core preparation. The slight differences in reduction sequence between the chert and flint components of the assemblage suggest that the chert arrived at scatter N12 in a slightly more modified state than the flint.

Technological analysis

The only technological analysis undertaken during this stage was an analysis of the type of negative removal scars on the dorsal faces of artefacts. This was done as a further rough chronological indicator. Dorsal removal scars, where present, were classed as blade or flake using the criteria set out above. Given the lack of a suitable range of reference collections the type of more detailed 'chrono-typological' analysis undertaken by Bond (2006) was not undertaken at this stage of analysis.

Data collection, data processing and interpretation

Data collection was carried out in late 2009 and early 2010. All information was initially recorded on a single large Excel spread sheet. The pivot table function in Excel was then used to extract and summarise data in a series of smaller tables and charts. Some summary tables were exported to ArcGIS 9.2 to produce distribution maps. These charts, tables and maps formed the 'raw material' for the interpretations presented in chapters eight and nine and appendices F, G and H.

6.2 Landscape analysis

Beyond analysing the contents of surface lithic scatters one of the key aims of this piece of research was to situate lithic scatters in their wider landscape context. The following section describes the methodologies used in doing this.

Analysis	What information does it give?	Related research question
Phenomenological landscape analysis	Detailed textual and photographic characterisation of the relationship between the location and distribution of lithic scatters and the topography of the study area and beyond	3. Biographies of place 4. Scales of mobility/contact
Vertical aerial photography	Visualises micro-topographic and archaeological features no longer apparent on the surface	3. Biographies of place
LIDAR	Visualises micro-topographic and archaeological features no longer apparent on the surface	3. Biographies of place

Table 6.2.0 Relationship between landscape and archaeological analyses and research questions

6.2.1 Landscape phenomenology

“The physicality of landscape grounds and orientates people and places within them, it is a physical and sensory resource for living and the social and symbolic construction of life-worlds” (Tilley 2010, 26)

“....everything would appear to have changed....the skin of the land is gone for good...where the flowers bloomed and the rushes sighed in the wind....[however,]the bones of the land – the mountains, hills, rocks and valleys, escarpments and ridges – have remained substantially the same” (Tilley 1994, 7)

“...for the phenomenologist his or her body is the primary research tool. He or she experiences and observes the landscape through the body” (Tilley 2010, 26)

As outlined in the quotes above, and discussed in chapter two, the essence of Tilley’s phenomenological approach to landscape archaeology is threefold. Firstly landscapes constituted some of the ‘raw materials’ from which prehistoric populations created their life-worlds or cosmologies. Secondly although the detail, ‘*the skin*’, of the landscapes inhabited in prehistory has changed considerably, much of their basic structure, ‘*the bones*’, remain today (Tilley 1994, 7). Thirdly the embodied experience of moving through, or simply being in, a modern landscape can provide a way into understanding how the same

landscape might have been drawn upon in the prehistoric past. This approach has underpinned a number of research projects that have sought to understand aspects of the inhabitation of prehistoric landscapes through an encounter with the modern landscape (see chapter two and studies in Tilley 1994; 2004; 2010; Cummings and Whittle 2004; Cobb 2008).

This element of fieldwork draws heavily upon methodologies established by Tilley (2008; 2010, 30-1 & 38-40), Cummings and Whittle (2004, 17-23), Cummings (2008) and Cobb (2008, 176-182). These methodologies are visually based and combine photography and note taking to record the views from particular archaeological sites, and other places in a landscape. For example, Cummings discusses the use of a range of methodologies for recording the views from monuments. These include annotated schematic drawings, 360° photographic panoramas and the use of GIS based viewshed analysis (Cummings and Whittle 2004, 17-23).

The methodology used in the current research was adapted for the specific nature and spatial resolution of the archaeology of the study area, and for the requirements of the research questions. Whilst many of the above studies have been concerned with understanding the landscape context of very specific places (both monuments and scatters), my research differs in that it deals with a series of spatially diffuse archaeological entities. By grouping individual 'sub-field' scatters together into 'field-level' assemblages (see section 6.1.2), the spatial resolution of the lithic data is reduced. As a result it was decided that rather than conducting scatter specific phenomenological investigations, that fieldwork should focus on characterising the different topographies of the study area, with a specific focus on the areas in which lithic scatters occur. The study area was subdivided into five zones. The extent of each zone was defined by a combination of mapped and field-based observations of the geology and topography, and the distribution of field-level lithic assemblages (see chapter nine and Figure 9.0.1). Although these zones imposed somewhat arbitrary divisions on the landscape, arguably simplifying the subtleties of the topography, they are intended to act as a framework for its discussion and analysis.

Fieldwork involved visiting the locations of a number of field-level lithic assemblages across the study area. Areas with no known lithic finds were also visited. Notes were made about the views from each location, concentrating on patterns of visibility within the study area, as well as identifying the extent and location of views beyond the limits of the study area. A number of photographs were taken at each location and were subsequently stitched together using Doubletake 2.2 to create a series of digital panoramas (see Figure 6.2.1). An important addition to data collected in this landscape focused phase of research, were notes and photographs taken whilst conducting other fieldwork. Several useful observations about the interplay between topography, landscape and weather were made whilst not explicitly seeking them, for example, whilst waiting for an AA recovery vehicle or supervising the machine backfilling of an excavation trench (for example see Figure 9.2.24).



Figure 6.2.1 180° photo panorama looking east from scatter T19 across the valley floor.

6.2.2 Vertical aerial photography and LIDAR

The combination of large, intensively-ploughed fields, separated by tall thick hedges complicates conducting phenomenological fieldwork in the study area. Particularly on the valley floor many micro-topographic features have been substantially eroded or entirely removed by ploughing. Where they do survive they are often masked by modern field boundaries. To mitigate the impact of these factors two digital mapping resources, vertical aerial photographs and LIDAR survey were used extensively during fieldwork on the landscape of the valley floor.

The vertical aerial photography used consists of extracts of tiles SS90 and SX91 of the Millennium Map tm (©Getmapping PLC and supplied through a licence agreement with Devon County Council). The data comprises contiguous vertical colour aerial photographic coverage of the study area taken in summer 1999 or 2000. Crop and soil marks caused by topographic and archaeological features show clearly on the valley floor (for example, see Figure 9.1.15).

LIDAR (Light Detection And Ranging) data is derived from a high resolution aerial laser scan of a landscape (Bewley *et al.* 2005) and is an increasingly established technique for interpreting Holocene floodplain geomorphology and archaeology (Howard *et al.* 2008 1044-6). The LIDAR data utilised in the current research consists of tiles SS9200, SS9400, SX9298 and SX9498 collected in December 2005 by the Environment Agency/Geomatics Group for flood management purposes. The data was supplied as a 'bare-earth' Digital Terrain Model (with vegetation and buildings filtered out), with a resolution of 2m.

Both aerial photographic and LIDAR data sets were imported as georeferenced files into ArcGIS 9.2 to allow for their comparison with other digital data sets. The LIDAR data was displayed as a two dimensional terrain model (see Figure 9.2.28), and as a three dimensional hill-shade model (see Figure 7.1.2), to visualise micro-topographic features. Printed extracts of both the vertical aerial photography and LIDAR were used in the field during all aspects of fieldwork.

6.3 Archaeological investigation

With the exception of a small number of heavily plough-eroded round barrows, which survive as slight earthworks, the majority of the study area's prehistoric archaeology is only known from oblique aerial photography (see chapter 4). Archaeological cropmarks shown on these photographs have been transcribed as part of the Devon Aerial Photograph project. Transcribed cropmarks in the study area are summarised by Fyfe (2005), and form the basis of Figure 4.1.4. Two areas of cropmarks on the valley floor were selected for further investigation as part of this research (see Figure 7.0.1).

- Area A comprises the cropmarks of an oblong ditched enclosure, a cursus monument and a series of ring ditches, as well as the earthworks of two extant round barrows. New fieldwork in area A consisted of a gradiometer survey of the area of the oblong ditched enclosure and cursus monument.
- Area B is centred on the cropmarks of a large but undated sub-oval enclosure. The enclosure is associated with the cropmarks of other enclosures, at least two oval barrows and a series ring ditches. New fieldwork in area B consisted of a gradiometer survey of the large

enclosure and surrounding area. Two small trenches were also excavated across the ditch of the large enclosure.

This element of research aimed to further characterise and, in the case of area B, date prehistoric monuments associated with lithic scatters on the valley floor.

Analysis	What information does it give?	Related research question
Gradiometer survey	Further characterises and adds detail to features identified from aerial photographs and gradiometer survey	1. Character and composition of inhabitation 2. Temporality of inhabitation 3. Biographies of place
Excavation	Further characterises and dates features identified from aerial photographs and gradiometer survey	2. Temporality of inhabitation 3. Biographies of place

Table 6.3.0 Relationship between archaeological analyses and research questions

6.3.1 Gradiometer survey

The gravel terraces of the lower Exe valley are particularly conducive to producing archaeological cropmarks. However, differences in cultivation regimes between fields, combined with differences in the hydrological properties of the terraces, produce a highly variable background against which to identify and interpret archaeological cropmarks. Most of the individual features shown in Figure 4.1.4 are composites plotted from multiple seasons of aerial photography under differing crop and weather conditions. The resultant transcribed cropmarks are frequently partial and incomplete.

Gradiometer survey was undertaken on two areas of the valley floor in an attempt to better understand a series of prehistoric monuments (see discussion of areas A and B in chapter 7). The surveys aimed to produce detailed single images of monuments previously only known from multiple aerial photographs, as well to identify associated features either invisible, or only ephemerally shown, on these photographs.

Survey grids were established in the field using an EDM total station and are internally accurate to within +/- 0.10m. Survey grids were then georeferenced with a differential GPS and are accurate to the British National Grid to within +/- 0.10m. Details of the extent, configuration and equipment used for each survey are summarised in Table 6.3.1. Data was downloaded in the field using Geoplot 3.0 and further data processing was carried out using ArcheoSurveyor 2.5. Processed data was then exported to ArcGIS 9.2 for georeferencing and incorporation into mapping.

	Area A	Area B
Date of survey	September 2007	Feb 2008 – April 2010
Grid size	30m x 30m	30x30m
Area of survey	2.9ha	25.7ha
Traverse direction	North/South	North/South
Traverse separation	1m	1m
Reading interval	0.25m	0.25m
Instrument type	Fluxgate gradiometer	Fluxgate gradiometer
Instrument make	Geoscan 1036	Bartington Grad601
Sensor element separation	0.5m	1m
Number of sensors	1	2
Sensor separation	n/a	1m
Sample range	1nt	1nt

Table 6.3.1 Details of gradiometer surveys in areas A and B

6.3.2 Excavation

Without recourse to intrusive techniques it is only possible to date features identified by aerial photography and gradiometer survey by analogy with comparable and independently dated features from outside the study area. Two small trenches were excavated in area B in order to characterise and date enclosure B1 for which no direct comparisons could be found. Both trenches were excavated across the line of the enclosure ditch. Topsoil was removed by machine and all archaeological deposits were excavated by hand. A written record was produced on pro-forma record sheets, a drawn record was produced on dimensionally stable drafting film at a scale of 1:20, and a digital photographic record made. In order to recover material suitable for radiocarbon dating 20 litre bulk samples were taken from each fill of the enclosure ditch. These samples were then processed using a water flotation system and flots

(charcoal and plant macro-fossils) were collected in 0.5mm and 0.35mm sieves (see chapter 7.2 for results).

6.4 Conclusion

This study addresses a series of research questions (see Table 6.0.1) relating to lithic scatters and the inhabitation of prehistoric landscapes. In doing this it integrates an analysis of the *contents* of surface lithic scatters with a consideration of their archaeological and landscape *context*. To achieve this three distinct groups of archaeological methodologies are used, each adapted to suit the particularities of the study area's archaeology, and the requirements of the research questions. Methodologies used are:

- Two levels of lithic analysis were carried out on previously collected surface lithic scatters from the John Uglow lithic collection. The results of the analysis are given in chapters 8 and 9.1, and appendices A, B, F, G and H.
- A combination of landscape phenomenology and the use of aerial photography and LIDAR survey were used to characterise the topography of the study area. The results of this are given in chapter 9.2.
- Geophysical survey and targeted excavation are used to characterise and date a series of prehistoric monuments, previously recorded as cropmarks, and associated with surface lithic scatters. The results of this are given in chapter 7 and appendix E.

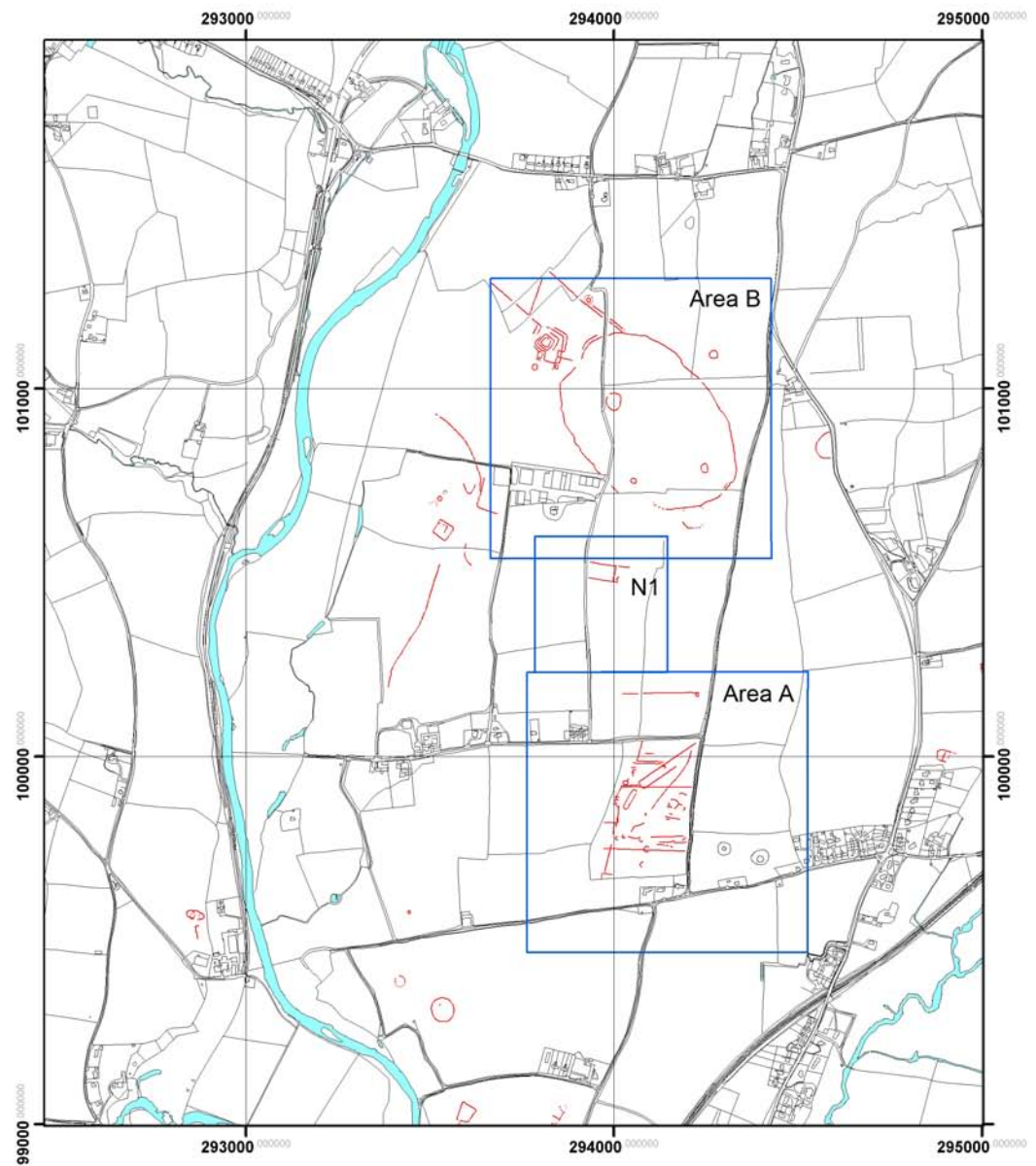
Chapter Seven. New archaeological fieldwork: investigating the monumental context of lithic scatters

As outlined in chapter 4 the study area contains a number of prehistoric monuments of Neolithic and Early Bronze Age date. The highest concentration of monuments occurs on the valley floor in what Fyfe (2005, 5) describes as the “*Nether Exe ritual monument complex*”. This group of monuments comprises one of the most significant Neolithic and Early Bronze Age ceremonial landscapes in lowland south-west England. A small number of the monuments (all heavily ploughed round barrows), survive as sight earthworks. The majority no longer survive above ground level due to the intensive historic and modern cultivation of much of the study area, in particular the valley floor. These monuments were discovered as cropmarks on aerial photographs. Whilst some Iron Age and Romano-British features have been excavated (Ugnow 2000; Ugnow *et al.* 1985), little ground-based investigation of earlier features has taken place.

New fieldwork was undertaken as part of this research to further characterise, and in one instance date, some of the cropmarks of prehistoric monuments on the valley floor. The location and extent of the two areas investigated is shown in Figure 7.0.1

7.1 Area A: The cursus and associated monuments

Area A covers a series of Neolithic and Early Bronze Age monuments which survive as cropmarks, and two extant earthworks, in the southern part of the valley floor north-west of Rewe (see Figure 7.0.1). All are located on the western edge of terrace three and none have been excavated. The proposed dates and interpretations outlined below are suggested by analogy with excavated examples of morphologically similar monuments elsewhere. Elements of the monument complex in area A are paralleled by monuments elsewhere in Devon, for example, oblong ditches at Bow/North Tawton (Griffith 1985) and Castle Hill (Butterworth 1999). Closer parallels for the entire complex (oblong ditched enclosures, cursus monuments and numerous ring) lie further afield on river terraces in the Thames valley and the Midlands (Buteux and Chapman 2009; Hey and Barclay 2011; Loveday 2006).



Location and extent of detailed study areas on valley floor

Extent of areas A, B and N1
 Transcribed cropmarks (after Fyfe 2005)



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0 1 km

Figure 7.0.1 Location of areas A and B on the valley floor ditches



Figure 7.1.1 Aerial photograph showing crop marks of oblong ditched enclosure and cursus monument at Nether Exe (after Griffith and Quinnell 1999b, 58)

7.1.1 Area A: Existing state of knowledge

Oblong ditched enclosure (feature A1, see Figure 7.1.4)

An elongated enclosure with rounded terminals, measuring approximately 15m wide by 55m long and orientated NNE/SSW was identified as a cropmark in the late 1950s (Griffith 1990, 24; 1994, 85). This feature has strong morphological similarities with a series of Neolithic monuments known variously as oblong ditched enclosures, long mortuary enclosures or long enclosures. Examples are found elsewhere in Devon (see chapter three), and throughout mainland Britain (Loveday and Petchey 1982, Loveday 2006, 55). Evidence from excavated examples suggests that these monuments were open enclosures whose interiors are associated with early to mid Neolithic funerary activity (Whittle *et al.*

1992, 148-52; Loveday 2006). The closest excavated examples to the study area are the two enclosures approximately 20km to the east at Castle Hill (Butterworth 1999a) one of which produced a date of 3610-3140 cal BC (AA-30670) (Fitzpatrick 1999, 215). Oblong ditched enclosures are frequently found in close proximity to, and predating, cursus monuments (for example, Whittle *et al.* 1992, 148).

Cursus monument (feature A2, see Figure 7.1.4)

The cropmark of the squared south-western terminus of an approximately 200m long by 25m wide elongated rectilinear, ditched enclosure was recorded in 1989 (Griffith 1990; 1994: see Figure 7.1.1). The cropmark is orientated NE/SW and fades to the north-east where it is eventually cut by a modern road. This feature has been suggested to be one end of a Neolithic cursus monument (Griffith 1990). Its squared terminus places it within Loveday's (2006, 24) 'Bi' class of rectilinear cursus monuments. At only c. 25m wide, the Nether Exe cursus is at the smaller end of the size range for these monuments (Loveday 2006, 203-4; Harding and Barclay 1999, 2). The Nether Exe cursus lies towards the south-western limit of the distribution of these monuments in Britain. The only example further to the west is the recent discovery of much larger monument near Downderry, in coastal south-east Cornwall (Trevvarthen 2004, 43; Young 2006, 112). To the east, whilst there are anomalously large examples of cursuses on Cranborne Chase and at Stonehenge, probably the nearest comparable monuments are found in the Upper Thames Valley (Barclay *et al.* 2003; Loveday 2006, 203-4). The location of the Nether Exe cursus on a gravel terrace, and close to the confluence of two rivers, is a trend shared by many other cursus monuments (Barclay and Hey 1999, 73-4; Loveday 2006, 133-6). Excavated cursus monuments have produced dates from the second half of the fourth millennium BC, ranging from 3640 to 2920 cal BC (Barclay and Bayliss 1999, 25).

Ring ditches (features A3-A14, see Figure 7.1.4)

A number of circular, sub-circular and penannular ring ditches, ranging in diameter from 8 to 25m, have been recorded as cropmarks in area A. Several (features A3 to A7), are close to the cursus and oblong ditched enclosure. Feature A3 lies within the cursus. These features are harder to date, by analogy with excavated sites elsewhere, it is likely that they are Neolithic or Early

Bronze Age funerary or ritual structures. The largest of these features (A6) measuring 25-30m in diameter is likely to be the quarry ditch of a ploughed out Early Bronze Age round barrow. Two extant round barrows (A15 and A16) of probable Early Bronze Age date (see chapter three for a discussion of the dates of these monuments in Devon), lie to the south-east of the main cropmark complex (Griffith 1988, 30-1; see Figures 7.1.2 and 7.1.3). Both barrows have surrounding ring ditches with diameters of between 25 and 35 metres.

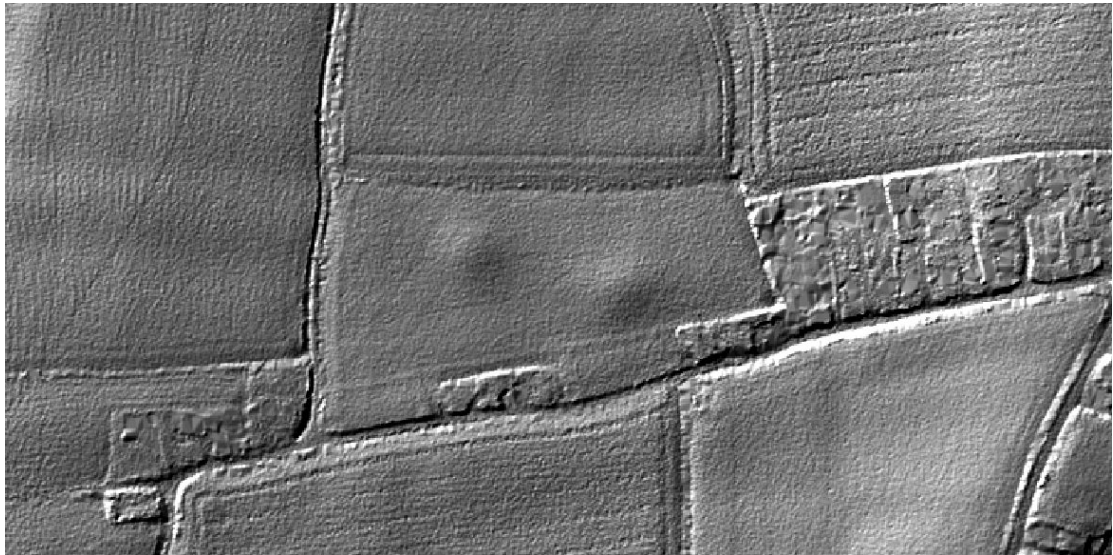


Figure 7.1.2 Earthworks of barrows A15 and A16. Shown as a hill-shade LIDAR plot (derived from LIDAR data © Environment Agency/Geomatics Group 2008)



Figure 7.1.3 Cropmarks of ring ditches associated with barrows A15 and A16 (after Griffith 1988, fig. 14)

The remaining smaller circular features (A3, A4, A7, A8, A9, A10, A11, A12, A13 and A14), could range in date from the Neolithic to the Mid Bronze Age. A range of circular features have been found in close association with cursus monuments and oblong ditched enclosures. For example, smaller ring forms found in association with the cursus at Dorchester on Thames produced Late Neolithic and Early Bronze Age dates (Whittle *et al.* 1992; Loveday 1999, 50-1). A 9m diameter ring-ditch at excavated at Markham Lane, Alphington, c. 10km south of the study area, was associated with Mid Bronze Age ceramics (Jarvis 1976, Jones 2005, 132). Feature A5, the slightly more rectangular ring ditch immediately to the west of the cursus terminal, is similar in size and shape to the initial (Early Neolithic), phase of an oval barrow near Abingdon in the Thames valley (Bradley 1992).

7.1.2 Area A: New fieldwork

Gradiometer survey

A gradiometer survey was undertaken centred on the known extent of the cursus and oblong ditched enclosure. The aim of the survey was twofold. Firstly to produce a detailed plot of the cursus, associated monuments and any related ephemeral features not visible on existing aerial photographs. Secondly to establish whether the line of the cursus could be extended further to the northeast. The results of the survey are shown in Figures 7.1.5 and 7.1.6.

The features previously identified from aerial photography are all apparent on the gradiometer plot with varying degrees of clarity. Modern agricultural striations and strong anomalies caused by removed field boundaries combine to make a 'noisy' background against which to interpret the more subtle prehistoric features. Comparatively few previously unidentified potentially prehistoric features were identified. However, the gradiometer survey does confirm detail only subtly apparent from the aerial photographs.



Nether Exe Area A

- Area of gradiometer survey
- Transcribed cropmarks (after Fyfe 2005)

0 200 Meters



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Figure 7.1.4 Transcribed cropmarks in area A (after Fyfe 2005)

Oblong ditched enclosure (feature A1, see Figures 7.1.5 and 7.1.6)

The oblong ditched enclosure is clearly visible as a magnetic anomaly. Its internal dimensions are 10m wide by 52m long and is surrounded by a 1.5 to 2m wide ditch. As on the aerial photograph transcriptions there is an approximately 3m long break in the ditch close to the north-east corner of the enclosure. Similar gaps are apparent in other oblong ditched enclosures (Loveday 2006, 55; Whittle 1992, 149). The magnetic survey shows the form of the enclosure to be less regular than that depicted in the aerial photograph transcriptions. It has a pronounced bend towards its southern terminus.

Cursus (feature A2), see Figures 7.1.5 and 7.1.6)

The cursus although somewhat obscured by removed field boundaries, is visible as a magnetic anomaly. The squared south-western terminus, and approximately 160m of parallel ditches (22m apart), are apparent on the gradiometer plot. The clarity of the cursus fades further to the north-east becoming increasingly indistinct towards its intersection with the present day field boundary. A very weak linear anomaly was observed in the smaller area of survey carried out to the north-east of the known extent of the cursus (A16). The anomaly is on approximately the same orientation as the southern ditch of the cursus suggesting its potential continuation to the north-east.

A general trend can be seen for both magnetic anomalies and crop marks to become less distinct with increased distance from the edge of the third terrace. Surface observations and excavation further to the north (see area B) show that whilst gravels are exposed on the surface of the immediate western edge of terrace three, they dip gradually to the east, becoming increasingly covered with a layer of softer silt up to 0.85m in depth. It is suggested that as a result archaeological features cut into the harder gravels on the western edge of terrace (including the oblong ditched enclosure and the cursus terminal) are more likely to remain detectable by aerial photography and magnetic survey. In contrast further east across the terrace on softer deposits, archaeological, and in particular slight prehistoric, features become less distinct due to the increasing impacts of modern agricultural erosion and bioturbation. In this context it is considered possible that the cursus did once continue for an unknown distance to the north-east but that taphonomic processes have either destroyed it, or greatly reduced its visibility.



Nether Exe Area A
Gradiometer survey (2007)

nT



0 100 Meters



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Figure 7.1.5 Detail of gradiometer survey area A



Nether Exe Area A
Gradiometer survey (2007)

nT



0 100 Meters



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Figure 7.1.6 Transcribed prehistoric features from gradiometer survey area A

Ring ditches (features A3, A5, A7 and A17, see Figures 7.1.5 and 7.1.6)

Ring ditch A3, shown on the aerial photographs transcriptions, appears as an indistinct magnetic anomaly, approximately 7m in diameter, close to the northern cursus ditch, approximately 80m north-east of its terminus. A previously unrecorded ring ditch (A17) approximately 10m in diameter is more clearly visible close to the southern cursus ditch and immediately south-east of (A3). Ring ditches A5 and A7 both appear as magnetic anomalies. Feature A5 shows as a sub-circular feature measuring 10m by 8m. Feature A7 is less distinct, it appears as a sub-circular pennanular anomaly approximately 8m in diameter, with a break in its eastern side.

7.1.3 Area A: Development of the monument complex

By analogy with more thoroughly investigated sites, the monument complex in area A indicates approximately two millennia of mortuary and ritual activity on this part of the valley floor. The sequence begins with the construction of the oblong ditched enclosure in the mid fourth millennium BC. This is followed by the construction of the cursus monument in the latter half of the fourth millennium BC. The sequence ends with the construction and use of the round barrows which may have continued as late as the mid second millennium BC.

7.2 Area B: The large enclosure and associated monuments

Area B covers a series of archaeological cropmarks in the central area of the valley floor between the hamlets of Nether Exe and Latchmoor Green. The area is approximately 1km north of area A, it lies approximately 700m east of the active river channel and straddles the junction of the second and third terraces. Whilst area A contains a number of monuments for which many parallels exist, area B is dominated by a single large enclosure (B1) for which no direct parallels exist. A possible Neolithic date has been suggested for this feature (Griffith 2001, 73-4). The principle aim of research in area B has been to characterise and date this enclosure in order to confirm its chronological relationship with nearby monuments and lithic scatters.



Figure 7.2.1 Cropmarks of enclosure B1 and associated features viewed from the north. The entrance to the enclosure is slightly to the right of centre. The change between second and third terraces is clearly visible running vertically across the left side of the photograph (image © Frances Griffith/Devon County Council, ref. DAP ZZ 04, 17/07/1996).

7.2.1 Area B: Existing state of knowledge

Large enclosure (feature B1, see Figure 7.2.4)

The principle monument in area B is a large sub-oval enclosure measuring approximately 550m on its long axis (NW/SE) by 370m on its short axis (SW/NE) and enclosing an area of over 16ha. Whilst cropmarks in this immediate area have been recorded since the late 1950s, feature B1 was first recorded in the mid 1980s. Its extent has been established from several photographs taken over a number of years, under different crop and weather conditions (Griffith 2001 73-74). A plan published by Griffith (2001, fig 5.6) shows over 90% of the enclosure ditch circuit. With the exception of part of its south-western area, most of the enclosure ditch is well-defined with the majority of breaks being attributable to historic or modern disturbance (i.e. field boundaries, both extant and removed, and a road).



Figure 7.2.2 Frost marks of south-eastern area of enclosure B1 and oval barrow B4 within it (looking east). Change between second and third terraces clearly visible running left to right in the centre of the photograph. A palaeochannel shows as a dark mark in the foreground (image © Frances Griffith/Devon County Council, ref. DAP TX 07, 11/02/1991).

The plan shows an apparent entrance with flattened, in-turned terminals in the north-west section of the enclosure ditch. This entrance is associated with a short length of apparent outer ditch circuit. A short length of inner ditch circuit is also shown in the south-east area of the enclosure. A further transcription of the crop marks (Fyfe 2005; see figure 7.2.13) shows a possible sub-circular enclosure (B11) approximately 60m in diameter appended to the southern side of the large enclosure.

On the basis of its river terrace location and its morphology Griffith (2001, 73-4; *pers. comm.*) suggests a possible Neolithic date for enclosure B1. However, the enclosure does not fit readily into any class of previously identified and dated monument, Neolithic, or otherwise. With the possible exception of Crofton, Wiltshire (Oswald *et al.* 1999, 71), B1 is much larger than most examples of Early Neolithic causewayed enclosures (see Figure 7.2.3). In terms of size and over all shape it bears a closer resemblance to later Neolithic palisaded

enclosures, for example, those at West Kennet 2, Walton and Hindwell II (see figure 7.2.3). Both causewayed and palisaded enclosures are known in valley bottom locations. Post-Neolithic comparisons for the enclosure B1 are harder to identify. It is not dissimilar in size to some Iron Age hill forts (for example Hembury), however, its valley floor location and single narrow enclosing ditch make it difficult to draw direct comparisons.

Small enclosure (feature B2, see Figure 7.2.4)

A smaller sub-circular enclosure measuring 40m east-west by 50m north-south was recorded as a crop mark in 1959. It has an entrance in its northern edge (on approximately the same orientation as enclosure B1), and lies to the north-west of the centre of enclosure B1. A small trench was excavated across the enclosure ditch in 1982 (Ugnow *et al.* 1985). The excavation produced sherds of mid first millennium BC pottery from the enclosure ditch. However, coming from relatively high up in the ditch silts this material does not necessarily securely date enclosure B2.

Oval enclosures (features B3, B4 and B5, see Figure 7.2.4)

Two small oval enclosures (B3 and B4) lie within the southern area of the interior of enclosure B1. A third possible example is approximately 90m to the north-west of enclosure B1. All were first recorded as cropmarks. Enclosures B3 and B4 measure 40x30m and 50x30m respectively, and have uninterrupted ditch circuits. Enclosure B5 measures approximately 35x25m and appears to be largely open on its eastern side. By analogy with excavated examples of morphologically similar sites elsewhere in the country, it is suggested these three sites are early to mid Neolithic oval barrows (Hey and Barclay 2011, 273-84). It is felt that the strongest case for such comparisons can be made at sites B3 and B4. The partial nature of the ditch circuit, and its proximity to an area of intensive Romano-British activity make the case for site B5 less certain.

Ring ditches (feature B6 and B7, see Figure 7.2.4)

A single circular ring-ditch was recorded as a cropmark to the north of enclosure B1. Aerial photograph transcriptions (see figure 7.2.4) show an interrupted circular ditch 23m in diameter enclosing a continuous ditch 12m in diameter. A second circular ring-ditch 23m in diameter was recorded as a cropmark to the north-east of enclosure B1. An Early Bronze Age date is suggested for both of these features (see chapter three).

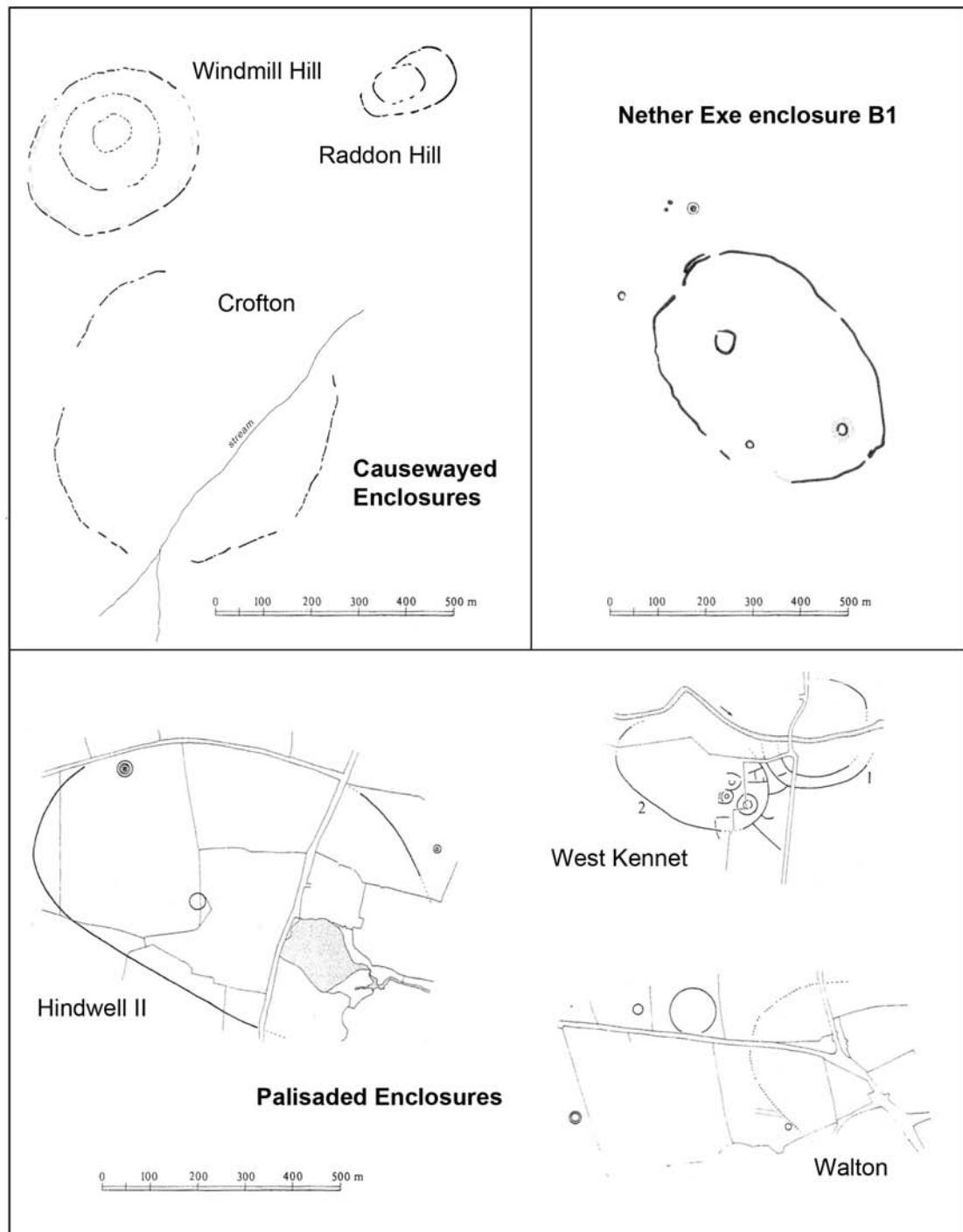
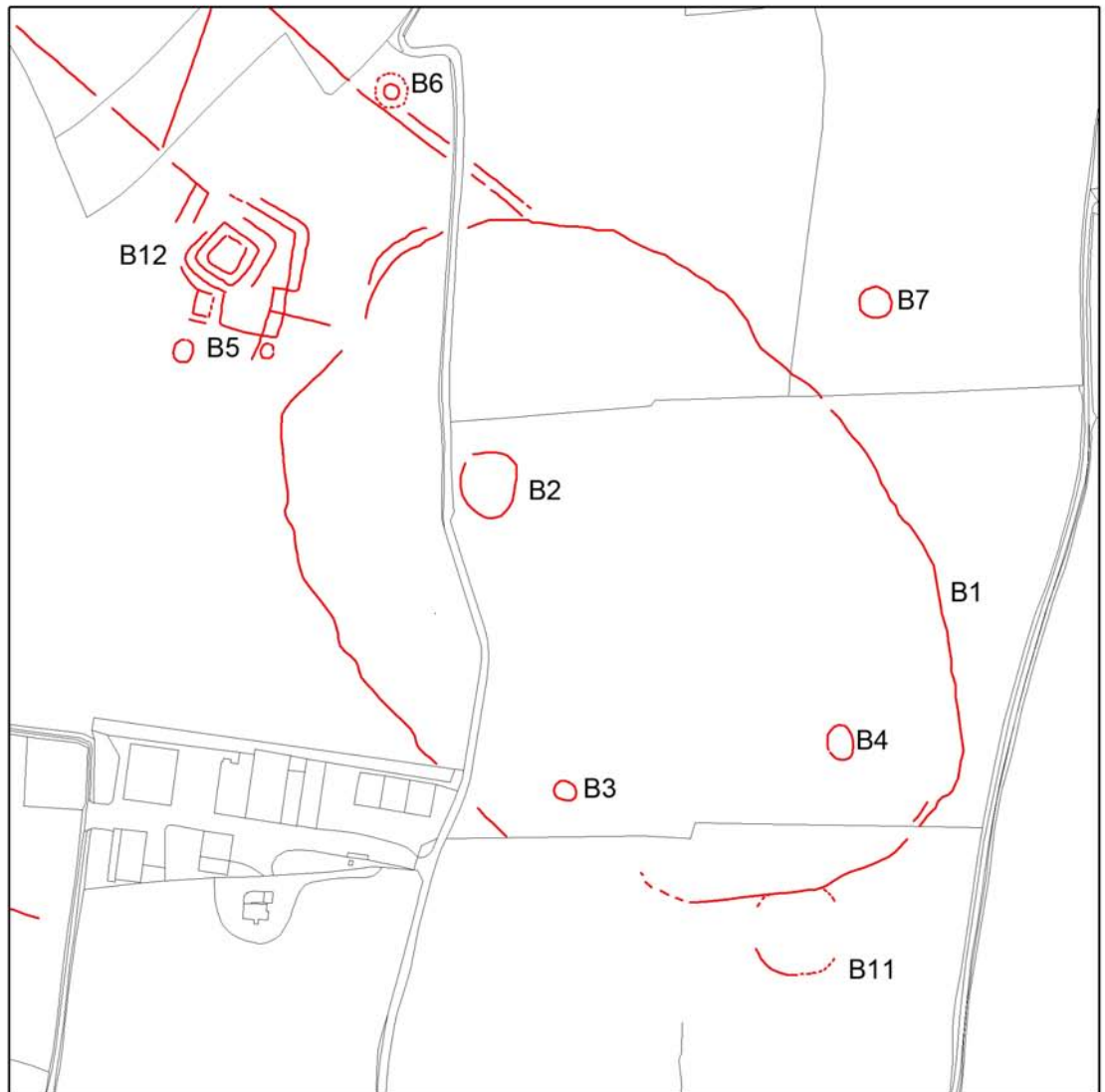


Figure 7.2.3 Enclosure B1 in relation to selected causewayed enclosures and palisaded enclosures (after Whittle *et al.* 1999, fig 13; Oswald *et al.* 2001, fig. 5.2; Griffith 2001, fig 5.6; Gibson 1998, fig 6.5).



Nether Exe Area B

Transcribed cropmarks shown in red (after Fyfe 2005, derived from Devon County Council aerial photographs)

0 200 Meters



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Figure 7.2.4 Transcribed cropmarks in area B

7.2.4 Area B: New fieldwork

Gradiometer survey

A gradiometer survey centred on enclosure B1 was conducted between spring 2008 and spring 2010 (see figures 7.2.5 and 7.2.6). The survey was carried out in four phases as fields became available. Over 95% of the area of enclosure B1 was covered by the survey. Two small areas on the southern edge of the enclosure were not covered by the survey. In the case of the south-west area this was due to the presence of farm machinery/spoil heaps, and in the case of the southern area due to its almost continual cultivation. The aim of the survey was to further characterise the nature of the enclosure and its relationship with other archaeological features.

Large enclosure (feature B1, see Figure 7.2.5 and 7.2.6)

The enclosure ditch is visible as a strong magnetic anomaly between 4 and 5.5m wide, enlarged to over 6m wide at the entrance terminals. It appears to have a continuous, albeit irregular, ditch circuit broken by a single entrance. Other than the main entrance the only gaps in the ditch circuit are caused by field boundaries (both extant and removed). It is possible that a further entrance exists in either of the two areas not surveyed, although the lack of traces of the pronounced in-turn apparent at the north-west entrance suggest otherwise. A faint cropmark apparent in figure 7.2.1 suggests that the enclosure ditch continues uninterrupted in this area.

A close examination shows that the course of the ditch is extremely irregular and appears to have been constructed in a series of individual arced segments approximately 100m in length. These arcs meet each other with varying degrees of accuracy and on occasion form marked kinks in the ditch circuit. One of these kinks is shown in Figure 7.1.2 close to the intersection of the enclosure ditch with the field boundary in the centre right of the image.

The ditch circuit does not appear to cut, or avoid, any pre-existing features and as such the gradiometer survey results do not provide a *terminus post quem* for the enclosure. However, the enclosure does appear to be overlain by elements of a field system associated with the series of sub-rectangular enclosures of Romano British date immediately to the north of its entrance (Rippon forthcoming; Uglow 2000, 235-41). The outermost line of the Romano British field system cuts, and effectively encloses, the entrance to enclosure B1. A

further element of the field system is orientated towards the enclosure entrance. These relationships provide a *terminus ante quem* for enclosure B1. Indicating that the enclosure predates the Romano British period, but that it may well have survived as a feature in the landscape that was reference and utilised in the construction of the later field system.

The survey results do little to clarify the relationship between the enclosure and the sub-circular enclosure (B11) recorded from aerial photographs immediately to the south. This feature appears much more ephemeral and fragmented than on aerial photographs and no clear relationship between it and enclosure B1 is discernable.

Ring ditches (features B7-B10, see Figure 7.2.5 and 7.2.6)

Feature B7 is mapped from aerial photographs as a regular circular ring form (see figure 7.2.4). However, the gradiometer survey suggests that it is actually a flattened sub-oval shape in plan with a break in its northern edge. The feature is highly magnetic suggesting the presence of ferrous material or intense burning. On this basis it is no longer regarded as prehistoric feature.

Three more ring-ditches were discovered by the gradiometer survey inside enclosure B1. Ring-ditch B8 is approximately 20m in diameter and lies within the south-western part of enclosure B1. Its otherwise very circular ditch has a pronounced break in its south-eastern side. The position and size of this break make this feature very similar in plan to some of the larger Iron Age round houses excavated at Blackhorse approximately 20km to the south-east (Fitzpatrick 1999, 221). A further ring-ditch B9 was recorded immediately to the west of enclosure B2. It is approximately 15m in diameter. A modern hedge bank hides the eastern quarter of this feature. A third new ring-ditch (feature B10) was identified towards the eastern edge of enclosure B1. It measures approximately 17m in diameter and although partially truncated by a removed field boundary its ditch appears to be unbroken. All of these features, with possible exception of B8, are considered likely to be Neolithic or Early Bronze Age in date.



