The Archaeology of Bronze Age settlement in south Wales

MA Archaeology 2017

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C1212884

Abstract

This study provides an overview of Bronze Age settlement patterns (c. 2500 – 600 BC) in south Wales. The region is largely ignored in the published literature, and yet the Bronze Age settlement pattern is seen as similar to that of southern England. Over the last 20 years, developer-funded archaeology has increased the dataset, but our interpretations of Bronze Age settlement patterns in south Wales have changed little. Early Bronze Age settlement are still regarded as a rare feature of the archaeological record, but little attention has been paid to small sites and features which could help identify settlement areas. Late Bronze Age enclosures are also rarely discussed in the context of earlier settlement patterns. This study will highlight their relationship with Early and Middle Bronze Age settlement, and that changes in settlement form does not necessarily indicate discontinuity in settlement patterns. By focusing on a broad region, this study also highlights the evidence for regionality in the Bronze Age of south Wales by comparing settlement patterns, and exploring the relationship between settlement and burnt mounds.

Finally, this study highlights the need to investigate regions which have previously been neglected in national Bronze Age narratives. It will also act as a stimulus for further research into the Bronze Age of south Wales, and provide a useful source of information for archaeologists in the region.

Acknowledgements

I would like to thank the following people for their significant contributions and advice, which has been instrumental to the completion of this study. Oliver Davis, of Cardiff University, for his guidance and advice throughout this research, and enabling it to come to fruition. Special thanks also goes to the Archaeological Trusts; GGAT (Sue Hill and Edith Evans) and DAT (Felicity Sage and James Meek) for responding to my queries, and providing me with various unpublished sources.

Special thanks also goes to the staff at the National Museum of Wales for providing me with the Welsh and Borders Radiocarbon Database (Steve Burrow), and for advice during the initial stages of the study (Adam Gwilt).

Finally, thanks also goes to John Valentin at AC Archaeology, for providing me with unpublished material, and to APAC Archaeology (Neil Philips, Iestyn Jones, and Simon Reames) for the many chats that we had about my research.

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1. Introduction

Settlement in the Bronze Age is one of the least understood elements of later prehistoric Wales. Compared to southern England, there is a dearth of large material and structural assemblages obtained through excavation. This has resulted in Wales being largely ignored in the published literature (Parker Pearson 1993; Roberts 2013), and the character of Bronze Age settlement in this region is assumed to be the same as that of southern England. There have however been several later prehistoric studies which have focused on regions of Britain that have previously received little attention (Halstead 2011; Hill 2011; Bell 2013; Davis 2017); and it is essential that we continue this trend in other parts of Britain, and other time periods.

Over the last 20 years, developer-funded and targeted research excavation has increased the dataset for Bronze Age settlement in Wales. The initial purpose of this study was to bring together – for the first time since the publication of *Prehistoric Wales* (Lynch *et al.* 2000) – all the available excavated data for Wales, so that we might re-evaluate our understanding of Bronze Age settlement patterns in the region. It soon became apparent that this would not be possible within the confines of an MA thesis, and so it was decided to focus on the southern counties of Wales. Nevertheless, the intention of the project has remained the same, while also aiming to shape further research and excavation in the region.

The study is arranged chronologically; I will first discuss Early Bronze Age settlement, before dealing with the Middle and Late Bronze Age. These chapters will discuss the distribution of excavated settlement evidence, as well as key themes identified throughout the research process. The overall purpose of this is to understand the nature of settlement,

and how the landscape of south Wales was exploited for settlement from the mid-third to the early-first millennium BC. This will provide a framework for exploring the relationship between earlier and later occupation, as well as identifying the development of any regional identities.

2. Literature Review

2.1 British Bronze Age settlement studies

For much of the twentieth century, the study of Bronze Age settlement was secondary to the study of funerary monuments and artefact chronologies (Clarke 1970; Needham 1990). This was largely a result of the abundance of excavated barrow sites as, in England, barrow excavations accounted for 99% of excavation activity in 1840, 79% in 1900, and 66% in 1950 (Morris 1990: 420). In contrast, excavated settlements account for 0% in 1840, 10% in 1900, and 14% in 1950 (Morris 1990: 420). Although no such data is readily available for Wales, these examples highlight the lack of excavated Bronze Age settlement sites. In addition to this, less than half of these excavations were followed by a published report (Morris 1990: 420), which only serves to limit our understanding of Bronze Age settlement.