Nether Exe Area B
Gradiometer survey (2008-2010)

nT

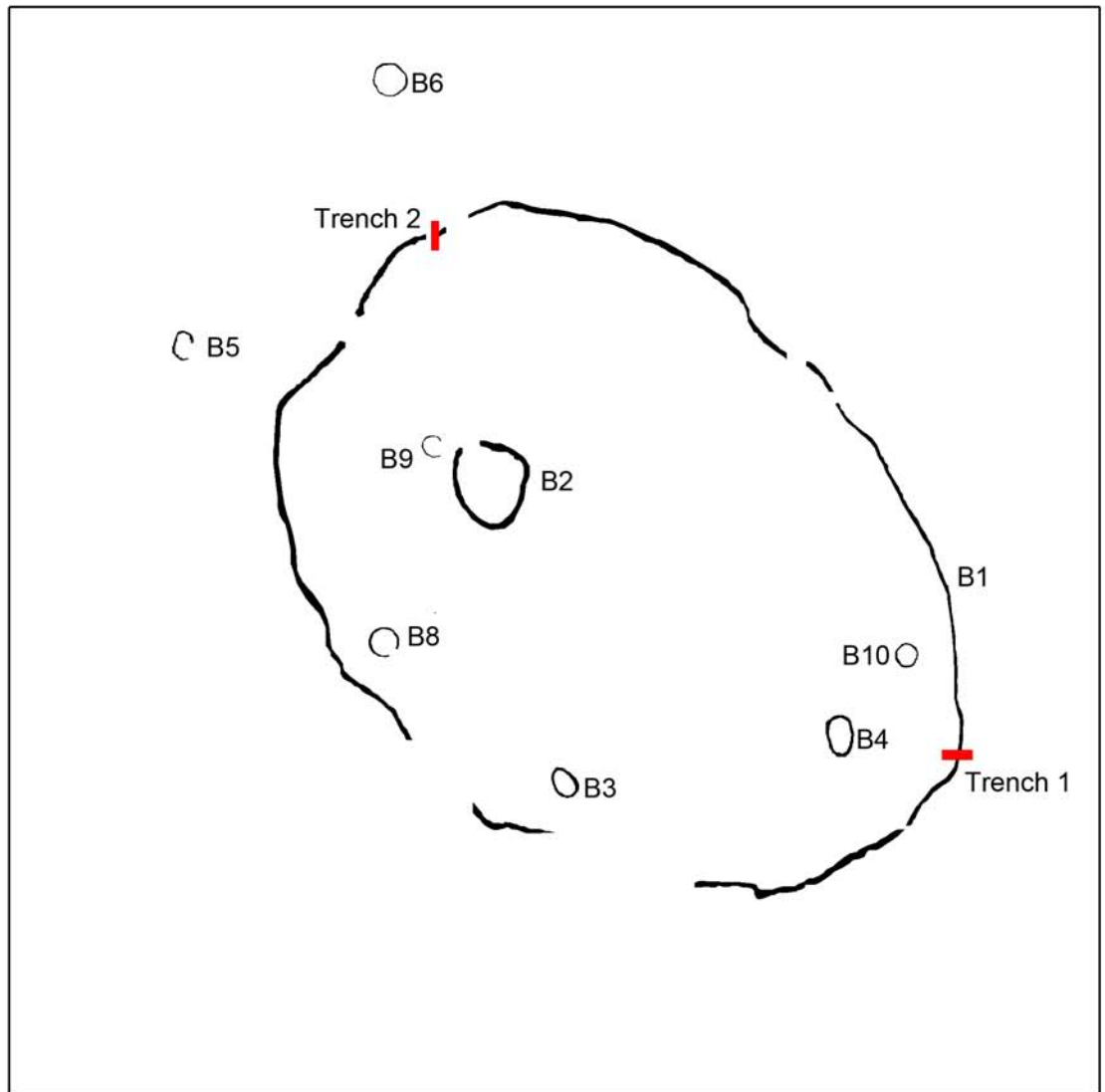


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Figure 7.2.5 Gradiometer survey area B



Nether Exe Area B

Transcribed prehistoric features from gradiometer survey

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Figure 7.2.6 Transcribed prehistoric features from gradiometer survey of area B and locations of trenches one and two.

Excavation

Two small trenches were excavated across the ditch of enclosure B1 (see figure 7.2.6). The principle aim of the excavations was to recover material with which to date the enclosure.

Trench 1

Trench one was excavated across the south-eastern area of the enclosure ditch in autumn 2008 (see Figures 7.2.7 and 7.2.9). In this area the subsoil comprises up to 0.85m of silt overlying the gravel terrace. The very soft nature of this material, and the resultant impact of root and worm intrusion, made the identification of the edges of archaeological features very difficult. Although after topsoil stripping and initial cleaning a dark area was apparent on the approximate line of the enclosure ditch, the impact of bioturbation meant that it was impossible to excavate in plan. As a result a sondage was excavated in a series of spits across the line of the enclosure ditch. The profile of the ditch was then recorded in section (see figure 7.2.7 and 7.2.9). The ditch (502) had a shallow v-shaped profile 6.65m wide by 1.25m deep, cut through natural silts (contexts 510 and 511) with its base slightly truncating the underlying gravels. The three fills of the ditch (503, 508 and 509) are all broadly symmetrical in profile with no evidence of slumping from an internal or external bank. The ditch appeared to be continuous, no traces of post holes (from a palisade) or other interruptions were observed.

A small quantity of worked flint, predominantly micro-debitage, and a single large retouched blade, were recovered from the tertiary silts (context 503). No other finds were recovered. Small quantities of unidentified charcoal were recovered by floatation sieving of bulk soil samples derived from contexts 503, 508 and 509 (Aldritt 2009 and see table 7.2.1). A single piece of unidentified short-lived charcoal from secondary fill 508 was submitted for C14 dating. The results of which are summarised in table 7.2.2.

Trench 2

Trench two was excavated across the northern area of the enclosure ditch, approximately 100m east of the enclosure entrance in summer 2010 (see figures 7.2.8 and 7.2.9). In this area the gravels were encountered immediately under the plough soil, against which the upper silts of the ditch were clearly

defined. In this trench the enclosure ditch (508) had a steeper v-shaped profile approximately 7m wide by 1.9m deep and cut into the terrace gravels (see figure 7.2.8). The sequence of ditch silting is more complex than that seen in trench 1, however, there is no clear evidence of asymmetric silting caused an internal or external bank. As in trench one small quantities of lithic micro-debitage were encountered in the tertiary silts (502 and 503), otherwise the ditch fills were devoid of finds. Small quantities of charcoal and carbonised plant macro-fossils were recovered by floatation sieving of bulk soil samples derived from contexts 504, 505 and 507 (see table 7.2.1). Three samples were submitted for C14 dating (the results of which are summarised in table 7.2.2).

Year	Context	Sample	Contents
2008	503	200	Unidentified charcoal
2008	508	201	Unidentified short lived charcoal
2008	509	202	Trace unidentified charcoal
2010	504	406	1 x <i>Triticum spelta</i> (spelt wheat) 1 x <i>Galium aparine</i> (cleavers) 1 x <i>Rumex</i> sp. (docks). 1 x small frag <i>Quercus</i> (oak) charcoal 1 x small frag <i>Prunoideae</i> (cherry Family) charcoal
2010	505	407	1 x frag unidentified charcoal
2010	507	409	Trace unidentified charcoal

Table 7.2.1 Summary of charcoal and carbonised plant macro-fossils (based on Alldritt 2009; 2010)

Year	Sample	Contents	Ref.	Uncalibrated	Calibrated
2008 (tr 1)	201	Unidentified short-lived charcoal	OxA-X-2423-6	2953 ± 36	1301-1046 cal BC (95.4%) * low yield date
2010 (tr 2)	406a	Spelt	OxA-24149	210 ± 25	1736-1805 cal AD (47.3%)
2010 (tr 2)	406b	Cherry	OxA-24148	3460 ± 28	1881-1731 cal BC (84.8%)
2010 (tr 2)	407	Unidentified charcoal	failed	failed	failed

Table 7.2.2 Summary of AMS radiocarbon dates

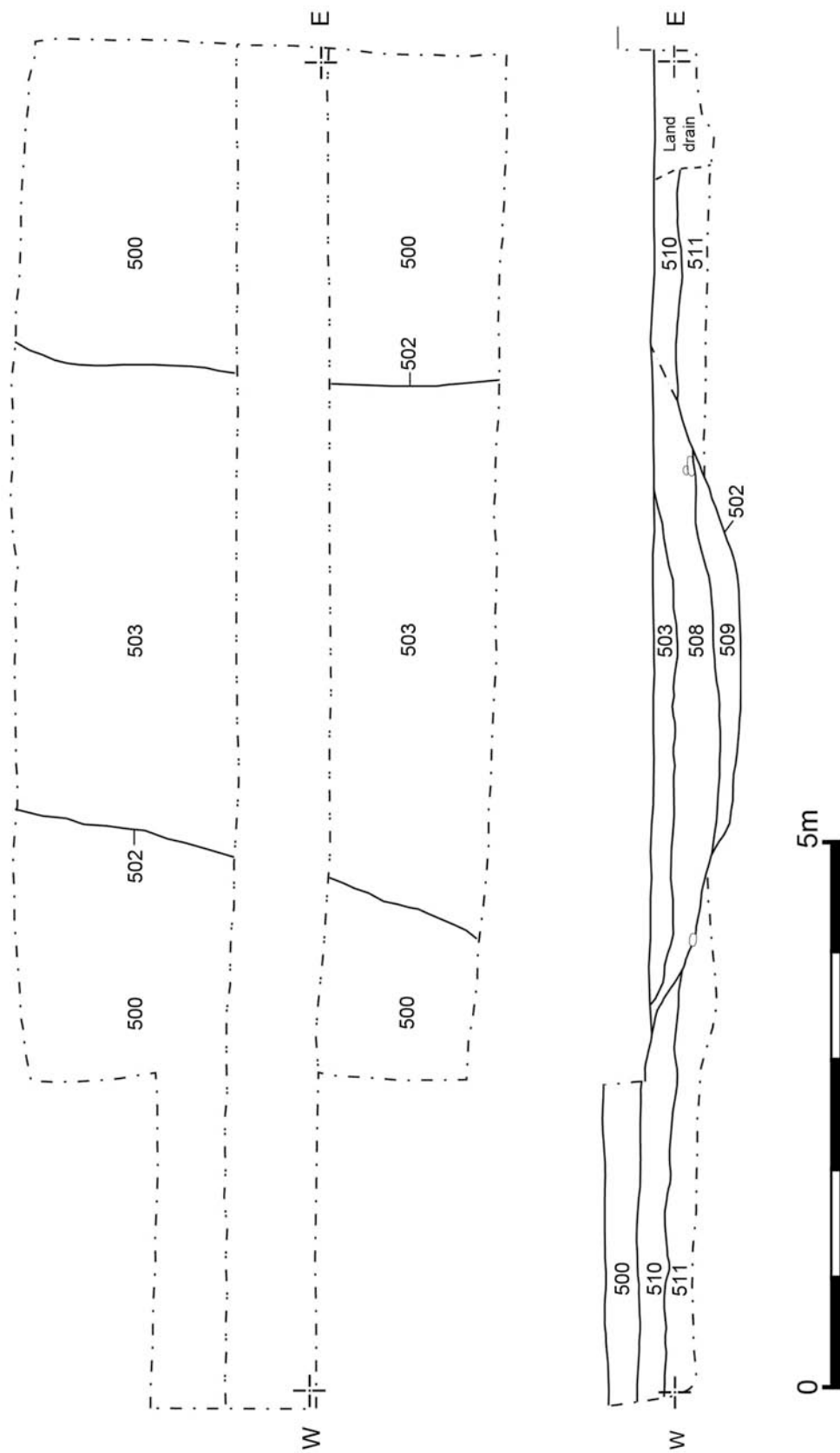


Figure 7.2.7 Trench 1 plan and section (inside of the enclosure is to the west).

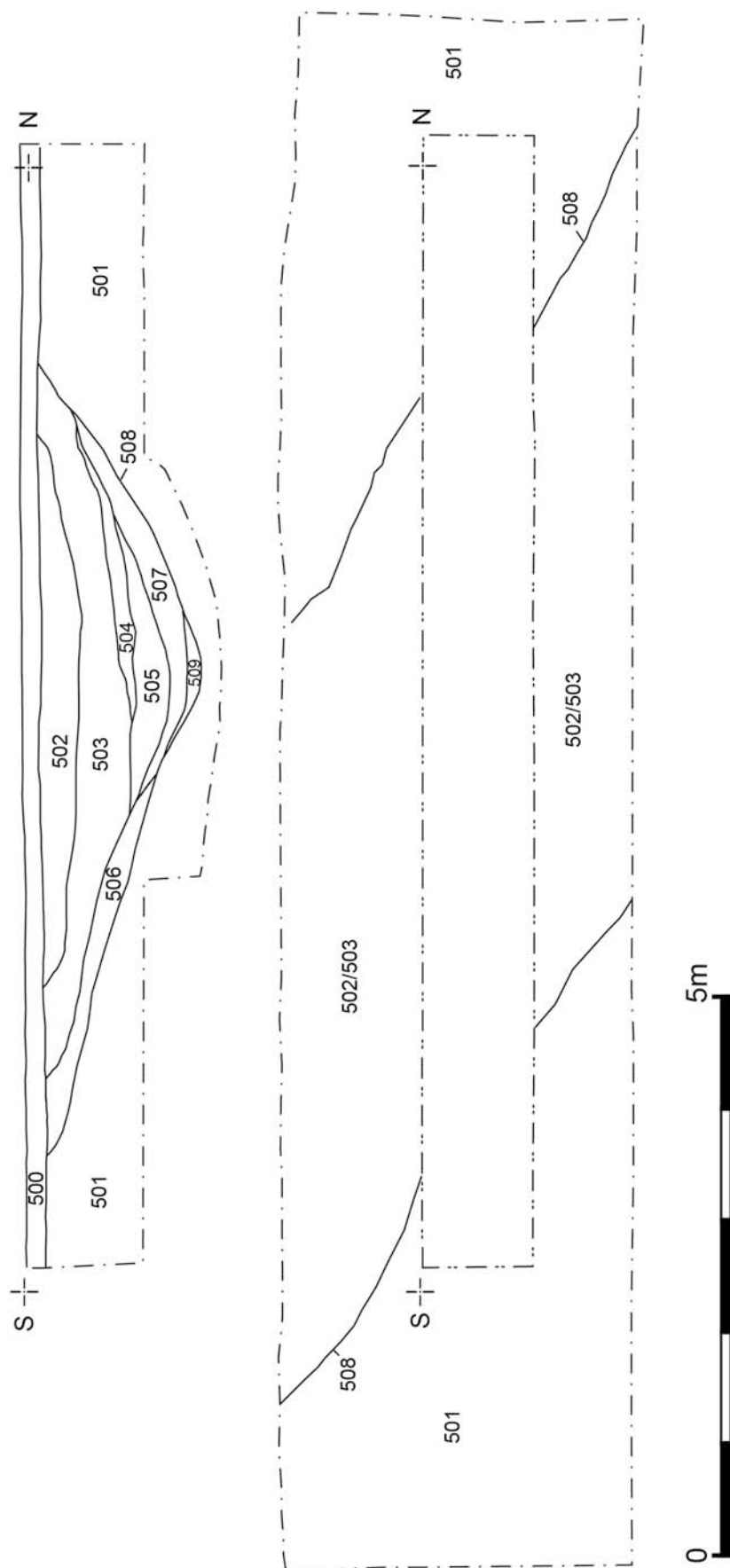


Figure 7.2.8 Trench 2 plan and section (inside of enclosure B1 is to the south).



Figure 7.2.9 Trench 1 view to the south-west. The enclosure ditch shows as a diffuse dark mark in the central area of the trench. The dark mark in the foreground is within the fill of a modern land drain. Scales 1m.

7.2.5 Area B: Summary of results

Fieldwork in area B has not provided conclusive dating evidence for enclosure B1. A combination of the gradiometer plot, and observations made during the excavation of both trenches one and two, suggests that the ditch of enclosure B1 is continuous in form. Although the ditch appears to have been built in sections, no evidence of the multiple interruptions that characterise Early Neolithic causewayed enclosures, or the substantial post-holes that define Late Neolithic palisaded enclosures were observed.

The gradiometer survey showed no direct relationship between the enclosure and any Neolithic or Early Bronze Age features. Although several monuments of potential Neolithic (oval barrows B3, B4 and B5), and Early Bronze Age date (ring-ditches B5, B6, B8, B9 and B10), exist inside and immediately outside of enclosure B1, none have a stratigraphic relationship with the large enclosure.

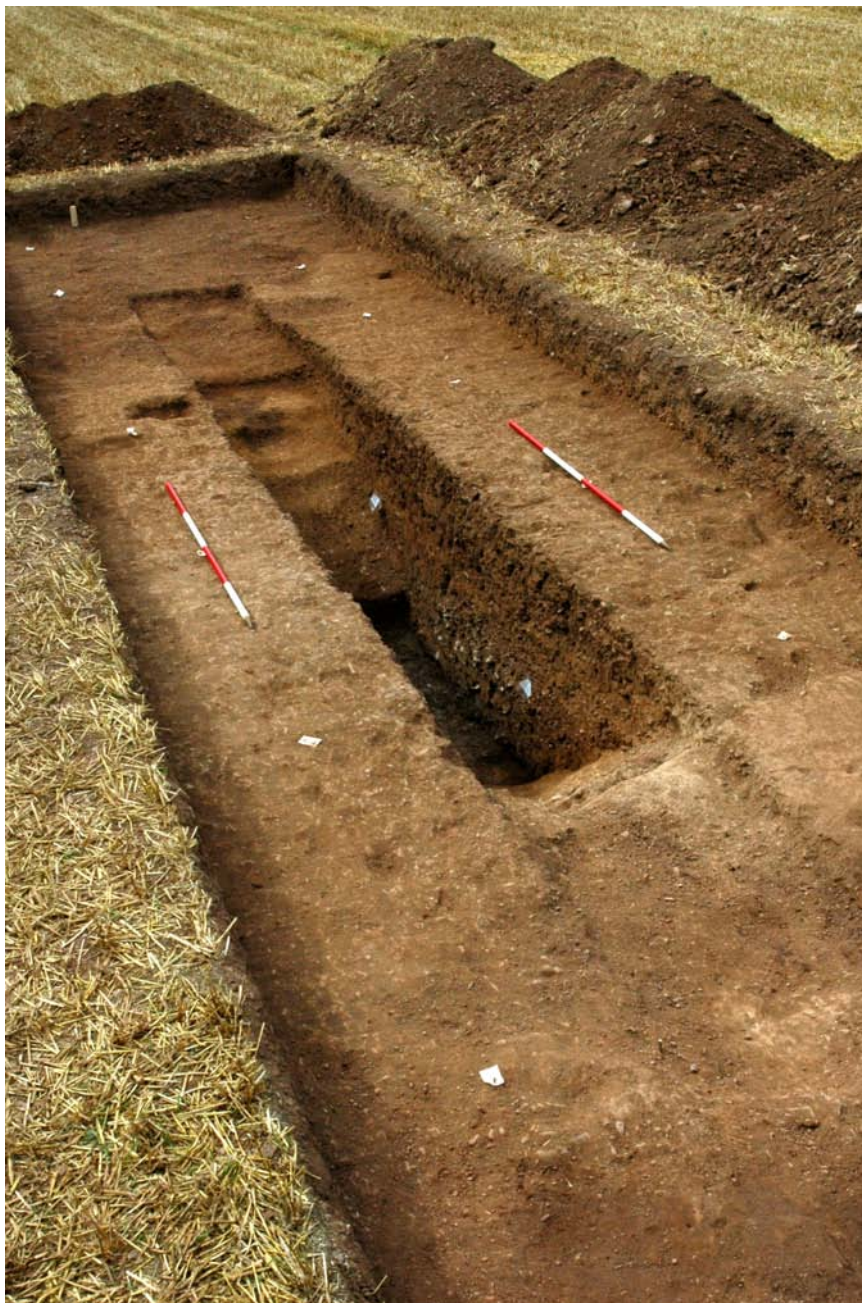


Figure 7.2.10 Trench 2 view to the south-west, scales 2m.

The gradiometer survey does indicate that the enclosure B1 is prehistoric. It is overlain and referenced by elements of a series of field systems associated with an enclosure of Romano-British date (Ugnow 2000) immediately to its north-west. Smaller enclosure B2 is potentially Iron Age in date (Ugnow *et al.* 1985) and lies inside enclosure B1. The two enclosures share a common entrance orientation, however, there is nothing to indicate a relative chronology between the two monuments.

Three radiocarbon dates were obtained from carbonised material from the secondary fills of enclosure B1's ditch. All are derived from bulk soil samples

and therefore should be treated with a degree of caution. However, the results taken at face value suggest a pre Iron Age date for the construction of enclosure B1. Two dates came from context 504 in trench two. It is likely that the post medieval date from this context (1736-1805 cal AD - OxA-24149) represents intrusive material introduced by root or worm action. The presence of this material calls into question the integrity of the Early Bronze Age date also from this context (1881-1731 cal BC - OxA-24148). Whilst this fragment of charcoal may accurately date the formation of the ditch's secondary silts, it may equally represent intrusive material unrelated to the enclosure ditch. The third date (1301-1046 cal BC - OxA-X-2423-6) comes from context 508 in trench one. This is a low yield sample and should be treated with caution. If this does not also represent introduced material (which given the high level of bioturbation seen during the excavation of trench one is a distinct possibility), it indicates that the enclosure ditch's secondary silts were forming during the mid to late Bronze Age, and that the construction of the enclosure predates this.

7.2.4 Area B: Development of the monument complex

Regardless of the relative position of large enclosure B1 in this sequence, the features identified in area B suggest a series of ritual/funerary monuments spanning up to two millennia. The sequence begins in the mid fourth millennium BC with the construction of two (B3 and B4), possibly three (B5), oval barrows. Ring ditches (B6, B8, B9 and B10) are most likely to have been constructed and used at any time between the end of the third millennium BC and the mid second millennium BC.

The somewhat inconclusive dating evidence from the gradiometer survey and excavations indicate that enclosure B1 is prehistoric and possibly pre mid to late Bronze Age in date. Three possible scenarios are proposed for the development of the monument complex in area B. Scenarios one and two assume OxA-X-2423-6 provides a reliable *terminus post quem* for the silting of the enclosure ditch, scenario three assumes that it does not.

1. The enclosure is analogous to causewayed enclosures, is Early Neolithic in date and is one of the earliest monuments on the valley floor. A series of Neolithic and Early Bronze Age funerary monuments are subsequently built inside or immediately outside the enclosure.

2. The enclosure is analogous to palisaded enclosures and is Late Neolithic in date. It encloses two pre-existing early/mid Neolithic oval barrows. Several Early Bronze Age round barrows are subsequently built inside or immediately the enclosure.
3. The enclosure is Iron Age in date. It partially encloses a series of Neolithic and Early Bronze Age funerary monuments. Several of these monuments remain outside the enclosure.

7.3 Conclusion

Chapter seven summarises the existing state of knowledge and the results of new fieldwork in two areas of archaeological cropmarks on the floor of the lower Exe valley. This research aimed to further characterise, and in one instance date, archaeological features close to or directly underlying surface lithic scatters. Two techniques, gradiometer survey and targeted excavation, were used to achieve this. In both areas A and B gradiometer survey proved to be a valuable technique for clarifying and adding detail to archaeological features previously only known from aerial photography. The results of the two small trenches excavated across the ditch of large enclosure B1 in area B are frustrating in the lack of clarity that they bring. However, perhaps the expectation of deriving clear answers about the nature and date of the enclosure from the excavation of approximately 0.3% of its ditch was always optimistic.

Interpreting the features identified in areas A and B has depended on searching the literature for comparisons for a series of outline plans and dimension of monuments derived from aerial photography and geophysical survey. This has been achieved with varying degrees of success, and often relies on drawing comparisons with more thoroughly investigated monuments from other areas of the country. Sequences of development are proposed for the monuments in both areas. The relationship between these monuments, their associated lithic scatters and their surrounding topography is discussed in chapter nine.

Chapter Eight: Lithic analysis – investigating the contents of lithic scatters

Chapter eight presents the results of an analysis of all lithic artefacts from the study area. This study area wide analysis examines the composition of the entire collection as a single assemblage. It aims to identify trends in the composition, distribution and chronology of collection's lithic scatters.

A note on tables and figures

Presentation of the results of this analysis relies heavily on a series of tables and distribution maps of which only a selection are included in the main body of the thesis. Those maps and tables incorporated in text follow a similar numbering system to that used in the rest of the thesis (Table 8.1.1, 8.2.1, 8.3.1 etc. and Figure 8.1.1, 8.2.1, 8.3.1 etc.). A complete set of the distribution maps is included in appendix F and are referred to with an 'F' prefix in text (Figure F1, F2, F3 etc.). Tables not in text are included in appendix G and are referred to with a 'G' prefix (G1, G2, G3 etc.).

For the sake of consistency the following terms are used throughout this chapter.

- Collection – the portion of the Uglow collection examined in this phase of analysis
- Assemblage – the lithic assemblages that make up the Uglow collection, either individually or grouped into field-level assemblages

8.1 Distribution of lithic finds and spatial analysis

A total of 19137 pieces of flaked stone were identified during the initial assessment of the Uglow collection. From the total Uglow collection 16577 lithic artefacts, weighing 168499g, were examined as part of the current analysis. This material originally comes from over 140 'subfield' collection units. For the purposes of this phase of analysis these subfield collection units have been merged into 63 larger 'field-level' assemblages.

Number of artefacts	Number of scatters	Examples
3-10	8 (13%)	R10, R13, T13, T14
11-50	20 (32%)	N13, N14, R4, R7, S1, T6, T30
51-100	8 (13%)	N1F, N11, R1, R3, T8, T21
101-500	21 (33%)	N5, N7, R2, R5, T2, T22
501-1000	3 (5%)	N8, N9, T27
1001-1500	2 (3%)	N4, N12
1501-5288	1 (1%)	N1
Total	63	

Table 8.1.1 Field level assemblage size by artefact count

Table 8.1.1 shows the considerable range in size of these ‘field-level’ assemblages. The smallest assemblages (scatters R13 and R14) contain just three artefacts each, whilst the largest assemblage, (scatter N1) contains 5288 artefacts. The majority of assemblages comprise less than 200 artefacts, are derived from one or two sub-field collection units, and were collected non-systematically. Larger assemblages tend to be comprised of multiple sub-field collection units, have a long history of collection, and contain an element of systematically collected material. The two largest assemblages, N1 and N12, are both the result of intensive systematic collection.

Weight g	Number of scatters	Examples
15-100g	6 (10%)	R9, R13, R15, S4, T13, T14
101-500g	17 (27%)	N14, R4, R14, S5, S6, T6, T31
501-1000g	11 (18%)	N11, N13, R1, R16, T5, T34
1001-5000g	21 (33%)	N1F, N10, R2, R7, T2, T25
5001-10000g	6 (10%)	N3, N3C, N4, N8, T22
10001-15000g	1 (1%)	N12
50735g	1 (1%)	N1
Total	63	

Table 8.1.2 Field level assemblage size by weight

Table 8.1.2 shows the range in weight of the ‘field-level’ assemblages. The variability in assemblage weight broadly echoes that seen in the assemblage size. Again, in gross terms, the nature and intensity of collection have a large bearing on the weight of an assemblage. The lightest assemblage (scatter R14) weighs 15g, whilst the heaviest assemblage, (scatter N1) weighs 50735g. The majority of assemblages weigh less than 5000g, are derived from one or two sub-field collection units, and were collected non-systematically. The heavier assemblages tend to be comprised of multiple sub-field collection units, have a long history of collection, and contain an element of systematically collected material. The two heaviest assemblages, N1 and N12, are both the result of intensive systematic collection.

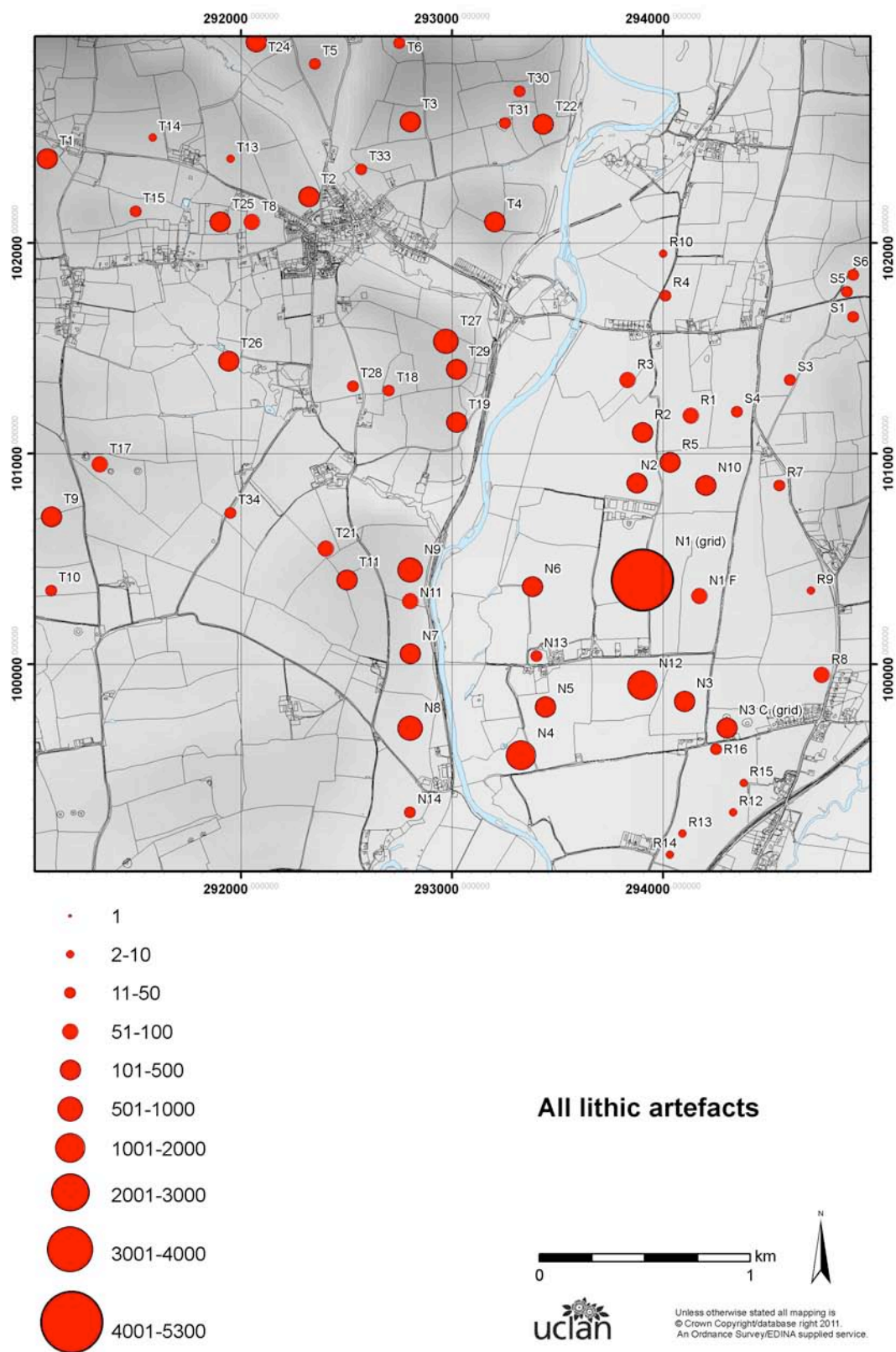


Figure 8.1.1 Field level assemblages by artefact count

Figures 8.1.1 and F1 shows the distribution of all the lithic material from the study area by artefact count and Figure F2 by artefact weight. Both distribution maps show that lithic material is far from evenly distributed across the study area. The highest concentrations of lithic material come from eastern central and southern parts of the valley floor in particular the area of scatters N1, N3, N4, N5 and R2. The scarp on the immediate western edge of the valley has also produced large quantities of lithic material in the area of N7, N8, N9, T19, T27. Lower concentrations of lithic material are recorded on the lower slopes of the Raddon ridge to the west of the Exe. Even lower concentrations of material are recorded on the low hills to the west of the Exe, and on the Exe/Culm interfluvium to the east of the valley. Several parts of the study area are relative blank areas with few or no recorded lithic finds. These blank areas include the south-west and north-east corners of the study area, as well as the northern and western-central areas of the valley floor.

8.1.1 Archaeological distributions or distributions of archaeologists?

Artefact distribution was recorded to give an indication of the scale and intensity of prehistoric inhabitation across the study area (Figure F3). The nature of the Uglo collection places certain constraints on how data derived from its analysis can be used at a landscape scale (see chapter four). It is important that figure 8.1.1, and the equivalent distribution maps used throughout this chapter are read critically. Interpreting the distribution maps found in publications resulting from research design led, systematic, surface collection studies (for example, Richards 1990, 17; Tingle 1998, 47; Woodward 1991, 22) is a relatively straightforward matter. The fieldwork upon which these studies were based placed great emphasis on ensuring uniform intensities of collection across a study area. The resultant densities of lithic material when plotted on distribution maps, notwithstanding the influences of landscape scale taphonomic processes, can be directly equated with distributions and densities of prehistoric activity. Unlike these studies the Uglo collection is comprised of nearly 70 years of piecemeal, accumulated and variable surface collection (see chapter four), meaning that the relationship between mapped densities of lithic material and any sort of prehistoric 'reality' is much more complex.

The study area as shown in figure 8.1.1 and subsequent distribution maps, was defined at an early stage in this research. The 4km by 4km square was imposed

on the existing Uglow collection, as depicted in Bayer (2008). The extent of the current study area was a pragmatic choice, providing a means of defining the core of the Uglow collection, clipping out some of the collection's outlying scatters and providing a regular shaped block of land to depict in distribution maps. As far as can be ascertained from the collection archive, John Uglow himself used no such defined study area. His work was carried out in a relatively ad hoc manner in the area surrounding his home. Certainly no attempt has ever been made to conduct systematic surface collection across the entire current study area. After Hamond (1981) this raises the question of to what extent do the distributions shown in figure 8.1.1 actually reflect the distribution of prehistoric activity itself, or the distribution of archaeological investigation?

8.1.2 Positive information (dots on maps)

For the purposes of this discussion positive information is defined as the information that figure 8.1.1 actually shows, or the 'dots on the map'. In general terms the positive information can be divided into two groups 'high intensity' and 'low intensity'. An examination of recording sheets in the collection archive suggests that high intensity areas are likely to reflect locations which produced large quantities of lithic material on initial inspection (often in the 1930s), or locations with pre-existing aerial photographic/earthwork evidence for prehistoric monuments. These locations became favoured sites that saw multiple episodes of collection (for example, N3, N4, N5, N7, N8, R2, T22, T27), and several were subject to more intensive collection strategies (for example, N1, N12). As a result their prominence within the collection as a whole has become accentuated. Conversely low intensity sites which produced few, or no, lithic finds on initial inspection (for example N13, S3, T13, T15), were unlikely to become the focus of repeated episodes of collection, thus potentially diminishing their prominence within the collection as a whole.

8.1.3 Negative information (blank areas)

In this context negative information is taken to mean the information that figure 8.1.1 does not show. Essentially the question asked here is what do the areas between the dots on map represent? No information has been found in the collection archive to adequately explain the blank areas on the distribution map and as a result their interpretation has to be more conjectural. It seems likely

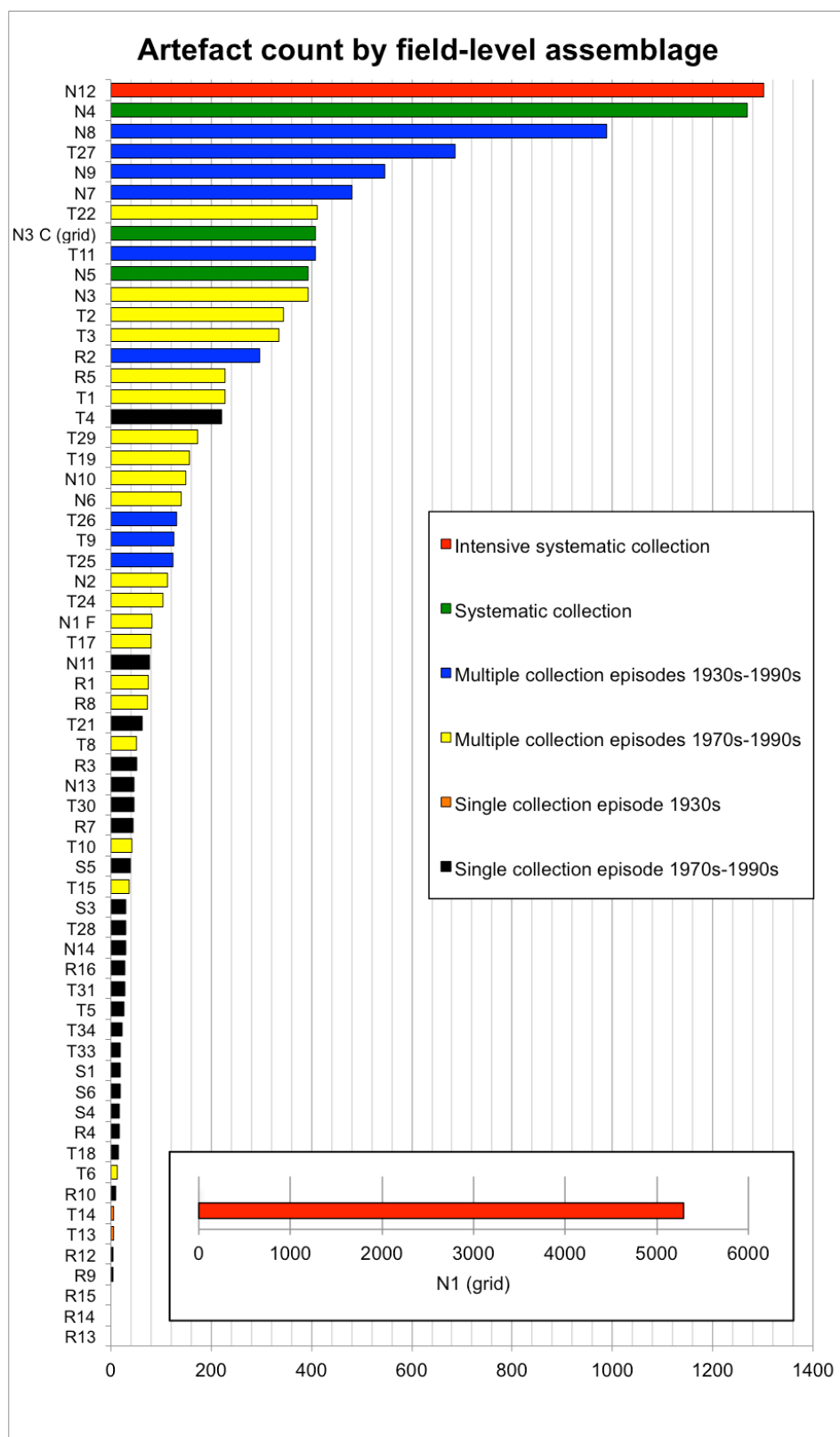
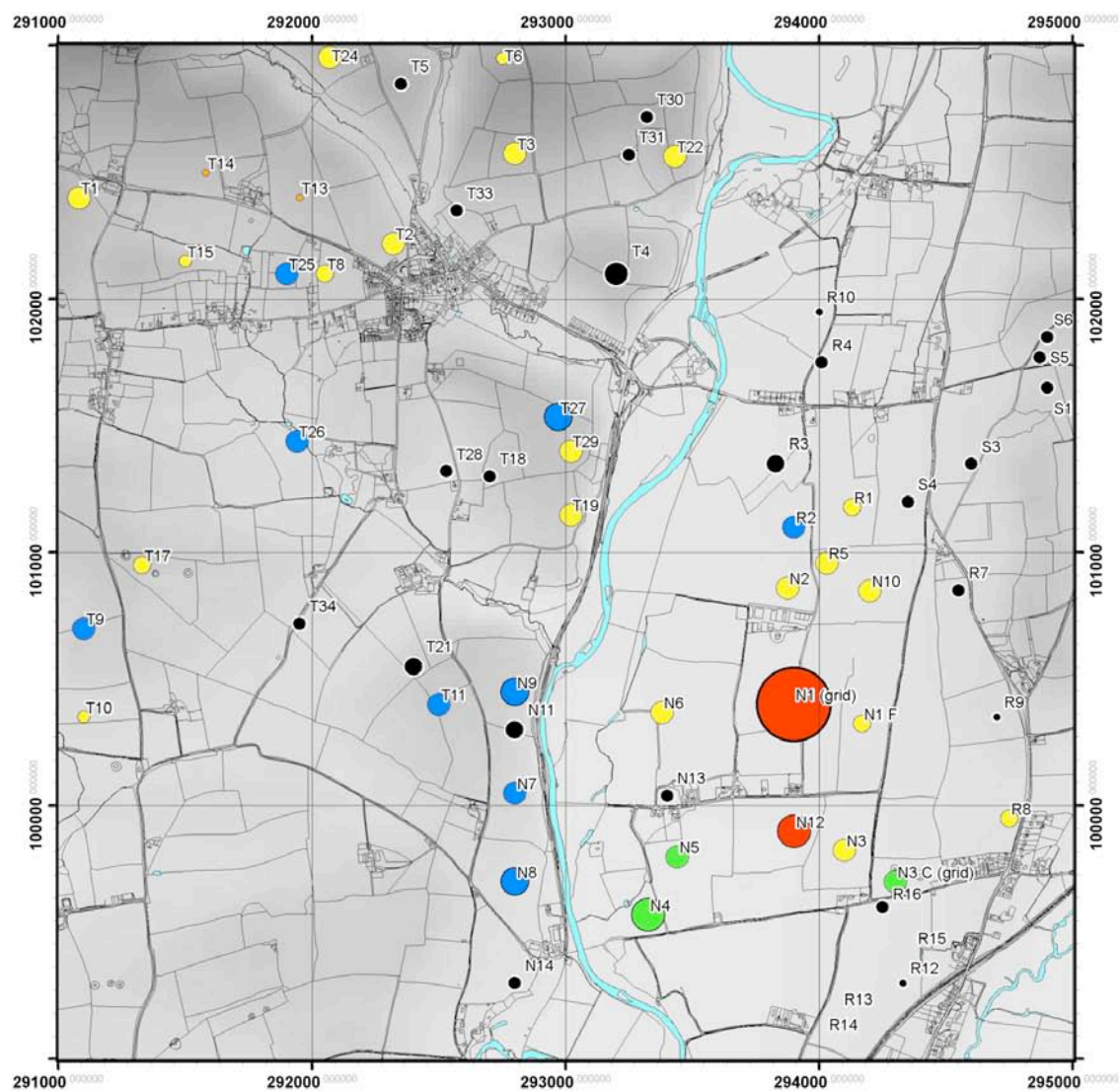


Figure 8.1.2 Artefact count by collection methodology



■ Intensive systematic collection

■ Systematic collection

■ Multiple collection episodes 1930s-1990s

■ Multiple collection episodes 1970s-1990s

■ Single collection episode 1930s

■ Single collection episode 1970s-1990s

0 1 Kilometers

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Figure 8.1.3 Distribution of collection methodologies

that in areas that have seen intensive collection, such as parts of the valley floor and its immediate western flank, at least casual surface collection would have been conducted in fields neighbouring favoured sites. In these instances it is likely that many of the apparent blank areas really can be taken at face value. In other parts of the study area where collection appears to have been less intensive, such as the south-west and north-east corners of the study area, and the northern part of the valley floor, the absence of lithic finds is more likely to reflect a lack of fieldwork rather than a real absence of lithic scatters.

None of the above observations necessarily mean that the Uglow collection should not be used to make distribution maps like figure 8.1.1. When plotted spatially information from the collection does give positive information about the nature of prehistoric inhabitation. However, this should be qualified with the knowledge that high intensity occupation is probably over collected and thus over represented, and low intensity occupation is probably under collected and thus under represented. It seems likely that the pre-Foley (1981) notion of site underpins the Uglow collection. In short the fieldwork that formed the collection sought to locate and define concentrations of lithic material or sites. Areas with few or no lithic finds were not sought out or recorded.

Figures 8.1.2 and 8.1.3 are an attempt to calibrate the positive information by combining the distribution of all lithic artifacts with information about the nature and intensity of collection of each collection unit. Dealing with the negative data is less straightforward; in areas close to favoured sites it is likely that blank areas reflect a genuine lack of prehistoric activity, whereas larger blank areas may reflect a lack of archaeological investigation. A more detailed consideration of factors biasing the distribution of lithic artefacts is given in the zoned analysis of the study area in chapter nine.

8.2 Typological analysis

A typological analysis of the collection was carried out in order to identify the range of activities that created it, and to establish the chronology of these activities. At its simplest the collection can be broken down into three categories:

- Modern/intrusive material (77 artefacts or less than 1% of the collection).

- Unmodified debitage (12158 artefacts or 73% of the collection).
- Retouched pieces (4419 artefacts or 27% of the collection).

8.2.1 Modern/intrusive material

	Date	Activity	Total
Modern/intrusive			
Gunflint	Modern	N/A	7
Liming fragment	Modern	N/A	70
Total			77

Table 8.2.1 Modern/intrusive material

The modern/intrusive category consists of all non-prehistoric lithic material from the study area. The smallest part of this material comprises seven post-medieval gunflints most of which come from the scarp overlooking the western edge of the Exe valley (N7, N8, N9). Two single examples come from the valley floor (R5) and the foot of the Raddon ridge (T2) (see Figure F4). The majority of the modern/intrusive material comprises 70 pieces of apparently unworked black and dark grey nodular flint. In contrast to other nodular flint in the collection, whose cortex is now stained a mid red colour by the study area's red soils (Silvester *et al.* 1987, 8), all of these pieces have thick fresh looking, white, chalky cortex. It is thought likely that these pieces were introduced by modern agriculture practices, either as an accidental inclusion in lime added to the fields, or lodged in hay bales brought in from the chalk/flint rich areas in Wessex to the east. This material is primarily found in a single concentration at scatter T25 on the southern slopes of the Raddon ridge. Much smaller quantities come from scatters T1 and T24 at the foot of the Raddon ridge (see Figure F5).

8.2.2 Unmodified debitage

Debitage, the waste material from stone working, makes up the majority of the collection (12158 pieces or 73% of the collection). Figures F6 and 8.2.2 show the distribution of all debitage within the study area. In general terms its distribution echoes that already seen in the total distribution of all lithic material (Figure 8.1.1). This indicates that making, using and maintaining stone tools is widely dispersed throughout the collection. High densities of debitage are seen on the valley floor and its western edge with lesser quantities in assemblages

further away from the Exe valley. The highest densities come from the largest assemblages in the collection, chiefly scatters N1 and N12 on the valley floor.

Table 8.2.2 summarised the typological composition of the collection's debitage. The debitage primarily consists of two groups of material: cores, the parent blocks of raw material from which blades and flakes are subsequently detached, which account for 1546 pieces, or 9% of the collection; and blades and flakes, the 'product' pieces detached from cores as either waste material or deliberate artefact blanks, which account for 10025 pieces, or 60% of the collection. Much smaller quantities of undifferentiated waste (unclassifiable, amorphous chunks and chips), unworked or tested flint/chert nodules and hammerstones are all present.

	Date	Activity	Total
Unmodified debitage			
Blade (unmodified)	early	stone tool manufacture	1650
Flake (unmodified)	late	stone tool manufacture	8375
Blade core	early	stone tool manufacture	718
Flake core	late	stone tool manufacture	828
Hammerstone	uncertain	stone tool manufacture	4
Unworked chunk/tested nodule	uncertain	stone tool manufacture	82
Undifferentiated waste	uncertain	stone tool manufacture	321

Table 8.2.2 Unmodified debitage summary

Debitage chronology- blades and flakes

As set out in chapter six, whilst flakes are a ubiquitous product of the stone working process of all periods, the presence of a blade-based component in an assemblage can be used as a crude chronological indicator of Mesolithic and, to a lesser degree, Early Neolithic activity. Table 8.2.3 summarises the quantity and proportion of blade-based debitage in the overall collection. For comparative purposes retouched/utilised blades and flakes, and the results of an analysis of blade and flake scars on the dorsal faces of artefacts are also included in table 8.2.3

	Blade	Flake	Total
Core	718 (46%)	828 (54%)	1546
Unmodified product debitage	1650 (16%)	8375 (84%)	10025
Retouched/utilised	407 (14%)	2564 (86%)	2971
Dorsal scars	3597 (22%)	12600 (76%)	16197

Table 8.2.3 Relative proportions of blades and flakes

The proportions of blade-based activity shown in Table 8.2.4 indicate that there is a significant Mesolithic, and or Early Neolithic, presence exists in the collection. This exists alongside the majority of material, which is flake dominated and of later Neolithic, and/or Early Bronze Age date. Figures 8.2.1 and F7-8 show that whilst flake-based activity is ubiquitous throughout the collection, the distribution of blade-based activity is much more narrowly concentrated on the valley floor (for example, scatters N1, N4 and N12) and the scarp edge immediately to its western side (for example, scatters N7, N8, N9 and T27).

Blade scars/flake scars

An analysis of the shape of negative removal scars on the dorsal faces of artefacts has been found to be the most useful way of identifying the presence of blade-based working within the collection. Such an approach enables the widest possible range of the collection to be considered on equal terms when searching for 'blade-based' or 'early' activity. This includes retouched/utilised tools alongside unmodified debitage. Figures 8.2.4 and F11-12 illustrate the relative proportions of blade and flake scars across the study area. Again this emphasises the distribution of blade-based material on the valley floor and its immediate western edge. Here instances of approaching, or over, 25% blade-based material per assemblage are relatively common. Whilst blade-based material is present in areas away from the river valley it occurs in much lower proportions, typically between 5 and 10% of an assemblage. Scatter T26, almost a kilometre west of the Exe valley, with 44% blade-based material, is a notable exception. This suggests a more isolated incidence of intensive 'early' stone working.

Blades, flakes and cores

The relative distribution of blades and flakes and their parent cores can give an indication as to the degree of separation between two different stages in the stone working process. Essentially are blades and flakes consumed/deposited in the same places in which cores are worked and deposited? Figures 8.2.1 and F13-14 show the relative distributions of blades and blade cores, flakes and flake cores. Amongst the larger blade-based assemblages on the valley floor, and its immediate western edge, the proportion of blade cores is fairly constant at between 25 and 30%. This general pattern is reflected in blade assemblages

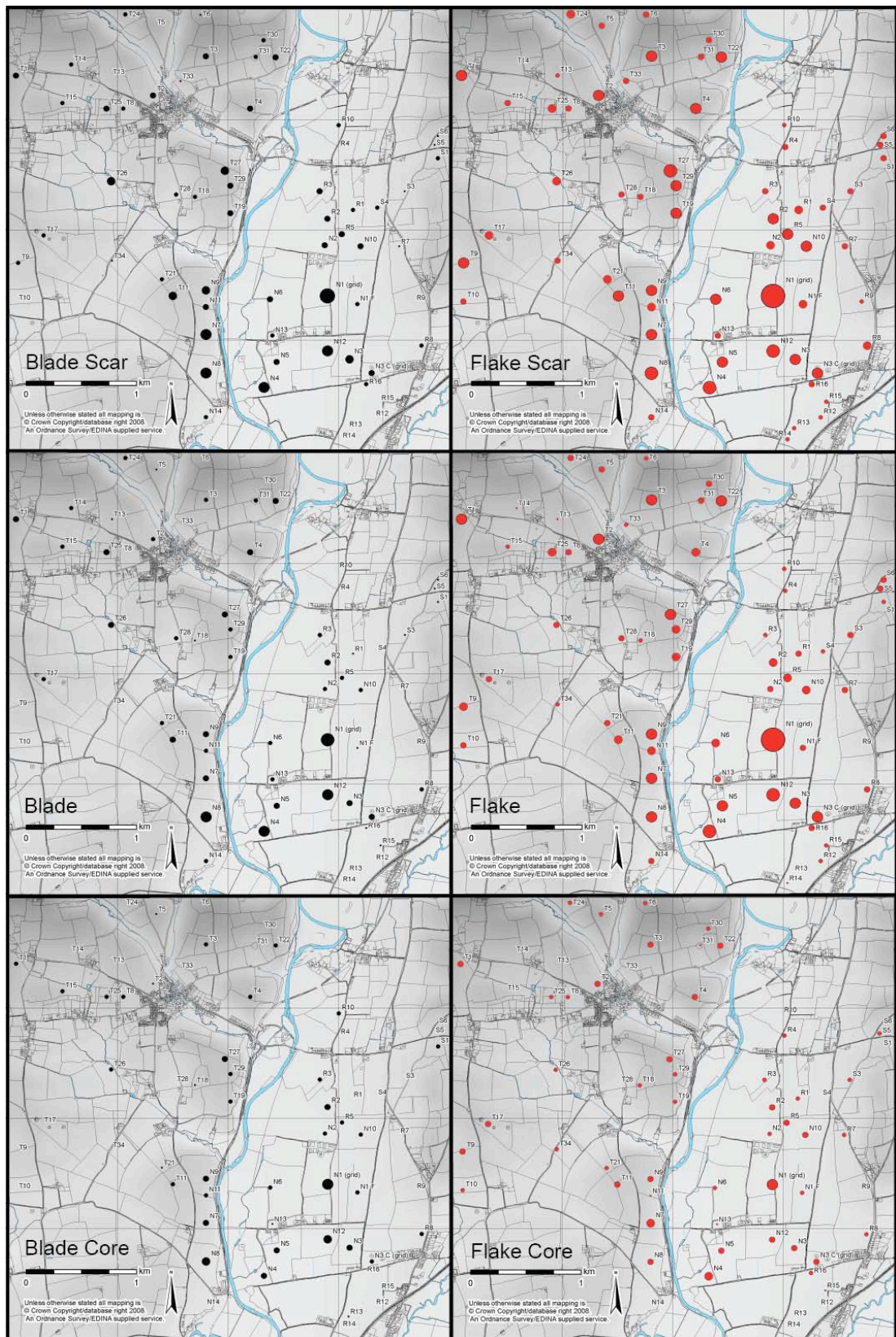


Figure 8.2.1 Distributions of blade-based and flake-based material

further away from the valley floor. Overall the impression gained is one of bladecore working and the use/deposition of blades occurring in the same locations. Only in a few smaller blade-based assemblages, generally away from the Exe (for example, S5, T17, T24, T28), are blade cores present in very small numbers or entirely absent. This suggests that at these sites blades are being ‘imported’ from their place of manufacture elsewhere in the study area or beyond.

% Blades	Number of scatters	Examples
0	5	R12, R13, R14
1-10%	24	N3c, T2, T3, T9, T22, T29
11-20%	17	N3, N4, N5, N10, R2, R5, T4, T19, T27
21-30%	9	N1, N2, N4, N6, N7, N9, T25
31-40%	5	N8, N12
>41%	3	T26

Table 8.2.4 percentages of blade-based pieces per field-level assemblage

The distribution of flakes and flake cores is broadly equivalent, although ratios of flake cores to flakes are much lower than with blade-based material, typically between 10 and 20% of a flake assemblage. This suggests that flake core working and the deposition/use of flakes occurs in broadly the same locations. Only a small number of generally very small assemblages deviate away from this trend, such as N7, R3, T17 and T34 which have significantly higher proportions of flake cores, and R12, S1, S5, S4 and T28 which have no flake cores. There is no spatial or topographic clustering amongst these anomalous scatters, all are dispersed throughout the study area.

8.2.3 Retouched/utilised tools

Flaked stone artefacts showing evidence of modification or utilisation, either as the result of the casual utilisation of otherwise unmodified debitage, or deliberate intentional retouch, make up the remaining 4419 artefacts (or 27%) of the collection. This portion of the collection was analysed both to identify individually chronologically distinctive artefacts with which to date scatters, and also to suggest the types of activity that generated them. Whilst the unmodified debitage provides evidence for stone working, i.e. the creation, and to a lesser extent the maintenance of stone tools, the modified/utilised portion of the collection provides evidence for their use, discard and/or deliberate deposition. Implicit in these artefacts are a range of tasks and materials many of which barely register in the archaeological record. It is through the modified portion of

the collection that a range of activities or tasks from the processing of plant resources to butchery, and from hunting to basketry, can be glimpsed and their location within a landscape examined. Table 8.2.5 summarises the typological composition of the modified/utilised portion of the collection. Much of this material is comprised of simple tools for cutting and scraping activities including utilised blades and flakes, knives and scrapers. There are smaller numbers of tools that would have been used for sawing, piercing and punching other materials.

	Date	Activity	Total
Retouched tools			
Blade (utilised)	early	cutting/scraping	407
Flake (utilised)	late	cutting/scraping	2595
Awl/Borer/Point	uncertain	piercing	121
Burin/Graver	uncertain	splintering/graving	7
Denticulate/saw	uncertain	Sawing/cutting	1
Fabricator	uncertain	Punching/fire-lighting/leather-working	10
Micro-denticulate	uncertain	Cutting/sawing	2
Scraper (including fragments)	uncertain	scraping/cutting	862
Unidentified retouched fragment	uncertain	cutting/scraping	11

Table 8.2.5 Retouched, modified and utilised artefacts summary

Figures 8.2.2 and F15 show the relative quantities of retouched and unmodified lithic artefacts, and figure 8.2.3 the relative proportions of retouched material. Both figures show that retouched/utilised artefacts are present throughout the study area. Quantities of between 25 and 33% modified pieces are widespread amongst many of the collection's assemblages. It is notable that scatters N1 and N12 on the valley floor, the collection's largest assemblages, contain proportionally low frequencies of retouched/utilised material (approximately 12.5% each). This suggests that these two dense scatters were foci of stone tool manufacture but not necessarily of their use and discard. Implicit in this is the likelihood that tools made here may have been 'consumed', discarded or deposited elsewhere in the landscape. Consistently higher frequencies of retouched material (between approximately 33 and 66% per assemblage) occur on the scarp overlooking the western edge of the Exe valley (for example, scatters N7, N8, N9, T11, T27 and T29). Many of these scatters were initially identified and collected from in the 1930s. An issue raised in chapter four is the extent to which these proportionally high frequencies of retouched tools may in part be due to the preferential collection/retention of retouched tools from these scatters during these early episodes of collection.

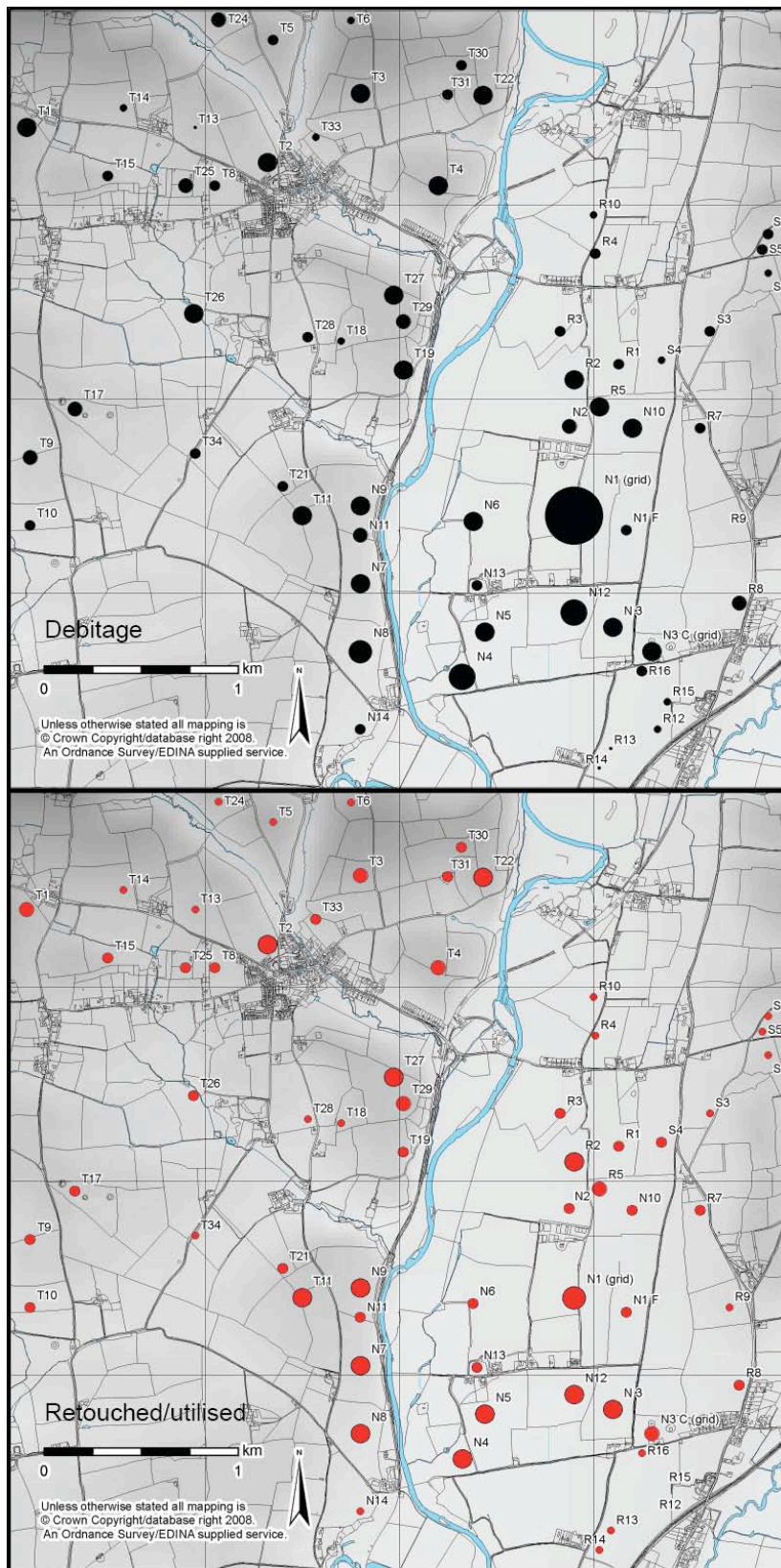


Figure 8.2.2 Distributions of debitage and retouched material

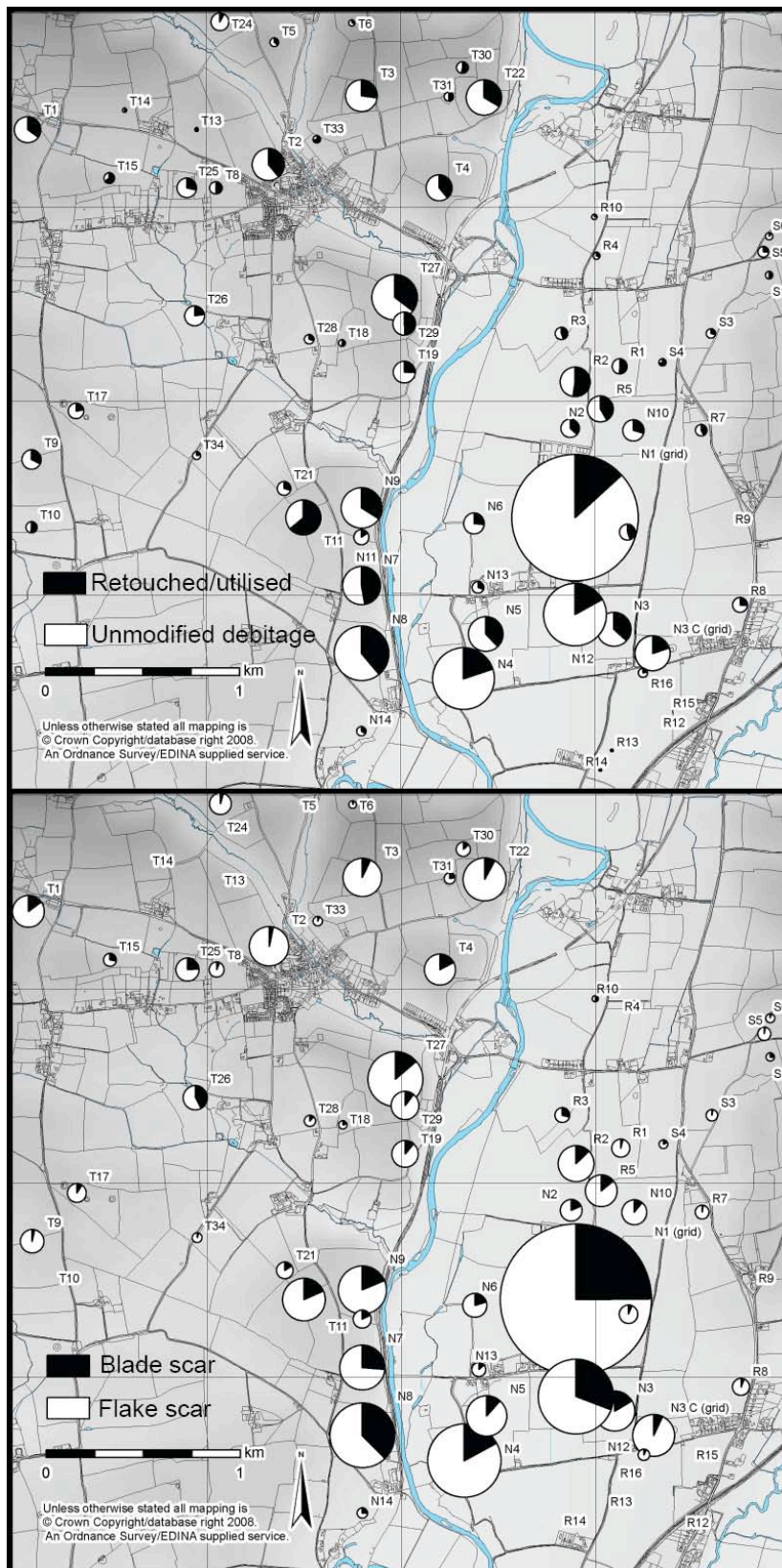


Figure 8.2.3 Proportions of debitage to retouched material, and blade scars to flake scars.

Figure 8.2.4 shows a comparison of frequencies of artefact modification/utilisation between sub-field assemblages collected in the 1930s and equivalent assemblages collected from the same areas between the 1970s and 1990s for scatters N7, N8, N9 and T27. Notwithstanding variable rates of retouch between scatters, it is apparent that for each scatter a consistently higher rate of modified or utilised material is present amongst assemblages collected during the 1930s than is evident from assemblages collected from similar locations between the 1970s and 1990s. This suggests that high frequencies of modified/utilised artefacts seen amongst these field level assemblages are in part a product of collection/retention bias. If these early assemblages are excluded from the analysis, the proportions of retouched material from this area whilst generally still higher than average are no longer quite as anomalous within the collection as a whole.

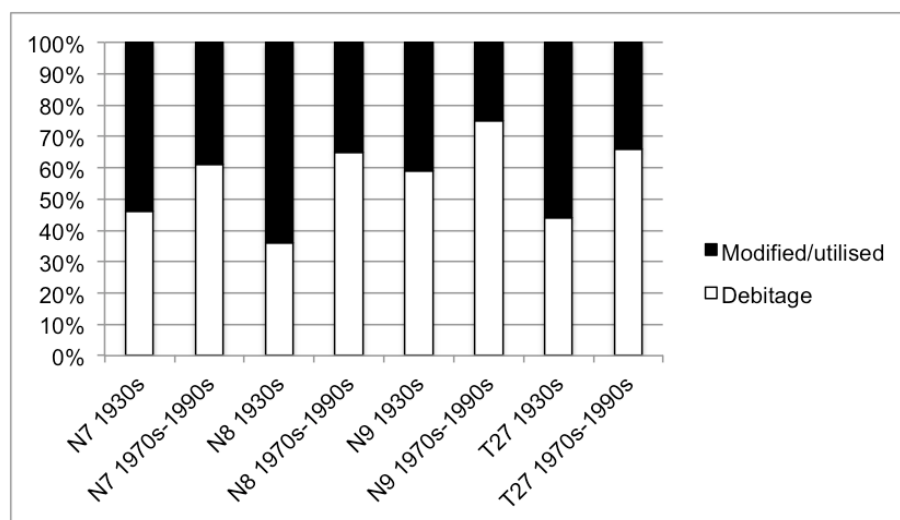


Figure 8.2.4 A comparison of frequencies of artefact utilisation between assemblages collected in the 1930s and 1970s-1990s

Utilised blades and flakes

Utilised blades and flakes are the most numerous of these artefacts (407 and 2564 artefacts respectively). They range from almost unmodified pieces of debitage showing signs of casual utilisation as a cutting edge, to pieces with more deliberate and extensive retouch including notches. Using the same rational as for the unmodified material (see above) these artefacts have been separated into blade-based and flake-based pieces as a crude chronological indicator. Figure F16 shows the distribution of earlier (Mesolithic or Early

Neolithic) retouched blades, and Figure F17 shows the distribution of later (Neolithic or Early Bronze Age) retouched flakes. Both classes of artefact are present in assemblages across the study area, retouched flakes occurring in slightly higher numbers and having a slightly wider distribution than retouched blades. Other than the separation of blade and flake forms, and the separate treatment of serrated blades as a potentially chronologically distinctive Early Neolithic artefact, no attempt has been made to define the chronology of these artefacts. Retouched flakes are a common component of lithic assemblages from the Early Neolithic onwards (Edmonds 1995, 40,167) 'Retouched flake' is a fairly elastic term, the typological boundary between them and scrapers is often rather arbitrarily drawn.

Scrapers

Scrapers are the next most common retouched artefact in the collection. Figure F18 shows that they are widely distributed in lithic assemblages across the study area. As with retouched flakes, scrapers are a relatively ubiquitous and ill-defined tool type. In general terms they are based on a relatively thick blank (blade or flake) and have steep-sided, blunting retouch to one or more edges. Scrapers are often associated with skinning and scraping clean hides, although there is some evidence of their also being used for working wood and bone (Lithic Studies Society, Unpublished, 53-4). Scrapers are common in lithic assemblages spanning the Palaeolithic to the Early Bronze Age and beyond. Although suggestions have been made about chronologically distinctive traits in scraper morphology (for example, end scrapers in the Early Neolithic (Edmonds 1995, 37) no attempt has been made in the course of this study to subdivide scrapers into chronologically distinctive groups. The one exception is small round invasively retouched 'thumbnail' scrapers that are dealt with separately as a chronologically distinctive Early Bronze Age artefact.

Awl/Borer/Point

This term is used to describe a variety of retouched pieces with deliberate, pronounced pointed protrusions, sometimes also known as piercers (Lithic Studies Society, Unpublished, 49-50) used for making holes in organic materials. They are potentially implicated in a range of different activities including leather-working and wood-working. Variants to the awl/borer/point theme are present in lithic assemblages from the Mesolithic to at least the Early

Bronze Age (Butler 2005). They occur in relatively small numbers and are confined to scatters on the valley floor and on its western edge (see Figure F19).

Fabricators

Fabricators are rod-like tools that have been variously suggested as 'strike-a-lights (for fire lighting), knapping punches (for stone working) or for leather working. They are not chronologically diagnostic being present in lithic assemblages from the Mesolithic to the Early Bronze Age and beyond (Butler 2005, 220). The distribution of the small number of fabricators in the Uglow collection are all found either overlooking the western edge of the Exe valley or on the lower slopes of the Raddon ridge (see Figure F20).

Burins/gravers

Burins or gravers have a narrow chisel-like point and are suggested to have been used for graving or splintering bone or antler. They occur chiefly in Mesolithic lithic assemblages but are also found in Neolithic and later contexts (Lithic Studies Society Unpublished, 22; Butler 2005, 51-3). There are only seven examples of these tools in the current collection, all of which occur to the west of the Exe valley (see Figure F21).

Micro-denticulate

The collection contains two flint micro-denticulates (flakes with very regular serrations) presumably used for a fine sawing action. One is from N1 on the valley floor, the other is from T2 at the foot of the Raddon ridge (see Figure F22). The example from T2 was identified by Berridge (Silvester *et al.* 1987, 20), who is ambiguous about its date, only commenting that it is not necessarily Mesolithic.

Denticulates

A single heavier Greensand Chert piece with flakes removed from alternating faces along one edge comes from N3c on the valley floor (see Figure F23). No date is suggested for this artefact. It is likely that it was used for sawing/cutting.

8.2.4 Chronologically diagnostic artefacts

Beyond the very general (early/late) chronology offered by an analysis of blade and flake-based stone working, a handful of diagnostic artefacts offer a more specific chronology for the collection. In broad terms these artefacts can be grouped into heavy core-based tools including axes and picks used for either tree felling/woodworking or digging, and projectile points including arrowheads and microliths used for hunting. Figure F24 shows that heavy core-based tools occur in low numbers in a handful of sites on the valley floor, the higher land over looking the western edge of the Exe valley and on the southern slopes of the Raddon ridge. Figure F25 shows the distribution of all projectile points within the study area. Projectile points occur in low numbers across the study area. The highest densities come from scatter N1 on the valley floor and from scatters N7, N8, N9, T11 and T27 immediately to the west of the valley.

	Date	Activity	Total
Chronologically distinctive pieces			
Microburin	Meso	Microlith manufacture	88
Microlith	Meso	Projectile point	91
Axe (pick)	Meso	cutting/digging	4
Axe (flaked - including fragments)	Meso/Neo	cutting	9
Blade (serrated)	?E Neo?	cutting	104
Axe (polished fragment)	E Neo	cutting	4
Arrowhead (leaf-shaped)	E Neo	projectile point	21
Arrowhead (oblique)	L Neo	projectile point	22
Arrowhead (transverse)	L Neo	projectile point	53
Arrowhead (triangular)	L Neo	projectile point	8
Arrowhead (barbed and tanged)	EBA	projectile point	7
Knife (plano-convex)	EBA	cutting/scraping	10
Scraper (thumbnail)	EBA	scraping/cutting	72

Table 8.2.6 Chronologically distinctive pieces summary

Microliths

The collection contains 91 microliths, examples of which are shown in Figure 8.2.5. Figure F26 shows the distribution of these artefacts across the study area. The highest concentrations of microliths are found on the valley floor at scatters N1, N3c, N4 and N12, and on the higher ground over looking its western edge at scatters N7, N8, T13 and T27 (see Figure F26). Single finds of microliths are common in assemblages throughout the study area. The majority

of the microliths in the collection are undated. However, Berridge (in Silvester *et al.* 1987, 18-19) identifies Early Mesolithic microliths at scatters N1 and N12 on the valley floor and possible Early Mesolithic microliths at N8 (immediately to the west of the Exe valley), and T26 (further to the west of the Exe valley). Later Mesolithic microliths are identified at scatters N1, N8, N9 and T26. Because of their small size microliths are generally considered to be the sharp cutting edges, or points, of composite tools and would have originally been set into an organic haft or shaft. There is some debate as to how they were actually used (see for example, Quinnell in Keen 1999, ii; Butler 2005, 88). They are generally assumed to be tips and barbs for arrows used in hunting (for example, Clark 1954; Myers 1989). Other authors suggest that they might equally have been used for a range of other tasks either hafted in composite tools (sickles, harpoons, threshing blocks; Clarke 1976), or on their own as simple cutting tools (Healy *et al.* 1992). For the purposes of this study it is assumed that microliths were used as projectile points.

Microburins

Microburins are the distinctive snapped off by-product from removing the bulbar ends of blades and bladelets when making microliths. Examples of microburins are shown in Figure 8.2.6. They are the next most numerous diagnostically Mesolithic artefacts in the collection. Figure F27 shows the distribution of the 88 microburins found in the study area. This corresponds closely with that of microliths in all scatters apart from N3c and T27 where significantly more microburins than microliths have been recognised. It is thought likely that the quantities of waste material directly linked to the manufacture of microliths is under represented, and/or under recognised within the collection. Only microliths created using the notch, twist and snap method produce recognisable microburins. It is possible that many of the blade fragments (particularly small bulbar pieces found within large blade-based assemblages such as N1, N12, N7 and N8) may well result from the unnotched snapping of blades to make microliths, and have thus gone unrecognised as microburins in the current analysis (after Finlay 2000).

Axe (pick)

The collection contains four roughly flaked core-based tools thought to be picks of Mesolithic date (after Berridge 1985, 19; Silvester *et al.* 1987, 17). Examples

of picks are shown in Figure 8.2.7. Figure F28 shows the distribution of these artefacts on the valley floor at scatters N2, N4 and N12, and at N8 immediately to the west of the valley. These artefacts are likely to have been used for either digging or tree felling/woodworking activities.

Axe (flaked)

Nine mostly fragmentary flaked axes were identified within the collection, examples of which are shown in Figure 8.2.8. They occur on the valley floor at N1, on the immediate western edge of the valley at N7 and T11, and on the southern slopes of the Raddon ridge at T1, T2, T3 and T24 (see Figure F29). Their chronology is not precisely established but they are considered to be either Mesolithic or Neolithic in date. These artefacts are likely to have been used for tree felling/woodworking activities.

Arrowhead (leaf-shaped)

21 leaf-shaped arrowheads considered to be diagnostically Early Neolithic (Green 1980, 184; Quinnell in Keene 1999, iii; Butler 2005, 125) have been identified in the collection. A selection of these artefacts is illustrated in Figure 8.2.9. The highest numbers are found at scatter N1 on the valley floor, and at scatters N7, N8 and T27 overlooking its western edge, single finds occur through out the study area (see Figure F30).

Serrated blades

104 blades with traces of serration, either deliberate very fine saw-like retouch or intensive use damage, were identified in the collection. A selection of these artefacts is illustrated in Figure 8.2.10. Their distribution predominantly on the valley floor and higher ground on its immediate western edge is shown in figure F31. Serrated blades although perhaps less firmly diagnostic of Early Neolithic activity than leaf-shaped arrowheads, are present within several Early Neolithic assemblages in southwest Britain (for example, Tingle 1999, 28/fig. 5-7; Saville 1981, 129/fig. 56 L102-3; Hurcombe 2008, 213), and beyond (for example, Butler 2005, 130-1; Edmonds 1995, 40). It is possible that some of these artefacts may be earlier in date (see discussion of artefact type and raw material below). These are likely to have been used as simple cutting tools. Hurcombe (2008) suggests that they may have been associated with working/extracting plant fibres.

Polished flint axe fragments and flakes

Three fragments of polished flint axes were found within the analysed portion of the Uglow collection, two examples are illustrated in Figure 8.2.11. Their distribution, at scatter N1 on the valley floor, and scatter T3 and T22 on the southern flank of the Raddon ridge is shown in figure F32. Not depicted in figure F32 is a further polished flint axe fragment the non-systematically collected (and not analysed as part of this study) portion of scatter N1 (Silvester *et al.* 1987, 16), and a flint flake with areas of polish on its dorsal face from scatter N3. The polished flint axe fragments in the collection have been given a Neolithic date. Polished flint axes occur throughout the Neolithic (Butler 2005; Edmonds 1995). However, the fragmentary nature of all the examples from the collection, and in the case of the two fragments from scatter N1 which have been reworked as cores, may indicate that these artefacts were curated or reworked over a protracted period of time.

Arrowhead (oblique)

22 later Neolithic (Green 1980, 114-5) oblique arrowheads have been identified in the collection, four of which are illustrated in Figure 8.2.13. They are found in small numbers on the valley floor and the higher ground overlooking its immediate western edge. Higher numbers are found at scatters N9, T11 and T27 all of which are immediately to the west of the Exe valley (see Figure F33).

Arrowhead (transverse)

Later Neolithic (Butler 2005; 185-6, Edmonds 1985, 99-100; Green 1980, 111-4) transverse arrowheads are the most numerous single piece arrowheads found in the collection, the distribution of all 53 examples is shown in Figure F34). Most are similar in form to Green's (1980 101) 'chisel' arrowheads. A single example of a 'petit tranchet' arrowhead (Green 1980, 101) comes from assemblage N3c. Their distribution in low numbers, or as individual finds, is widespread across the study area. The distribution of higher numbers of transverse arrowheads is slightly more restricted and occurs in broadly similar locations to the oblique arrowheads and particularly at scatters N9 and T11 overlooking the western edge of the Exe valley. Four examples of these artefacts are illustrated in Figure 8.2.13.

Arrowhead (triangular)

A more tentative later Neolithic date is proposed for the eight triangular arrowheads found within the collection. Butler (2005, 160) points to their use in the later Neolithic (as derivatives of transverse arrowheads), but also notes that some may be more closely related to Early Neolithic leaf-shaped arrowheads or Early Bronze Age barbed and tanged arrowheads. Triangular arrowheads have a much more restricted distribution than either oblique or transverse arrowheads. They are found in small numbers on the valley floor, and the higher ground immediately to its west (see Figure F35). Multiple examples are only found at scatter N7 overlooking the western edge of the Exe valley. Four examples are illustrated in Figure 8.2.15.

Arrowheads (barbed and tanged)

Early Bronze Age barbed and tanged arrowheads (Butler 2005, 162-5; Edmonds 1995, 141-3; Green 1980, 137-41) occur in small numbers in the study area. Only seven examples were identified, three from scatter N1 and one from scatter N5 on the valley floor, as well as single examples from scatters N7, N8 and T27 immediately to the west of the Exe valley (see Figure F36). Four examples are illustrated in Figure 8.2.16.

Knives (plano-convex)

The collection's ten Early Bronze Age plano-convex knives (Butler 2006, 172; Edmonds 1995, 144-5) have a very similar distribution to barbed and tanged arrowheads. Three examples come from scatter N1 (Silvester *et al.* 1987, 16) on the valley floor, single examples are found with scatters on the valley floor and the higher ground on its immediate western edge (see Figure F37). Two examples are illustrated in Figure 8.2.12.

Scrapers (thumbnail)

72 Early Bronze Age thumbnail scrapers (Butler 2006, 165; Edmonds 1995, 140-41) are found in the collection. Multiple examples occur in assemblages from scatters on the valley floor, western valley side and the southern slopes of the Raddon ridge (see Figure F38). Single examples are widespread in the study area. A high concentration of thumbnail scrapers was identified within the otherwise unremarkable assemblage from scatter T2 at the foot of the Raddon ridge. Four examples are illustrated in Figure 8.2.17.



Figure 8.2.4 Microliths



Figure 8.2.6 Microburins



Figure 8.2.7 Axe/pick



Figure 8.2.8 Flaked axes



Figure 8.2.9 Leaf-shaped arrowheads



Figure 8.2.10 Serrated blades



Figure 8.2.11 Polished flint axe fragments



Figure 8.2.12 Plano-convex knives



Figure 8.2.13 Oblique arrowheads

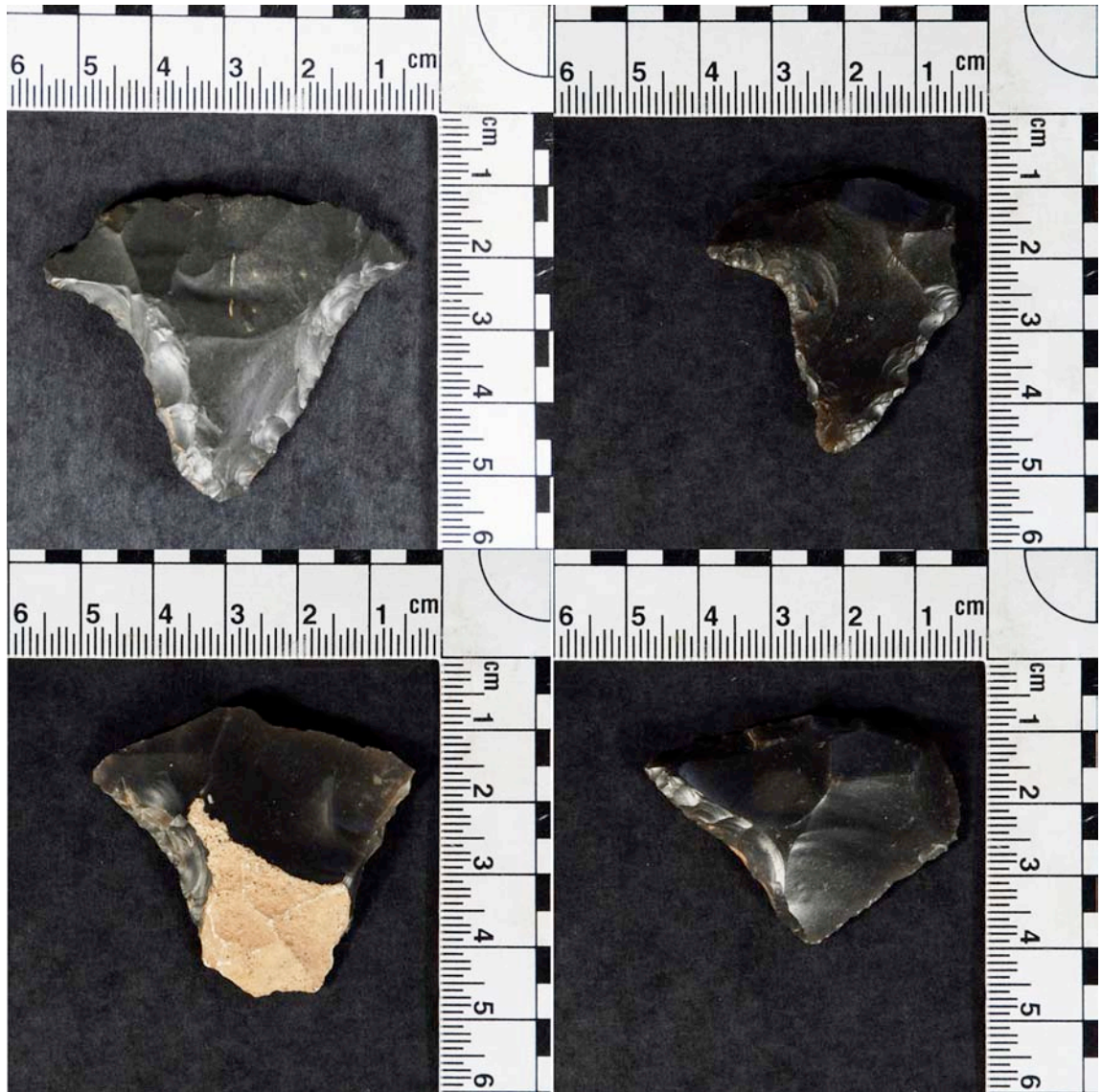


Figure 8.2.14 Transverse arrowheads



Figure 8.2.15 Triangular arrowheads



Figure 8.2.16 Barbed and tanged arrowheads



Figure 8.2.17 Thumbnail scrapers

8.2.4 Chronology of inhabitation

Figures 8.2.18-8.2.20 and F39-44 assimilate all of the chronologically distinctive artefacts discussed above into a series of six period-based distribution maps. The discussion of lithic assemblage chronology based on a series of phased distribution maps such as figures 8.2.18-8.2.20 is itself potentially problematic. At a theoretical level such maps run the risk of reducing the temporal and spatial complexity of millennia of inhabitation into a series of crude, static caricatures of certain periods or types of activity (Snashall 2002, 26). Whilst this issue is acknowledged it is still felt that such maps still provide a useful means of displaying 'big picture' chronological and spatial variability within the collection. At a more practical level, in the context of the current analysis an inevitable consequence of having decided against utilising chronometric dating techniques for the assemblage debitage, is the fact that these maps depict phased activity based on 506 chronologically distinctive artefacts not the entire collection. As a result the non-diagnostic majority (over 96%), of the collection is excluded from a discussion of chronology. The inclusion of figure 8.2.21 showing the distribution of blade and flake-based stone working is in part an attempt to draw the otherwise 'non diagnostic material', all be it somewhat crudely, into such an analysis.

Figure 8.2.18 shows the distribution of all diagnostic Mesolithic artefacts. This material is concentrated in a handful of scatters, N1 on the valley floor, and N8, T11 and T27 overlooking the western edge of the valley floor. Mesolithic material occurs in low concentrations or as single finds in assemblages throughout the study area. Figure 8.2.19 shows the distribution of diagnostic Early Neolithic material. It differs from the Mesolithic material in that it occurs in slightly higher densities in slightly wider areas of the valley floor, the western valley side, and isolated groups on the western edge of the study area. However, its overall distribution is more restricted than the Mesolithic material with fewer low concentration groups or isolated finds.

Figure 8.2.21, showing the distribution of blade-based material, to a great extent compliments the distributions of both Mesolithic and to Early Neolithic material. Certainly 'blade heavy' scatters at N1 and N12 on the valley floor are considered to be intense foci of Mesolithic activity, and so too to a lesser extent some of the scatters overlooking the western edge of the valley (N7, N8, N9

and T29), as well as T26 further to the west. By analogy with the composition of the excavated lithic assemblages from Raddon Hill (Gent and Quinnell 1999a) and Haldon Belvedere (Gent and Quinnell 1999b), it is considered likely that a significant portion of the utilised/retouched flake-based material (Figure F17), as well as scrapers (Figure F18), within the current collection are also of Early Neolithic date.

Figure 8.2.20 shows the distribution of all later Neolithic diagnostic material. This is quite tightly focused in a handful of scatters on the valley floor and its western edge, with comparatively few outlying or low-density occurrences. Figure 8.2.20 also shows the distribution of Early Bronze Age diagnostic material. Although occurring in slightly denser concentrations, which are slightly more dispersed onto the southern slopes of the Raddon ridge, this follows a similar pattern to that shown by the later Neolithic material. Figure 8.2.20 is likely to under represent the real extent of later Neolithic and Early Bronze Age material within the study area. Much of the non-robustly chronologically distinctive material shown in the distributions of the different types of both modified and unmodified lithic artefacts, in particular flake-based debitage and retouched flakes and scrapers, is likely to be of Late Neolithic or Early Bronze Age date.

Figures 8.2.18-8.2.20 do not necessarily show clearly defined or logical progressions in the intensity and density of inhabitation through time. With the limitations imposed by focussing chiefly on diagnostic artefacts, and by the nature of the Uglow collection's very variable collection, it is perhaps unrealistic and unwise to be seeking such patterns. Notwithstanding these constraints, the clearest pattern to emerge from these figures is the multi-period nature of inhabitation at the majority of scatters and the continuity of use of certain locales over time. Taken individually, the majority of scatters show evidence of inhabitation spanning several if not all of the phases illustrated in figures 8.2.18-8.2.20. Assemblages dominated by Late Neolithic and Early Bronze Age activity frequently also contain traces of Mesolithic and Early Neolithic activity.