Despite this, there have been several studies of Bronze Age settlement published through the course of the twentieth century. Crawford (1912) was one of the first authors to approach the subject, which he discusses within the context of the migration of Beaker people across Europe and into Britain (Crawford 1912: 190). He argues that settlement is represented by the distribution of Beaker pottery and 'flat celts', which in turn represents the movement of people between European and British regions (Crawford 1912: 190). Much of this evidence was obtained from barrow excavations, and it serves to underpin the Beaker invasion theory, which dominated discussions of the Bronze Age in the early twentieth century (Childe 1930: 153-154; Piggott 1949: 110).

Childe's (1930) discussion of the Bronze Age in Britain was the first to refer to the existence of circular structures in both upland and lowland areas (Childe 1930: 160). He also makes several important points about the changing nature of settlement during the British

Bronze Age, some of which are still relevant today, and these include (1) the possibility that the enclosures found on Dartmoor could belong to the Early Bronze Age; (2) that hill camps were being built in the Middle Bronze Age (Childe 1930: 191); and (3) that the existence of cremation cemeteries and field boundaries suggests a more permanent form of settlement in the Late Bronze Age (Childe 1930: 226). Aside from suggesting that Late Bronze Age settlement might not have been as permanent as more recent historical examples (Childe 1930: 226-227), Childe does not discuss these points any further until a decade later when he suggests that Early Bronze Age British societies were semi-nomadic and living in tents, or other equally perishable dwellings (1940: 98).

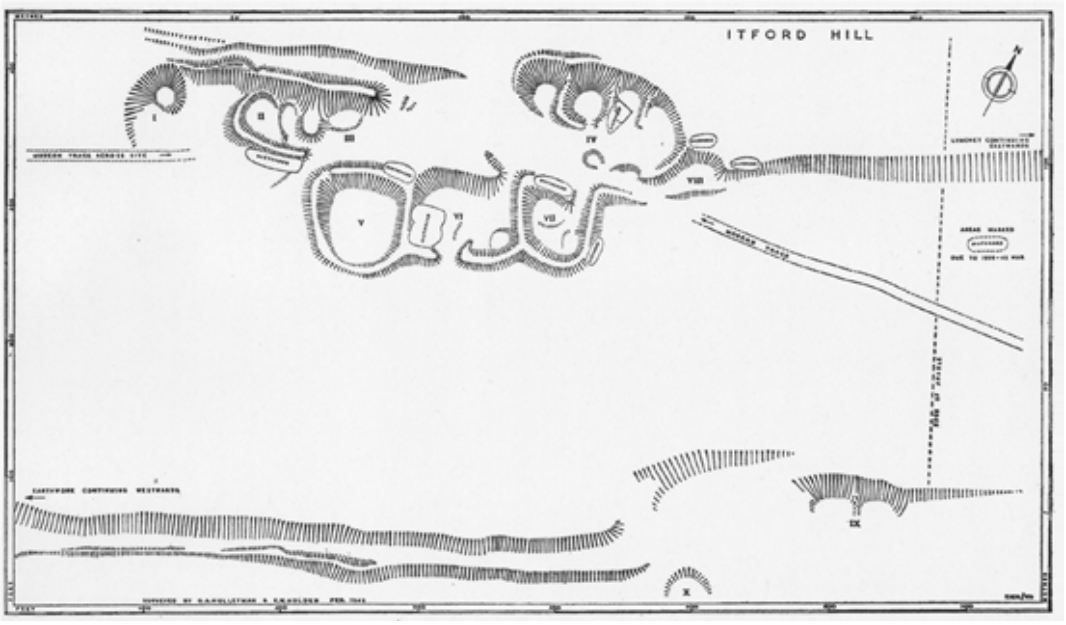

Figure 1. Pre-excavation plan of Itford Hill (Burstow and Holleyman 1957)

In the immediate post-war period, the excavation of Middle Bronze Age settlement between 1949 and 1953 on Itford Hill, Sussex (Burstow and Holleyman 1957), was an important development in furthering our understanding of later Bronze Age settlement in southern England. The site contains 13 roundhouses built on circular platforms, surrounded by low banks and a palisade (Burstow and Holleyman 1957; Figure 1). The original

excavators interpreted Itford Hill as a short-lived village (Burstow and Holleyman 1957: 209-10), owing to the small material assemblage and limited evidence for multi-phase roundhouses. Later authors however, have suggested that the settlement could have been occupied by a single family who moved location every generation (Ellison 1978), and this concept has been elaborated upon by later authors - such as Bruck (1999b) - who suggest that a settlement's lifecycle was tied with that of its occupants and, upon death, the settlement would be abandoned or destroyed (Bruck 1999b).