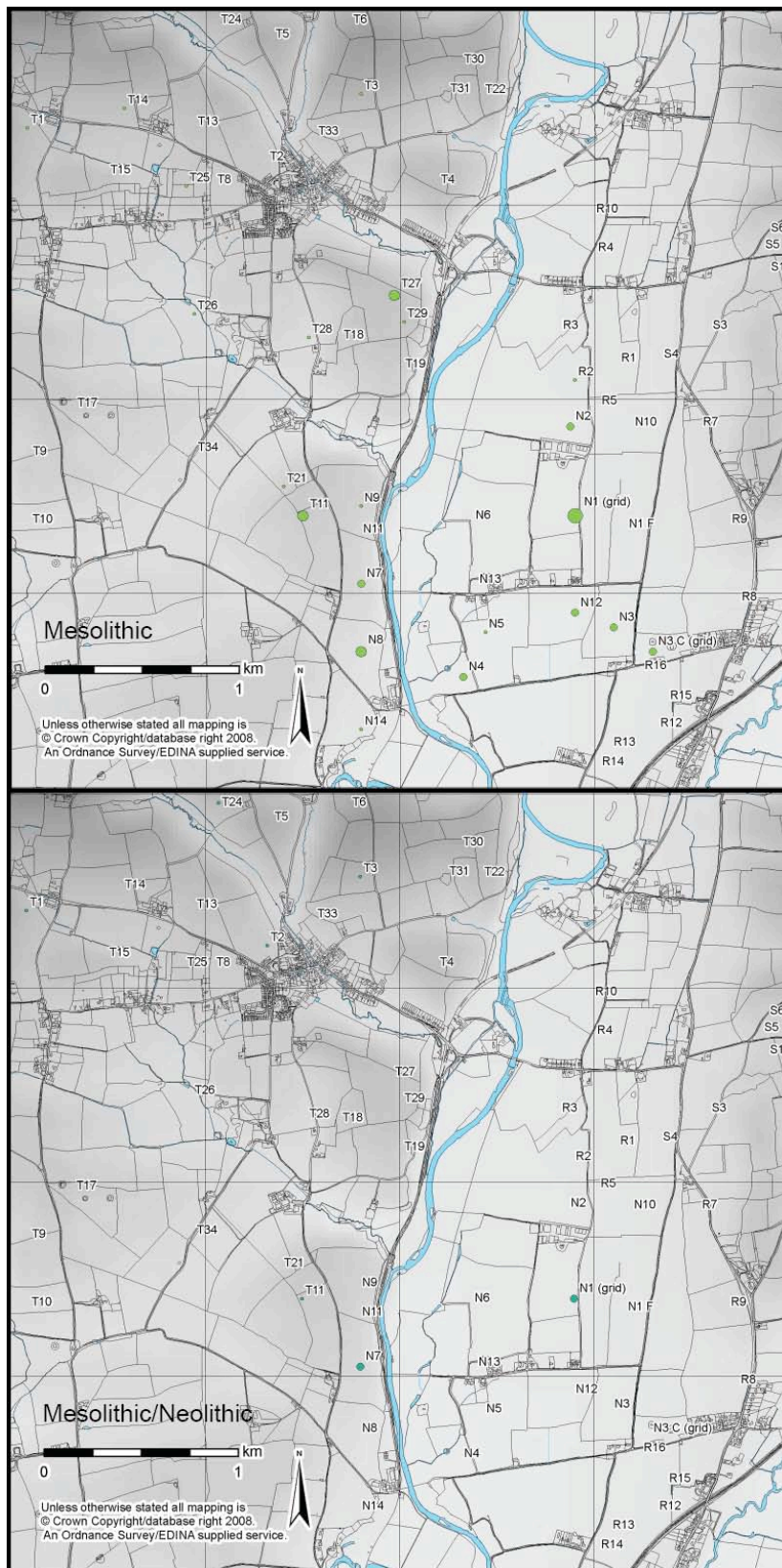


Figure 8.2.18 Distribution of Mesolithic and Mesolithic/Neolithic diagnostic artefacts

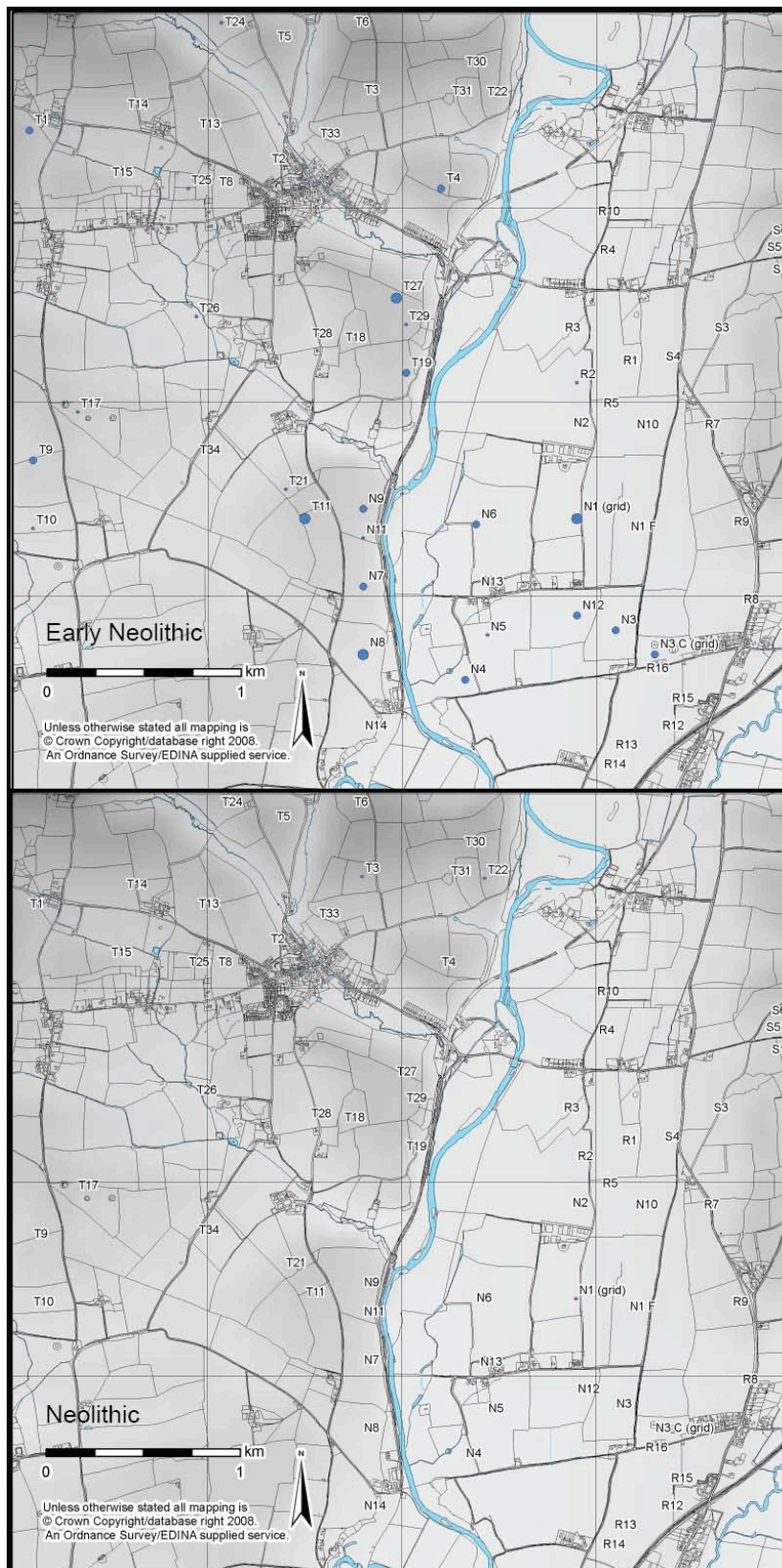


Figure 8.2.19 Distribution of Early Neolithic and Neolithic diagnostic artefacts

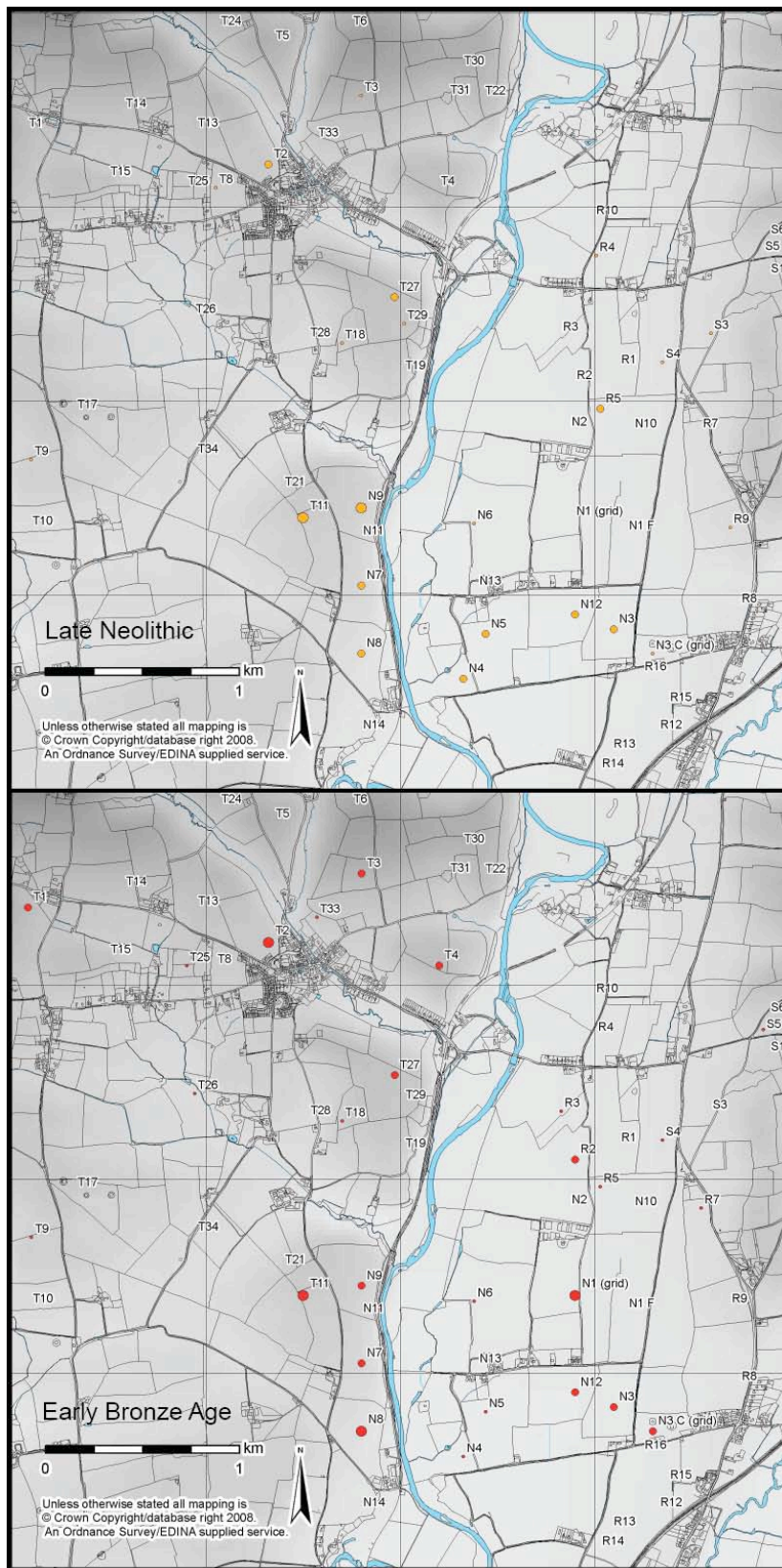
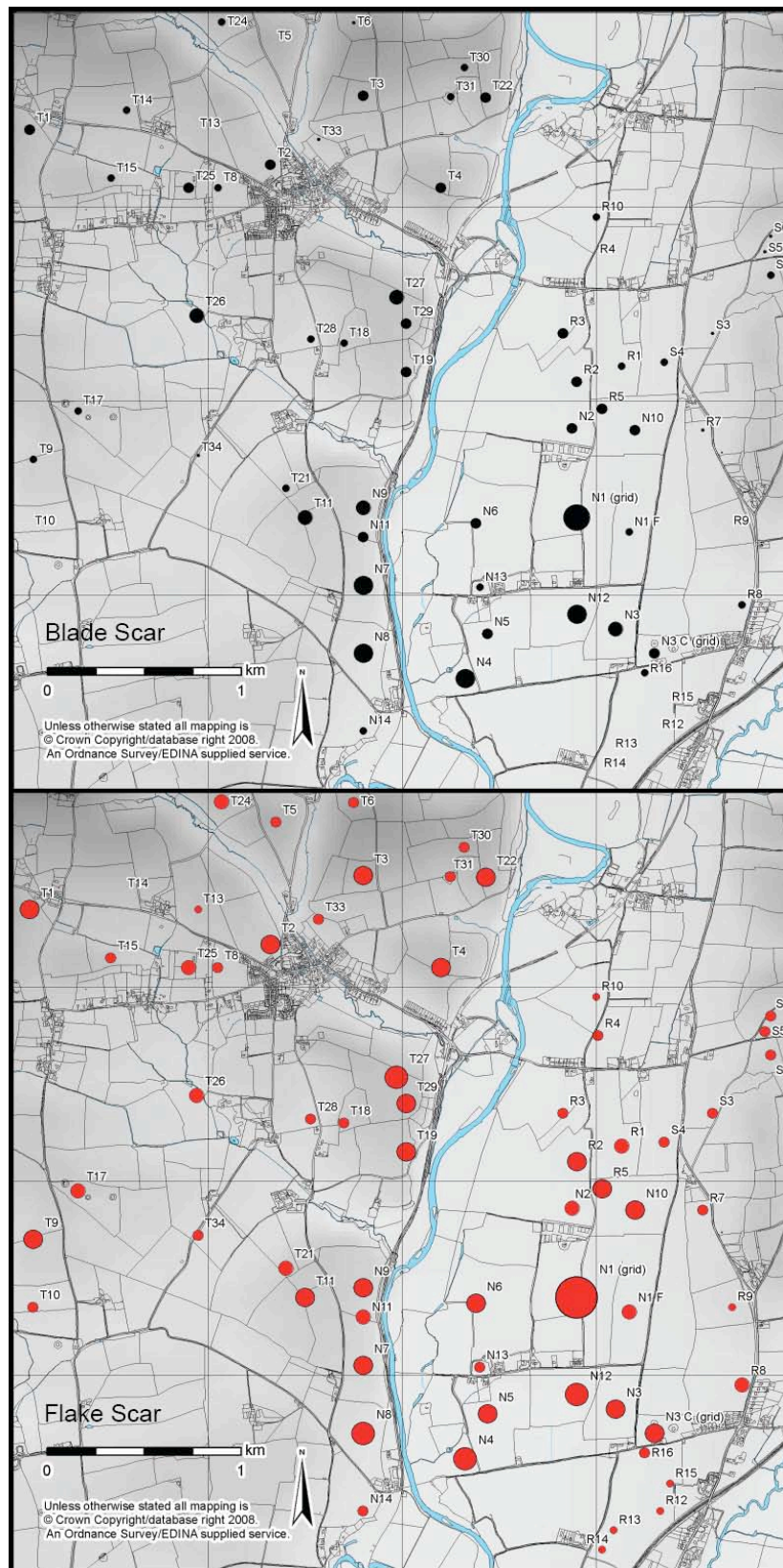


Figure 8.2.20 Distribution of Late Neolithic and Early Bronze Age diagnostic artefacts



8.3 Raw materials

Raw materials were analysed to gain an impression of the range of lithic raw materials being utilised in the study area, the distances over which they are transported, the differences in how they were utilised, and whether these patterns of usage change over time. The following analysis examines the range and colour of raw materials present in the collection, their distribution within the study area, their utilisation and a discussion of their likely sources.

Raw material	Count (%)	Weight g (%)	Mean weight g
Flint (all)	11752 (71%)	92768 (55%)	7.89
Nodular flint	11654 (70%)	90406 (54%)	7.75
Pebble flint	98 (<1%)	2362 (1%)	24.10
Greensand chert	4709 (25%)	71410 (42%)	15.16
Portland chert	54 (<1%)	200 (<1%)	3.70
Haldon chert/flint	72 (<1%)	3815 (2%)	52.98
Other	10(<1%)	406 (<1%)	N/A
Total	16577	168499	

Table 8.3.1 Composition of the collection by raw material

8.3.1 Types of raw material

Table 8.3.1 summarises the quantities and proportions of raw material present in the collection. Flint is by far the most numerous raw material comprising 71% of the collection, or 11752 pieces. The flint was initially recorded in three different class types based on the presence/absence, or nature, of cortical surfaces; nodular flint, pebble flint and non-cortical flint. Due to the proportionally very small quantities of pebble flint, and the fact that pebble flint and nodular flint are indistinguishable on the basis of internal colour alone, the non-cortical flint has been combined into the nodular flint class (see table 8.10). This will have led to a slight under representation of pebble flint in the collection as a whole (see discussion of raw materials and reduction sequence below).

Raw material	Count (%)	Weight g (%)
Nodular flint	11654 (99%)	90406 (97%)
<i>(Non-cortical flint)</i>	<i>5651 (48%)</i>	<i>60768 (66%)</i>
<i>(Nodular flint)</i>	<i>6003 (51%)</i>	<i>29638 (31%)</i>
Pebble flint	98 (<1%)	2362 (3%)
Flint (all)	11752 (100%)	92768 (100%)

Table 8.3.2 Composition of the flint component of the collection

Greensand chert is the next most numerous raw material, comprising 25% of the collection or 4709 pieces. When considered by weight the Greensand chert is much more prominent, comprising 42% of the collection (see discussion of reduction sequence below). The remainder of the collection is comprised of

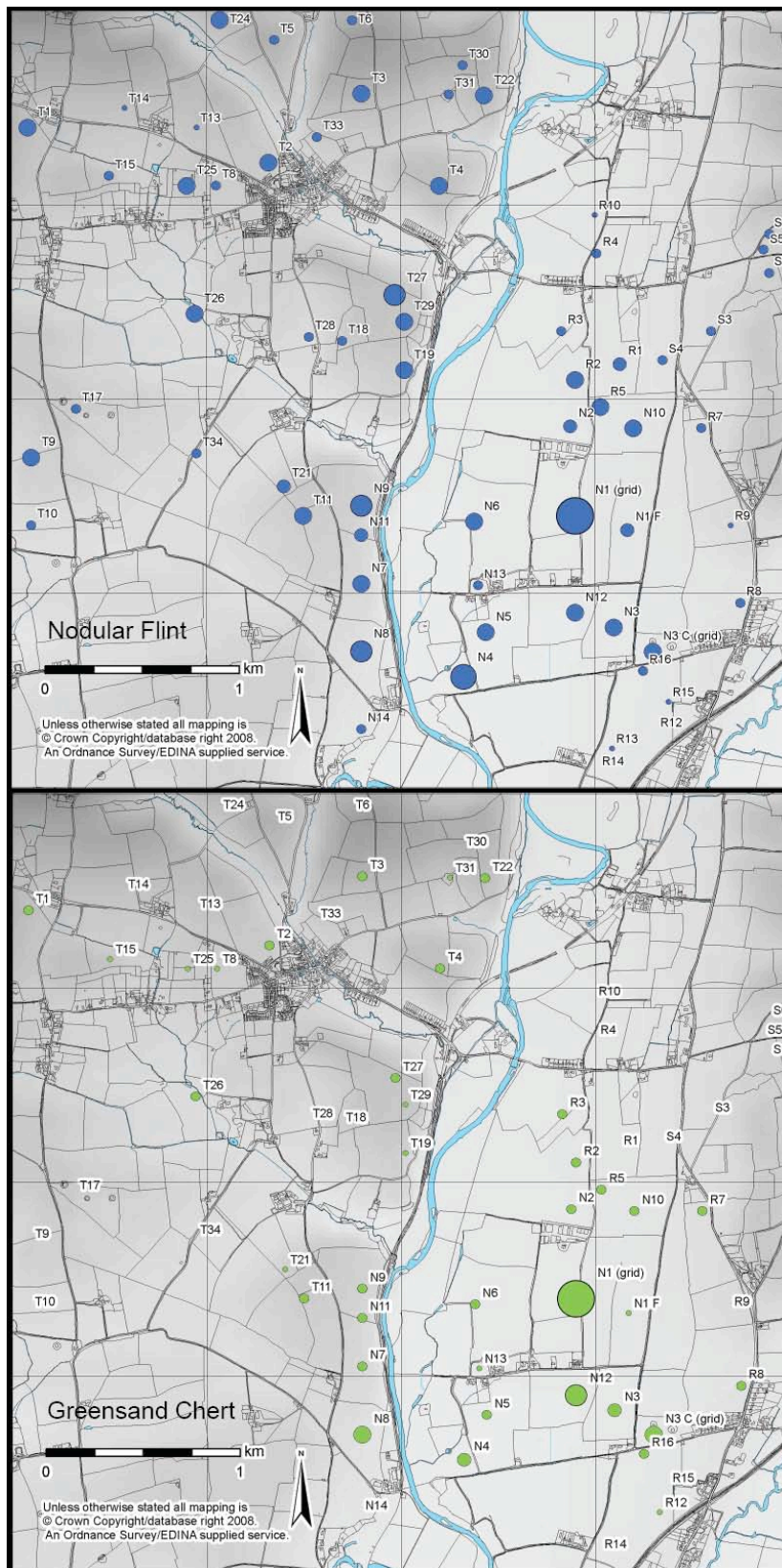


Figure 8.3.1 Distribution of Nodular Flint and Greensand Chert

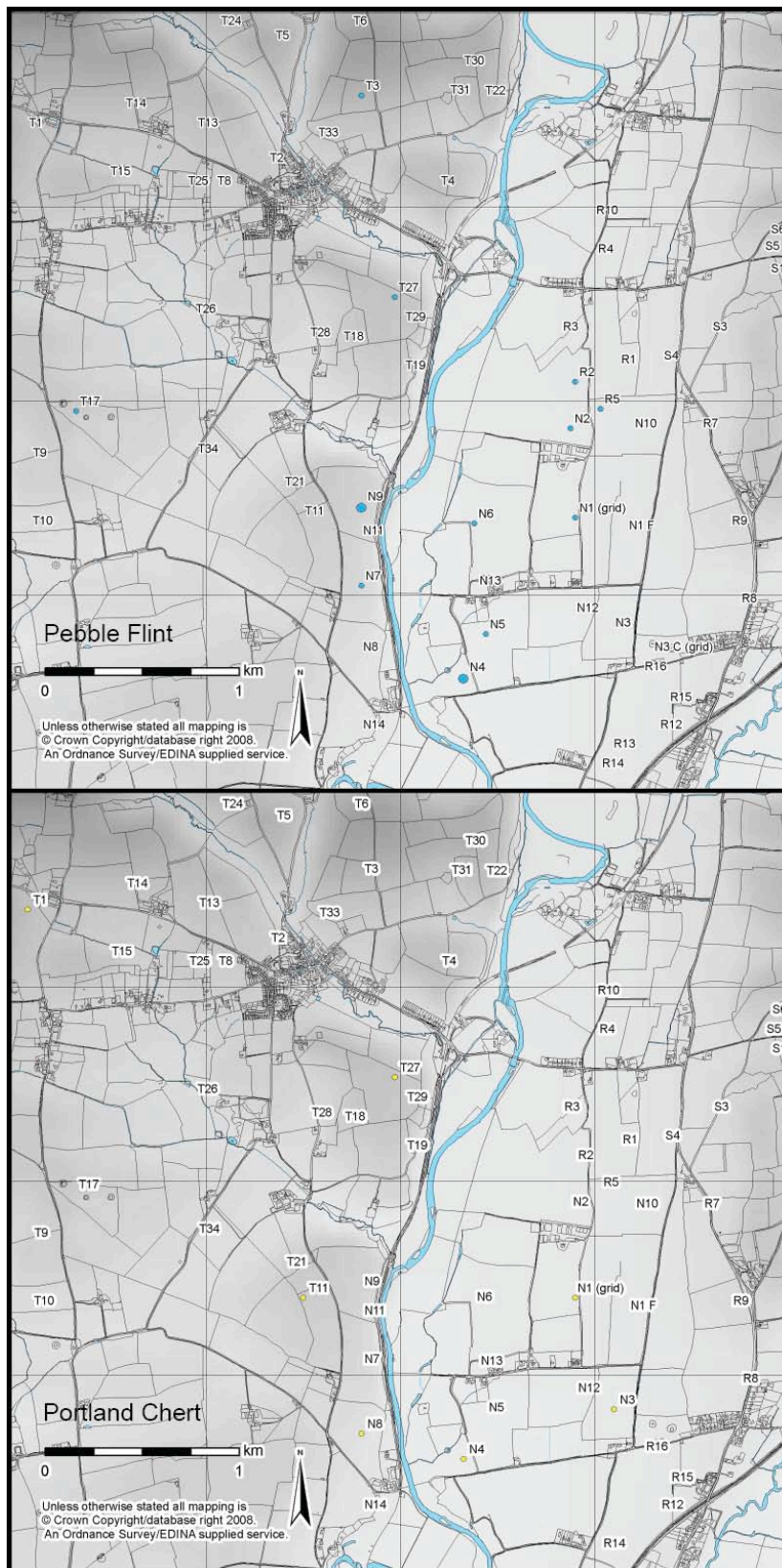


Figure 8.3.2 Distribution of Pebble Flint and Portland Chert



small quantities of a further five raw materials; Portland chert (54 pieces), Haldon chert/flint (72 pieces), quartz (5 pieces), quartzite pebble (1 piece) and a single piece of possibly worked slate.

8.3.2 Raw material distribution

Figures 8.3.1-8.3.3 and F45-50 show the distribution of the various raw materials within the study area. From these maps it is clear that the various raw materials present in the collection are not evenly distributed.

- Nodular flint (figure 8.3.1) is the most ubiquitous raw material in the collection and comprises over 90% of the majority of lithic assemblages. The most notable exceptions to this being scatters N1, N3, N3c and N12 on the valley floor, and scatter N8 on the western edge of the valley.
- Pebble flint (figure 8.3.2) has a much more restricted distribution than the nodular flint. It is found in very small quantities (typically less than five pieces per assemblage) on the valley floor and its western flank.
- Greensand chert (figure 8.3.1) is the second most numerous raw material in the collection. When compared with nodular flint it has a more restricted distribution. It is found in very small quantities across the entire study area (typically less than 20 pieces per assemblage). However, most of the Greensand chert is found in a very small number of assemblages on the valley floor and its western edge. The highest concentrations are at scatter N1 (2686 pieces), N12 (855 pieces), N8 (246 pieces) and N3c (226 pieces).
- Portland chert (figure 8.3.2) is present in very small quantities (1-3 pieces per assemblage) in a small number of assemblages across the study area. Slightly elevated quantities (4-8 pieces per assemblage) are seen in a handful of assemblages from the valley floor (N1 and N4) and its western flank (N8, T11)
- Haldon chert/flint (figure 8.3.3) is predominantly found in two assemblages T17 on the western edge of the study area (33 pieces) and T22 on the eastern end of the Raddon ridge overlooking the lower Exe basin (20 pieces). It is present in very small quantities in a handful of other scatters across the study area.

- Other raw material (figure 8.3.3). A total of five pieces of possibly worked quartz were found on the valley floor at N3c (two pieces) and N4 (one piece), and on the western edge of the foot of the Raddon ridge at T3 and T4 one piece each. A single quartzite pebble was found at N1 and a piece of worked slate was found at scatter N3 both on the valley floor.

8.3.3 Raw material and chronology

One of the key features of Silvester *et al*'s (1987) analysis of scatter N1 and partial review of the wider Uglow collection is a discussion of raw material use and chronology. In this Berridge (Silvester *et al.* 1987, 8-19) argues that use of Greensand chert is generally Mesolithic (particularly Early Mesolithic), and that the use of flint is Neolithic and later in date. Newberry (2011) disputes Berridge's separation of a chert dominated Early Mesolithic and flint based Late Mesolithic. He argues that there is insufficient chronological evidence to support this theory.

Berridge also suggests that the use of Portland chert is characteristically Neolithic (Silvester *et al.* 1987, 8). In order to examine whether these trends are observable within a much wider sample of the Uglow collection an analysis was made of raw material trends amongst blade-based and flake-based pieces (as indicated by dorsal scar morphology) throughout the entire collection (see Table 8.3.5).

	Nodular flint	Pebble flint	Greensand chert	Portland chert	Haldon chert/flint	Other	Total
Blade	2134	10	1441	11	1	0	3597
Flake	9317	73	3093	42	70	5	12600
Total	11451	83	4534	53	71	5	16197

Table 8.3.3 Raw material use trends amongst blade-based and flake-based pieces

If Berridge's interpretations of raw material chronology are correct there should be a positive correlation between the use of Greensand chert and blade-based, nominally earlier, stone working practices. Table 8.3.3 and figure 8.3.4 show that the situation is far from clear-cut. Flake-based material dominates all raw material classes. However, the frequency of blade-based pieces is noticeably

higher amongst the Greensand chert portion of the collection (32%), than amongst the nodular flint (19%). Given that blade-based working is seen as being indicative of, but not exclusively, Mesolithic activity this broadly supports Berridge's assertions. The size of the pebble flint, Portland chert and Haldon chert/flint assemblages is too small to allow meaningful direct comparison with the nodular flint and Greensand chert assemblages. Each of these raw materials displays some degree of blade-based working. In particular the 21% blade-based pieces amongst the Portland chert may suggest a Mesolithic/Early Neolithic element to its use in addition to the almost exclusively Late Neolithic use indicated by chronologically diagnostic artefacts.

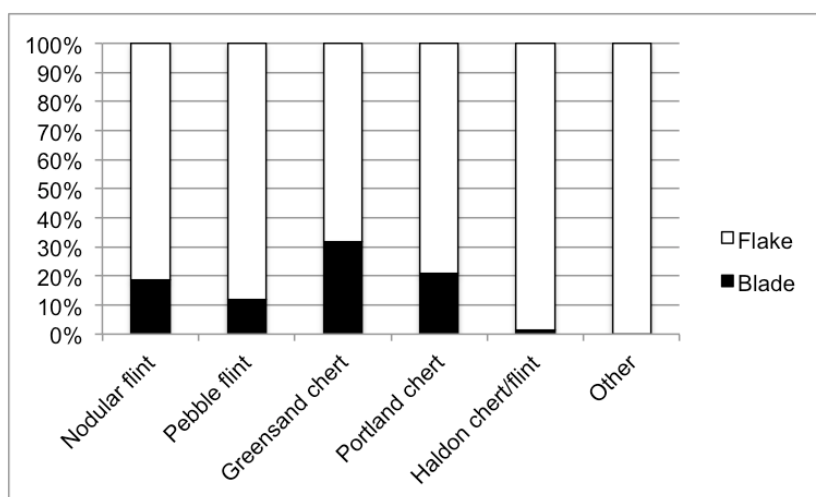


Figure 8.3.4 Trends in dorsal flake scar morphology and raw material use

An analysis was also made of trends in raw material use amongst all retouched, and all chronologically distinctive, artefacts in the collection (see Table 8.3.5). Nodular flint is by far the most ubiquitously utilised raw material. With the exception of a denticulate/saw (of which there is only one example, struck from Greensand chert, in the collection) it is utilised in the manufacture of every tool type in the collection, and in all periods. Its occurrence amongst typologically Mesolithic material (for example, microliths - 80% and microburins - 63%), indicates that Greensand chert was not the only raw material utilised during this period. Greensand chert was used extensively, but in much smaller quantities than nodular flint, in all retouched but undiagnostic artefacts (scrapers, awls, utilised blades and flakes etc). Its proportionally higher incidence amongst utilised blades (24%) as compared with utilised flakes (14%), echoes trends

seen above in blade-based and flake-based pieces above. With the chronologically diagnostic artefacts Greensand chert is present amongst all Mesolithic artefacts (Microburins 18%, Microliths 34%, Axes/picks 80%, Flaked axes 44%).

	Nodular Flint	Greensand chert	Portland chert	Pebble flint	Haldon flint	Other	Total
Retouched tools							
Blade (utilised)	309	97	1	0	0	0	407
Flake (utilised)	2192	374	16	11	2	0	2595
Awl/Borer/Point	114	7	0	0	0	0	121
Burin/Graver	2	1	0	0	0	0	3
Denticulate/saw	0	1	0	0	0	0	1
Fabricator	9	1	0	0	0	0	10
Microdenticulate	2	0	0	0	0	0	2
Scraper	755	112	2	5	0	1	875
Unidentified retouched fragment	15	0	0	0	0	0	15
Chronologically distinctive pieces							
Microburin	69	18	0	0	0	0	87
Microlith	57	34	0	0	0	0	91
Axe (pick)	1	4	0	0	0	0	5
Axe (flaked - including fragments)	5	4	0	0	0	0	9
Arrowhead (leaf-shaped)	21	0	0	0	0	0	21
Axe (polished fragment)	4	0	0	0	0	0	4
Blade (serrated)	83	18	2	1	0	0	104
Arrowhead (oblique)	21	0	1	0	0	0	22
Arrowhead (transverse)	49	0	4	0	0	0	53
Arrowhead (triangular)	8	0	0	0	0	0	8
Arrowhead (b&t)	7	0	0	0	0	0	7
Scraper (thumbnail)	72	0	0	0	0	0	72
Knife (plano-convex)	10	0	0	0	0	0	10
Total	3803	672	26	17	2	1	4522

Table 8.3.4 Raw materials trends amongst retouched, chronologically distinctive artefacts by count

18 examples (17%) of the serrated blades are struck from Greensand chert potentially indicating its use in the Early Neolithic. No diagnostically Late Neolithic or Early Bronze Age artefacts struck from Greensand Chert were identified. This picture fits broadly a more generalised version of Berridge's

model (Silvester *et al.* 1987, 16-9) with both chert and flint being used during the Mesolithic and assemblages from the Early Neolithic onwards being almost entirely composed of flint. The exception being a small number of diagnostically Late Neolithic artefacts struck from Portland Chert.

A small number of undiagnostic retouched pieces of Portland chert were identified in the collection. This includes a single utilised blade, 16 scrapers and two serrated blades of potential Early Neolithic date. Portland chert is most visible in the collection in its use for Late Neolithic arrowheads (one oblique and four transverse). This includes a single very large transverse arrowhead from scatter N3.

Only a handful of pieces of pebble flint and Haldon chert/flint show signs of modification, of these most are undiagnostic (utilised flakes and scrapers). A single serrated blade struck from pebble flint, and of potential Early Neolithic date, is the only diagnostic artefact.

8.3.4 Raw material colour

As well as being separated into 'types', raw materials were also allocated a 'colour' class.

- Nodular flint (Table G1) The majority of the nodular flint falls within the black to grey to white colour range. Within this range the most is a mottled dark to mid grey colour. Smaller quantities of dark to mid brown nodular flint are also present. Much smaller quantities of material in the grey/green, brown/green, red, pink and orange colour ranges are also present amongst the nodular flint.
- Pebble flint (Table G2) As with the nodular flint the majority of the pebble flint falls within the dark to mid grey colour range. Much smaller quantities light grey, white, dark and mid brown pebble flint are also present. This range of colours overlaps with the nodular flint, hence the difficulty in separating the non-cortical flint into nodular and pebble derived classes on the basis of colour alone.
- Greensand chert (Table G3) The Greensand chert displays a far wider range of colours than either the nodular or pebble flint. The majority falls within the black-grey-white colour spectrum, with the majority being a

dark to mid grey colour. A smaller, but still significant, quantity of dark to mid brown chert (sometimes referred to as 'chocolate chert') is also present. Smaller quantities of red, pink and orange material are also present.

- Portland chert (Table G4) The Portland chert ranges in colour from dark to mid grey, the majority being dark grey.
- Haldon chert/flint (Table G5) The Haldon chert/flint ranges in colour from dark grey to white, the majority being mid to light grey.

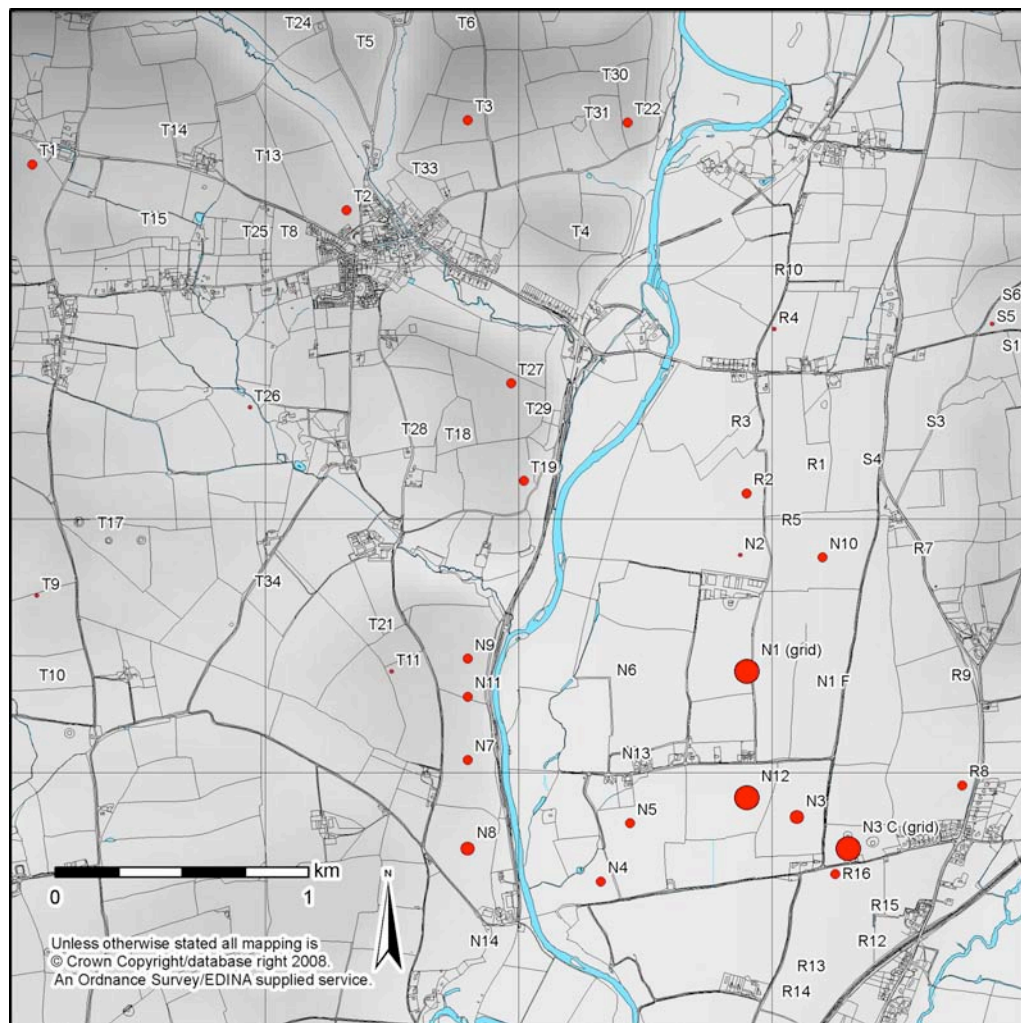


Figure 8.3.5 Distribution of 'exotic' raw materials (red, pink, yellow and orange)

8.3.5 Distribution of raw material by colour

Rather than producing multiple distribution maps to show the distribution of each type and colour of raw material, the raw data for such mapping is presented as Table G6. In summary Table G6 shows that for both the nodular flint and the Greensand chert, the majority of the more exotic colours (reds, pinks, oranges, yellows) are found at a handful of locations on the valley floor (N1, N3c and N12). The distribution of these colours is shown in figures 8.3.5 and F51.

8.3.6 Use of raw material by colour

One of the aims of recording raw material colour was to determine whether different types, and colours, of raw material were utilised in different ways. The analysis is conducted in two phases, firstly an assessment of the extent and significance of retouch/utilisation within each raw material colour class, and secondly an analysis of the range of raw materials and colours used in the manufacture of each type of artefact.

Tables G7 to G11 show the extent and significance of retouch/utilisation for each raw material type/colour class.

- Nodular flint (Table G7). Nodular flint comprises nearly 83% of the retouched/utilised material in the collection. The most heavily utilised colours are the dark to mid grey nodular flint which together account for over 70% of the retouched pieces in the collection. Smaller quantities of black and light grey flint are utilised and even smaller quantities of the white, dark and mid-brown flint. The remaining colours in the grey/green, brown/green, red, pink and orange have negligible or no incidences of utilisation.
- Pebble flint (Table G8). Pebble flint accounts for 0.3% of the retouched/utilised material in the collection. As with nodular flint dark to mid grey pebble flint are the most heavily utilised colours. Smaller quantities of light grey, and negligible quantities of dark and mid brown pebble flint show signs of retouch or utilisation.
- Greensand chert (Table G9). Greensand chert accounts for nearly 15% of the retouched/utilised material in the collection. The most heavily

utilised colours are dark grey, black, dark brown and mid grey, which between them account for almost 15% of the total retouched material. Mid brown accounts for a smaller portion of the utilised Greensand chert and very much smaller quantities of dark red and mid orange utilised material is also present. The remaining colours in the red, orange and yellow ranges show negligible or no levels of utilisation.

- Portland chert (Table G10). Portland chert accounts for less than 1% of the total retouched/utilised material in the collection. Approximately half of both the dark and mid grey colours show signs of utilisation/retouch.
- Haldon chert/flint (Table G11). Only two pieces of mid grey Haldon chert/flint show signs of retouch. The remaining dark and light grey, and white material shows no sign of retouch/utilisation.

8.3.7 Raw material colour by artefact type

Tables G12a and G12b compare artefact type with raw material colour. Several authors have remarked on the apparent deliberate selection of particular colours of raw material for the manufacture of specific artefacts particularly arrowheads (Care 1982, 277; Clark *et al.* 1960, 215-6; Cummings 2010). There appears to be little evidence of such patterning amongst the assemblages from the study area. As set out above the assemblages are dominated by dark to mid-grey flint and chert. Whether this is due to the practical qualities, aesthetic properties or relative abundance of these colours of raw material is unclear. There is no evidence for the selection of the small amount of more exotic colours (oranges, reds and yellow) for specific tasks. These colours tend to be seen as unmodified debitage. The only apparent correlation of a specific artefact type and raw material is between the small number of polished axe fragments and a fine-grained pale grey/white flint. Frances Healy (pers. comm.) suggests that several polished flint axes from Hembury are made from a similar raw material.

8.3.8 Raw material sources

None of the raw materials found in the Uglow collection occur naturally within the study area. One of the principle aims of analysing the collection's raw

materials has been to identify the locations from which they were sourced, the distances over which they were transported to the study area and the scales of mobility and contact that this implies for the populations who utilised them. This has proven hard to accomplish; figure 8.3.6 shows with varying degrees of accuracy the location of a series of possible raw material sources for the collection.

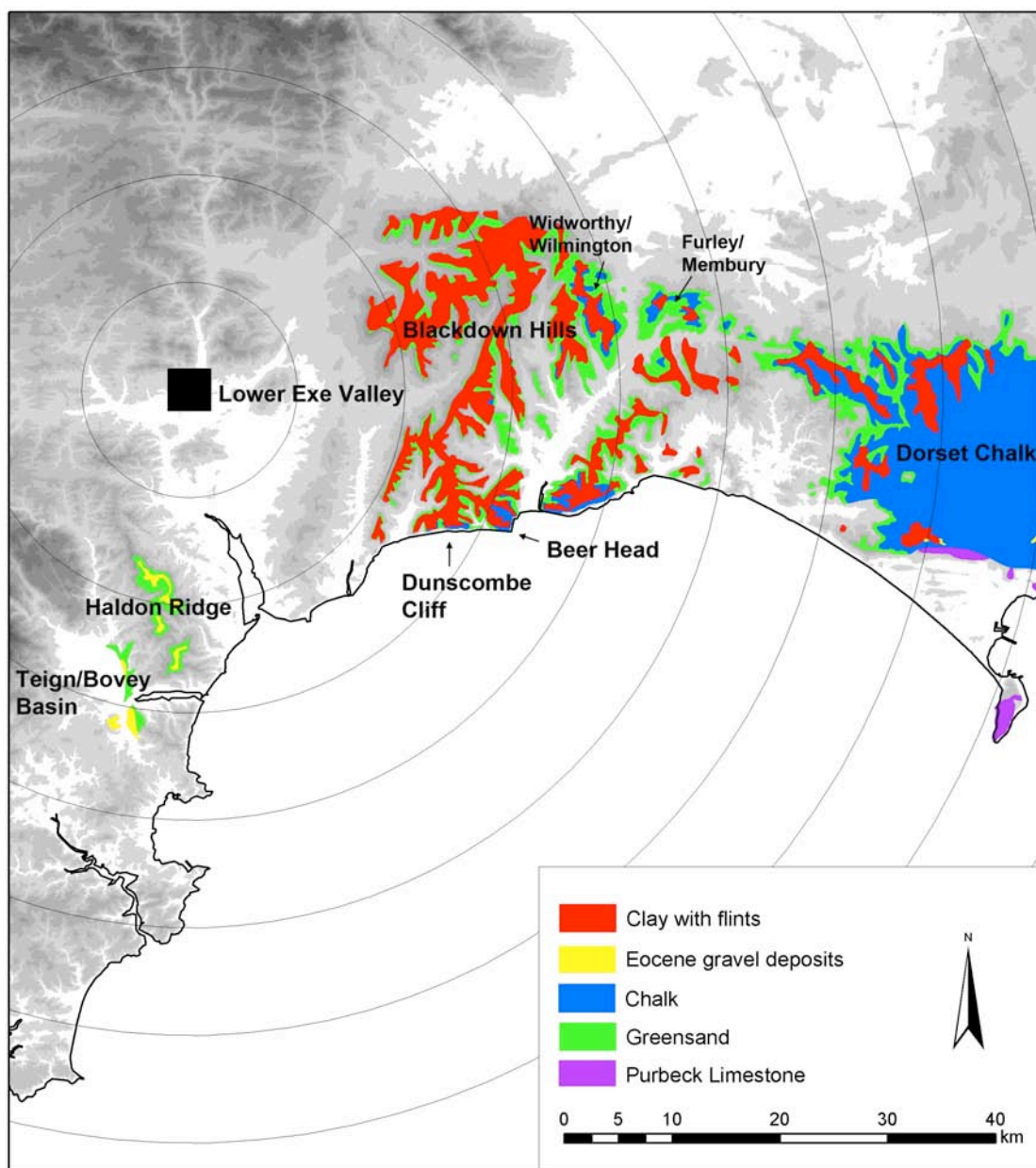


Figure 8.3.6 Potential raw material lithic raw material sources for the lower Exe valley. (Based upon data provided by British Geological Survey © NERC. All rights reserved)

Nodular flint

Establishing a precise source for the nodular flint component of the Uglow collection is a near impossible task. Thirty years ago it is likely that easier

answers would have been found. Traditionally all dark flint from lithic assemblages in Devon and Cornwall displaying nodular cortex was considered to have come from the most westerly chalk in mainland Britain at Beer Head in the far south-east of Devon (for example, Care 1982; Fox 1964, 34; Green 1980, 98; Greig and Rankine 1953, 23; Saville 1981: 108; Todd 1987, 71; Whittle 1977). Dark grey and black flint in particular has been identified as 'Beer Flint', even to the extent that non-cortical flint in this colour range has been ascribed a Beer provenance, for example Parker Pearson (1981, 20) and Saville (1981, 108-9).



Figure 8.3.7 Flint nodules *in-situ* in a cliff fall deposit between Branscombe and Beer.

Recent work has begun to erode the assumption that all nodular flint or dark grey/black flint in Devon comes from Beer. Work by Martin Tingle has

suggested that due to the wide range of colours present within the flint deposits at Beer Head it is impossible to positively identify 'Beer flint' visually (1998, 97). Tingle and other authors have also pointed out that Beer flint need not be the only source of nodular flint for south-western lithic assemblages. Tingle (1998, 90-7) points to the potential *in-situ* chalk flint source at Wilmington, east Devon and other chalk flint sources further to the east in Dorset, which may have made an equally significant contribution to these assemblages. Newberry (2002) has done much to dispel the idea of Devon being a flint poor region. In addition to Beer Head he identifies a series of in-situ, chalk flint sources (Furley/Membury and Widworthy/Wilmington in east Devon). He also stresses that flint bearing coastal chalk exposures are more extensive than just Beer Head, extending a further 5km west to Dunscombe Cliff (John Newberry pers. comm.).