It was only in the 1970s that the hypothesis on Beaker migrants was seriously questioned by authors such as Burgess and Shennan (1976). They proposed that rather than the migration of people, the Beaker 'cultural package' was transmitted between Britain and Europe through social and economic relations (Burgess and Shennan 1976: 309-312). However, a recent study which analysed and compared the DNA from 170 Neolithic, Calcolithic, and Bronze Age Europeans with modern genomes has cast doubt on this theory (Olalde et al. 2017: 4). The results of the study show that at the beginning of the Beaker period and throughout the Bronze Age, all tested British individuals displayed high proportions of Steppe ancestry, and a close genetic association with Beaker individuals from the Lower Rhine (Olalde et al. 2017). These results appear to confirm the importance of migration from Europe into parts of Britain during the mid-third and second millenniums BC. Further research will of course need to be carried out and caution should be exercised due to the uneven geographic distribution of individuals tested, and the possibility that different burial practices existed between the native and migratory populations. Many of the tested Bronze Age individuals are however concentrated near to the coast (Fig. 1.2), and it would be fair to assume that these were locations more susceptible to migratory populations, given their proximity to the sea. In recent decades, work along the shores of the Severn

Estuary has revealed several rectangular structures, many of which are almost certain to have functioned as a form of seasonal settlement (Bell *et al.* 2013). Four of these were found at Redwick, and have been radiocarbon dated to the Middle Bronze Age, but further Iron Age examples have been found nearby at Goldcliff (Bell *et al* 2000), and Greenmoor Arch (Locock 1999). They are increasingly being found across Britain, dating to the later Bronze Age and the Iron Age (Bell *et al*. 2013: 159), and they are an obvious contrast to the circular/oval-shaped roundhouses which are far more commonly found across later prehistoric Britain. The closest parallels to these rectangular structures are instead found on the European continent (Bruck and Fokkens 2013: 84). Taken with the new genomic evidence discussed earlier, it would not be farfetched to suggest that these settlements were of a north-western European character.

The growing evidence for cereal cultivation in the Early Bronze Age also began to cast doubt on predominantly pastoralist models for society (Bradley 1972), but this narrative continues to dominate Bronze Age studies (Roberts 2013). Out of these developments came more detailed studies of Early Bronze Age settlement (Simpson 1971; Gibson 1982), many of which assumed that structures dating to this period were as substantial and impactful on the local environment as Middle Bronze Age structures (Bradley 1970; Simpson 1971; Darvill 1987). In an effort to explain the evasive nature of Early Bronze Age settlements, Simpson suggested that many of these settlements were located in areas subject to erosion or accretion of alluvium/colluvium which has resulted in their limited visibility (1971: 131). Bruck (1999a) has already pointed out the problems of this explanation, as areas such as the highest parts of the chalk downlands of southern England – prone to high levels of erosion – contain a plethora of Middle and Late Bronze Age sites (Bruck 1999a: 53-4). She also emphasises that where Early Bronze Age activity has

been found beneath natural sedimentary horizons, houses are rarely found and the evidence is limited to artefact scatters and occasional features (Bruck 1999a: 54).

Perhaps the most extensive study of Early Bronze Age settlement during this period was by Gibson (1982). He identifies four main types of domestic site dating to the Early Bronze Age which could occur individually or in combination. These include: a hearth site, a cave/house site, a pit site, and a midden site (Gibson 1982: 3). His interpretation of Early Bronze Age settlement is somewhat simplistic, as he considers all sites with Beaker pottery and no evidence for burial or ritual activities as domestic in nature (Gibson 1982: 1). Several excavations across Britain have shown that sites could be the focus for both domestic and ritual activities. The excavation of a Middle Bronze Age settlement in Newquay, Cornwall, provides one such example, where a hearth was later used for the burial of a young adult male (Nowakowski 1991: 203). Furthermore, several roundhouse-like structures have been found beneath Early Bronze Age funerary monuments across southern Britain (Bruck 1999), and although they could be interpreted as a preliminary ritual structure, it is just as possible that they represent domestic structures.