Newberry (2002) also points to several inland residual flint sources (Orleigh Court in north Devon, Haldon Hill and the Bovey/Decoy Basin in south Devon), all of which produce good quality flint in a range of colours including dark greys and black. There has also been an acknowledgement of the potential prehistoric exploitation of residual clay-with-flints deposits which cap the extensive coastal and inland Greensand deposits in south-east Devon. Gent (1997), Gent and Quinnell (1999b, 86) and Tingle (1998, 93), suggest that these clay-with-flint deposits should be considered as the source of much of the mid to dark grey flint found in prehistoric lithic assemblages on several sites in Devon.

As set out above, in contrast to the traditional myopic focus on Beer Head, a range of potential sources for the nodular flint component of Devon lithic assemblages, including the Uglow collection, have now been identified. It is most likely that the material from the study area comes from either the clay-with-flints deposits of south-east Devon (at least 18km), or directly from the chalk slightly further to the south-east (at least 28km). Each of these sources, particularly the clay-with-flints, cover extensive areas. Flint from these sources is very variable in quality. It is likely that material was selected from a range of very specific sources within a quite a wide area. In the absence of evidence of prehistoric flint extraction, akin to the flint mines seen in Wessex and further east (Barber *et al.* 1999, 26-8), it is likely that nodular flint would have been obtained from natural exposures such as cliff falls and tree throws.

Pebble flint

Several authors including Berridge and Simpson (1992, 7) and Newberry (2002, 28), have commented on the difficulty in distinguishing between water-worn flint from river gravel and beach sources. As a result all material in the Uglo collection with water-worn cortex has been given a generic pebble flint classification. The closest possible sources for this material to the study area are the gravel terraces of rivers that drain the flint rich areas to the east outlined above. These include the rivers Culm and Clyst where pebble flint has been recorded in very low concentrations. The closest recorded instance is 2km to the east of the study area on the Culm terraces (Edwards and Scrivener 1999, 135). Greater quantities of pebble flint are presumably to be found in the higher reaches of these rivers. In addition to riverine pebble flint Griffith and Quinnell (1999a, 52) suggest pebble flint occurring on beaches to both the east and west of the Exe estuary 20km to the south of the study area.

Greensand chert

Greensand chert with both unabraded and water-worn dorsal cortex is present in the Uglo collection. Although the condition of its dorsal cortex was not formally recorded as part of the current analysis it is estimated that the majority of the Greensand chert in the collection has unabraded dorsal cortex. This indicates either a primary (*in-situ* straight from the Greensand), or residual (analogous to clay-with-flints) source for most of this material. The largest potential source for this material is the Greensand of east and southeast Devon. This area coincides considerably with the likely sources of nodular flint outlined above. A less extensive source for this material is Haldon Ridge c. 20km to the south of the study area (see discussion of Haldon flint below). As is the case with the pebble flint discussed above, pebbles of Greensand chert are present in the river terraces that drain the *in-situ* cretaceous geology further to the east. In the upper reaches of these river systems gravel terraces may be almost entirely comprised of chert gravels, as is the case at Broom (Hosfield *et al.* 2011) and Chard Junction (Basell *et al.* 2011). Lower down their courses and away from chert bearing parent geologies chert pebbles make up a very much smaller fraction of terrace deposits. Small quantities of Greensand Chert pebbles occur in river terrace deposits close to the study area, for example the Culm and the Clyst (Edwards and Scrivener 1999, 135). It is suggested that

this pebble chert makes up a lesser part of the Greensand Chert portion of the Uglow collection.



Figure 8.3.8 Chert gravels at Railway Ballast Pit, Broom, Axe valley.

This interpretation of the potential source of the Greensand chert differs to that put forward by Silvester *et al.* (1987) in their discussion of the N1 assemblage in which they argue for a local pebble source for most of the Greensand Chert. This theory is advanced partly on the basis of the chert's dorsal cortex, and partly because of the wide range of colours it displays (Silvester *et al.* 1987, 8). It is argued here that although the range of colours amongst the Greensand chert portion of the collection is wide, certainly wider than amongst the nodular flint, much of it falls into two relatively narrow classes of material, fine grained dark to mid grey chert (60%), and fine grained dark to mid brown chert (20%) (see Table G3). It is suggested that this in combination with the unabraded nature of the chert's cortex is indicative of the deliberate selection of specific raw materials perhaps from a particular clay-with-chert/flints or Greensand source rather than what could be found fortuitously in local river gravels. Although

pebble chert has been recorded in local river terraces, and it is likely that this material does form at least part of the chert portion of the Uglow collection, it is considered unlikely that it exists in sufficient quantities to account for all of the Greensand chert. In contrast to the darker high quality material, it is suggested that some of the more 'exotic' coloured chert in the collection may have a local pebble source.



Figure 8.3.9 Nodular and Pebble flint from the Tower Hill and Buller's Hill gravels, Buller's Hill quarry, Haldon Ridge

Haldon chert/flint

Deposits of a distinctive coarse-grained pale grey flint cap the Haldon Hills which lie between 15 and 20km to the south of the study area. This material comprises a small part of the Uglow collection. It is mentioned here specifically because it is one of the few raw materials in the collection whose source can be identified with relative certainty. The Haldon Hills are the western-most outlier of Greensand in mainland Britain (see above for a discussion of their potential as a Greensand chert source). The Greensand is overlain by two deposits of

flint gravel: the Tower Hill gravel, consisting of nodular flint derived from the *in situ* weathering of the chalk which once covered this area; and the Buller's Hill gravel, consisting of water worn flint thought to be derived from chalk deposits eroding from Dartmoor during the Eocene (Hamblin 2011). Together these deposits produce an opaque, brittle, fractured grey flint. Although difficult to work (Newberry 2002, 15; Tingle 1998; Willock 1936, 246), present day knapping experiments have indicated that Haldon flint would have been a potential source of stone in prehistory (Newberry 2002, 15).

Portland Chert

As with the Haldon flint, although Portland Chert accounts for only a small proportion of the Uglow collection it is one its few constituent raw materials to have a relatively certain source. This very fine-grained blue grey chert occurs in the limestone of the Isle of Portland approximately 80km to the south-east, on the Isle of Purbeck further to the east (Palmer 1970, 83 and more widely in inland Dorset (Gent and Quinnell 1999b, 86-7). Portland Chert pebbles are also found slightly further west on Chesil Beach (Palmer 1970, 83; West and Harvey 2008).

Other raw materials

Quartz is found in a variety of contexts in Devon. Most locally it occurs as intrusive veins within the Carboniferous rocks that form the northern edge of the study area. Redeposited fragments of this vein quartz are present within the terraces of the Exe valley (Edwards and Scrivener 1999, 136). The single quartzite pebble is likely to come from the Budleigh Salterton pebble beds which extend from near Plymtree approximately 10km to the east of the study area, to the south coast at Budleigh Salterton. (Edwards and Scrivener 1999, 87; Tilley 2010, 248-50). The main body of the pebble beds underlies Woodbury common to the east of, and parallel with, the Exe estuary. The single piece of slate is likely to be derived from the Carboniferous rocks of the Raddon Ridge, which also make up most of the Exe terraces (Edwards and Scrivener 1999, 135-6).

8.4 Reduction sequence

The extent of cortex on the dorsal surfaces of all artefacts was analysed in order to determine the stages of the stone working process or reduction sequence present in the collection, and to determine those stages that are missing and by implication occurred elsewhere in the wider landscape. Figure 8.21 summarised the variation in amounts of dorsal cortex between the different raw material classes outlined above (note quartz, quartzite and slate have been excluded as they occur in such small quantities). As Figure 8.4.1 and Tables G13-17 show there is a good deal of variation between raw material classes. As expected for all raw materials the proportion of pieces in each dorsal cortex category decreases inversely to the percentage of dorsal cortex. Put simply the more dorsal cortex the fewer the artefacts, the less dorsal cortex the more the artefacts. The underlying assumption in using the extent of dorsal cortex to understand the stone working process is that pieces from earlier in the stone working process (extraction, testing and initial core preparation) will retain higher proportions of dorsal cortex, whilst those from later in the process (core reduction, tool manufacture, use and maintenance) will retain little or no dorsal cortex.

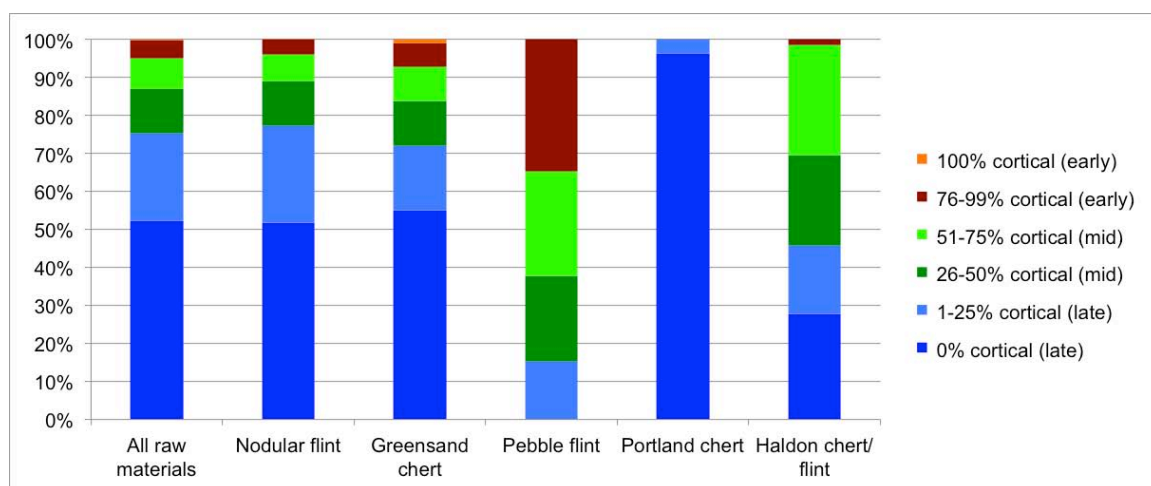


Figure 8.4.1 Extent of dorsal cortex by raw material type

None of the raw materials that make up the collection is sourced from within the study area, all have been transported some distance to the study area. On a purely practical basis it is considered unlikely that most raw materials would have been brought to the study area as full sized, unmodified nodules, beach cobbles or pebbles. An assumption that runs through the following analysis of

reduction sequence is that all raw materials arrived at the study area in a partially modified state. It is likely that some of the earliest stages in the stone working process (raw material extraction, testing, nodule quartering and trimming) are likely to have taken place closer to raw material sources, and at a distance from the study area.

8.4.1 Nodular flint and Greensand chert reduction sequence

Nodular flint and Greensand chert are by far the most numerous raw materials in the collection and provide the best opportunity to examine differences in reduction sequence. The reduction sequence histograms for both raw materials looks superficially similar (figure 8.4.1), however, due to the size of each raw material assemblage the subtle differences are significant.

- **Early stage (76-100% dorsal cortex)** Nodular flint 4%, Greensand chert 7%.
- **Mid stage (75-51% dorsal cortex)** Nodular flint 19%, Greensand chert 21%.
- **Late stage (25-0% dorsal cortex)** Nodular flint 78%, Greensand chert 72%.

As set out above it is likely that both nodular flint and Greensand chert arrived within the study area in a partially modified state, with some of their cortical surfaces having already been removed. The slightly higher proportion of early and mid stage pieces amongst the Greensand chert portion of the collection suggests that it arrived in a less modified state than the nodular flint. For both raw materials the remainder of the reduction sequence, from core preparation and reduction, to the manufacture, use, maintenance and discard of stone tools, occurred within the study area.

Figures 8.4.2 and 8.4.3 show general trends in the distribution of reduction sequence for both principle raw materials. The nodular flint reduction sequence is relatively equally distributed throughout the study area (see figure 8.4.2). That is to say most assemblages in the collection contain all stages in the reduction sequence in approximately the proportions seen in figure 8.4.1. The situation with Greensand chert is very different. As seen in figure 8.4.3 above

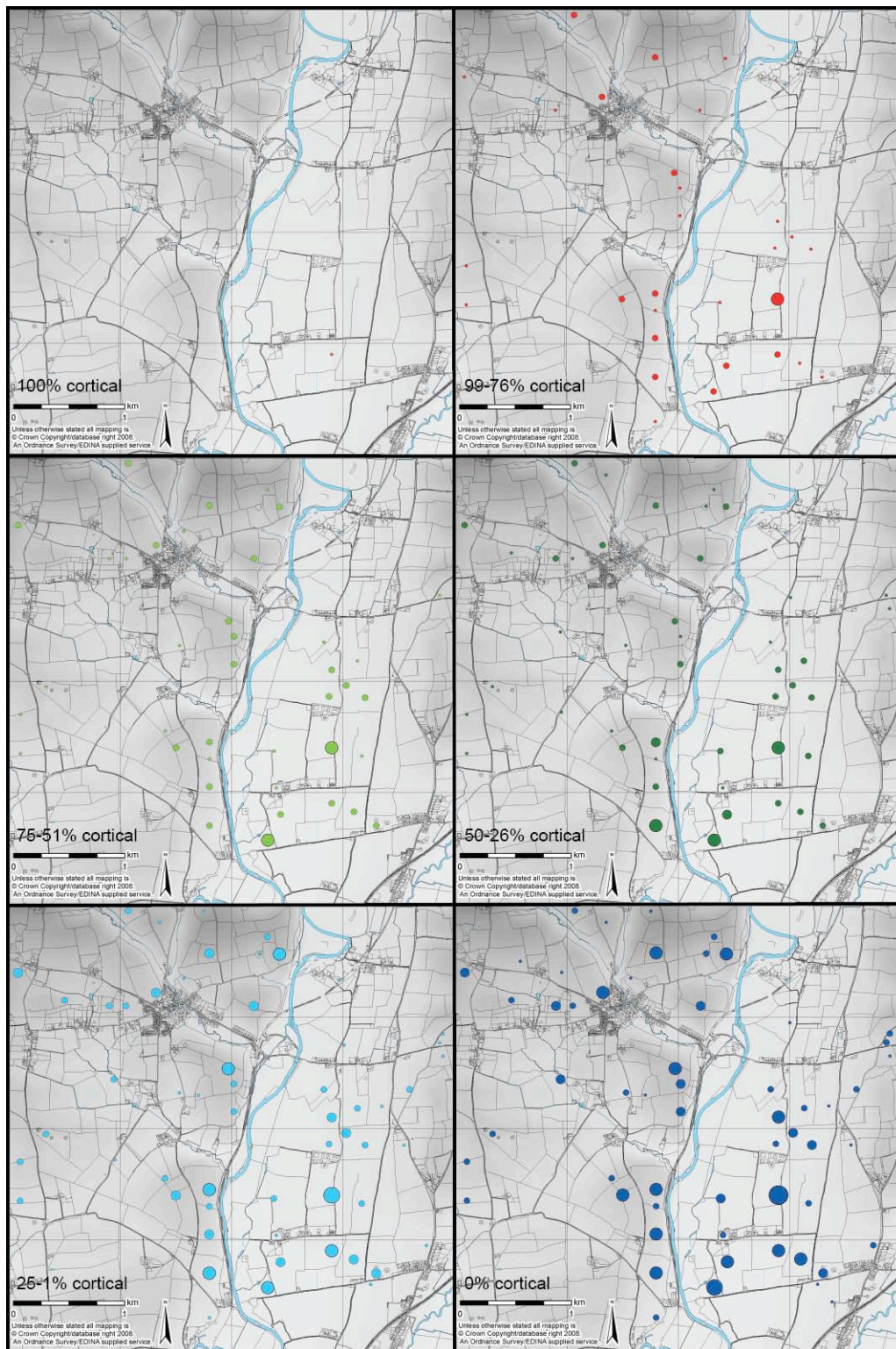


Figure 8.4.2 Nodular flint reduction sequence (see Figures F52-57)

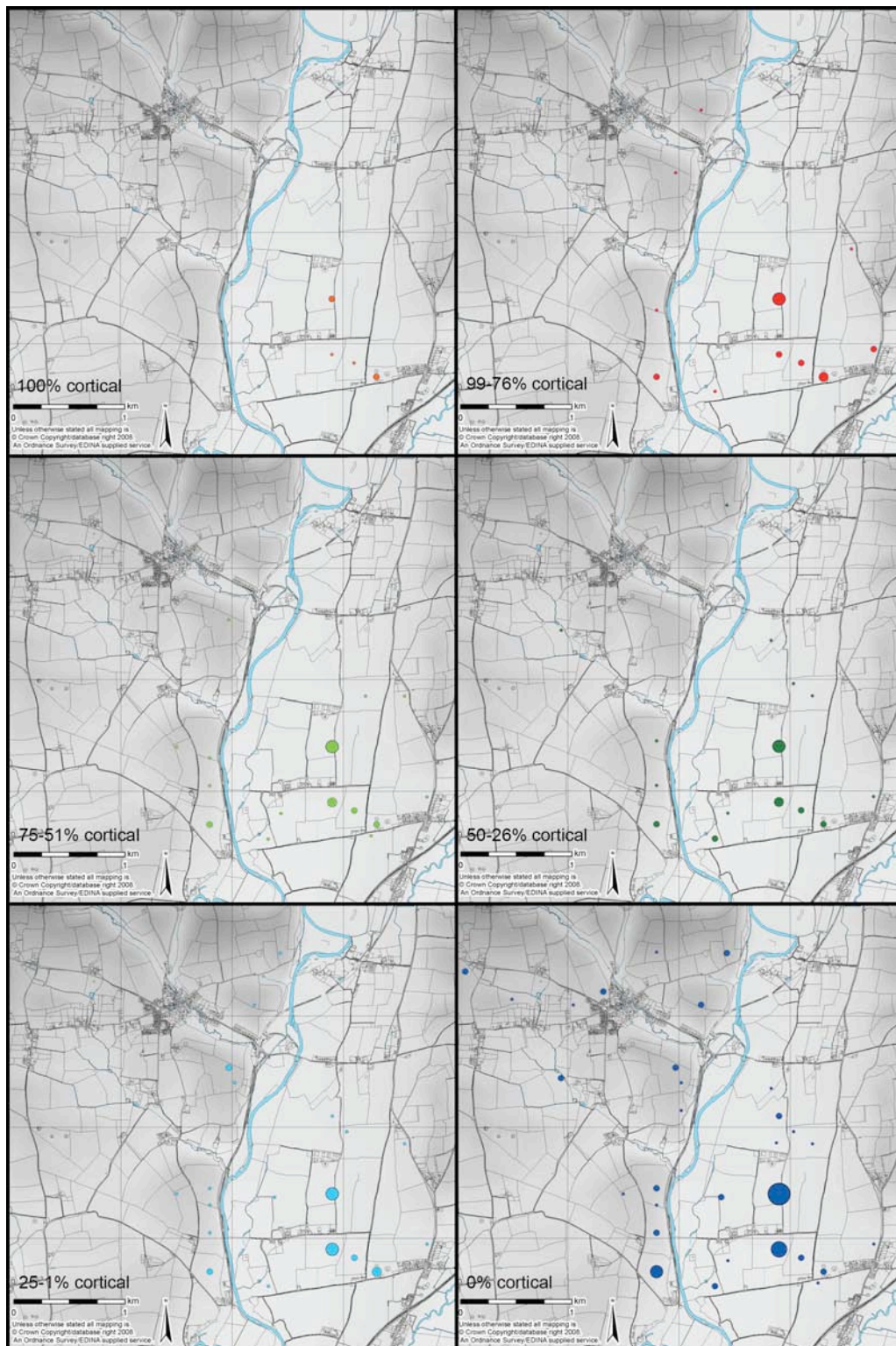


Figure 8.4.3 Greensand Chert reduction sequence (see figures F58-63)

the overall distribution of chert is much more restricted than that of nodular flint. The early and mid stages of the chert reduction sequence are clustered at a small number of scatters on the valley floor and its immediate western edge. Interestingly the later stages of the chert reduction sequence are much more widely distributed, albeit in low densities, even on the western part of the study area.

8.4.2 Pebble flint reduction sequence

The overall pebble flint reduction sequence shown in figure 8.4.1 is misleading. Because of the impossibility of separating non-cortical flint into that of nodular or pebble origin on the basis of colour alone, the entire non-cortical element of the collection's flint has been incorporated into the nodular flint class. As a result no non-cortical element (dark blue in figure) is depicted for the pebble flint in figure 8.4.1. It is therefore difficult to make direct comparisons between the pebble flint reduction sequence and those of other raw materials.

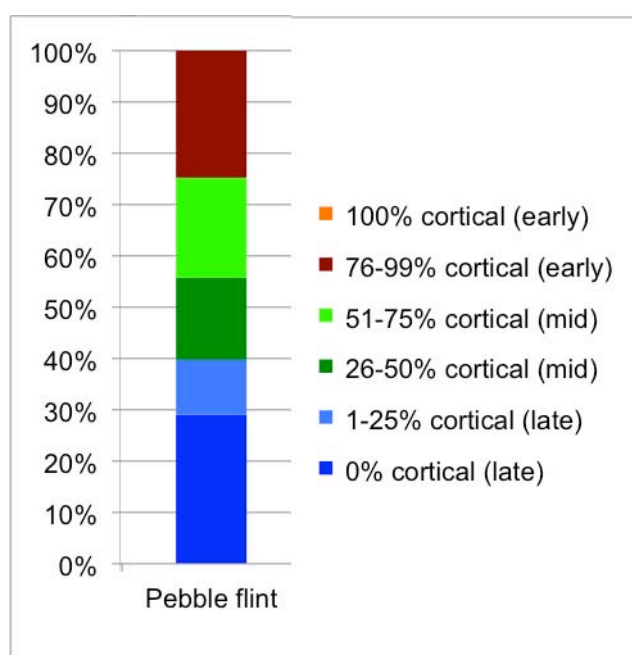


Figure 8.4.4 Estimated pebble flint reduction sequence

It is assumed that due to flint pebbles being smaller in size than flint nodules, and thus having a proportionally higher ratio of surface area (cortex) to internal (non-cortical) material, they would produce a lower proportion of non-cortical or late stage pieces. Figure 8.4.4 is a somewhat conjectural approximation of what a full pebble flint reduction sequence might look like. The c. 30% non-cortical component is implied from the proportion of non-cortical material from

the Haldon chert/flint sequence, which includes much pebble-based material. Regardless of this extrapolated non-cortical component it is obvious that all stages of the reduction sequence are present within the pebble flint material. The higher proportions of early stage pieces may in part be due to the smaller size of flint pebbles making them easier to transport to the study area with little or no preparation. Given the small size of the pebble flint component of the collection no attempt has been made to plot the spatial distribution of its reduction sequence. However, an examination of the raw data indicates that in the locations where it is found all of the stages in the reduction sequence occur together. The implication of this being that flint pebbles arrived in the study area in small quantities and were often worked and utilised in a single location.

8.4.3 Portland chert and reduction sequence

Almost all of the Portland chert in the collection is non-cortical. Only two pieces, an unmodified flake from N1 on the valley floor and a retouched flake from N8 on its western side retain very small amounts of dorsal cortex. This suggests that it arrived in the study area in very small quantities either as cores or finished artefacts.

8.4.4 Haldon chert/flint and reduction sequence

The very low proportions of early reduction sequence pieces in the Haldon chert/flint component of the collection suggest that this material arrived in the study area in a partially worked state. The higher proportions of mid and late stage pieces indicate that Haldon chert/flint was then worked and used within the study area. Because of the very small quantities of Haldon chert/flint in the collection no attempt has been made to formally map the distribution of the stages in its reduction sequence. However, an examination of the raw data suggests that it was used in different ways in the small number of locations at which it has been found. At all the scatters where it is found in low concentrations (N7, T2 and T34), only the mid stages of the reduction sequence are present, however, the scatters where it is found in slightly higher concentrations (T17 and T22) contain both mid and late stage pieces. The distribution of these two apparent groups of scatters are not topographically separate, all being mixed together in a range of locations to the west of the Exe



Figure 8.5.1 Distribution and proportions of burnt material

valley. The impression from T17 and T22 is of very small quantities of raw material (perhaps just single nodules) arriving in a partially modified state and being worked and 'consumed' at a single location.

8.5 Burning

Of the collection's 16577 artefacts, 2513 (15%), show signs of burning. Figures 8.25 and F64 show that burnt material is present within the majority of field-level assemblages. The distribution of burnt material is closely linked to overall assemblage size. For example, the largest single quantity of burnt material (861 pieces) comes from N1, (the largest scatter in the collection) but only accounts for 16% of that assemblage. Figures 8.5.1 and F65 show that quantities of between 7 and 20% burnt material per assemblage are widespread though out the collection. The highest proportion of burnt material within a single assemblage (containing more than 10 pieces) comes from scatter N3c on the valley floor, of which 30% is burnt.

8.6 Conclusion

Chapter eight has examined the contents of the John Uglow collection to identify trends in the composition, distribution and chronology of the study area's lithic scatters. These trends are now summarised below on a period-by-period basis.

Mesolithic

Mesolithic activity is specifically evidenced by a small number of diagnostic artefacts (microliths, microburins, and picks), and more generally by concentrations of blade-based debitage. Berridge (in Silvester et al. 1987, 18-19) identifies both early and Late Mesolithic material within the Uglow collection, often occurring in the same assemblages. No further attempt has been made as part of this study to separate early and Late Mesolithic material.

Mesolithic activity is concentrated in a handful of high-density scatters, N1 and N12 on the valley floor, and N8, T11 and T27 over looking the western edge of the valley floor. Scatter T26 is the only distinct concentration of Mesolithic activity to occur at a distance to the valley floor. Aside from these obvious concentrations of activity, Mesolithic material occurs in very low concentrations,

often only evidenced by a single microlith or a small quantity of blade-based debitage, in larger and later assemblages throughout the study area.

Diagnostically Mesolithic material is struck from both nodular flint and Greensand Chert. No chronologically distinctive post-Mesolithic artefacts made from Greensand Chert have been identified in the collection. This suggests that the use of Greensand Chert may well be predominantly Mesolithic in date. The Greensand Chert reduction sequence hints at a degree of separation in Mesolithic taskscape. The early and mid stages in its working appear to be concentrated in a small number of larger scatters on the valley floor and its immediate western edge. Only the later stages of the chert reduction sequence are more widely distributed through out the study area. A similar pattern is hinted at by the ratio of unmodified debitage to retouched and utilised tools from assemblages N1 and N12. Both large chert rich assemblages, comprise a substantial Mesolithic component, and are heavily skewed towards unmodified debitage. This again indicates that the early stages of Greensand chert working took place at these locations, and that a significant proportion of this material was then removed to other places either as cores, artefact blanks or finished tools.

Early Neolithic

Early Neolithic activity is evidenced by a small number of diagnostic artefacts including leaf-shaped arrowheads, and with a lesser degree of certainty, serrated blades. A range of other less diagnostic material is also likely to be of Early Neolithic date including some of the blade-based debitage, as well as a significant portion of the retouched blades and scrapers.

The distribution of the diagnostically Early Neolithic differs from that of the Mesolithic material in that it occurs in slightly higher densities in slightly wider areas of the valley floor, the western valley side, and isolated groups on the western edge of the study area. However, its overall distribution is more restricted than the Mesolithic material with fewer low concentration groups and isolated finds.

Nodular flint is the dominant raw material from the Early Neolithic onwards. All leaf-shaped arrowheads are struck from nodular flint, as are the majority of serrated blades. Unlike the Greensand Chert there does not appear to be any

spatial separation in the various stages of the flint reduction sequence, with the composition of the majority of scatters appearing relatively balanced. The homogenous nature of the nodular flint reduction sequence and its ubiquity though out the collections assemblages make it difficult to identify and isolate particular trends and traditions in its working.

Late Neolithic

A range of diagnostic artefacts including oblique, transverse and triangular arrowheads evidences Late Neolithic activity. These diagnostic artefacts have a quite tightly focused distribution in a handful of scatters on the valley floor and its western edge, with comparatively few outlying or low-density occurrences. The real distribution of Late Neolithic activity is likely to be much more extensive including a large proportion of the less chronologically distinctive material, in particular flake-based debitage and retouched flakes and scrapers.

The majority of the Late Neolithic material is struck from nodular flint. It is likely that most of the collection's small amount of Portland Chert is Late Neolithic in date. It is particularly conspicuous amongst the transverse, and to a lesser extent the oblique, arrowheads.

Early Bronze Age

Diagnostically Early Bronze Age material includes barbed and tanged arrowheads, plano-convex knives and thumbnail scrapers, all of which are struck from nodular flint. The highest densities of diagnostic Early Bronze Age material occur on the valley floor and its immediate western edge, as well as on the southern slopes of the Raddon ridge. Again as with the Late Neolithic material, the true distribution of Early Bronze Age activity is considered to be much more extensive than the small number of diagnostic artefacts. It is likely to include a significant proportion of the flake-based debitage and retouched flakes and scrapers.

At a very general level between the Mesolithic and Early Bronze Age it is possible to see a gradual increase in the extent and intensity of occupation. However, within this picture there is a recurring trend suggesting the long-term or repeated use of particular places.

This chapter has looked at the contents of the Uglow collection's lithic scatters at a study area wide scale. Chapter nine now explores some of the trends identified in the chronology, composition and distribution of lithic scatters in relation to their wider archaeological and topographic contexts.

Chapter Nine: Landscape, lithics and monuments - investigating the contexts of lithic scatters

Chapter nine situates the inhabitation evidenced by lithic scatters (analysed in chapter eight), and monument complexes (investigated in chapter seven), within a wider landscape context. As developed in chapter two, it is argued that the archaeological and topographic contexts of both lithic scatters and monuments constitute, albeit in fragmentary form, elements of the clues and keys through which those who created and dwelt in these places understood the world around them.

Zone	Description
Zone One: The Raddon Ridge	The southern slopes of the Raddon Ridge, forms the northern edge of the study area. Southern limits are defined by the junction between the Carboniferous geology of the Raddon Ridge with the Permian geology of zones two and three to the south. Eastern edge marked by the Exe valley
Zone Two: The western hinterland	Low hills and ridges in the western and south-western parts of the study area underlain by Permian geology. For northern edge see zone one. For eastern edge see zone three.
Zone Three: Over looking the Exe valley	Three low hilltops capped with early terrace deposits on the western edge of the Exe valley. For northern edge see zone one. Western edge formed by sharp drop to the floor of the Exe valley (zone four). Eastern edge with zone two more ambiguous, partially defined by edge of the hills and also by the character and distribution of lithic scatters.
Zone Four: The valley floor	Covers the active flood plain, and terraces one to three of the lower Exe basin. Bounded to the west by zones one and three, and to the east by zone five.
Zone Five: The Exe/Culm interfluvium	Ridge of low hills separating the valleys of the Exe and Culm in places capped with early terrace and head deposits. Western edge defined by the limits of terrace three on the valley floor.

Table 9.0.1 Summary of location and extent of lithics and landscape zones

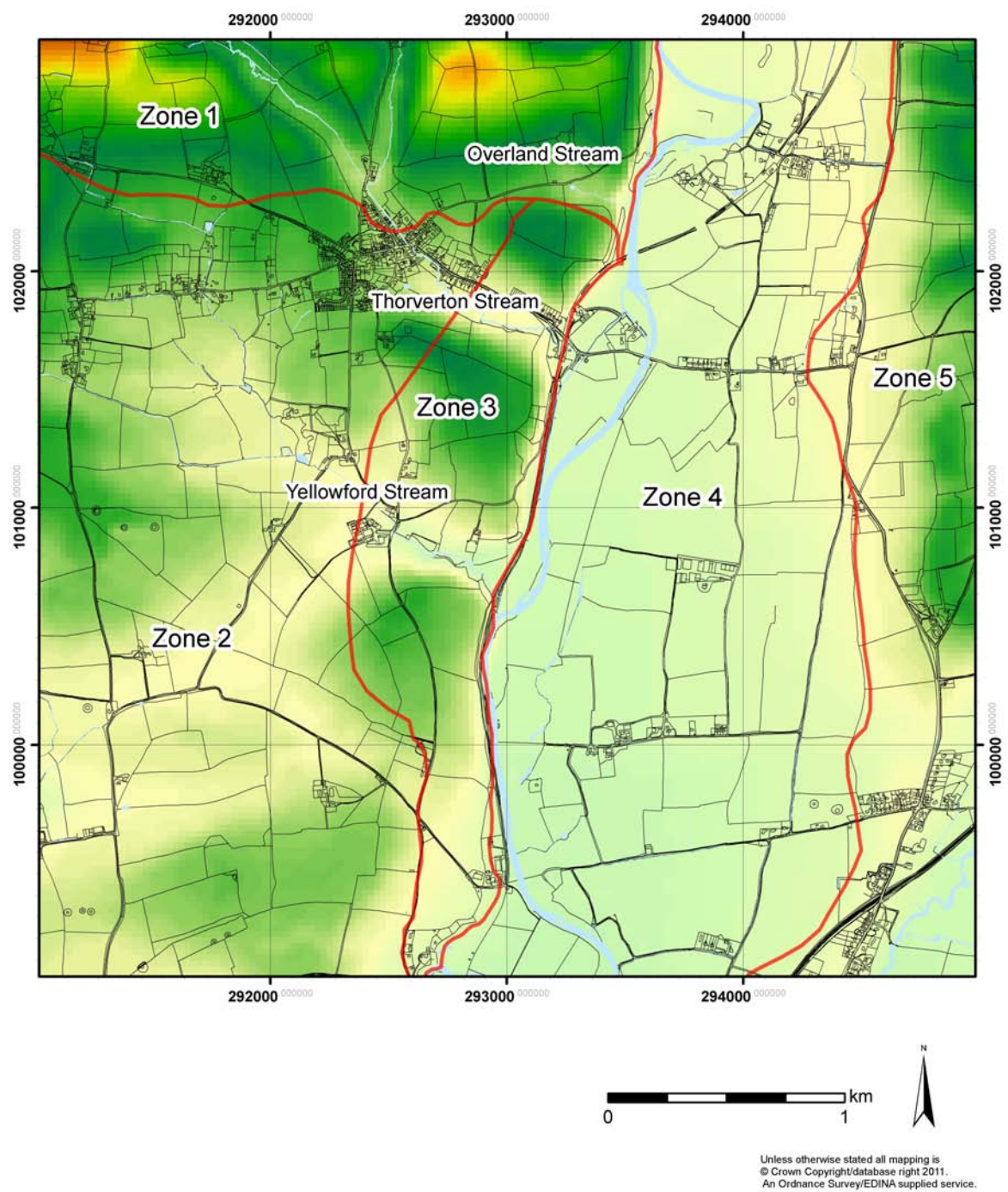


Figure 9.0.1 Location and extent of lithics and landscape zones

This chapter characterises the study area in two distinct ways:

- a consideration of inhabitation and traditions of practice through an examination of surface lithic assemblages
- phenomenological consideration of the location of the study area's lithic scatters and specific monuments.

For the purposes of both elements the study area has been divided into a series of zones defined by topography, geology and archaeology. Although somewhat arbitrarily imposed on the landscape, and arguably simplifying its subtleties, the five zones used below are intended to act as a framework for discussing the lithic assemblages, monuments and landscape of the study area. Both analyses aim to understand differences in prehistoric activity both between and within zones. The rationale behind the location and extent of each zone is summarised in table 9.0.1 and figure 9.0.1.

9.1 Zone-based lithic analysis.

Chapter 9.1 characterises occupation and traditions of practice through an examination of the study area's surface lithic scatters. It draws on the results of chapter eight and a scatter-by-scan analysis of the Uglow collection included as appendix H. Lithic material is predominantly considered as field-level assemblages. Where appropriate field-level assemblages are broken down into their original sub-field scatters to allow for a more detailed spatial consideration.

9.1.1 Zone One: the Raddon Ridge

Zone one has produced a series of mainly small (less than 25 pieces) lithic assemblages which are grouped together into field-level assemblages T14, T13, T24, T5, T33, T6, T3, T31, T30 and T22 (see figure 9.1.1). The distribution of these assemblages suggests that the majority of the fields within this area have been subject to surface collection. As such, and notwithstanding variability in collection intensity between fields, they are likely to reflect genuine trends in the distribution of prehistoric occupation. With the exception of T13 and 14, which are the result of single episodes of collection during the 1930s, all of the assemblages are the result of non-systematic collection during the mid-1980s. T22 coincides with a Romano-British building excavated during the mid-1980s (Uglow 2000). The excavation and the increased levels of casual

surface collection in its immediate vicinity may in part account for the larger lithic assemblage recovered from T22.

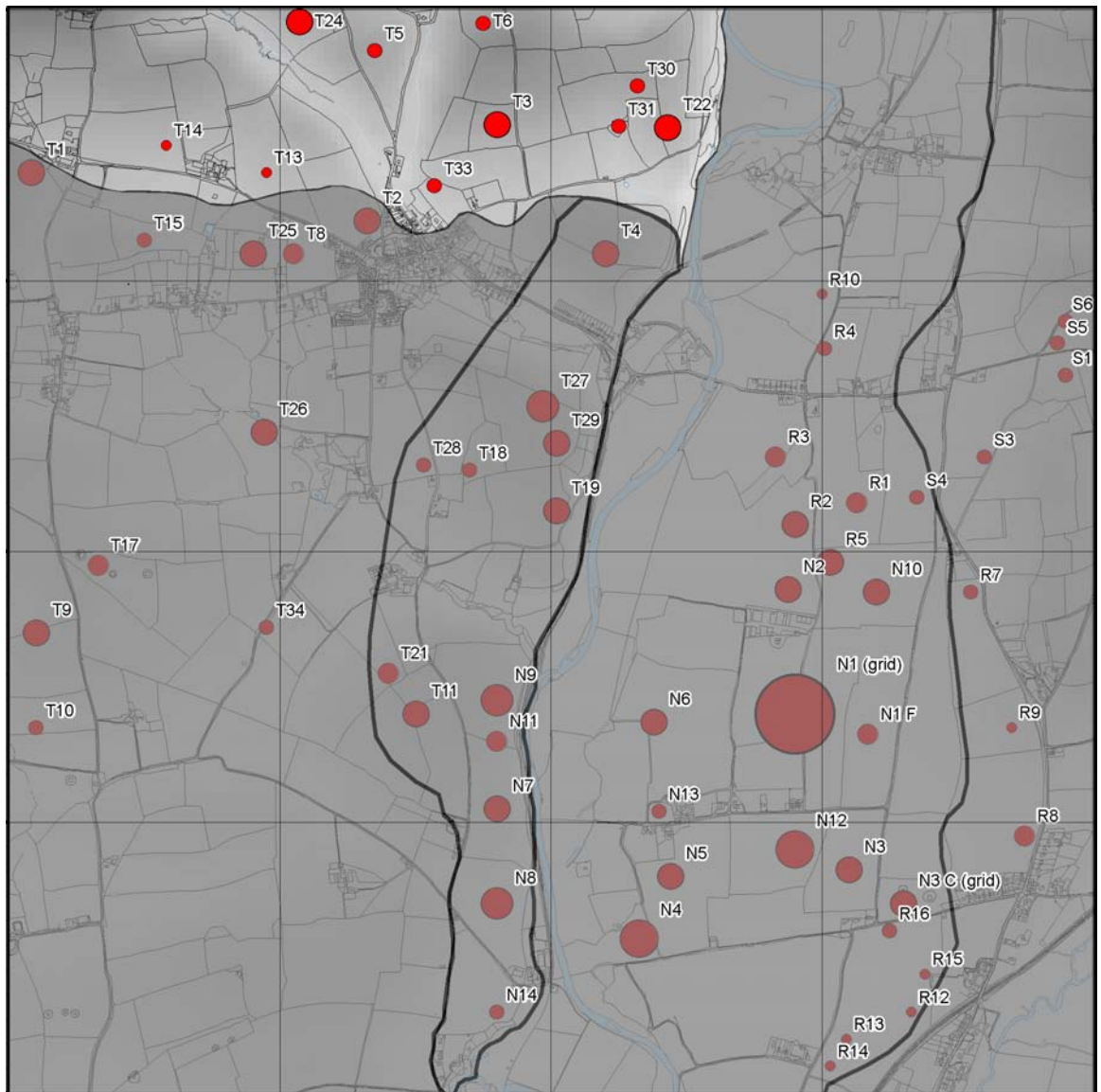


Figure 9.1.1 Zone One: the Raddon Ridge

The composition and distribution of the zone's lithic assemblages suggests that it saw extensive low intensity occupation over a wide date range.

Comparatively few individually chronologically distinctive pieces are recorded. Those present, span the Mesolithic (two microliths from T3c and T14); the Early Neolithic (two polished axe fragments from T22x and T3c, and a leaf-shaped arrowhead from T22); the Late Neolithic (a transverse arrowhead from T3b); and the Early Bronze Age (single thumbnail scrapers from T3a, T3b and T33). Most of the assemblages are dominated by flaked-based pieces suggesting a Neolithic or Early Bronze Age for the majority of activity in this area. Small

quantities of blade-based material, sometimes in combination with diagnostic artefacts (such as with a Microlith at T14) suggest a much slighter, earlier presence, of Mesolithic or Early Neolithic date. The majority of the zone one assemblages contain a small number of retouched tools for cutting, scraping and piercing activities (simple retouched/utilised blades and flakes, scrapers and awls).

Mottled dark to mid grey nodular flint dominates all of the area's assemblages. Greensand chert is present in small quantities in many of the assemblages. Portland chert and pebble flint are also present, but in very small quantities. Although comparatively small in number the Haldon flint portion of T22 stands out within the collection as a whole. Throughout zone one nodular flint chiefly retains little dorsal cortex. This implies that nodular flint arrived in the area in an already modified state, with the earliest stages of the reduction sequence having occurred elsewhere. It was then used in the manufacture of stone tools, which were then used, maintained and discarded within the area. Only at scatters T24 and T3 are there slightly higher levels of early and mid-stage pieces suggesting that some flint arrived in a less modified state. Few of the zone's assemblages contain a large enough Greensand chert component to enable a meaningful analysis of its reduction sequence. Taken at face value the small amount of chert present reflects a trend seen across the wider study area in that it has slightly more early and mid-stage pieces than the nodular flint suggesting that it arrived in a less modified state.

In summary, little about zone one's lithic assemblages stands out amongst the collection as a whole. Broadly speaking they reflect extensive low-level Neolithic and Early Bronze Age occupation but contain few more chronologically precise indicators. A very small number of diagnostic artefacts and a limited amount of blade-based stone working hint at more discrete foci of Mesolithic and Early Neolithic activity.

9.1.2 Zone Two: The Western Hinterland

The distribution of lithic scatters within zone two is much more uneven than in neighbouring areas. The scatters making up T1, T15, T25, T8 and T2 on the northern edge of zone two reflect a similar intensity of collection to that seen in zone one, with lithic assemblages identified in the majority of fields. This comprehensive coverage may in part be due to the proximity of this area to the

former home of John Uglow on the western edge of Thorverton. Almost all of these assemblages are the result of non-systematic collection during the 1970s and 80s.

Further to the south in the central area of zone two the distribution of lithic assemblages is much more diffuse and probably reflects the distribution of surface collection itself, rather than any underlying archaeological patterning. The two scatters at T26, and the isolated scatter at T34, are likely to be the result of chance finds followed up by limited non-systematic collection. Surface collection at the more extensive group of scatters at T10, T9 and T17 may well have been

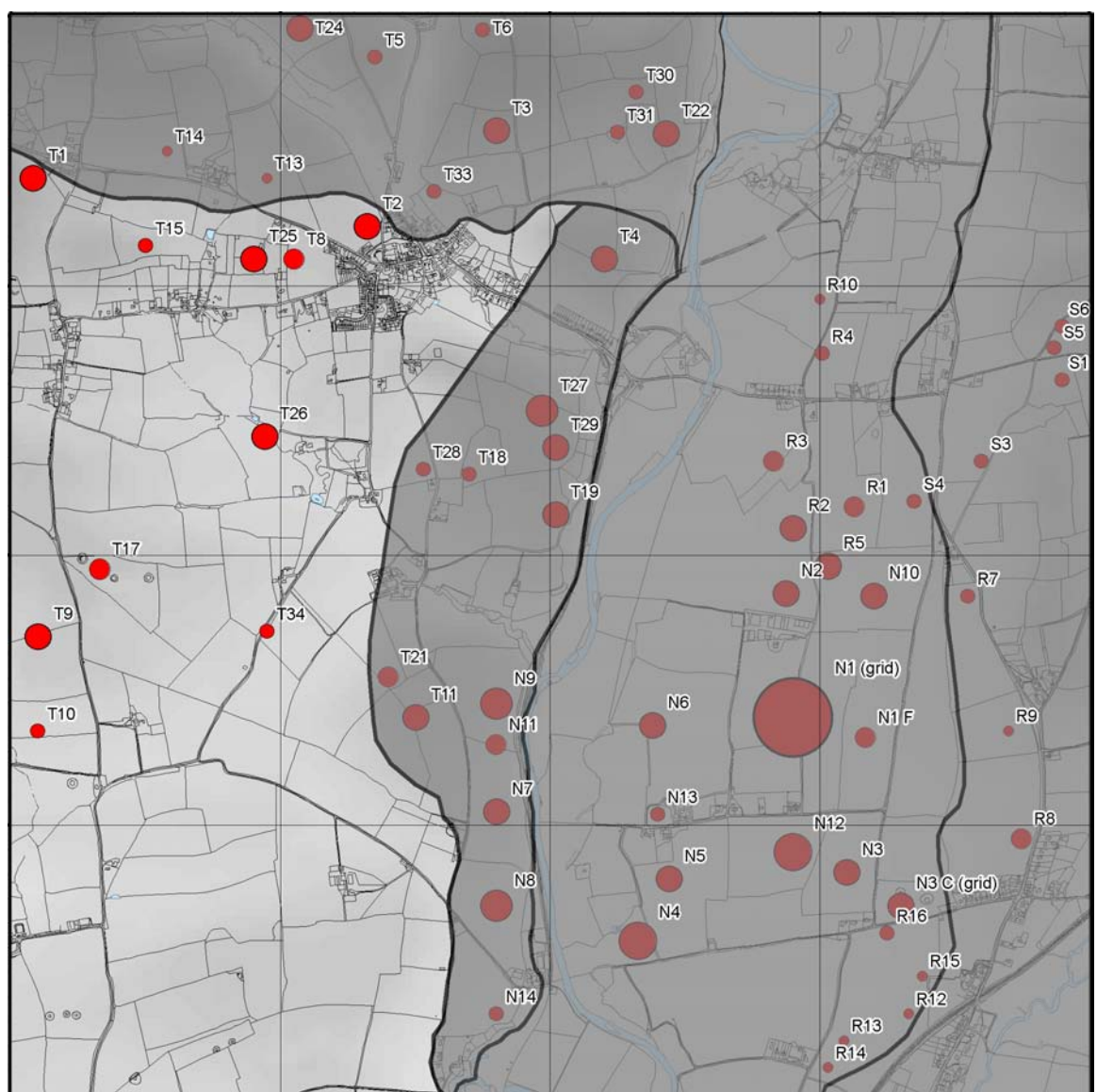


Figure 9.1.2 Zone Two: The Western Hinterland

prompted by the presence of a number of extant round barrows. With the exception of scatter T9, where collection began in the 1930s, all scatters in the central area of zone two are the result of non-systematic collection during the 1970s and 80s. No lithic assemblages are recorded from the southern area of zone two. It is likely that this large blank area reflects an absence of surface collection rather than a real absence of lithic scatters in this area.

Despite their more uneven distribution the lithic assemblages from the western hinterland have a very similar composition to those from the southern slopes of the Raddon ridge. Sub-field assemblages are generally small (less than 50 pieces), with only a handful of slightly larger scatters (T25, T26 and T2). Again the picture is of extensive but low intensity occupation spanning the Mesolithic through until the Early Bronze Age. Diagnostic artefacts include: a small number of Mesolithic artefacts (microliths from T1 and T26 and a microburin from T2); Early Neolithic artefacts (leaf-shaped arrowheads from T1, T25, T2, and T9, and serrated blades from T1 and T9); Late Neolithic artefacts (transverse arrowheads from T25, T2 and T9 and oblique arrowheads from T2); and Early Bronze Age artefacts (thumbnail scrapers from T1, T25, T2, T26 and T9).

Most of zone two's assemblages are dominated by flake-based pieces suggesting a Neolithic or Early Bronze Age date for the majority of this activity. Blade-based pieces occur in very low numbers through out the area. This material, in combination with isolated diagnostic artefacts, suggests the presence of smaller foci of Mesolithic, or Early Neolithic, activity. Scatter T26 stands out as a particular focus of Mesolithic activity containing three microliths (Berridge (in Silvester *et al.* 1987. 18-9) suggest two are Late Mesolithic and one is possibly Early Mesolithic), a microburin, and an unusually high proportion of blade-based pieces (44% of the assemblage). The remaining flake-based material in the assemblage, including flake cores, is likely to reflect the reuse of this locale during the Neolithic and/or later. A single thumbnail scraper comes from scatter T26b approximately 200 metres distant from the main scatter. The majority of assemblages within zone two contain a limited range of retouched tools for cutting, scraping and piercing activities (simple retouched/utilised blades and flakes, scrapers and awls).

In terms of raw materials the composition of the assemblages from the Western Hinterland echoes that seen on the southern slopes of the Raddon Ridge. Dark to mid grey mottled nodular flint dominates all assemblages, with Greensand chert being present in much smaller quantities. Portland chert and pebble flint are also present but in very small quantities. As at T22 (above) the small quantity of Haldon chert/flint from T17 stands out within the collection as a whole. Throughout zone two nodular flint retains little or no dorsal cortex. This implies that nodular flint arrived in the area in an already modified state, with the earliest stages of the reduction sequence having occurred elsewhere in the wider landscape. It was then used in the manufacture of stone tools, which were subsequently used, maintained and discarded within the area. Only at scatter T34 are there slightly higher levels of mid-stage pieces suggesting that some flint arrived in a less modified state. Few of the zone's assemblages include a large enough Greensand chert component to enable a meaningful analysis of its reduction sequence. At face value the small amount of chert present has slightly more early and mid-stage pieces than the nodular flint, suggesting that it arrived in a less modified state.

Although much less complete than on the southern slopes of the Raddon Ridge, the picture that emerges from the Western Hinterland is broadly comparable. The area's assemblages reflect extensive but generally low-level Neolithic and Early Bronze Age occupation. Only at a small number locations (T25 and T2) are there slightly larger quantities of material reflecting more intensive occupation. There are hints of a much lower level of Mesolithic and Early Neolithic activity within many of the assemblages. This is most pronounced at scatter T26 which appears to be a discrete focus of later (and possibly earlier) Mesolithic activity.

9.1.3 Zone Three: Overlooking the Exe valley

Zone three consists of a narrow strip of land on the low hills forming the immediate western edge of the Exe valley. Topographically the zone is split into three hilltops by the valleys of two small tributaries of the river Exe, the Yellowford and Thorverton streams (see figure 9.1.3). All lithic assemblages come from these hilltops. The collection contains no lithic finds from the stream valleys all of which are under permanent pasture. The hilltops are discussed individually working from south to north.

Zone Three A: Overlooking the Exe valley (south)

The most southerly of the hilltop groups comprises a series of subfield scatters making up assemblages N14, N8, N7, N11, N9, T11 and T21. Elements of several assemblages (N7, N8, N9 and T11) contain episodes of collection from the 1930s. The remainder of the material was collected in the 1970s and 1980s. The distribution of sub-field assemblages on the eastern and northern parts of the hilltop suggests that surface collection has been comprehensive in these areas.

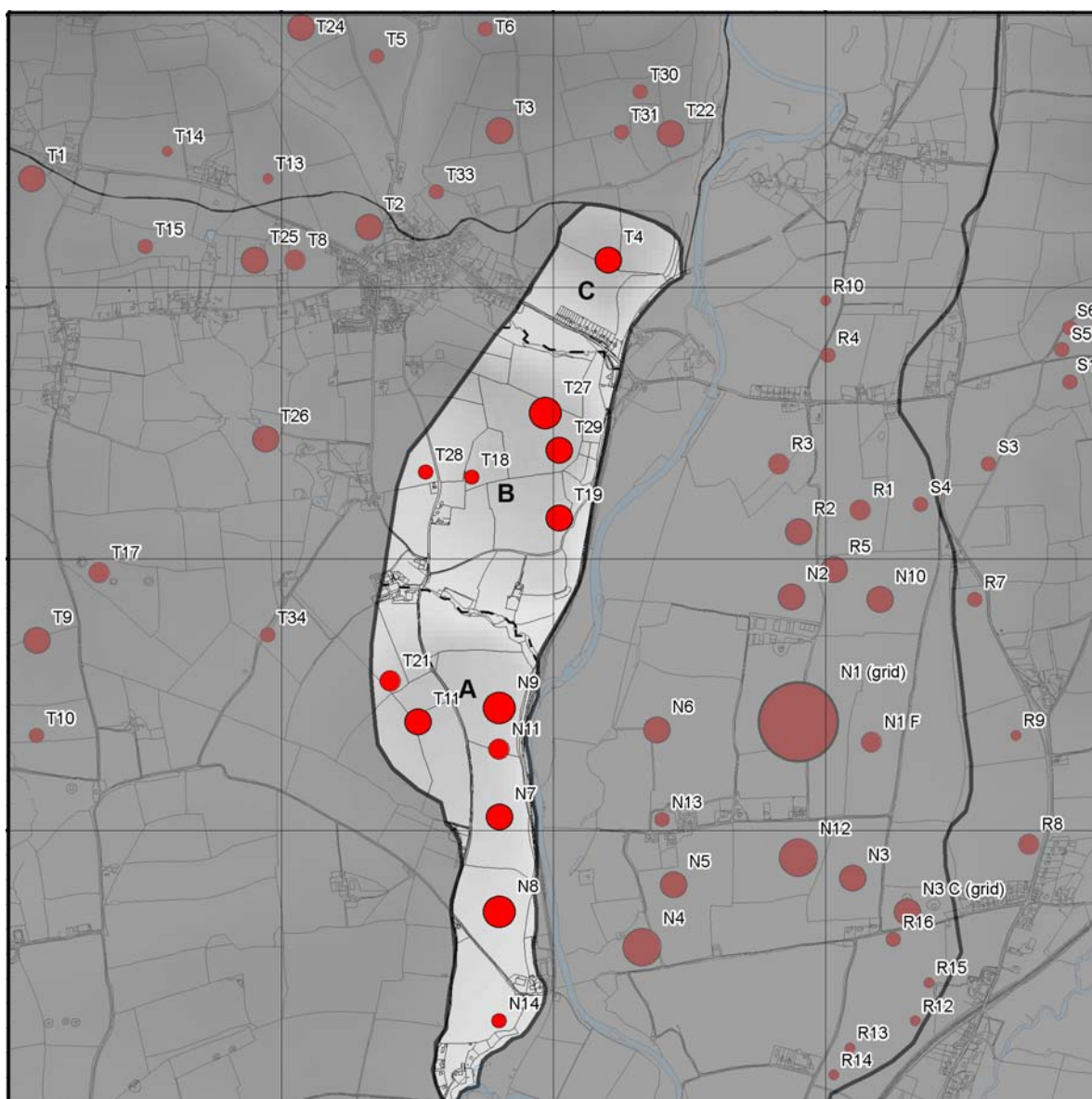


Figure 9.1.3 Zone Three: Over looking the Exe valley

Several of the hilltop's assemblages (N7, N8 and N9) comprise over 500 lithic artefacts and are some of the largest in the collection away from the valley floor. The remaining assemblages range between 407 and 29 pieces. Overall this group of assemblages indicates an extensive, and in places intensive, degree

of multi-period inhabitation. This group of assemblages is unusual in that it contains a very high proportion of retouched and chronologically distinctive pieces. For example, scatters N7, N8 and T11 contain 47%, 39% and 64% retouched/utilised pieces respectively. The likelihood that such material was preferentially collected and retained amongst the 1930s components of these assemblages has been discussed above. Even taking this into consideration, the composition of the assemblages along the eastern edge of the hilltop and in particular scatters N7, N8, N9 and T11 remains conspicuous within the collection as a whole. Table 9.1.1 summarises the chronologically diagnostic pieces from the hilltop.

	N14	N8	N7	N11	N9	T11	T21	Total
Axe/pick	0	1	0	0	0	1	0	2
Microburin	0	35	6	0	0	10	1	52
Microlith	1	14	4	0	1	9	0	29
Arrowhead (leaf shaped)	0	2	2	0	2	1	0	7
Blade (serrated)	0	13	2	1	2	20	0	38
Arrowhead (oblique)	0	1	1	0	4	5	0	11
Arrowhead (transverse)	0	7	2	0	13	12	0	34
Arrowhead (triangular)	0	0	0	0	0	1	0	1
Arrowhead (B&T)	0	1	1	0	0	0	0	2
Knife (plano-convex)	0	1	0	0	1	1	0	3
Scraper (thumbnail)	0	9	3	0	4	10	0	26
Total	1	84	21	1	27	70	1	205

Table 9.1.1 Chronologically distinctive artefacts from Zone 3a

Diagnostic artefacts, although not evenly distributed amongst the hilltop's assemblages, are extremely numerous. They range in date from the Late Mesolithic (microliths at N8 and N9 after Berridge in Silvester *et al.* (1987, 18), Early Neolithic, Late Neolithic to the Early Bronze Age. The majority of all of these assemblages are flake-based and reflect Neolithic and Early Bronze Age

activity. However, the substantial Mesolithic, and/or Early Neolithic component of several of these scatters is demonstrated by the high proportion of blade-based pieces within large assemblages (27% at N7 and 33% at N8). The intensity of occupation in all periods that is evidenced by this group of scatters differs greatly from those in zones 1, 2, and 5. Higher intensities of occupation are found amongst some of the larger assemblages from zone four on the valley floor (for example, N1 and N12); however, they lack the range and number of diagnostic artefacts seen in the current assemblages.

Alongside chronologically distinctive pieces, all assemblages in this area contain large numbers of retouched tools for cutting, scraping and piercing activities (simple retouched/utilised blades and flakes, scrapers and awls). The consistently high number of projectile points of all periods suggests that either their manufacture, use in hunting or deliberate deposition in this area may have remained a constant from the Late Mesolithic until the Early Bronze Age.

All of these assemblages are dominated by dark to mid grey nodular flint. Greensand chert is present in varying quantities. It is most prominent at scatter N8 (c. 250 pieces), which represents the highest incidence of Greensand chert away from the valley floor. Pebble flint, Portland chert and Haldon chert/flint are also present in small quantities. The nodular flint is generally from late in the stone working sequence. It retains very little dorsal cortex, indicating that it arrived in the area in a partially modified state, with the earliest stages of the reduction sequence having occurred elsewhere. It was then used in the manufacture of stone tools that were used, maintained and discarded within the area of the hilltop. The presence of several very cortical flint flakes at N14 suggests that a limited amount of early stage flint working (nodule trimming and core preparation) may also have occurred. The Greensand chert is also predominantly from late in the reduction sequence. However, it includes a slightly higher proportion of early and mid-stage pieces, indicating that it arrived in a less modified condition than the flint.

Zone Three B: Overlooking the Exe valley (central)

The central hilltop in zone three comprises two groups of assemblages: two small scatters on its western edge (T28 and T18); and a series of generally larger scatters on its eastern side making up assemblages T19, T29, T27. Whether the difference in quantities of material from either side of the hilltop

reflects a genuine difference in levels of prehistoric activity, or is simply the product of differing intensities of surface collection is unclear. However, differences in the composition of these two groups of assemblages suggest a distinct difference in the character and chronology of activity.

The composition of scatters T28 and T18 on the western flank of the hilltop reflects closely those found in the zone two. Both are the result of non-systematic collection during the 1980s and are small in size (30 and 15 pieces of struck stone respectively). A single Early Bronze Age thumbnail scraper from T18 is the only chronologically distinctive artefact from either assemblage. Both contain a small number of scrapers and retouched flakes. Scatters T18 and T28 are almost exclusively flake-based pieces suggesting predominantly Neolithic or Early Bronze Age activity. A small number of blade-based pieces from T28 hints at a much lesser Mesolithic or Early Neolithic presence. With the exception of a single piece of pebble flint from T28, both scatters are struck from nodular flint from generally late in the reduction sequence.

The character of assemblages from the summit and eastern side of the hilltop is much more closely related to those from zone three a to the south. They are larger (ranging in size from 156 artefacts at T19 to 686 at T27), contain more, and a wider range of chronologically distinctive pieces, as well as a higher proportion of retouched/utilised pieces.

Table 9.1.2 summarises the distribution of chronologically distinctive artefacts amongst all assemblages in zone three b. The majority come from assemblage T27 whose subfield scatters wrap around the northeast and eastern end of the hilltop. Here diagnostic artefacts indicate activity spanning the Mesolithic, Early Neolithic, Late Neolithic and Early Bronze Age. Whilst T29 contains fewer diagnostic pieces than T27, it includes a high proportion of retouched/utilised pieces. Activity at both of these scatters has close parallels with that seen on the hilltop to the south (assemblages N7, N8, N9 and T11). The picture here is of extensive multi-period inhabitation resulting in unusually high levels of retouched and diagnostic artefacts. The presence of material collected during the 1930s may well have distorted the quantities of retouched material in these assemblages. However, as on the hilltop to the south the levels are so high that it is considered likely that this to some extent reflects a genuine trend in the archaeology. All assemblages in this area contain large numbers of retouched

tools for cutting, scraping and piercing activities (simple retouched/ utilised blades and flakes, scrapers and awls). Simple retouched flakes are particularly prominent within assemblage T29. The fact that the majority of material from the eastern side of the hilltop is flake-based suggests that it is mostly Neolithic and Early Bronze Age in date. Diagnostic artefacts and blade-based material indicate lower levels of Mesolithic and Early Neolithic activity.

	T28	T18	T19	T29	T27	Total
Microburin	0	0	0	0	11	11
Microlith	0	0	0	0	8	8
Arrowhead (leaf shaped)	0	0	0	0	3	3
Blade (serrated)	0	0	1	1	10	12
Arrowhead (oblique)	0	0	1	0	3	4
Arrowhead (transverse)	0	0	0	0	2	2
Arrowhead (triangular)	0	0	0	0	0	0
Arrowhead (B&T)	0	0	0	0	1	1
Knife (plano-convex)	0	0	0	0	1	1
Scraper (thumbnail)	1	0	0	0	1	2
Total	1	0	2	1	40	44

Table 9.1.2 Chronologically distinctive artefacts from Zone 3b

All of the assemblages on the eastern side of the hilltop are dominated by nodular flint from late in the reduction sequence. This indicates that nodular flint arrived in the area in a partially modified state before it was used for the manufacture of tools, which were then used, maintained and discarded on the hilltop. Compared with Zone Three A to the south the assemblages from Zone Three B contain relatively little Greensand chert. Most chert retains little dorsal cortex indicating that it is from late in the reduction sequence. Very small quantities of Portland Chert are also present at T27.

Zone Three C: Overlooking the Exe valley (north)

T4 is the only lithic assemblage recorded from the northern most hilltop in Zone Three. Collected in 1993 using a non-systematic methodology it consists of 220

pieces of flaked stone. N4 includes a small number of chronologically distinctive artefacts including three serrated blades (potentially Early Neolithic) and two thumbnail scrapers (Early Bronze Age). It is chiefly composed of flaked based pieces suggesting a Neolithic or Early Bronze Age date for most of this material. The smaller quantity of blade-based material indicates a lesser degree of Early Neolithic or potentially Mesolithic activity. Retouched/utilised pieces include a range of simple tools (mostly retouched blades and flakes, and scrapers) for cutting and scraping activities.

The majority of the assemblage is struck from dark to mid grey nodular flint, with a much smaller amount of Greensand chert and a single flake of mid grey pebble flint. The nodular flint reflects broad trends across the study area with the majority of pieces coming from the later stages of the stone working process (core reduction and tool manufacture/use/maintenance). There are very few early stage pieces suggesting that the flint arrived at T4 in a partially modified state. The much smaller chert assemblage has slightly higher incidence of early stage pieces, again reflecting broad trends across the study area.

Zone Three: Summary

Zone Three comprises a series of multi-period lithic scatters on the higher ground immediately to the west of the Exe valley. This area has the largest quantities of lithic finds anywhere in the study area away from the valley floor. The majority of this material is Neolithic and Early Bronze Age in date, however there are also discrete and substantial areas of Mesolithic inhabitation. The composition of the majority of the area's scatters stands out in the collection as a whole due to their unusually high frequencies of retouched and diagnostic pieces of all periods. The high numbers of projectile points from the Mesolithic microliths all the way through to the Early Bronze Age are particularly conspicuous. A trend seen in the size and composition of some of the assemblages in Zone Three, particularly T28 and T18, suggests a difference in the nature of activity between the western and eastern sides of zone three. Occupation on the western side of Zone Three much more closely resembles that seen in the zone two immediately to the west.

9.1.4 Zone Four: The valley floor

The valley floor contains the highest densities of surface lithic finds in the study area. However, in the context of the Uglow collection this activity has to be viewed through the filter of the greatest variation in surface collection techniques seen in any part of the study area. This ranges from areas of intensive systematic collection, through varying intensities of non-systematic collection, to apparent blank areas in which it is possible that no surface collection has actually taken place at all. Some of these blank areas are likely to be due to a combination of taphonomic and modern land use factors. For example, the fact that no scatters are recorded on the western side of the valley floor is probably due to a combination of fluvial erosion and deposition on the active flood plain (meaning that surface scatters have been removed or covered with alluvium), and the prominence of permanent pasture on much of the first terrace (meaning that any potential scatters are never revealed by ploughing). In other parts of the valley floor, such as the far south, north and western central areas, it remains uncertain as to whether the blank areas reflect the archaeology (i.e. no scatters to be found) or the archaeologists (i.e. a lack of archaeological investigation).

As well as comprising the highest numbers of surface lithic finds Zone Four also contains the majority of the prehistoric monuments in the study area including areas A and B outlined in chapter seven. The relationship between these monument groups and the lithic scatters with which they are associated is discussed below.

Due to the size of Zone Four, and the number of scatters that it contains, it is discussed as a series of five smaller segments. The extent of each of the segments is loosely defined by the distribution of lithic scatters. Scatters in each segment are described from west to east, from the active flood plain to the eastern edge of terrace three.

Zone Four A: The valley floor (south)

The southern most part of the valley floor contains comparatively few lithic finds. A substantial blank area exists on the active flood plain, first terrace and most of the second terrace. Given the intensity of activity immediately to the north it is considered likely that blank area, at least on the second terrace, reflects a lack

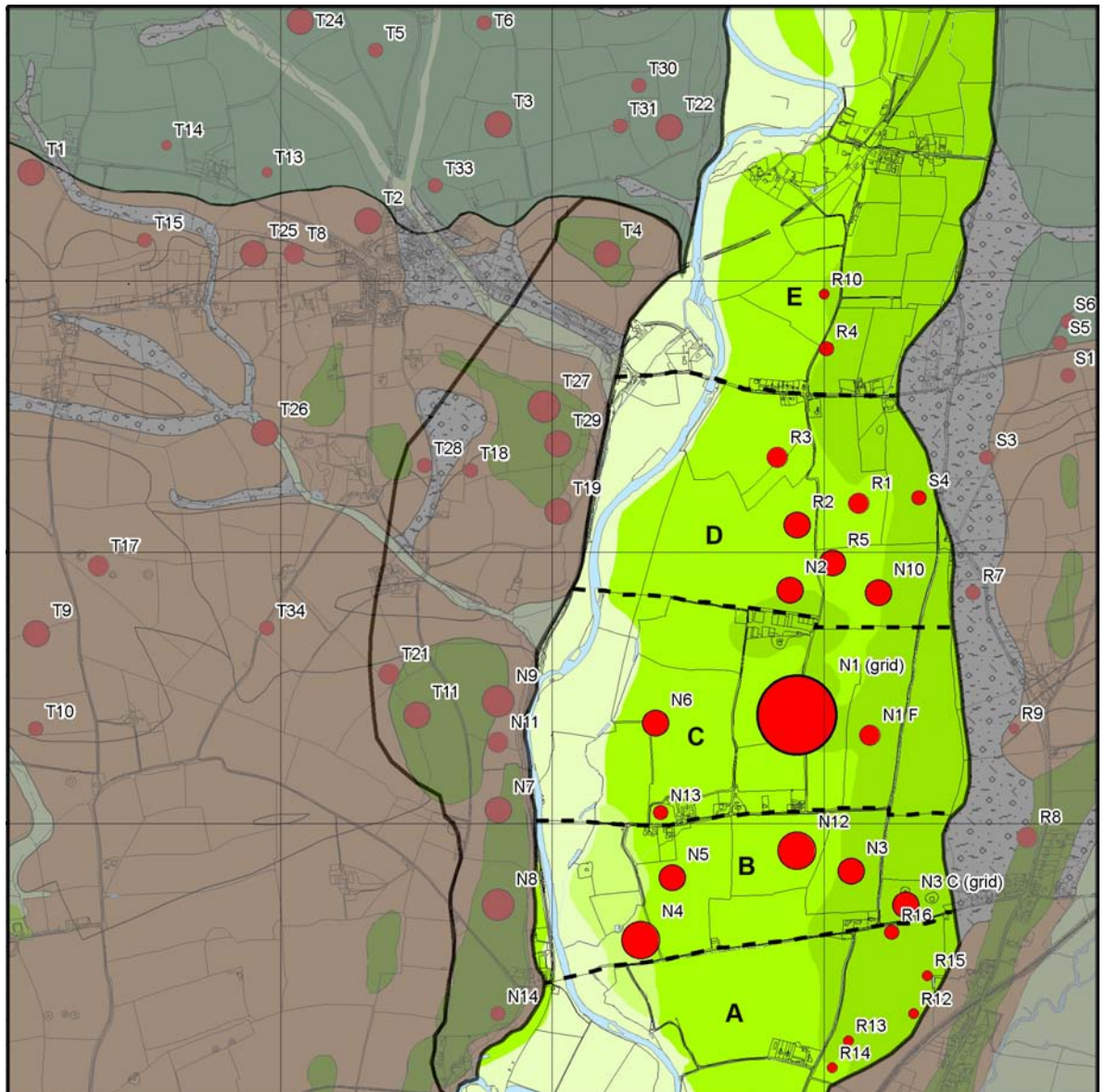


Figure 9.1.4 Zone Four: The floor of the Exe valley (Based upon data provided by British Geological Survey © NERC. All rights reserved)

of investigation. The only finds come from a series of very small scatters on the eastern edge of the valley floor, R12, R13, R14, R15 and R16. All of these scatters are the result of non-systematic collection in the early 1990s.

Scatters R12 to R16 contain no individually diagnostic pieces. They are each almost exclusively flake-based suggesting that they are Neolithic or Early Bronze Age in date. The retouched portion of the assemblages comprises a small number of simple tools for cutting and scraping (retouched flakes and scrapers). The majority of the lithic material is struck from dark to light grey nodular flint. A smaller amount of Greensand chert is also present and is particularly prevalent at R16. Patterns in reduction sequence broadly reflect

those shown in many other areas on the valley floor. The nodular flint is dominated by pieces from the later stages in the stone-working sequence. This suggests that it came into this immediate area in a partially worked state. The Greensand chert by contrast comprises many more pieces from the early and mid-stages of the stone working process. This suggests that the chert arrived in a less altered state and that more of the stone working process happened *in situ* at scatters R12-16 (principally R16).

Scatters R12-R16 reflect a broad spread of very low intensity Neolithic and Early Bronze Age activity across the southern area of the valley floor. Levels of activity are slightly elevated at R16 and are perhaps more closely related to that seen in assemblages immediately to the north (N3 and N3c). Patterns of raw material use and reduction sequence are broadly similar to other across the valley floor.

Zone Four B: The valley floor (south central-including Area A)

Moving further north evidence of lithic scatters is more extensive, ranging from the constituent scatters of assemblage N4 straddling the junction of the first and second terraces, assemblages N5 and N12 on the second terrace, and assemblages N3 and N3c on the third terrace. All of these large assemblages were collected during the 1970s and 1980s and are the result of both intensive non-systematic, and systematic surface collection. The relatively high number of finds from this area (for example, 1269 artefacts from N4 and 1302 from N12) may be slightly accentuated by the higher intensity of their collection.

Considering their relatively large sizes, assemblages N5, N4, N12, N3 and N3c contain relatively few diagnostic artefacts. These artefacts range in date from Mesolithic microliths, microburins and picks; Early Neolithic serrated blades; later Neolithic transverse and oblique arrowheads, and Early Bronze Age plano-convex knives and thumbnail scrapers. The majority of the area's scatters are predominantly flake-based, indicating a Neolithic or Early Bronze Age date for much of this activity. In most cases a much smaller quantity of blade-based pieces in combination with diagnostic artefacts indicate a lesser degree of Mesolithic or Early Neolithic activity. A far larger and more intensive focus of Mesolithic activity at N12 is indicated by the scatter's very high proportion of blade-based pieces (31%). Berridge suggests an Early Mesolithic date for the

assemblage's two microliths (Silvester *et al.* 1987, 18). In addition to diagnostic pieces each of the area's scatters contain a range of retouched tools for cutting, scraping and piercing activities (simple retouched/utilised blades and flakes, scrapers and awls).

In terms of raw materials most assemblages are dominated by dark to mid grey nodular flint, with much smaller quantities of Greensand Chert, and even smaller amounts of Portland Chert and pebble flint. In keeping with trends seen throughout the study area the nodular flint is generally from late in the reduction sequence, retaining little if any dorsal cortex. This indicates that it arrived into the area in a partially modified state before being used in the manufacture of stone tools that were subsequently used, maintained and discarded within the area. Similarly in most instances the Greensand chert includes slightly more cortical pieces suggesting that it comes from earlier in the reduction sequence arriving into the area in a less modified state than the nodular flint.

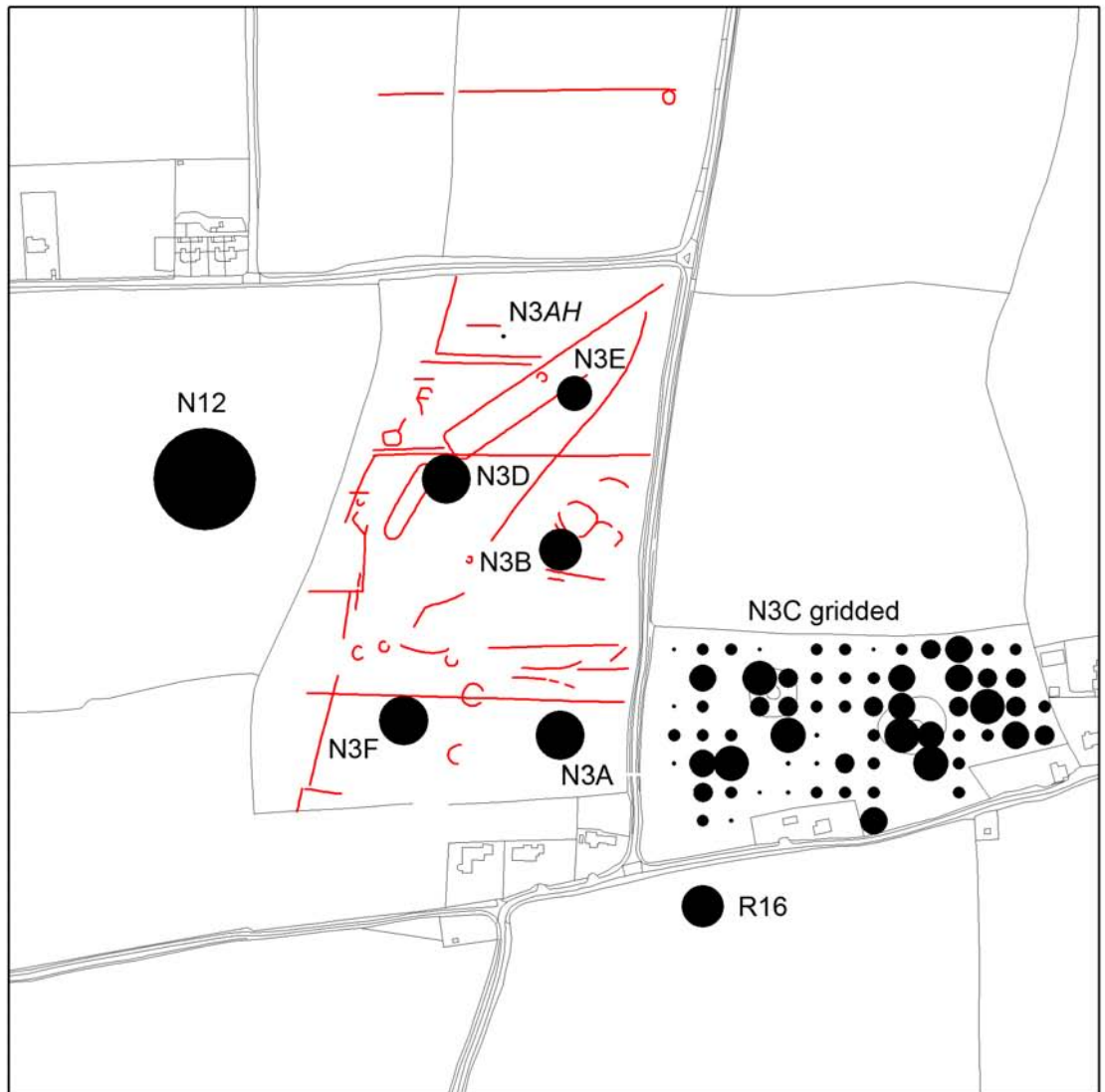
The blade-rich scatter at N12 stands out against this local background, and within the collection as a whole. It contains an extremely high proportion of Greensand chert (66%). The chert reduction sequence N12 differs from that seen in neighbouring scatters in that contains fewer cortical pieces, more closely resembling that of the nodular flint. Scatter N3c also has a high proportion of Greensand chert (55%). This material differs from N12 in that it is not associated with a significant quantity of blade-based material. It also contains a number of pieces of 'exotic' orange, red and pink Greensand chert. In keeping with most of its neighbouring assemblages N12's Greensand chert is from earlier in the reduction sequence than the nodular flint. The scatters forming assemblages N12, N3 and N3c, as well as R16 immediately to the south, stand out within the collection as a whole because of their relatively high frequencies of burnt material (between 25 and 30% against a background of c10%). These four assemblages all lie within Area A, the area of Neolithic and Early Bronze Age monuments outlined in chapter seven (with see figure 9.1.6). Other than this raised incidence of burning, the composition of area A's Neolithic and Early Bronze Age lithic assemblages is relatively unremarkable. In broad terms they are similar to other assemblages from Zone Four B which are not associated with the construction and use of monuments (for example,



Figure 9.1.5 Large Portland Chert transverse arrowhead from N3AH



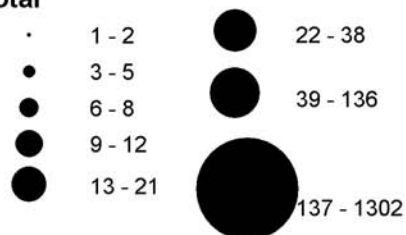
Figure 9.1.6 Flake from a polished flint axe from N3F. Polished face with pot-lid fracture caused by heating/burning.



Nether Exe Area A

All lithic finds

Total



0 200 Meters



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Figure 9.1.7 All surface lithic finds from area A

N4 and N5). All reflect the manufacture, maintenance and use of stone tools in a range of cutting and scraping tasks, activities that are hard to interpret as representing anything other than day-to-day life. Only two artefacts hint at the use and/or deposition of more 'special' artefacts within the monument complex. The first is an unusually large transverse arrowhead struck from Portland Chert from N3AH (see figure 9.1.5), found approximately 40m north of the cursus. The second is a flake from a polished flint axe (see figure 9.1.7). It is struck from a pale grey/white flint (similar to the polished axe fragments from scatter N1), and shows traces of burning.

Zone Four C: The valley floor (mid central)

Zone Four C covers the southern central area of the valley floor. All scatters in this area are the result of non-systematic (N6, N13 and N1f), or systematic (N1) surface collection during the 1970s and 1980s. The area includes a series of small scatters from the second terrace (assemblages N6 and N13), the largest assemblage from the entire collection, N1, which lies on the junction of the second terrace and an outlying area of the third terrace, and two small scatters forming N1f on the third terrace. There are several blank areas within this part of the valley floor. To the west of N6 the lack of lithic finds is probably attributable to alluvial deposition and permanent pasture. On the third terrace to the east of N1f the lack of lithic finds is probably due to a lack of surface collection by John Uglow. A single flint scraper was found in this area whilst establishing survey control during fieldwork for the current project suggesting that prehistoric activity does extend further east across the valley floor.

The N6 scatters contain a small number of diagnostic artefacts spanning the Early Neolithic (a single serrated blade), the Late Neolithic (single examples of oblique and transverse arrowheads), and the Early Bronze Age (a single barbed and tanged arrowhead). N13 contains no diagnostic artefacts, however, in general terms both assemblages share many similarities. Both are dominated by flake-based pieces, which alongside N6's diagnostic artefacts suggests a Neolithic and Early Bronze Age date for these scatters. Much smaller quantities of blade-based pieces indicate a lesser Early Neolithic or possibly Mesolithic component. In addition to diagnostic pieces each of the area's scatters contain a range of retouched tools for cutting, scraping and piercing activities (simple retouched/utilised blades and flakes, scrapers and awls).

N6 and N13 are both chiefly composed of artefacts struck from nodular flint, the majority of which contains little dorsal cortex indicating that it comes from late in the stone-working process. A much smaller quantity of Greensand chert is present in both assemblages. The Greensand chert reduction sequence is less homogenous than that of the flint. That from N6 is similar in composition to the nodular flint, retaining little dorsal cortex and belonging late in the stone working process. That from N13 follows a general trend amongst the study area's Greensand Chert assemblages and appears to have arrived in a less modified state retaining more cortical pieces.

At over 5000 pieces the assemblage from scatter N1 is the largest in the entire study area. The Uglow collection contains two assemblages from this immediate area, a systematic collection made in the early 1980s, which is summarised below, and a non-systematic collection made in the late 1970s and early 1980s, which is not analysed as part of this study.

For its size N1 contains relatively few retouched/utilised artefacts. 87% of this assemblage is unmodified debitage. Only a small number of diagnostic artefacts are present in the N1 assemblage. They range in date from the early and Late Mesolithic (microliths, microburins, a flaked axe and a pick), Early Neolithic (serrated blades and leaf-shaped arrowheads), to the Early Bronze Age (thumbnail scrapers, plano-convex knives and barbed and tanged arrowheads). Several Late Neolithic artefacts (triangular and transverse arrowheads) exist in the non-systematic assemblage from N1 but were not included in this analysis. This broad date range is reflected in the character of the wider assemblage. The majority of pieces are flake-based suggesting a Neolithic or Early Bronze Age for much of scatter N1. However, there is also a significant blade-based element (29%) suggesting a substantial Mesolithic or Early Neolithic presence. Alongside the diagnostic artefacts the assemblage contains a wide range of tools for cutting, scraping, piercing and digging tasks, as well as a smaller number of projectile points.

Raw materials at N1 are split almost 50/50 between nodular flint and Greensand Chert. When examined by weight Greensand Chert comprises over 70% of the assemblage. Pebble flint, Haldon chert/flint and Portland chert are also present in far smaller quantities. At face value the reduction sequences for both the nodular flint and Greensand chert are broadly similar, each reflecting

the later stages in the stone working process and implying that raw materials arrived at the scatter in a partially modified state. The earliest stages of the reduction sequence are slightly more prevalent amongst the Greensand chert portion of the assemblage suggesting that it arrived in a slightly less modified state than the nodular flint. A rapid examination of the N1 non-systematic collection suggests that early reduction sequence pieces may be under represented in the N1 systematic assemblage. It is possible that many larger cortical chert pieces were removed from the scatter by earlier non-systematic collection thus skewing the composition of the systematic collection that succeeded it.

Scatter N1 indicates a large area of multi-period occupation spanning the Early Mesolithic to at least the Early Bronze Age. The Mesolithic occupation is significant in that it appears to have been of a very high intensity. The only other scatter on the valley floor that displays anything like this intensity of Mesolithic activity is scatter N12. The area of N1 also shows a high level of Neolithic and Early Bronze Age occupation, however, this is slightly less unusual and is broadly paralleled by some of the other valley floor scatters (for example N3 and N4 to the south). N1 also has an unusually high proportion of Greensand chert. Again only scatters N12, and possibly N3c and N8, have comparable levels of chert.

The composition of assemblage N1F to the east of N1 indicates the presence of low levels of Neolithic/later occupation, with hints of earlier, possibly Mesolithic activity. Raw materials (predominantly nodular flint) arrived in the area in a partially modified state. The composition of the assemblages suggests that the later stages in raw material reduction as well as the manufacture, use and discard of a range of simple tools took place within field NF1. The use/discard of tools is particularly evident at scatter N1F1

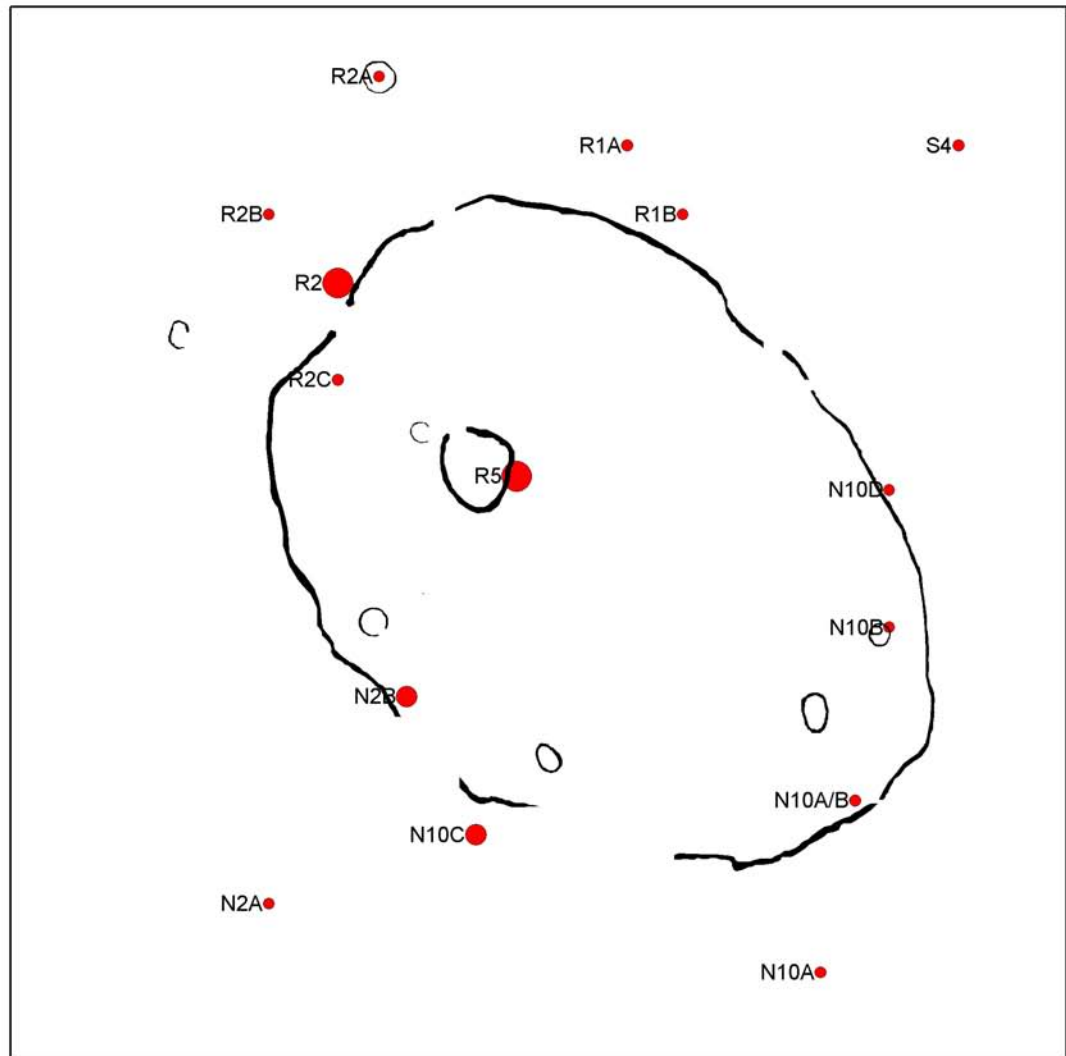
Zone Four D: The valley floor (north central – including Area B)

Zone Four D covers the northern central area of the valley floor area. The eastern part of the zone coincides with the monument complex Area B outlined in chapter seven (see figure 9.1.8). Overall it comprises a number of small and medium sized scatters (typically between 20 and 250 artefacts) from the second and third terraces, which make up assemblages R3, N2, R2, R5, R1, N10 and S4. With the exception of elements of R2 and R3, which were collected in the

1930s, all of these assemblages were the result of non-systematic collection during the 1970s and 1980s. Parts of assemblages R2 and R5 were recovered as residual material during the excavation of later archaeological features (Uglove *et al.* 1985; Uglove 2000).

Working east from the river Exe, there are no lithic finds from the alluvium or from much of the second terrace. It is unclear whether this blank area on the western part of the second terrace is due to a genuine absence of prehistoric activity, an absence of surface collection, or the presence of alluvium obscuring any prehistoric activity. All of the lithic assemblages come from the slightly higher eastern edge of terrace two and from terrace three. This part of terraces two and three coincides with the series of Neolithic and Early Bronze Age monuments discussed as Area B in chapter seven. The composition and distribution of these lithic scatters indicates extensive, but relatively low level, Neolithic and Early Bronze Age inhabitation across this area of the valley floor. Assemblages are generally dominated by flake-based material, and the relatively low numbers of diagnostic artefacts are mostly Neolithic or Early Bronze Age in date. Diagnostic artefacts include a single Early Neolithic leaf-shaped arrowhead (R2); later Neolithic arrowheads (R2, R5 and S4); and Early Bronze Age thumbnail scrapers (R2, R3, R5 and S4) and a plano-convex knife (R2). Smaller quantities of blade-based material indicate a lesser degree of Mesolithic and Early Neolithic activity. Diagnostically Mesolithic artefacts include microburins (R2 and N2) and a pick (N2). Aside from diagnostic artefacts, utilised/retouched pieces are present in all assemblages. They include a fairly limited range of simple tools for cutting, scraping and piercing activities (retouched blades and flakes, awls and scrapers). Several assemblages in this area contain proportionally high numbers of retouch/utilised pieces, including R2, R3 and R5.

All of the scatters in Zone Four D are dominated by pieces struck from nodular flint. In keeping with a trend seen across much of the study area the majority of the nodular flint retains little dorsal cortex suggesting it belongs late in the stone working process. The implication being that much of the initial reduction of this material occurred away from the area, with nodular flint arriving in a partially modified state. The slightly raised quantity of more cortical pieces amongst assemblage N2 indicates a degree of variability in the nodular flint reduction



Nether Exe Area B

All Lithic Finds

- 0-50
- 51-100
- 101-250

0 200 Meters



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Figure 9.1.8 Transcribed prehistoric features from gradiometer survey of area B and location surface lithic finds

sequence. Greensand chert comprises a much smaller proportion of the lithic assemblages in this area, typically between 8 and 12%, but with slightly higher levels (33%) at R3. Again reflecting wider trends within the study area, the Greensand chert generally retains more dorsal cortex than the nodular flint suggesting that it arrived in a less modified state. Much smaller quantities of Portland Chert and pebble flint are also present.

The distribution, location and chronology of lithic scatters do little to elucidate the chronology and function of enclosure B1, the main focus of investigation in area B. Both in terms of the composition of its lithic assemblages, and in terms of individual artefacts, little stands out about area B. Lithic assemblages indicate low levels of predominantly Neolithic and Early Bronze Age activity in the area of enclosure B1, with hints of a lesser degree of Mesolithic and/or Early Neolithic occupation. There is no discernible difference between the composition of assemblages found inside enclosure B1 and those from outside it. The level of burning seen in each of the assemblages (c10%) is typical for the collection as a whole. The only apparent trend in the data is an increased incidence of retouched/utilised artefacts in assemblages R5 (the area of enclosure B2), and at R2 (inside and just outside the entrance to enclosure B1).