Although the concept of mobile settlement in the Early Bronze Age had been suggested as far back as the 1970s (Fleming 1971), several studies in the late 1990s began to question the notion of permanent settlement in the Neolithic and Bronze Age (Thomas 1999; Bruck 1999a). With reference to the Early Bronze Age of southern England, Bruck (1999a) emphasises the lack of evidence for permanent settlement, and she argues that arable agriculture was likely to have existed alongside a subsistence economy which also exploited wild resources (ibid: 55-60). Settlement has also been discussed in the context of the landscape, with several authors emphasising the relationship between occupation and

other features in the landscape, such as ceremonial monuments, funerary sites, and artefact deposition (Barnatt 2000; Halstead 2005).

Pearson's *Bronze Age Britain* (1996) is the most recent summary of the archaeological evidence for the Bronze Age in Britain. It is only halfway through his study that Pearson discusses the Bronze Age archaeological evidence however, and the preceding chapters are dedicated to discussions of the Neolithic in Britain (Pearson 1996). The majority of Pearson's discussion of the Early Bronze Age is focused on the funerary and ceremonial landscape, but he argues that from c. 1800 BC onwards the landscape changed in focus from the dead to the living (Pearson 1996: 103). Nucleated settlements of substantial roundhouses are described as the standard form of settlement from this period onwards, but the evidence cited by Pearson comes almost exclusively from southern England (Pearson 1996: 103-8). He emphasises the difficulty of locating Late Bronze Age settlements and suggests that this is down to two key factors: (1) the lack of surface finds, since flint tools were not used as frequently as in earlier periods, and the fragile pottery of the period is easily destroyed by ploughing; and (2) that the majority of enclosures are located on the higher and drier valley sides, where they tend to be difficult to detect from aerial photography (Pearson 1996: 119).

Sharples' recent study on Wessex in the first millennium BC (Sharples 2010) focuses on the Late Bronze Age and Iron Age, but he also highlights the prominence of earlier monuments in the landscape. Early Bronze Age round barrows influenced the development of Middle Bronze Age settlements and field systems, and were incorporated into the Late Bronze Age boundaries (Sharples 2010: 14). Field systems are also discussed in some detail; they are seen by the author as a short-lived phenomenon whose construction had largely

ceased during the Late Bronze Age (Sharples 2010: 43). Following this, Sharples emphasises that the construction of short sections of boundaries across prominent topographical locations appears to have developed during the Late Bronze Age, but that the construction of hillforts was largely a phenomenon of the Early Iron Age in southern Britain (Sharples 2010: 53, 55). Instead, he argues that simple curvilinear enclosures appear to date to the Late Bronze Age/Early Iron Age transition period (c. 800 BC – c. 600 BC) (Sharples 2010: 55), and this would be in keeping with the excavated evidence from south Wales.

Roberts' (2013) chapter is the most recent summary of the evidence for the British Bronze Age. During his discussion of settlement patterns, he points out the limited visibility of Earlier Bronze Age settlements and highlights that much of the evidence is restricted to "…ephemeral oval and circular shaped structures formed by postholes and hearths…" (Roberts 2013: 534). In terms of subsistence, Roberts argues that animal bone depositions and charred plant remains in pits from burial or ritual sites cannot be assumed to be representative of wider farming or consumptive activities (2013: 534). Such an approach assumes that there was a sharp distinction between domestic and ritual activity, and it ignores the potential to further our understanding of subsistence activities. Furthermore, Roberts contradicts himself by arguing that the prevalence of cattle remains in pits from ceremonial sites in central England is suggestive of a mobile pastoralist regime (2013: 535). It is unclear why he has made this statement just after arguing against the use of ceremonial pit evidence for understanding local consumptive patterns.