Zone Four E: The valley floor (north)

Zone Four E covers the northern most area of the valley floor. In contrast to the evidence of more intensive inhabitation immediately to the south on the valley floor, it contains just two small lithic assemblages R4 and R10 both from the junction of the second and third terraces. These assemblages comprise just 16 and 10 pieces respectively and are the result of non-systematic collection in the 1970s (R4) and the 1980s (R10). The majority of the zone has no recorded lithic finds and comprises one of the largest blank areas on the valley floor. It is considered likely that this picture is probably due to a lack of archaeological investigation by John Uglow, rather than a genuine lack of prehistoric activity. The presence of R4 and R10 indicate that a limited degree of investigation did take place in this area. However, it is considered likely that their small number of artefacts, and John Uglow's apparent focus on higher density sites, rather than establishing the presence of low intensity activity, led to no subsequent work being carried out.

The composition of assemblages R4 and R10 suggests similar activity to that seen in Zone Four D to the south, albeit at a far lower intensity. The assemblages contain no diagnostic artefacts. Their domination by flake-based pieces suggests a Neolithic and, or Early Bronze Age date. The small number of blade-based pieces at R10 hints at the presence of a lesser element of Mesolithic or Early Neolithic activity. A small number of tools for cutting and scraping are present in both assemblages. Both assemblages are almost entirely struck from nodular flint from a late in the stone-working process. The three pieces of Greensand chert also present are entirely non-cortical.

Zone Four: Summary

Overall lithic assemblages from the floor of the Exe valley indicate extensive areas of multi-period occupation spanning the Early Mesolithic to the Early Bronze Age. Neolithic and Early Bronze Age activity is most prevalent, is particularly intense in the area of assemblages N5, N4, N3 and N1 but is seen in varying intensities across the valley floor. Mesolithic activity is generally seen more sporadically and in much lower intensities. The two exceptions to this are the assemblages from N1 and N12 whose character and composition stand out within the collection as a whole. Both have evidence of very high levels of blade-based activity, unusually high levels of Greensand chert and a number of diagnostically Mesolithic artefacts. These quite tightly defined scatters comprise the most intensive foci of Mesolithic activity seen anywhere in the study area.

Dark to mid grey nodular flint comprises the majority of most scatters on the valley floor. This is generally from late in the stone working sequence suggesting that it arrived into the area in a relatively modified state before it was used in the manufacture of tools, which were subsequently used, maintained and discarded on the valley floor. For the most part Greensand chert makes up a much smaller fraction of the valley floor assemblages. It comprises more cortical pieces indicating that it arrived into the area in a less modified state and that all stages of the stone working process from core preparation to tool discard occurred *in situ*. Again scatters N1 and N12, and to lesser extent, N3c stand out due to their domination by Greensand chert pieces.

9.1.5 Zone Five: The Exe/Culm interfluve

Zone Five lies on the eastern edge of the study area on the western slopes of the Exe/Culm interfluve. It contains few lithic assemblages. The scatters making up R8, R9, R7 and S3 are widely spaced in the southern and central parts of the zone. Each are small assemblages, (3-103 pieces and occur low on the valley side, between three and seven metres above the eastern edge of the valley floor. All are the result of non-systematic collection during the 1980s. The slightly raised number of finds from R8 may in part be due to the inclusion of residual lithic material from the excavation of Romano-British features (Ugnow 2000, 238). S1, S5 and S6 form a cluster of small assemblages (18-39 pieces), higher up the valley side, approximately 16m above the valley floor. In the absence of records it is assumed that these assemblages are the result of non-systematic surface collection during the 1970s or 1980s. It is assumed that these generally widely spaced, small assemblages do genuinely reflect a much lower degree of prehistoric activity than on the valley floor. The blank areas higher up the interfluve, and at the northern end of the zone, probably reflect an absence of archaeological investigation in an area peripheral to the core of the Ugnow collection, rather than a complete lack of prehistoric activity. The lithic assemblages from the Zone 5 contain only two diagnostic artefacts (single examples of Early Bronze Age thumbnail scrapers from R7 and S5). The majority of the material from each of these assemblages is flake-based suggesting very low intensity occupation of Neolithic or Early Bronze Age date. Much smaller quantities of blade-based material indicate a lesser degree of Mesolithic or Early Neolithic activity. Each of these assemblages contains a small range of retouched/utilised pieces for cutting, scraping and piercing activities (retouched blades/flakes, awls and scrapers). Most of the assemblages are dominated by pieces struck from nodular flint. In keeping with trends seen throughout the study area most of this nodular flint retains little dorsal cortex suggesting that it comes from later in the stone working process, having arrived in a partially modified state. Greensand chert is generally present in much smaller quantities in all of the assemblages, the exception being R8 where it comprises of over 50% of the assemblage. Again in keeping with trends seen throughout the collection the Greensand chert retains more dorsal cortex suggesting that it arrived in a less modified state than the nodular

flint. More of the early and mid-stages, in addition to the later stages of the reduction sequence taking place in situ within these assemblages.

Assemblages from zone 5 indicate a far lower intensity of prehistoric occupation on the Exe/Culm interfluvium than is seen immediately to the west on the valley floor. The composition of these assemblages indicates low intensities of Neolithic and Early Bronze Age activity across this area. Hints of much lower intensities of earlier (Mesolithic or Early Neolithic) activity are also present. For the most part assemblages are dominated by nodular flint from late in the reduction sequence. Greensand chert often from earlier in the reduction sequence is present in much smaller quantities.

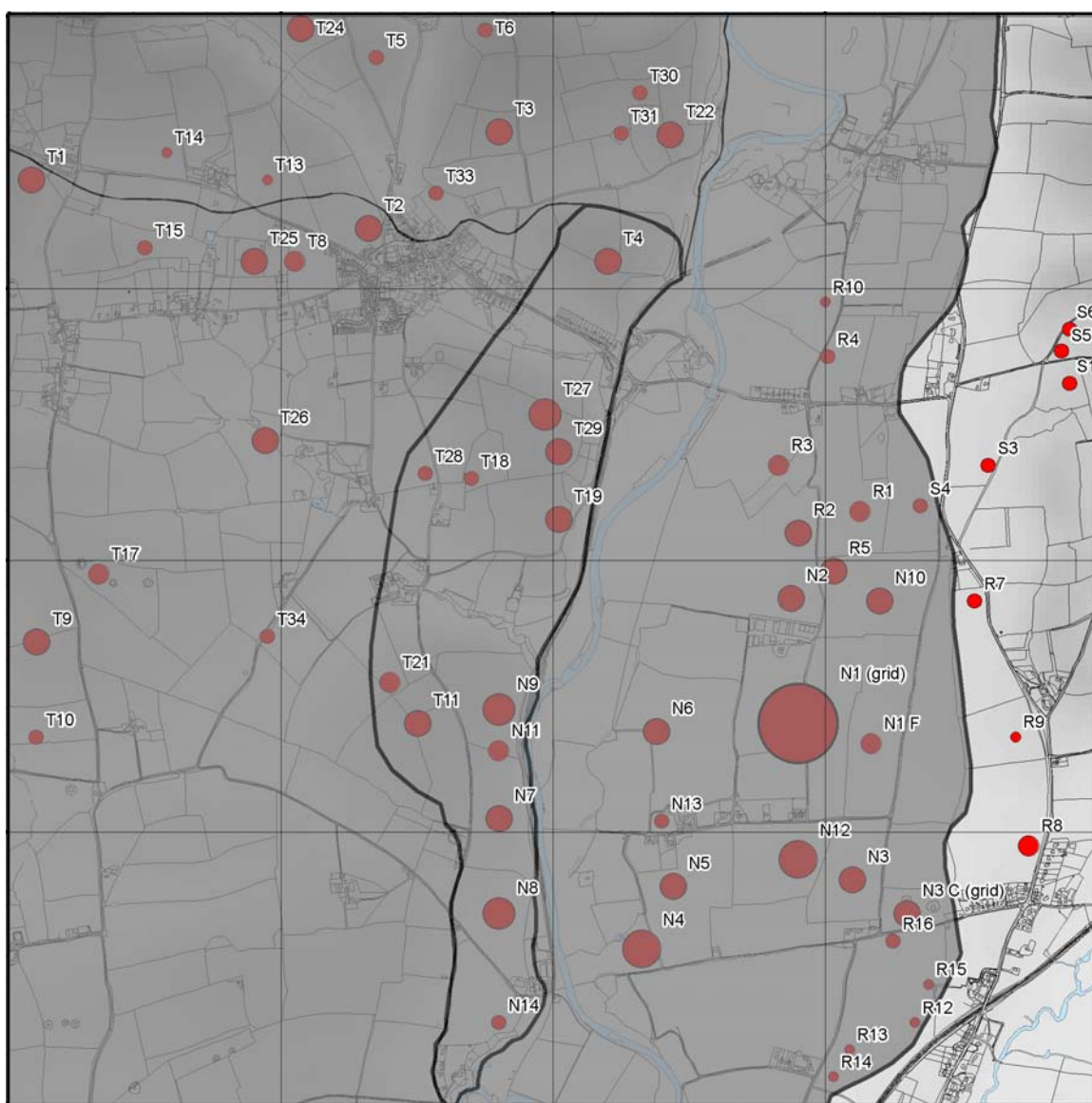


Figure 9.1.9 Zone Five: The Exe/Culm interfluvium

9.1.6 Summary

The results of this zone by zone characterisation of the study area's lithic assemblages are summarised in table 9.1.3.

Zone	Summary of lithic scatters
Zone One: The Raddon Ridge	Low-level Neolithic and Early Bronze Age activity. Hints of more discrete foci of Mesolithic and Early Neolithic activity.
Zone Two: The western hinterland	Predominantly extensive low-level Neolithic and Early Bronze Age occupation. At T25 and T2 more intensive occupation. Hints of a much lower level of Mesolithic and Early Neolithic activity in many assemblages. T26 a discrete focus of later (and possibly earlier) Mesolithic activity.
Zone Three: Over looking the Exe valley	<ul style="list-style-type: none"> • (West) Assemblages similar in size and composition to those in Zone Two. • (East) Largest quantities of lithic finds anywhere in the study area away from the valley floor. Large multi-period lithic scatters. Mostly Neolithic and Early Bronze Age in date but also discrete and substantial areas of Mesolithic activity. Unusually high frequencies of retouched and diagnostic pieces of all periods. Conspicuously high numbers of projectile points from the Mesolithic microliths to the Early Bronze Age.
Zone Four: The valley floor	<p>Largest quantities of lithic artefacts in the study area</p> <ul style="list-style-type: none"> A. Very low level Neolithic and Early Bronze Age activity B. More intensive mostly Neolithic and Early Bronze Age activity with smaller amounts of Mesolithic activity. N12 stands out as a substantial focus of Mesolithic activity. C. Very substantial focus of Mesolithic activity at N1 with continued occupation into the Neolithic and Early Bronze Age. Surrounded by much lower levels of multi-period activity Mesolithic – Early Bronze Age D. Moderate levels of Neolithic and Early Bronze Age activity with a lesser Mesolithic presence E. Low level Neolithic and Early Bronze Age activity with hints of a Mesolithic presence
Zone Five: The Exe/Culm interfluv	Low-level Neolithic and Early Bronze Age activity. Hints of more discrete foci of Mesolithic and Early Neolithic activity.

Table 9.1.3 Summary of lithic scatters by landscape zone

9.2 Landscape setting

This section comprises the results of a phenomenological consideration of the topographic setting of the study area's lithic scatters (summarised in chapter eight and nine), and the monument complexes in Area A and B (outlined in chapter seven). In the context of British landscape archaeology phenomenological approaches have been used in a variety of different locations. These range from upland topographies with dramatic rocky outcrops (for example, Bradley 1998; Cummings and Whittle 2004, chapter 5; Tilley 1994, chapter 3; 2010, chapters 8 and 9), to softer lowland landscapes with more subtle topographies (for example, Tilley 1994; Tilley 2010, chapters 3-6). Such approaches have also attempted to situate a range of different types of archaeological evidence from extant chambered tombs (Cummings and Whittle 2004; Tilley 1994, chapters 3-4), to eroded earthworks and Mesolithic lithic scatters (Tilley 1994, chapter 5). By focussing on the 'unfeatured' remains of surface lithic scatters and ploughed out monuments, in a landscape of 'soft' geologies and subtle topography, conducting a phenomenological study in the current study area is arguably at the difficult end of both spectrums. These difficulties are exacerbated by the multi-period nature of the study which spans millennia of accreted human inhabitation itself taking place within a landscape whose vegetation is undergoing dramatic change, both natural and anthropogenic. The intention here is not to establish a 'landscape logic' behind the location of each lithic scatter. Rather to characterise in general terms the topographic differences evident within the study area, to identify relationships between topography and the distribution and location scatters, and potentially to identify some of the topographic 'raw materials', both inside and outside the study area, through which the prehistoric inhabitants of the lower Exe valley might have created and understood the world around them.

As set out in chapters four and eight the study area is defined by the extent of the core of the John Uglow lithic collection, itself determined by the extent of over 60 years of *ad hoc* surface collection in the fields surrounding his home. It is by no means topographically defined. The 16km² of the study area cuts across a range of landforms.



Figure 9.2.1 Looking north-west across the study area from Stoke Hill (arrow marks Raddon Top)



Figure 9.2.2 Looking south-east across the study area from Raddon Top (arrow marks Stoke Hill)

Shaped by variations in the underlying geology, as well as the erosional and depositional action of the river Exe, the study area is topographically diverse (see figure 9.2.0). Ranging from the steep slopes of the Raddon ridge, the softer undulating surface of the Crediton Trough, to the near flat expanse of the lower Exe basin ringed by hills. This topographic diversity is apparent at a glance from figures 9.2.1 and 9.2.2, photographic panoramas taken from the high ground at Raddon Top to the north-west, and Stoke Hill to the south-east of the study area. The following section is an attempt to describe in general terms the landscape setting of the study area's lithic assemblages. Following the methodology set out in chapter six photographic panoramas and narrative descriptions are used to give a sense of the topographic differences between different parts of the study area.

9.2.1 A phenomenology of the Raddon Ridge (zone one).

The Raddon Hills form a prominent steep-sided ridge lying immediately to the north of the study area. The ridge marks the southern edge of the hard Carboniferous sandstones and shales of the Bude formation (Edwards and Scrivener 1999). Apart from the prominent gap where it is cut through by the Exe valley, the ridge extends across the entire northern edge of the study area and forms the northern skyline for most of the study area. Only the ridge's southern slopes actually lie within the study area. Here the otherwise smooth south-facing slopes are cut through by two, small, steep-sided valleys, tributaries of the Thorverton stream (see figure 9.2.3). Both tributaries drain the hilly landscape to the north-west of the study area and offer routeways through the Raddon Ridge. A third smaller stream, a tributary of the Yellowford stream, rises as a spring at the foot of the Raddon ridge immediately outside the north-west corner of the study area. Zone one contains a series of generally small lithic scatters indicating extensive low level and predominantly Neolithic and Early Bronze Age activity. There are occasional hints of a far lesser degree of Mesolithic activity. Scatters on the Raddon ridge have some of the most extensive views in the entire study area. Whilst views to the north are restricted by the steeply rising ground of the ridge, a wide panorama opens out to the east, south and west (see figure 9.2.4). Moving from east to west the distant horizon is formed by Mutter's moor on the eastern edge of the Blackdown Hills, the south coast visible through the Sidmouth Gap, Woodbury Common, Stoke



Figure 9.2.3. Looking north up the valley of the Thoverton stream towards Raddon Ridge.



Figure 9.2.4 Looking south-east (left) to south (right) from the lower slopes of the Raddon Ridge across the western hinterland.

Hill (in the middle distance between the study area and Exeter), the Haldon Hills, the higher ground at Upton Pyne (again in the middle distance), Whitestone ridge, and in the far distance the eastern and northern fringes of Dartmoor. Western parts of the zone have views across much of the study area with the exception of the valley floor, which is hidden behind the low rise of the hills on its western edge (zone three). It is only towards the eastern end of the zone, in particular at scatter T22, that substantial areas of the valley floor become visible. Views south across the study area from the base of the Raddon Ridge (for example, scatters T14, T14, T3 and T31), are restricted by a slight ridge at the northern edge of zone two.

9.2.2 A phenomenology of the Western Hinterland (zone two)

The Western Hinterland comprises the western and south-western parts of the study area. Underlain by softer Permian bedrock of the Crediton Trough, this area consists of a series of low hills and ridges separated by shallow-sided valleys draining east into the Exe via the Thorverton and Yellowford streams, and south-west into the Creedy via the Jackmoor stream. In their upper reaches these stream valleys are generally shallow, but the valleys of the Thorverton and Yellowford streams become deeper cut as they approach the Exe (see figures 9.2.5 and 9.2.6). Due to the shallow topography in this area views are generally over short to medium distances. Over much of this area distanced views are cut out by the Raddon ridge to the north, the hilltops on the western bank of the Exe to the east and Stoke Hill and Upton Pyne Hill to the south and south-west. To the south-west and west in the catchment of the Jackmoor stream there are longer views across the Crediton Trough towards the Whitestone Ridge, the northern edge of Dartmoor and into mid Devon (see figures 9.2.7 and 9.2.8).



Figure 9.2.5 Looking south from T26 across the valley of the Yellowford stream



Figure 9.2.6 Looking east from T34 along the valley of the Yellowford stream (centre). The shallow-sided valley steepens as it cuts through the higher ground overlooking the Exe (to the left and right).



Figure 9.2.7 Looking south-west (left) to north-west (right) across the western hinterland and the Crediton Trough continuing beyond it



Figure 9.2.8 Looking south-west (left) to north-west (right) along the ridge top south of Stevenstone Barton (site of three ploughed out round barrows) in the south-west corner of the study area.

Zone two contains a series of small lithic scatters which have produced material of predominantly Neolithic or Early Bronze Age date. At some scatters such as T26 there are lesser quantities of Mesolithic material. As set out in section 7.2 the distribution of lithic scatters in the Western Hinterland is uneven, and in places sparse or entirely absent. A series of scatters cluster along the northern edge of the area (T1, T15, T25, T8 and T2). The scatters which make up T1 cluster around the tributary of the Yellowford stream and have relatively restricted views confined to its low valley to the east and the Raddon Ridge rising to the north. The scatters making up T15 are strung along the crest of the low ridge that marks the northern limit of the Permian deposits, to the north and north-west they overlook the T1 scatters and up towards the Raddon ridge. To the south they look into the central area of the western hinterland and the catchment of the Yellowford stream. Scatters T25 and T8 occupy shallow south facing slopes overlooking the Yellowford Stream. Scatter T2 overlooks a step drop to the north-east to the Thorverton stream.

Scatter T26 is on a south-facing slope overlooking the Yellowford stream. The shallow slopes of the valley sides keep views limited to valley itself. The exception is to the north and north-east, where there are slightly more distanced

views to the Raddon Hills. The similarly isolated scatter at T34 is limited to more restricted views within the centre of the Western Hinterland.

A third group of lithic scatters comes from the western edge of the study area. The scatters making up T17 are down slope from a group of ridge top barrows on an east facing slope overlooking the Yellowford Stream, extensive views to the east, including the Exe valley are blocked by the hilltops immediately to the west of the Exe. On the opposite side of the same low ridge the scatters that make up T9 and T10 face south-west towards a tributary of the Jackmoor stream. Views here are again almost entirely limited to the Western Hinterland, with glimpse of more distant hills to the south and west.

The Uglow collection contains no lithic scatters from the area to the south and west of T17, T9 and T10. This is probably due to a lack of surface collection rather than a complete lack of prehistoric activity. There are a number of extant round barrows in this part of the study area, forming the core of what Fox (1969) terms the 'Upton Pyne cemetery'.

9.2.3 The phenomenology of zone three 'Overlooking the lower Exe valley'

The third zone consists of a series of three low hills separating the Western Hinterland from the floor of the lower Exe Valley. Underlain by Permian bedrock the relatively flat tops of these hills are capped with isolated remnants of the early gravel terraces of the Exe (Bennett *et al.* 2011 71-4; Brown *et al.* 2009). To the west the hills slope shallowly down towards the Western Hinterland. To the east a river cliff forms an abrupt drop to the river Exe. The hilltops are separated by the steep-sided valleys of the Yellowford and Thorverton streams, (see figure 9.2.9). A further smaller valley, the Overland valley, separates the northern most hill from the Raddon ridge to the north (9.2.10).

The majority of the material from these scatters is Neolithic and Early Bronze Age in date. However, there is a substantial Mesolithic component at several scatters (for example N7, N8 and T11). As is set out in chapter eight, topographic location may account for an apparent difference in the composition of scatters on these hilltops. Those scatters on the eastern side and top of the hills (that is those that actually overlook the Exe valley), are larger, display high levels of retouch pieces and contain significant quantities of projectile points (for

example assemblages N7, N8, N9, N11, T19, T27 and T29). In contrast, those assemblages from the western side of the hilltops (for example, T11 and T21) are smaller and less remarkable and more closely resemble those found in zone two.



Figure 9.2.9 Looking north-west (left) to north (right) across Thorverton valley from T27



Figure 9.2.10 Looking south (left) to south-west (right) towards zone three across the Overland valley. Note the flat profile of the hill capped with early terrace deposits. T4 is on the horizon immediately to the right of the woods.

The eastern side, and to a lesser extent the tops, of these hills have some of the most extensive eastward views in the study area. As is shown by figure 9.2.11 distant views to the north are truncated by the rising ground of the Raddon Ridge. From the north-east around to the south-east the horizon opens out to views of the south-western fringe of the Blackdown Hills from Hembury around to Mutters Moor, followed by the south coast at the Sidford Gap and round to Woodbury Common. From the south-east round to the south-west distant views are restricted by the high ground at Stoke Hill and Upton Pyne, however, with occasional glimpses of the Haldon and Whitestone ridges further to the south. More locally the same areas of zone three have the potential to have had extensive views across the valley floor, the Exe/Culm interfluve, with



Figure 9.2.11 180° panorama looking east from N9 towards the Exe Gap in the near distance, the Blackdown Hills from Hembury to Mutter's Moor on the distant horizon, Killerton Hill in the foreground, the Sidmouth Gap on the distant horizon and Woodbury Common as the distant horizon fades out.

Killerton Hill (immediately to the east of the interfluvium), becoming a prominent skylined feature in the middle distance. Views from the western side of the hilltops are very different (see figure 9.2.12). To the east and south views are truncated by the hilltops themselves. To the south-west and west the views open out towards the Whitestone ridge, and in the far distance the north-eastern edge of Dartmoor. The views to the west are generally over much shorter distances across the Western Hinterland and further across the low hills of the Crediton Trough beyond it. To the north-west and north the horizon is framed by the Raddon ridge.



Figure 9.2.12 Looking west across towards the Western Hinterland

Although much of the eastern side of these hilltops is physically close to the Exe, the cliff effectively hides the river itself. It is only at the top of this abrupt drop that the river becomes visible (see figure 9.2.14). It is unclear the extent to which the river cliff would restrict access to the valley floor during prehistory. Today it is far from uniform in character. In places the drop of between 15m and 25m is a steep but accessible slope (for example at Fortescue farm see figure 9.2.13), in others, particularly where the course of the Exe runs directly underneath the edge, it is a near vertical cliff (such as below N7, N8, N9). Trying to relate the present day topography of the river cliff to that at any stage during prehistory is complicated by several factors. The active area of the river Exe is restricted to a narrow band on the western side of the valley floor often close to, if not directly underneath, the river cliff. As a result Holocene fluvial erosion and deposition is likely to have altered the nature of the base of the slope. Human activity has also shaped the river cliff. The construction of the farm, its access and informal quarrying have all slighted the cliff at Fortescue. The construction of the Exe Valley Railway (now abandoned), along the base of the cliff has further altered its profile.



Figure 9.2.13 The river cliff at Fortescue from the valley floor



Figure 9.2.14 looking down the river cliff to the river (hidden by trees in the foreground) and across the valley floor)

9.2.4 The phenomenology of the valley floor (zone four)

The Exe valley runs from north to south through the centre of the study area. Although topographically very different to the rest of the study area, the valley floor is underlain by the same solid geology. The shape of the valley is formed by the change from Carboniferous bedrock to the north, to Permian geology to the south (Bennett *et al.* 2011, 67; Brown *et al.* 2009, 277-8; Fyfe 2000, 49). The harder rocks underlying the Raddon ridge constrain the course of the Exe into a narrow steep-sided valley. However, as the river flows south across the softer geology of the Crediton trough, the valley opens out into a wider basin. Between the confluences of the Exe with the Culm and the Creedy, and beyond beyond the limits of the study area, a further band of hard Carboniferous geology forms the southern end of the basin. Here the Exe is again constrained



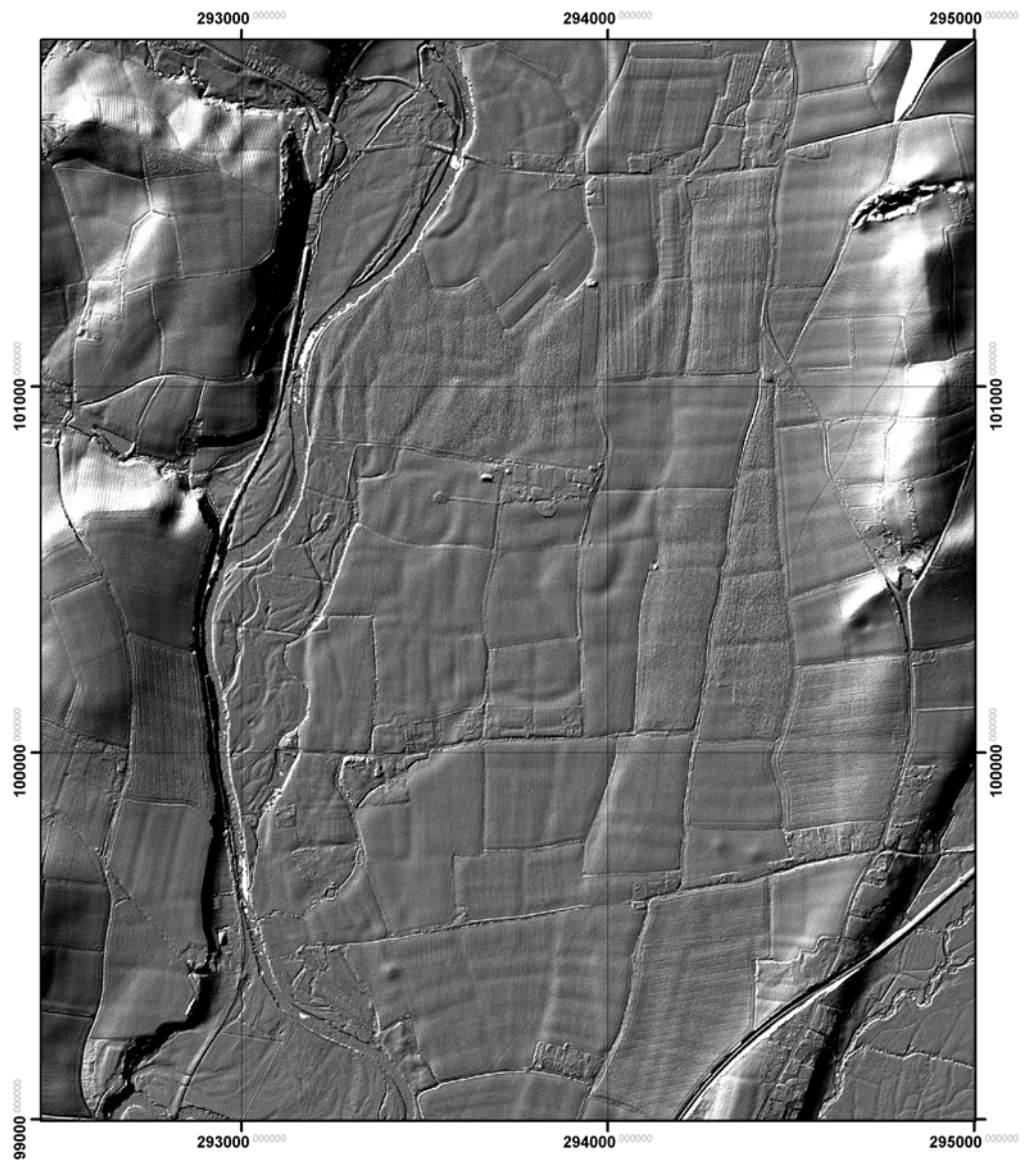
Detail of valley floor. Vertical aerial photograph showing cropmarks of palaeochannels and terrace edges c.1999. (Extract from Millenium Map™, © Getmapping PLC).



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Figure 9.2.15 Vertical aerial photograph of valley floor



Detail of valley floor. Hill-shade model based on bare-earth LIDAR plot showing micro-relief indicating palaeochannels, terraces and removed hedgelines. (Derived from LIDAR data © Environment Agency/Geomatics Group 2008).



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Figure 9.2.16 LIDAR hill shade model of valley floor

into a narrow, steep-sided valley as it passes between Stoke Hill and Upton Pyne.

Whilst solid geology forms the broad shape of the valley, more recent deposits create the detailed topography of the valley floor. Topographically the valley floor stands apart from the rest of the study area. When compared with the landscape on either side of the valley, and even on modern mapping, it appears almost totally flat. However, observations made whilst conducting fieldwork show that this is not the case, and that the valley floor is covered with a series of low topographic features that have been broken up by historic and present day field boundaries, and spread by cultivation. Whilst difficult to comprehend at ground level, remote sensing (see figures 9.2.15 and 9.2.16) of the central area of the valley floor makes more sense of these features. A stepped sequence of gravel terraces, cut across by several relic river channels as well as the modern river, emerges from beneath the Medieval, Post-Medieval and Modern field systems.

Terraces two and three cover most of the valley floor. According to Fyfe (2000, 83) both terraces were laid down in the late glacial period (between c14,000 and 10,000 C¹⁴ BP). Only a small area of terrace one survives to the east of Nether Exe hamlet. Fyfe (2000, 84) suggests that the combined area of terrace one with the currently active flood plain - which forms a relatively narrow band tightly constricted against western edge of the valley - constitutes the active zone of the river Exe during the Holocene (post 10,000 BP or the beginning of the Mesolithic). It is only in this narrow swathe of the valley floor that extensive topographic evidence of palaeochannels survives (see figure 9.2.17).

The Exe follows a relatively straight course through most of the study area, running close to, if not actually cutting into, the base of the river cliff on the western edge of the valley. The course of the river in this area is unlikely to have changed significantly during the Holocene (Fyfe 2000, 84). This straight stretch of river is bracketed at either end by large meanders at Up Exe to the north and Fortesque to the south (see figure 9.2.18). Here the river loops eastward across the valley floor. Unlike the straight stretch of river whose course is effectively constrained by the first and second terraces on its immediate eastern edge, the shape of these meanders is much more likely to have altered considerably though out the Holocene. Recent research indicates

significant changes in the course of the river during the historic period at both meanders (Bennett *et al.* 2011, 69-71; Fyfe 2000, 84-6).



Figure 9.2.17 Looking west across palaeochannels on terrace one from the area of scatter N6



Figure 9.2.18 Looking west across the river and the Fortescue meander

Despite its instrumental role in creating and shaping the basin the river itself is not a conspicuous feature on much of the valley floor. Unsurprisingly almost all of the lithic assemblages on the valley floor come from its central and eastern areas, the surfaces of the second and third terraces. Only one of the scatters in the collection (N4V) comes from the eastern edge of the first terrace. The lack of surface lithic finds on the active flood plain and terrace one is due to a range of possible factors:

- Alluvial deposits covering any lithic scatters
- Fluvial erosion removing any lithic scatters
- Differential patterns of land use. Flood prone lower lying areas remain under permanent pasture (i.e. they are never ploughed and never reveal scatters)
- Intensive occupation of flood prone, low-lying areas was avoided during prehistory (i.e. intensive occupation was limited and lithic artefacts were discarded/lost in insufficient quantities to be detectable as surface scatters).

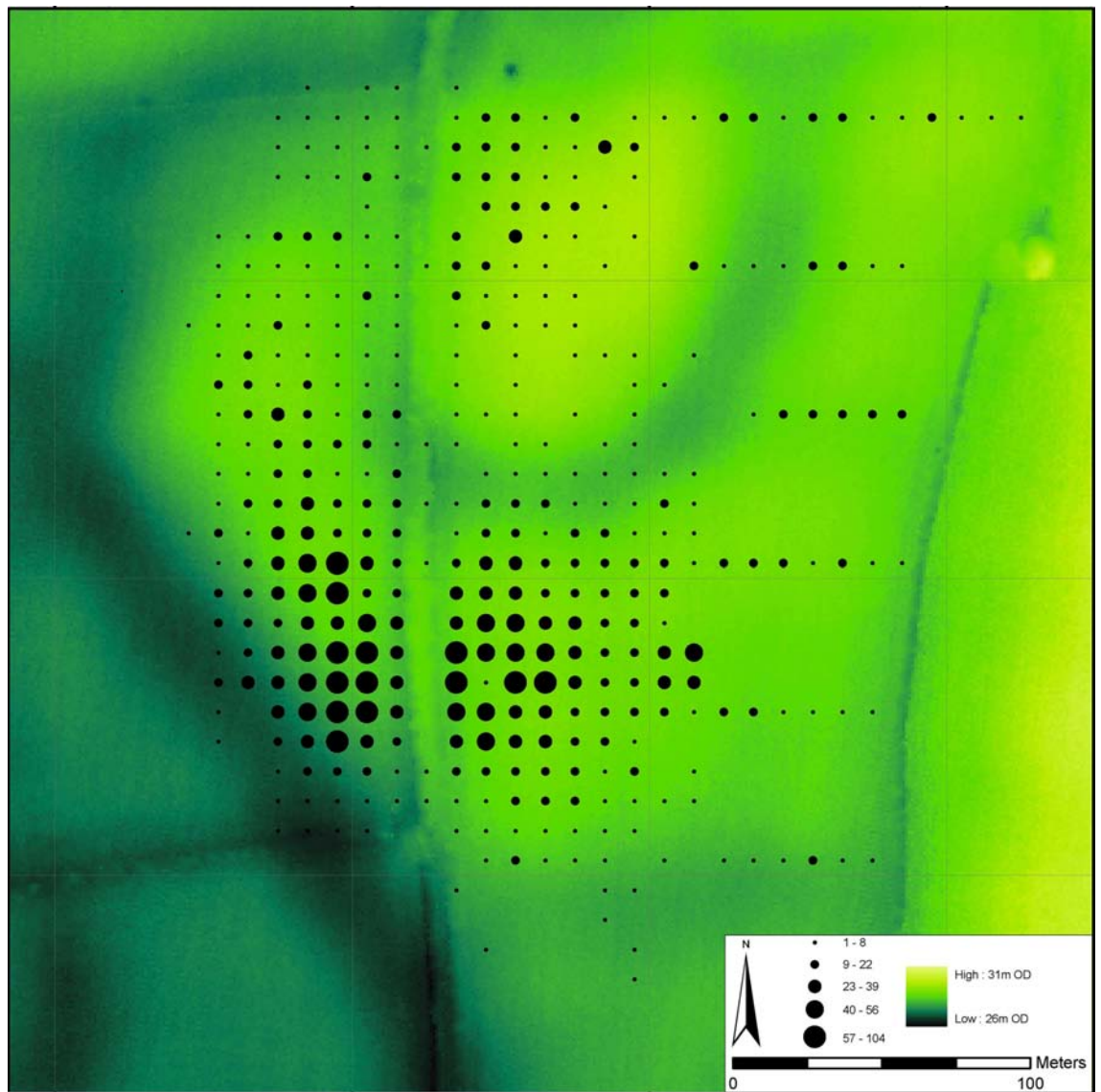


Figure 9.2.19 Distribution of all lithic finds from scatter N1 superimposed upon over bare earth LIDAR (yellow highest – dark green lowest). The distribution of lithic finds corresponds closely to the limits of the raised areas (derived from LIDAR data © Environment Agency/Geomatics Group 2008)



Figure 9.2.20 Distribution of all lithic finds from scatter N1 superimposed upon vertical aerial photograph showing cropmarks of palaeochannels on the second terrace (Extract from Millennium MapTM, © Getmapping PLC).

There appears to be little relationship between micro-topography and the location of lithic assemblages on the second and third terraces. One of the few exceptions is the large multi-period scatter systematically collected by Silvester *et al.* (1987) at N1. The authors describe the scatter as being located one of “*several low platforms, presumably of natural origin, rising above the general surface level*” (Silvester *et al.* 1987,1). A comparison of the extent of the N1 with other data sources shows that the western and northern edges of the scatter correspond closely with a raised area of ground (shown on the LIDAR survey) and the arc of a relic palaeochannel (shown on the LIDAR survey and vertical aerial photographs) (see figures 9.2.19 and 9.2.20). This indicates that a scatter whose occupation spans the Mesolithic through until at least the Early Bronze Age was carefully positioned in relation to local topography. A detailed consideration of the relationship between two areas of archaeological cropmarks and the topography of the valley floor is made below (see section discussion of areas A and B below).

In very general terms the valley floor is a large flat basin ringed with hills (see figure 9.2.21). Standing in the centre of the basin the skyline from the north-west round to the north-east is framed by the Raddon Ridge. Directly to the north the gap through the ridge made by the river Exe is omnipresent on the valley floor (see figures 9.2.22, 9.2.23 and 9.2.24). This feature is most dramatic when viewed from on the valley floor and is lost in more oblique views from the valley sides. The low ridge of the interfluvium forms the horizon of much of the eastern side of the basin. Views to the south-east and south, across the basin, are framed in the middle distance by the rising ground of Stoke Hill and Upton Pyne. The gap between the two hills allows a longer distance view to Tower Hill on Haldon Ridge (figure 9.2.25). Moving around to the south-west and west the horizon is formed by the higher ground at Upton Pyne, Brampford Speke and Whitestone ridge, and the low hills overlooking the western side of the valley. Although generally ringed by higher ground on the edges of the basin in the near and middle distance, views change subtly as you walk north to south across the valley floor. Glimpses of more distant features, as far away as Dartmoor, become possible through the breaks in the river cliff made by the Overland, Thorverton and Yellowford streams (see figure 9.2.26 and 9.2.27).



Figure 9.2.21 360° panorama from the valley floor in the area of scatter N10



Figure 9.2.22 Looking north from Thorverton Bridge across the valley floor to the Exe gap in the Raddon Ridge.



Figure 9.2.23 Looking north across the surface of terrace three towards the Exe gap in the Raddon Ridge. Fieldwalking at N1F1 in the foreground.



Figure 9.2.24 Looking north from the southern edge of the study area across the valley floor to the Exe gap in the Raddon Ridge.



Figure 9.2.25 Looking south across the valley floor with Tower Hill on Haldon Ridge in the distance (centre) Stoke Hill (left) and Upton Pyne Hill (right).



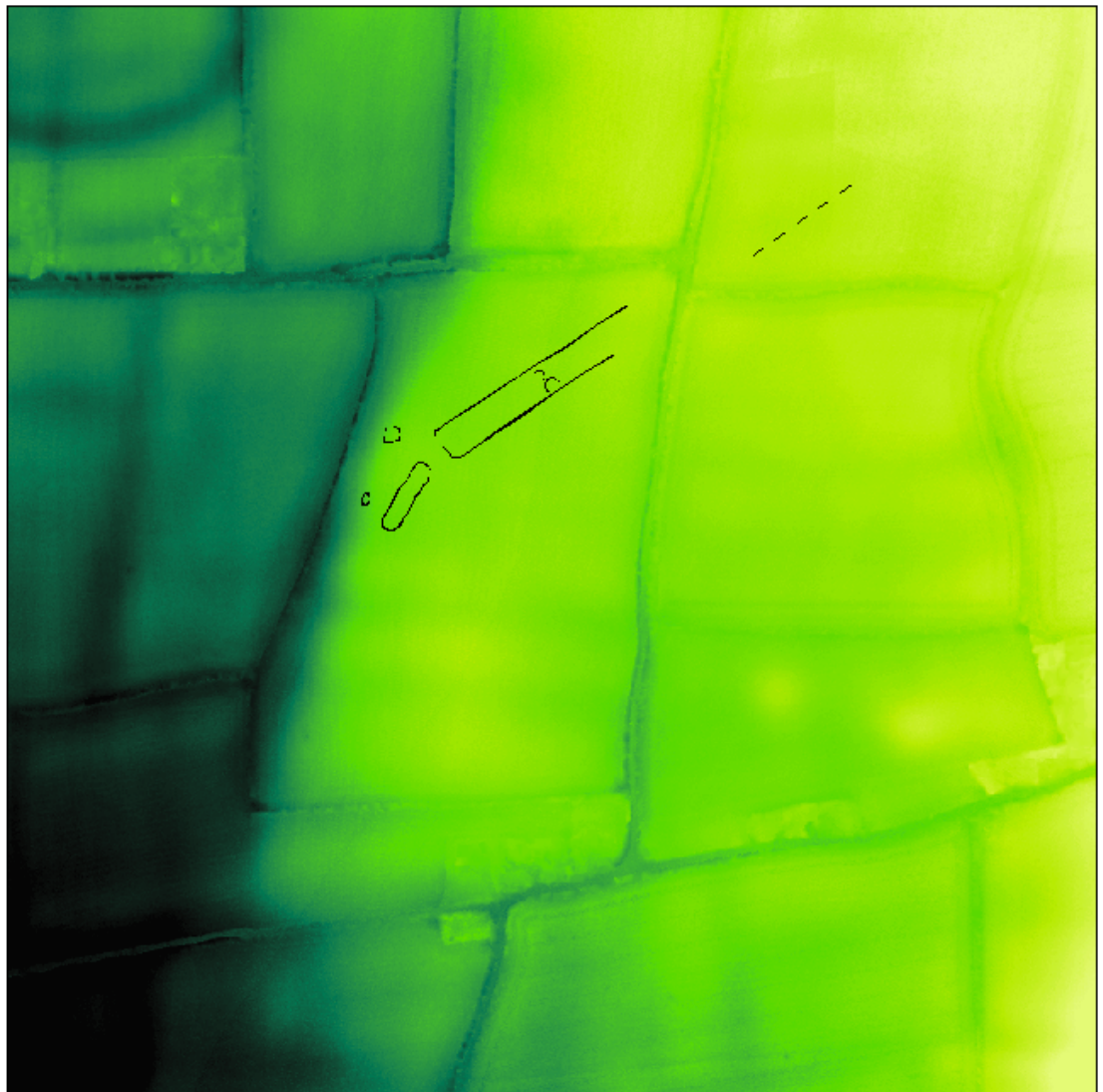
Figure 9.2.26 Looking west across the valley floor towards the Overland valley which separates zone three (to the south), from zone one (to the north).



Figure 9.2.27 Looking west across the Exe towards the Yellowford valley

Area A: the cursus and related monuments

Area A covers parts of the second and third terraces in the south central area of the valley floor. The break between terraces two and three is the only topographic feature in the otherwise open landscape of area A (see figure 9.2.28). Today it consists of a rounded bank, about one and a half metres high, separating the two terrace surfaces. It is likely that its profile has been softened by millennia of natural and agricultural erosion, and in prehistory its profile would have been sharper. Several of the monuments in area A, in particular the oblong ditched enclosure which runs parallel to the bank top, appear to have been deliberately positioned in relation to this subtle break in the landscape.



Nether Exe Area A



0 200 Meters



Bare-earth Lidar plot showing micro-relief including removed field boundaries, terrace edges and extant round barrows A14 and A15. (Derived from LIDAR data © Environment Agency/Geomatics Group 2008)

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Figure 9.2.28 Bare-earth LIDAR terrain model of area A showing terrace 3 (yellow/green) and terrace 2 (green/black)

When viewed from the lower ground to the west the height of any above ground elements to this monument (such as banks, mounds or timber settings) would have been accentuated by its slightly elevated position.

Considered in isolation there is little in the present day landscape that explains the orientation of the principle axis of the cursus. Standing at the point where traces of the cursus begin to fade out, and looking south-west along the axis of the monument, the view is across the flat expanse of the terraces three and two towards the Fortescue meander and the western edge of the basin. The distant horizon is formed by the edge of Upton Pyne hill and the Whitestone Ridge several kilometres distant behind it (see figure 9.2.29). Turning through 180 degrees and looking north-east along the projected line of the cursus, the view is across the level ground of terrace three and up a gradually steepening slope towards a slight spur projecting west into the valley floor from the interfluvium (see figure 9.2.29). The orientation of the cursus makes most sense not in relation to its surrounding topography, but in relation to the oblong ditched enclosure which probably predates it. Effectively the cursus being a monumentalised pathway leading across the third terrace, possibly even from the edge of the interfluvium and ending at the oblong ditched enclosure.

Area B: the large enclosure and related monuments

Although superficially flat, the valley floor in area B is broken up by a series of micro-topographic features formed by the terrace edges and palaeochannels (see figure 9.2.31). A pronounced step of approximately 1.5m marks the junction between the second and third terraces, which runs north to south across the eastern side of area B. The surface of terrace three is relatively flat, whereas the surface of terrace two is more varied. Terrace two is cut by the meandering course of a palaeochannel of unknown date (the northern continuation of the same channel discussed in relation to scatter N1 below), breaking the terrace surface up into a series of raised platforms surrounded by areas of slightly lower lying ground. The western edge of area B broadly coincides with a break of slope in the second terrace. Moving further west beyond this break, the surface of the terrace begins to slope towards the river.

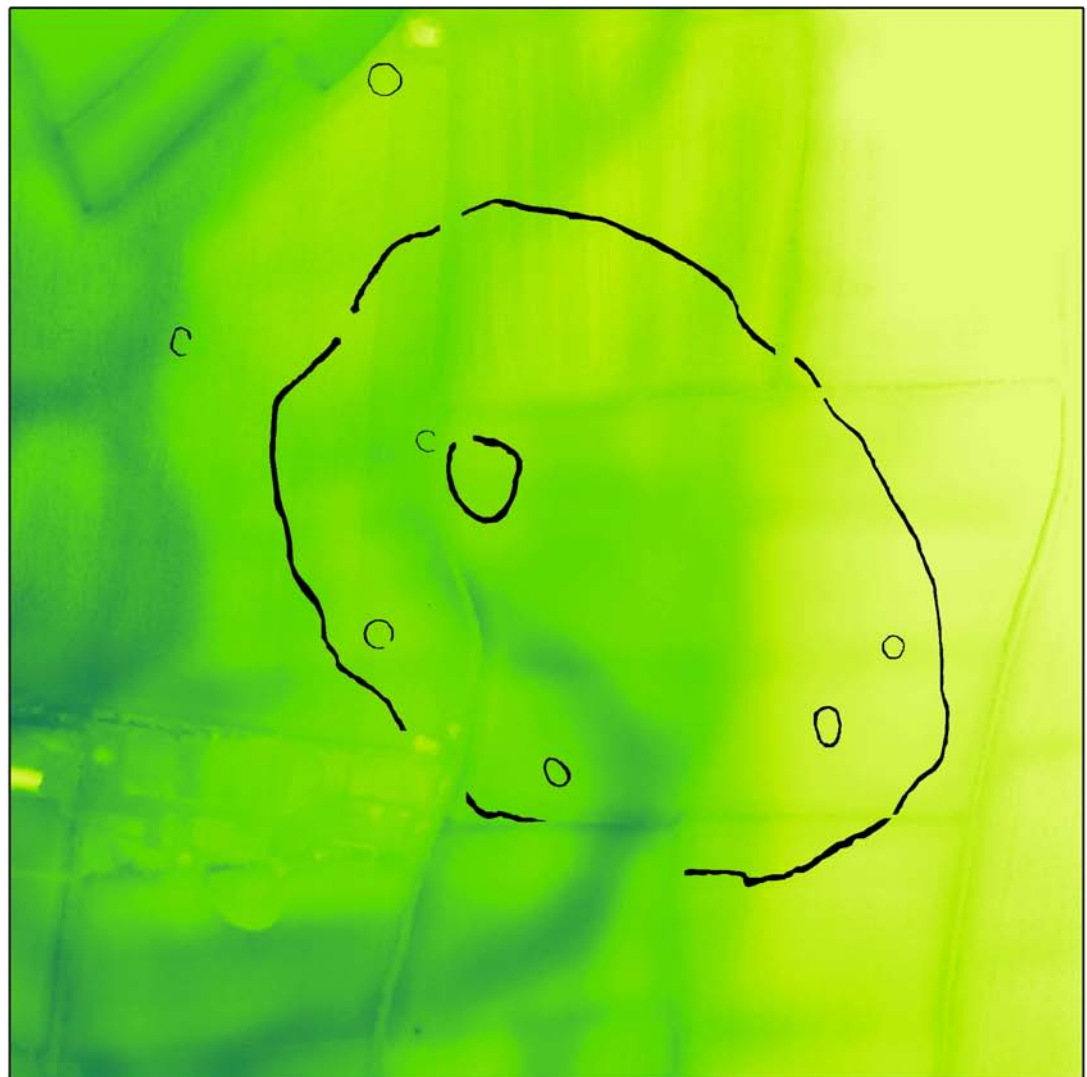


Figure 9.2.29 Looking SW along the line of the cursus (arrow marks approximate axis of cursus).



Figure 9.2.30 Looking NE along the line of the cursus (arrow marks approximate axis of cursus).

For the most part the location of the large enclosure (B1) is terrain oblivious. It spans the second and third terraces, ignoring many of the subtleties of the topography described above. The line of the enclosure ditch crosses both the break in the terraces and the slighter undulations of the palaeochannel. However, the western and north-western edges of the enclosure, including the entrance, appear to be more carefully located. Although slightly set back from its edge, this part of the enclosure follows the curve of the western break in slope. When viewed from the lower ground to the west, and from the river, this part of the enclosure is accentuated by its position on slightly elevated ground (see figure 9.2.32). Enclosure B1 would have been a prominent feature on the valley floor. It is of sufficient size to have restricted north-south access across the second and third terraces.



Nether Exe Area B



0 200 Meters



LIDAR terrain model overlain by transcribed prehistoric features from gradiometer survey (Derived from LIDAR data © Environment Agency/Geomatics Group 2008)

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Figure 9.2.31 LIDAR terrain model showing terrace three (white to yellow) and terrace two (light to dark green) and the palaeochannels (dark green).

Possible oval barrow B5 and ring-ditch B6 are also located on the very edge of the break of slope. The other prehistoric features outlined above (enclosure B2, oval barrows B3 and B4, and ring-ditches B5, B8, B9 and B10), are all situated on the raised areas of terrace two, or on the western edge of terrace three.

Area B lies at a point on the valley floor where views are almost entirely restricted to the basin itself and the hills that surround it. To the north the view is framed by the Raddon ridge, with the river Exe gap being a dominant feature on the skyline (see figure 9.2.35). Immediately to the east the land begins to slope up to the interfluvium, which is at its highest at this point, and forms a relatively close horizon (see figure 9.2.32). Views from the south-east round to the south-west are across the length of the basin in the foreground, with the horizon formed by the high ground of Stoke Hill and Upton Pyne. It is only directly south, in the gap made by the Exe between Stoke Hill and Upton Pyne, that an area of the Haldon Ridge is visible in the distance. Further to the west areas of Whitestone ridge are occasionally visible above the edge of the basin. The view to the west and north-west, including the view out of enclosure's entrance, is across the terraces towards the river (see figure 9.2.33). The horizon, in the middle distance, is formed by the hills rising abruptly on the western bank of the Exe. The hills are only broken by the gap made by the Yellowford valley through which Cosden Hill on the northern edge of Dartmoor can be glimpsed.

9.2.5 A phenomenology of zone Five: The Exe/Culm interfluvium

This low ridge separating the flood plains of the Exe and Culm forms the eastern edge of the study area. Geologically it echoes the west bank of the river. The higher steeper ground at its northern end is underlain by harder Carboniferous rocks, whilst softer Permian rocks underlie the lower ground of the interfluvial ridge to the south. The low ground at the junction of the Carboniferous and Permian geologies rises into a low hilltop capped with remnants of earlier terrace deposits (terrace 4), before running out into a low ridge towards the confluence of the two rivers. In contrast to the abrupt drop on the western bank of the Exe, access from hilltop to valley floor is much easier on the eastern side of the basin. Rather than a river cliff punctuated only by steep-sided valleys, more gradual slopes grade from ridge top to valley floor.

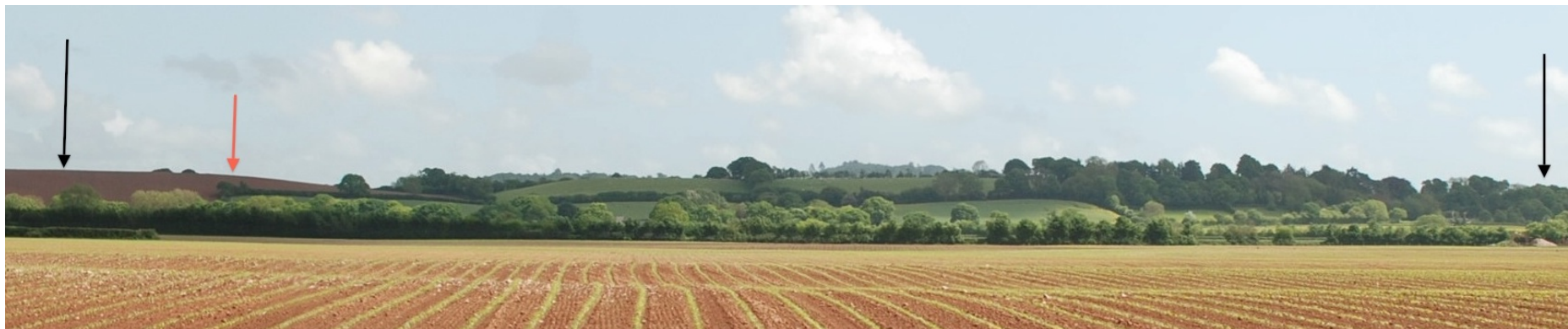


Figure 9.2.32 Looking east from the river towards enclosure B1. The enclosure lies on the low rise immediately in front of the hedge line. The black arrows indicate the approximate extent of the western edge of the enclosure. The red arrow indicates the approximate location of the enclosure entrance. The Exe/Culm interfluve (zone 5) forms the horizon.



Figure 9.2.33 Looking west from the entrance to enclosure B1 towards the river. The break in the horizon on the centre left is the valley of the Yellowford stream. The eastern end of the Raddon ridge emerges on the right side of the photo from behind the higher ground west of the Exe (zone 3).



Figure 9.2.34 Looking south-west (left) to north (right) across the valley floor from trench one, with the Raddon Ridge hidden by clouds.



Figure 9.2.35 Looking north from oval barrow B4 towards the Exe gap in the Raddon Ridge



Figure 9.2.36 180° panorama from R9 on the western edge of the interfluve (zone 5) looking west over the valley floor (zone 4) and the hills on its western edge (zone 5). Cosden Hill on the northern edge of Dartmoor is the distant horizon on the join between the two halves of the image.



Figure 9.2.37 Looking east across the valley floor towards the tail of the interfluvium just visible above the hedge line with Killerton Hill in the distance.

Scatters in this part of the study area cluster into two groups all on the west facing flank of the southern part of the ridge overlooking the Exe valley. The first group (assemblages S1, S5 and S6) is located at the head of a slight west facing combe. Views to the north and east are restricted by the rising ground of the ridge. To the south, west and north-west are more extensive views across the lower Exe basin and beyond. Rather than the wide-ranging views possible from the land overlooking the western side of the valley, distanced views are more limited. To the south and south-west views occasional glimpses of the Haldon and Whitestone ridges are possible in the gaps between Stoke Hill and Upton Pyne. The western skyline is framed by the hilltops on the western side of the Exe, hiding the hinterland beyond. Distanced views only open out to the north-west along the line of the Raddon Hills (see figure 9.2.36).

The second group of scatters is spread out along the lower slopes of the ridge (assemblages S3, R7, R9 and R8). Again all face west across the floor of the Exe valley, with the higher ground to the east preventing any distant views. The only exception to this comes as the height of the ridge drops to the south, in the area of R8, where the top of Killerton Hill becomes visible (see figure 9.2.37). Like those on the valley floor the views from these lower lying scatters is effectively restricted by the hills that ring the basin.

9.2.6 Summary

The results of this zone-by-zone analysis of the study area's topography is summarised in table 9.2.1

Zone	Summary
1. The Raddon Ridge	Smooth south facing slopes incised by steep-sided valleys. Views to the north-west to north-east precluded by rising ground of the Raddon Ridge, much more open aspects with distant views to in all other directions.
2. The Western Hinterland	Low ridges and hills cut by shallow-sided valleys. Views generally localised with occasional glimpses of distant horizons to the south and west.
3. Over looking the Exe valley	Flat-topped hills cut by steep-sided valleys. Eastern side of the hills have an abrupt drop to the valley floor, overlook the valley floor and have extensive views east and south to distant horizons. Western side of the hills have a gradual slope to the western hinterland, views over the western hinterland with more limited distanced views to the south, and west.
4. The valley floor	Flat river basin ringed by hills. Generally flat with micro-topography caused by river terraces and palaeochannels. Views generally restricted to within the basin with occasional glimpses of more distant horizons. The Exe gap in the Raddon ridge is a dominant feature across much of the valley floor.
5. The Exe/Culm interfluve	Low ridge running south from the Raddon Ridge and separating the valleys of the Exe and Culm. Shallow slope to the valley floor. Extensive views across the valley floor with more distant views to the south and west.

Table 9.2.1 Summary of each of the study areas landscape zones

9.3 Conclusion

Chapter nine examines two different aspects of the study area's landscape; the locations and traditions of inhabitation evidenced by its surface lithic scatters, and the character and variability of its landscape. Although perhaps subtle in comparison to that of other landscapes, the topography of the study area is diverse. It comprises several distinct landforms; some of which are portions of topographies that extend beyond the limits of the study area (zones one and two, and the northern part of zone five); others are topographies closely related to the lower Exe valley, and are thus more unique to the study area (zones three and four, and the southern part of zone five).

This distinction between the Exe valley and its hinterland, is apparent in the traditions of inhabitation and practice evidenced by surface lithic scatters. There is a correlation between proximity to the lower Exe basin, and increased evidence for prehistoric inhabitation. Those areas furthest from the river contain a lesser number of relatively small lithic assemblages (zones one, two, the western side of zone three and zone 5). Where as the floor of the Exe basin, and the higher ground overlooking its immediate western edge, (Zone four and the eastern side of Zone three), contain a greater number of often larger assemblages (see table 9.3.1).

	Zone 1	Zone 2	Zone 3 (east)	Zone 3 (west)	Zone 4	Zone 5
Field level assemblages	10	10	9	4	23	7
Total lithic artefacts	991	1184	3354	514	10306	226
Average lithic artefacts per assemblage	99	118	373	129	448	32

Table 9.3.1 Number and size of field level lithic assemblages by topographic zone

The contrast between ‘valley oriented’ and ‘hinterland oriented’ assemblages is most marked on the hills immediately to the west of the Exe valley (zone three). Assemblages on the eastern ‘valley orientated’ side of the hilltops are large, multi-period, and display unusually high frequencies of retouched tools, particularly projectile points. Assemblages from the western ‘hinterland orientated’ side of the same hilltops are fewer, smaller in size, and more closely resemble those from the zone two, which they overlook.

Although probably accentuated by variations in the intensity of collection, and by the preferential collection and retention of retouched artefacts, it is suggested that the difference between ‘valley orientated’ and ‘hinterland orientated’ occupation is real. It is also suggested that this difference is not only in the intensity of occupation (the size of scatters), but also in its composition (the contents of scatters). Whilst running the risk of homogenising the nature of occupation across very different periods of prehistory, it is apparent that something different is happening on the valley floor, and its immediate western edge, and that this difference occurs from the Mesolithic onwards. On the eastern edge of zone three, overlooking the valley floor, this difference is

apparent in the unusually high proportion of retouched tools, particularly Microliths and Neolithic and Early Bronze Age arrowheads. On the valley floor the dense, tightly defined Mesolithic scatters at N1 and N12 are unparalleled elsewhere in the study area. During the Neolithic and Early Bronze Age inhabitation on the valley floor becomes more extensive, and the terraces become the focus for the construction of series of ceremonial and funerary monuments many of which are unparalleled in the study area. The different, and possibly locally exceptional, nature of activity associated with the Exe valley, stands in contrast to that seen away from the valley. It is suggested that the intensity and composition of occupation in the 'hinterland' orientated areas (zones one, two and five) is more representative of a 'normal' background of activity occurring over a much wider area beyond the study area.

On the valley floor there is some evidence of both lithic scatters and monuments being carefully situated relative to comparatively subtle micro-topographic features caused by palaeochannels and the edges of gravel terraces.

Table 9.3.2 summarises the visibility of topographic features within and beyond the limits of the study area. Beyond the general trend for more and larger lithic scatters to be found on the valley floor and its western edge, it is difficult to make a case for lithic scatters being deliberately located to reference particular landscape features. What a consideration of the study area's landscape does draw attention to is a range of topographies and features that would have formed the back drop to everyday existence in the Exe valley. Features such as the river Exe Gap in the Raddon Ridge, the cliff on the west bank of the Exe, the river Exe itself, the unusually wide, flat expanse of the lower Exe basin, and hills and ridges that surround it would have all been familiar, known places with associated histories, myths and stories providing some of the raw materials for the creation of the life worlds of the prehistoric inhabitants of the study area.

The distant views possible from parts of the study area break down the artificially imposed limits of its boundaries, and make explicit the context of its inhabitation within a much wider world. These long distance views draw in a range of other locations, some over 35km distant, and make them part of the world experienced by the prehistoric inhabitants of the lower Exe valley. Some of these locations would have had particular histories and associations. The

significance of a fraction of these places is recognised today in the archaeological record.

	Zone 1	Zone 2	Zone 3 east	Zone 3 west	Zone 4	Zone 5
Study Area						
Exe Gap	No	No	Limited	No	Yes	No
River Exe	Limited	No	Limited	No	Limited	Limited
River cliff	No	No	Limited	No	Yes	Yes
Middle Distance (<5km)						
Raddon Hill (CWE)	Yes	Yes	No	Yes	Yes	Yes
Killerton	Yes	Limited	Yes	No	Limited	Limited
Stoke Hill	Yes	Yes	Yes	No	Yes	No
Upton Pyne	Yes	Yes	No	Yes	Yes	Yes
Distant (>5km)						
Hembury (CWE)	No	No	Yes	No	No	No
Blackdowns	Yes	Limited	Yes	No	No	No
Sidmouth Gap	Yes	No	Yes	No	No	No
Woodbury	Yes	No	Yes	No	No	No
Haldon Ridge	Yes	No	Yes	No	Limited	Limited
Tower Hill	Yes	Limited	Limited	Limited	Limited	No
Whitestone Ridge	Yes	Yes	No	Yes	Yes	Yes
Dartmoor (Cosden Hill)	Yes	Limited	No	Limited	V limited	Limited

Table 9.3.2 Visibility within and beyond the study area

For example, the Early Neolithic enclosures at Raddon Hill on the northern skyline (Gent and Quinnell 1999a), and at Hembury on the distant eastern horizon (Liddell 1930; 1931; 35); the Early Neolithic ‘house’ and associated occupation at Tower Hill on the Haldon Ridge on the southern horizon (Gent and Quinnell 1999b; Willock 1936; 1937); and the Early Bronze Age round barrows on Woodbury common to the south-west (Tilley 2010). Other of these places are implicated as potential sources of the raw materials used in the study area’s lithic scatters. Greensand chert and nodular flint from the Blackdown Hills, whose western edge from Hembury to Mutter’s Moor forms much of the eastern horizon visible from zone three; pebble flint from the south coast almost visible through the Sidmouth Gap, and at Dawlish at the foot of Haldon ridge; and Greensand chert and pale grey flint from Haldon ridge often visible on the southern horizon.

Chapter Ten: Conclusion

10.1 The project

This thesis set out to examine the inhabitation of the lower Exe valley, between the Mesolithic and the Early Bronze Age through the evidence of a series of surface lithic scatters. Drawing on the work of Ingold (2000) and others on the dwelling perspective it proposed that both the contents of lithic scatters (the stone tools and debitage of which they are composed), and their contexts (the locations in which they are found), form elements of the 'clues and keys' embedded in the landscape, through which prehistoric populations came to be understood and create their worlds.

Whilst the dwelling perspective does not in itself propose a new methodological approach to the study of prehistoric landscapes, it does provide a framework within which phenomenological methodologies can be used alongside the more 'orthodox' methodologies of landscape archaeology. This study has utilised several methodologies in its analysis of the contents and contexts of lithic scatters from a small study area centred on the lower Exe basin. In addition to the analysis of surface lithic assemblages from a museum collection, new fieldwork has been undertaken in order to understand the contexts and locations in which these scatters were found. This fieldwork has utilised several distinct methodologies. These include extensive geophysical survey and the targeted excavation of archaeological cropmarks, and a phenomenological encounter with the study area's topography combined with the use of LIDAR data and vertical aerial photographs.

10.2 The reality of the data set

The combination of surface lithic scatters with a series of unexcavated cropmark monuments does not make for an easy data set to work with. The particular nature of the study area's archaeological resource has impacted both on the types of analyses it was possible to conduct on it, and ultimately the types of question that it has been possible to ask of it. The very variable intensities of surface collection conducted across the study area have necessitated working with its lithic assemblages at a relatively coarse spatial resolution. Although the collection does contain a small number of assemblages collected with a high degree of internal

spatial differentiation these assemblages are in a minority. In order to work with the entire collection on something approaching equal terms sub-field assemblages were aggregated together into field-level assemblages with a consequent impact on the spatial resolution of analysis.

Several other recent analyses of surface lithic assemblages (for example, Bond 2006; Snashall 2002) have used a combination of the chronometric and chronotechnological analysis of lithic debitage to augment the evidence of individually diagnostic artefacts in determining the chronology of prehistoric activity. Due to the lack of a suitable range of independently dated and locally derived 'bench marking' assemblages this type of analysis was not conducted as part of this study. As a result establishing assemblage chronology has relied on a narrow range of diagnostic artefacts and a much coarser chronological assessment of lithic debitage based on the relative quantities of blade-based and flake-based material.

One of the original aims of this project had been to contribute towards a regional prehistory based on the archaeology of the study area and feeding into broader prehistories at sub-regional, regional and national scales. This was to some extent frustrated by having to rely on morphologically similar comparisons from outside, and often at great distance to, the study area with which to date and interpret its lithic artefacts and monuments. In the case of some of the study area's cropmark monuments this has meant a heavy reliance on evidence from excavated monuments from the "*luminous centres*" (Barclay 2009, 3) of prehistoric research in central southern England. No comparisons were identified for large enclosure (B1). Samples derived from the excavation of its enclosing ditch have failed to provide a conclusive date for this monument; however, all indications are that it is prehistoric in date. In the absence of morphologically similar comparisons perhaps here we have to step outside the comfort of 'off the peg' recognised traditions of monument building and accept this as evidence of a regionally specific prehistory.

10.3 Research questions revisited

Four broad and over-lapping questions relating to lithic scatters and inhabitation were posed in chapter one, and were referred to throughout this thesis. The

following section summarises the results of this piece of research and evaluates the extent to which each of these questions has been addressed.

10.3.1 How can lithic scatters be used to understand the character and composition of inhabitation?

At its most basic level the objective of this study has been to identify patterns of variability within the study area's assemblages, to determine how such patterns vary over time and space, and to examine the implications that this has for understanding the character and composition of prehistoric inhabitation. Despite the limitations imposed by the nature of the data set this study has been successful in identifying big picture variation in the character and composition of prehistoric activity across the study area.

The distribution of lithic material is very variable. The highest intensities of occupation occur in areas of the valley floor and the hilltops on its immediate western edge. The southern slopes of the Raddon Ridge produced a lesser quantity of lithic material, and the Exe/Culm interfluve as well as south-west and western edge of the study area even less. The identification of chronologically distinctive lithic artefacts and a characterisation of the collection's debitage have identified occupation in the study area spanning the Mesolithic (potentially the Early Mesolithic) through until at least the Early Bronze Age. This sequence begins in the Mesolithic with a small number of tightly focused foci of activity on the valley floor and its immediate western edge, with much more ephemeral traces of activity present elsewhere. During the Neolithic and Early Bronze Age the intensity of this occupation greatly increases, as does its extent. Against this background an important trend is the apparent continuity of activity in many locations right across this time-span. The implications of this continuity are discussed below in relation to the question on biographies of place (10.3.3).

The evidence of aerial photography, geophysical survey and excavation shows that on the valley floor beginning in the Early Neolithic, and continuing into the Early Bronze Age, the lithic scatter evidence for inhabitation exists alongside evidence for the construction and use of a series of ceremonial and funerary monuments.

This relationship is further discussed below in relation to biographies of place (10.3.3).

Analysis of raw material reduction sequences and the relative proportions of retouched or utilised material indicate that the manufacture and maintenance of stone tools, and their subsequent use in a range of other tasks was widely distributed across the study area. Similarly the incidence of artefact burning is relatively constant amongst the collection's assemblages. In the majority of instances there is little to suggest that specific tasks or activities were concentrated in specific places. However, some anomalous trends hint at a degree of separation and difference.

Several strands of evidence suggest that there may have been a degree of spatial separation in the composition of Mesolithic taskscape. Both the low incidence of artefact utilisation/retouch, and imbalances in the Greensand Chert reduction sequence indicate that whilst the initial stages of the chert working process took place on the valley floor (particularly at scatters N1 and N12), the products of this working were 'consumed' elsewhere in the study area and probably beyond. A second anomaly is the increased incidence of retouched/modified artefacts, in particular projectile points and arrowheads of all periods, on the hilltops overlooking the western edge of the lower Exe basin. A further anomaly is the elevated level of burnt artefacts seen in the general area of the cursus and associated Neolithic and Early Bronze Age monuments in area A.

The study area's lithic assemblages are predominantly comprised of two raw materials, nodular flint and Greensand Chert, with much smaller quantities of pebble flint, Haldon chert/flint and Portland Chert also present. There is some evidence that trends in raw material use changed over time. Nodular flint seems to have been used throughout the entire lithic sequence whilst Greensand Chert appears to have been particularly associated with Mesolithic activity. Portland Chert is particularly associated with late Neolithic artefacts. A range of raw material colours are present amongst the Greensand Chert and nodular flint components of the collection. The majority of artefacts are struck from a relatively narrow range of colours at the mid to dark end of the grey, and to a lesser extent the brown,

spectrum. More exotic colours, including reds, yellows and oranges are present, but in very much smaller quantities. No correlation between specific artefact types and specific raw material colours was observed.

Analysis of reduction sequences shows that raw materials arrived in the study area in differing states of modification. Nodular flint and Greensand chert both arrived in a partially modified state, the flint more so than the chert, with the earliest stages in their reduction having occurred elsewhere. The situation with pebble flint and Haldon chert/flint is different, as it seems to have arrived in an almost unmodified state. Portland chert differs again in that it seems to have arrived in a very modified state either as ready-made cores or finished artefacts. The implications of variations in raw materials and reduction sequence are discussed below in relation to questions about temporality and movement (10.3.2 and 10.3.4).

10.3.2 How can lithic scatters be used to understand the temporality of inhabitation?

Questions about the temporality of occupation are hard to address with the sole evidence of lithic scatters and it is probably the area where this study has had least success. Lithic scatters start life as the cumulative residues of multiple acts of prehistoric inhabitation. However, they end up as a fragment of these palimpsests displaced and mingled together by modern agriculture. Using this evidence to extract information about the individual acts of stone-working that created a lithic scatter, and to understand the tempos of inhabitation that they were once part of, is inevitably a difficult task. Whilst it has been possible to use the evidence of lithic scatters and monument types to establish rough chronologies of activity within the study area, these chronologies remain frustratingly broad, with a resolution measured in millennia and at best in multiple centuries. Such a resolution is a long way from the intervals of days, seasons, years and generations through which social life would have been experienced (cf. Whittle *et al.* 2011)

Edmonds *et al.* (1999) is one of the few studies to attempt to understand the temporality of inhabitation through surface lithic scatters. In this a combination of fine-grained spatial and technological analysis and analysis of the chain-operatoire/reduction sequence is used to imply varying rhythms of occupation

within a series of large scatters from the Cambridgeshire Fen edge (Edmonds *et al.* 1999, 70-71, 74). The spatial and chronological resolution at which the current collection has been dealt with has precluded such an analysis. Whilst it has been possible to determine differing intensities of occupation, it has remained difficult to crack apart lithic assemblages into their more meaningful constituent events. This is particularly true amongst the nodular flint and Greensand Chert material that forms the majority of the collection. In assemblages that are dominated by these raw materials it is difficult to comprehend the potential variability in the scale, composition and frequency of the occupation events that created them (Whittle 1997, 21-2). The question remains as to how variation in the size and distribution of surface assemblages relates to variation in the size of social groups, the duration of occupation, the types of activity engaged in, or the frequencies with which locations were returned to. With the much smaller quantities of Haldon chert/flint and pebble flint the situation is slightly different. In a small number of assemblages it is potentially possible to glimpse more human-scale events with single nodules of pebble flint and Haldon chert/flint seemingly being reduced and worked *in situ*.

10.3.3 How can lithic scatters contribute to an understanding of biographies of place?

This study has been successful in establishing broad chronologies of activity in locales across the study area. At a very general level between the Mesolithic and Early Bronze Age it is possible to see a gradual increase in the extent and intensity of occupation. Within this picture there is a recurring trend suggesting the long-term or repeated use of particular places. Put simply, places with evidence of Mesolithic inhabitation often have evidence for Neolithic and Early Bronze Age inhabitation. Evidence of similarly protracted inhabitation is a common place at other locations in Devon (for example Bayer 1999, 66; Berridge 1984, 5; 1986; Greig and Rankine 1953; Quinnell 1994, 50), and beyond (for example, Barton *et al.* 1995; Bond 2009; Tilley 1994). This occurs at small scales and low intensities throughout the study area. However, it is most apparent amongst the larger scatters on the valley floor and its immediate western flank, and particularly at scatters N1 and N12.

Both scatters N1 and N12 appear to have been the focus of activity spanning millennia, beginning in the Mesolithic and recurring into the Late Neolithic and Early Bronze Age. Here it is at its most obvious that the sustained inhabitation of particular locales would have necessitated and resulted in an engagement with the material traces, the 'clues and keys', of past activity. Past inhabitation, perhaps distanced by years, generations or even millennia, might have been evidenced in a range of different ways. This could have included physical traces such as slight changes in vegetation (Bond 2009, 1; Edmonds 1999, 23-6; Gow 1995, 44); stone tools and debitage lying on the ground surface or exposed by tree throws or animal burrows; as well as the more substantial remains of abandoned dwellings, hearths, pits and middens. In addition to, or maybe even in place of, such physical traces, stories, memories, myths and traditions could have maintained or created the history of a location (Edmonds 1997, 101; Gosden and Lock 1998; Pollard 2005). Beyond the transfer of knowledge via oral tradition several authors have discussed the potential for embodied experience (the repeated performance of certain acts in certain places, such as stoneworking), as a vehicle for the long-term perpetuation and transmission of social memory (cf. Connerton 1989; Jones 2007; Peterson in prep)

Moving beyond the scale of individual scatters, it is evident that the character and composition of inhabitation on the valley floor and its western edge is very different to that of the rest of the study area. The nature of lithic scatters in this area is both quantitatively and qualitatively different to that seen elsewhere. From the Mesolithic onwards certain locals seem to have persisted as prominent foci of inhabitation. Not only is the character of lithic scatters different, but also during the third and fourth millennia BC the valley floor is the only focus of monument building in the study area. It is not until early second millennium BC with the construction of a series of round barrows in the south-western and western parts of the study area, that monument building extends beyond the valley floor. Whilst it is possible that this picture is partially accentuated by differing intensities of surface collection and the propensity of the valley floor to produce archaeological cropmarks, it is

suggested that this apparent focus of activity on the valley floor is to a great extent real.

This asks the question why should the lower Exe basin be the focus for such activity? There are a number of possible answers, all potentially interlinked and not mutually exclusive. From a functional perspective Brown (1997, 141) discusses the ecologically advantageous nature of valley bottom locations due to their proximity to water, abundant wild resources and fertile soils. He also suggests that woodland growing on the light soils of the river terraces would have been particularly prone to wind damage resulting in a fragmented tree cover interspersed with natural clearings (Brown 1997, 141). Such natural clearings are potentially apparent in the lower Chitterley pollen sequence (Fyfe *et al.* 2003, 174-177), and may have provided the contexts for “*persistent places*” (Barton *et al.* 1995), during the Mesolithic, such as at N1 and N12, and subsequent Early-Mid Neolithic clearance, cultivation and monument building (Fyfe *et al.* 2003, 174-177).

The physicality of river valleys also offers natural paths of movement through a landscape (Clark 2005), especially the heavily wooded landscapes of Mesolithic and Neolithic Devon. The lower Exe basin lies close to the junction of the Exe with two other valley systems. Potentially it would have been a hub connecting three separate river catchments (the Exe, Culm and Creedy), which together span most of mid Devon, and through which many people would have passed. Conversely, just as rivers connect landscapes together they are also natural boundaries potentially dividing them up (Pooley 2005, 152-3; Tilley 1994, 39).

Aside from the functional and physical aspects of the river valley, cultural and symbolic factors may also play a role in determining the inhabitation of the lower Exe valley. Several authors have discussed the powerful symbolic potential of water generally (Richards 1998; Strang 2008), and rivers particularly (Brophy 2000; Cummings and Whittle 2004, 81-2; Pooley 2005; Tilley 1994; 2010). Brophy (2000, 65), when discussing the association between cursus monuments and rivers discusses their combination of life-giving and live-taking qualities. Tilley (2010, 287-289), in discussing the context of Bronze Age activity on the east Devon pebble beds somewhat arbitrarily designates the Exe as a river of death in contrast

to the life giving properties of the River Otter. Although extending beyond the temporal scope of this study there are countless examples of rivers as contexts of burial, deposition and offerings in Neolithic, Bronze Age and Iron Age Britain (for example Allen *et al.* 1997, 125; Bradley 1998b). Moving away from the river itself, cultural associations made with the wider topography of the lower Exe basin may itself have been part of the attraction. This topography of the basin, a wide flat expanse of gravel terraces ringed by hills, is a unique feature in the local landscape.

Regardless of which, if any, of the above reasons explains the initial acts of inhabitation on the valley floor, once they existed they would have acted as anchors for later activity. It would have been through these locales of inhabitation, and their broader taskscapes, that the landscape of the basin (for example, its surrounding hills, the river Exe gap, and the palaeochannels and terraces of the valley floor), developed historical and mythological associations (Ingold 1993; Pollard 2005). Subsequent acts of inhabitation and later monument building would have referenced, avoided or reworked these biographies of place (Gosden and Lock 1998; Pollard 2005).

10.3.4 What can lithic scatters tell us about scales of mobility and contact?

When conducting research within a defined study area and especially when focussing on its mapped extent within a GIS it is all too easy to let the world beyond its limits fade into the background. Aspects of the study area's lithic assemblages and their landscape contexts serve as reminders that life in the lower Exe valley was not bounded by the 4km by 4km square of the study area.

None of the raw materials present in the collection occur naturally in the lower Exe valley. As such implicit in their presence are varying scales of mobility, or contact. Nodular flint and Greensand Chert dominate the study area's assemblages. Contrary to Berridge's suggestion (Silvester *et al.* 1987) that the Uglo collection's Greensand Chert is sourced from local gravel deposits, in this study it is suggested that the chert is likely to have been sourced from either the Haldon Hills 15-20km to the south-west, or more likely from the more extensive Greensand deposits on the Blackdown Hills between 20 and 50km to the east. The closest sources of

nodular flint overlap considerably with those of the Greensand Chert on the Blackdown Hills, and in coastal east Devon. On this basis there does not appear to have been a significant shift in raw material procurement patterns between the chert rich Mesolithic assemblages and the almost entirely flint dominated Neolithic and later assemblages. Although differently composed, the reduction sequences of both nodular flint and Greensand Chert reach out beyond the study area. The early stages in their reduction occur elsewhere in the landscape, presumably at, or close to, their sources.

The small quantities of other raw materials present in the collection indicate a range of other different mobilities. Pebble flint and Haldon chert/flint both occur closer to the study area (within 20km). Haldon chert/flint appears to have arrived in the study area in a partially modified state, where as pebble flint seems to have arrived with little or no modification. Portland chert makes up a very small proportion of the collection's Late Neolithic assemblages and is sourced at a much greater distance. In contrast to the other raw materials, for which a large part of their reduction sequence seems to have occurred within the study area, evidence for the Portland Chert suggests that it arrived in a highly modified state either as partially worked cores, or potentially as finished artefacts.

On the basis of this study it is difficult to know whether the use of these 'imported' raw materials, their variable reduction sequences (often with missing components), and other occasional imbalances in the composition of assemblages, necessarily reflects the movement of people or of raw materials. However, this consistent implication of 'other places' either within, or beyond the limits of the study area does indicate that inhabitants of the lower Exe valley from the Mesolithic to the Early Bronze Age were caught up in patterns of movement, contact and exchange that reached out into a wider world.

Similarly varied patterns of raw material use and implicit mobility and contact are evidenced in Mesolithic lithic assemblages in Devon. For example, the combination of locally available and more distanced raw materials amongst Mesolithic assemblages in north Devon at Abbotsham Court (Newberry and Pearce 2005), Little Pill Farm (Leivers 2007), and Hawkcombe Head (Gardiner

2007). More complex and varied networks of interaction are apparent amongst Early Neolithic assemblages. Ceramic assemblages from Hembury and Raddon Hill indicate the use of fabrics from local sources and as well as gabbroic material from the west of Cornwall (Quinnell 1999; Whittle *et al.* 2011, 518). Conversely lithic assemblages from contemporary Cornish sites include nodular flint presumably sourced from east Devon (Saville 1981; Whittle *et al.* 2011, 518). A small number of axes (or partial axes) from Devon point at even wider reaching networks of interaction both across the British Isles (Whittle *et al.* 2011, 519) and into continental Europe (Quinnell and Rogers 1999; Whittle *et al.* 2011, 519).

Aside from the contents of lithic scatters, the views from parts of the study area offer a different way of understanding the relationship between the study area and this wider world. Views out from the study area extend over 30km to the west towards Dartmoor, to the coast c.25 km to the south and south-east, and over 30km to the east towards the Blackdowns. Areas of raw material sources including the Haldon Hills on the southern horizon and the Blackdown Hills to the east would have formed part of the backdrop to daily life in the lower Exe valley. Today the discontinuous coverage of the archaeological record recognises a handful of these points on the horizon as significant locations (causewayed enclosures, settlement sites and round barrow cemeteries), each with their own particular associations and histories. Views out would have offered a connection to other places, people and events, sometimes the barely acknowledged backdrop to day to day life, and at other times explicitly drawn upon as a symbolic resource (Cummings and Whittle 2004, 15).

10.4 Further work

This study is a starting point for further research in the lower Exe valley. It has worked with, elaborated upon, and sought to understand a series of existing data sets. Further research and fieldwork is needed to develop our understanding of its inhabitation between the Mesolithic and Early Bronze Age. The following section outlines a series of potential next steps for developing this research.

10.4.1 Spatial resolution and new surface collection

This study made significant compromises in the spatial resolution of lithic analysis.

A handful of scatters with detailed internal spatial resolution were analysed as single assemblages (for example scatters N1, N3c and N12). An obvious and low cost next step for research would be to make use of this unutilised spatial data and to see how some of the themes approached in a broad-brush way in this thesis, play out at a more detailed scale.

Due to time constraints and prohibitive logistical difficulties, when starting this research a pragmatic decision was taken to work with the existing John Uglow collection, whatever its limitations, and to not conduct extensive areas of new surface collection. A priority for new fieldwork would be to carry out several areas of systematic surface collection in different parts of the study area. These areas should be targeted to test ideas developed in this thesis and should sample areas of known activity as well as the Uglow collection's blank areas. Priority areas for new surface collection are outlined below.

Zone Two

Due to the absence of material in the Uglow collection from the south-west and western areas of the study area, little attention has been paid to the round barrow cemetery in the south-west corner of the study area. New surface collection in and around the Upton Pyne barrow group would enable an understanding of the chronology and nature of occupation in this area. This would allow a comparison between activity here and that seen associated with Early Bronze Age monuments on the valley floor (Zone Four). Systematic collection focussed on scatter T26 in the Yellowford valley would enable a comparison between an apparently isolated and unmixed area of Mesolithic activity in the western part of the study area with that seen on the valley floor (Zone Four).

Zone Three

Systematic collection would also be useful on the hill tops immediately to the west of the Exe valley to contextualise the nature and extent of the Mesolithic, Neolithic and early Bronze Age activity seen here. Fresh surface collection here would also help clarify the apparent differences in the intensity and composition of activity between the hinterland and valley orientated scatters. It would also help to clarify

the extent to which the apparent concentration of retouched artefacts amongst the valley-orientated scatters is real, or a product of collection/retention biases.

Zone Four

Existing systematic collections at N1 and N12 sought to establish the extent of high intensity Mesolithic activity. Further systematic collection in the surrounding areas of the valley floor (Zone Four) would help to contextualise this activity. Extensive areas of systematic collection on the valley floor and particularly in areas A and B, and the area of scatters N3, N4 and N5, would help to further elucidate the spatial relationship between Neolithic inhabitation and the construction and use of monuments.

10.4.2 Lithic analysis

Chronological resolution

In parallel with its broad spatial resolution, a further issue with this study has been its broad chronological resolution based on a small number of diagnostic artefacts and a rough characterisation of lithic debitage. In order to enable tighter chronological definition in surface lithic assemblages a priority for further work is to identify a series of unmixed and independently dated lithic assemblages in Devon. Such assemblages would provide reference points enabling a more detailed, and regionally specific, chronometric and chronotechnological characterisation of surface assemblage debitage (cf. Bond 2006; 2009; Snashall 2002). A number of suitable Early Neolithic assemblages are identified in chapter six, however, the identification of Early and Late Mesolithic assemblages as well as Late Neolithic, Early Bronze Age and Mid Bronze Age lithic assemblages would be particularly useful. An increased chronological resolution for surface lithic scatters would enable a more detailed understanding of the biographies of inhabitation and would go some of the way towards clarifying the temporality of inhabitation (cf. Bond 2009)

Movement and contact

Both the analysis of the contents of lithic scatters and their landscape contexts has enabled a consideration of the study area's place within wider patterns of movement, contact and exchange. Almost all of the lithic raw materials

encountered in the study area have been imported. However, due to the difficulties inherent in establishing the precise sources of lithic raw materials these patterns remain broad and generalised. This is especially true with nodular flint where there is little potential for identifying particular sources. The work of John Newberry (2002; *pers comm.*) has done much to change our understanding of the diversity and distribution of flint sources in Devon. Further work of this nature, whilst perhaps of little use in identifying particular flint sources, could usefully contribute to refining our knowledge of the extent of potential flint sources. The situation with Greensand Chert is slightly different in that there is more potential for identifying compositional signatures for specific sources (Rosemary Stewart *pers comm.*). On going research by Rosemary Stewart will hopefully contribute to a more detailed understanding of patterns of chert use in Mesolithic and Neolithic Devon.

Beyond looking at raw material sources a further avenue of research would be to compare the patterns of raw material use and reduction sequence evident amongst the Uglow collection with lithic assemblages from the surrounding area. A first step towards this would be to examine previously collected assemblages from the Exe, Culm and Creedy valleys.

10.4.3 Further geophysical survey and excavation

Gradiometer survey

This study has shown the utility of using extensive areas of gradiometer survey to clarify and add detail to archaeological features previously only known from aerial photography. Thus far gradiometer survey has only been used in areas of the valley floor with previously identified archaeological features. The number of new features identified within these areas certainly suggests that gradiometer survey might be usefully applied to areas without previously identified monuments.

Potentially gradiometer survey could be carried out in conjunction with any of the potential areas of new surface collection identified above (10.4.1). In particular it would be useful to establish whether there are any contemporary features relating to areas of intensive occupation on the valley floor (Zone Four) and the hills on its western edge (Zone Three).

Excavation

Aerial photography has transformed our understanding of the prehistory of lowland Devon. The Neolithic monuments discovered in the Exe valley and surrounding area are a particularly significant case in point. Now that these monuments have been identified there is a need to excavate at least some of them. On one level this would help to develop a regionally based understanding of the chronology and character of monument building and use. The need to do this is pressing as, despite their identification as significant prehistoric monuments and in some instances their statutory protection, the intensity of cultivation particularly on the Exe terraces is incrementally erasing them before they can be investigated and better understood.

The results of the two small trenches excavated across the ditch of large enclosure B1 as part of this project were frustrating in the lack of clarity that they brought. However, perhaps the expectation of deriving clear answers about the nature and date of the enclosure from the excavation of approximately 0.3% of its ditch was always optimistic. Further excavation of this feature should investigate much longer lengths of the enclosure ditch and potentially include the investigation of one of the ditch terminals at its entrance.

Moving beyond the investigation of monuments the trial excavation of one or more lithic scatters would be useful to identify *in situ* occupation activity or pit deposits. Such deposits might help to address the elusive question of temporality (cf. Garrow *et al.* 2005, 153-4), especially given the difficulty in understanding through surface scatters alone.

10.5 Wider context

Having evaluated this study in relation to its initial research questions and proposed areas of new research in the study area, the final section considers its wider methodological and theoretical implications. This thesis developed methodologies in response to a series of research questions which were adapted to work with the specific nature of the study area's archaeological record. As a result it is not proposed that the methodologies used in this study should be

uncritically transplanted into other research contexts, rather, several more widely applicable themes are identified.

Firstly it is hoped that this study reiterates that, despite of the difficulties inherent in working with them, surface lithic scatters have enormous potential for understanding the inhabitation of prehistoric landscapes. Rather than just indicating the presence/absence of prehistoric activity, scatters have the potential to address a range of more subtle issues relating to the variability and composition of inhabitation, its articulation in wider networks of mobility and interaction, and the creation and maintenance of biographies of place. As such this evidence of day-to-day life constitutes a class of data worthy of consideration in its own right rather than just providing a background or a context to more luminous activities such as monument building.

This study has differed from several recent studies of lithic scatters (for example, Snashall 2002; Chan 2003; Bond 2006). Firstly it has taken quite a broad-brush approach to the analysis of lithic scatters. This was necessitated in part by the nature of the Uglow collection, and in part was the result of a deliberate selection of lithic analyses. The intention here was to address a specific set of research questions, rather than necessarily to record every potential variable amongst the collection's lithic assemblages.

Drawing on the dwelling perspective, a key aspect of this study has been the idea that both the contents and contexts of lithic scatters are inseparable parts of the same whole. This approach has meant that alongside using lithic analysis to understand the contents of lithic scatters several other methodologies were used to understand their landscape contexts. It is hoped that the results of this approach underscore the validity of attempting to study lithic scatters on equal terms with their topographic and archaeological contexts. In short it is worth spending as much time looking up and around at the landscape as it is looking at the floor when fieldwalking.

Moving beyond surface lithic scatters chapter two revealed at least two increasingly polemic theoretical and methodological tensions within British landscape archaeology which are relevant to this piece of research. The first

tension is that between the empirical methodologies of 'orthodox' landscape archaeology and the interpretive methodologies of post-processual archaeology (Fleming 1999; 2005; 2006; Thomas 2008). The second is that between the immediate, embodied experience of the landscape implicit in phenomenological methodologies, and the distanced Cartesian view of the landscape implicit in GIS and remote sensing (Thomas 2004, 198-201; Tilley 2010, 477). In response to the first tension it is hoped that this study has shown the validity of using the dwelling perspective to combine the empirical methodologies of lithic analysis, geophysical survey and excavation, with a more subjective phenomenological approach to understanding landscape setting. In response to the second tension this study has necessarily involved working backwards and forwards between Cartesian datasets (aerial photography, geophysical survey, LIDAR and GIS), and the embodied experience of walking, working and being in a landscape. In contrast to the more immediate archaeology and topography of upland landscapes, when working in a heavily ploughed lowland landscape the use of both approaches has been crucial to developing a contemporary understanding of the surviving elements of the skin and bone of past landscapes (cf. Tilley 1994). An important caveat to this is that this has been a very much two way process, sometimes with ideas developed in the field being examined within GIS, and conversely print outs from GIS being reconsidered in the field.

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