In his discussion of the Later Bronze Age, Roberts (2013) emphasises (1) the importance of arable and pastoral agriculture; (2) that this resulted in a dispersed population of small communities and (3) that it was only during the late second/early first

millennium BC that a hierarchy of settlement emerged, with the widespread construction of enclosures (ibid: 543). He also notes that outside of southern and eastern England there is very little evidence for investment in field systems, and that it is possible that they were not a widespread feature of the Middle and Late Bronze Age, but he makes little attempt to consult the evidence from outside of the English counties (Roberts 2013: 538). For example, he makes no mention of the extensive co-axial field system on St David's Head (Murphy 2001; Driver 2007: 95-7) which is similar to the Dartmoor 'reaves' (Fleming 1988), and could at least partially date to the Middle or Late Bronze Age.

2.2 Welsh Bronze Age settlement studies

In contrast to southern England, there has been relatively little work done on Bronze Age settlement in Wales, and this is partly due to the lack of excavated sites. The earliest reference to Early Bronze Age settlement in Wales was made by Crawford, who suggests that Wales and Atlantic Scotland were "…regions of refuge rather than of settlement", due to the lesser quantities of material culture (1912: 186-188). A couple of decades later, Sir Cyril Fox (1932) expanded on this notion by placing Wales into his 'Highland Zone' - a peripheral region of culturally backward communities. This concept of Wales as a peripheral region has had a lasting impact on Bronze Age studies (Savory 1961; Lynch 2000) which – combined with the difficulty of identifying earlier Bronze Age settlements – has resulted in a dearth of studies relating to Bronze Age settlement in Wales. Gibson's (1982) study was one of the few works to highlight the evidence for Early Bronze Age settlement in Wales, but these examples are confined to his catalogue of sites, and there is no discussion of settlement patterns in Wales. Based on his judgement of what constitutes a domestic site, it

is also unclear as to whether Gibson interprets sites such as Bedd Branwen, Anglesey, (1982: 108) or Cat Hole Cave, Glamorgan, (1982: 130) as strictly domestic in nature given their association with human remains.

Although several important excavations of Bronze Age settlements took place during the 1980s and 1990s (e.g. Coed-y-Cymdda (Owen-John 1988), Atlantic Trading Estate (Sell 1988), Thornwell Farm (Hughes 1996)), there were no further syntheses published which related to Bronze Age settlement in Wales during this period. The first study to discuss these examples was *Prehistoric Wales* (Lynch *et al*. 2000), and this also happens to be the most recent summary of the evidence for Bronze Age settlement in Wales. The authors divide the Bronze Age into two periods; the Later Neolithic and the Earlier Bronze Age; and the Later Bronze Age and Iron Age. In her discussion of the Later Neolithic and Earlier Bronze Age, Lynch largely supports the idea that Wales was part of the 'Highland Zone' (Fox 1932), and that there was no sharp contrast from the Later Neolithic in some aspects of the archaeological record – such as the burial record (Lynch 2000: 79). She argues that over-cultivation of agricultural land in the Early Neolithic – demonstrated by the concentration of megalithic tombs in the lowlands – resulted in an expansion into the upland regions of Wales (Lynch 2000: 80). With regards to settlement sites, Lynch acknowledges the elusive nature of roundhouses during this period (Lynch 2000: 85). There is however no discussion of settlement mobility, and instead she reverts to the traditional view of the unenclosed farmstead as the typical unit of settlement (Lynch 2000: 85). Discussion of these Early to Middle Bronze Age roundhouse settlements is largely restricted to only two sites from south Wales, but Lynch also recognises other forms of evidence which could indicate settlement such as burnt mounds, domestic scatters in the form of pits and scatters of artefacts, and upland huts and fields which can be associated with clearance cairns (Lynch 2000: 85-95).

Despite discussing these alternative forms of settlements, in particular burnt mounds and domestic scatters, and acknowledging the elusive nature of Early Bronze Age houses, Lynch still argues that the typical unit of settlement was the permanently occupied, unenclosed farmstead (Lynch 2000: 85).

In their discussion of the Later Bronze Age, Davies and Lynch (2000) argue that the greatest change was the visibility of settlements, "now enclosed and in many cases seriously defended" (ibid: 139). Most of this section is dedicated to the discussion of hillforts - only two pages of which relate to the Late Bronze Age period (ibid: 150 – 151) - which the authors see as a response to social unrest caused by climate change (bidi: 150). The authors interpret the emergence of enclosures as being a consequence of climate change, and an increased reliance on pastoralism which – along with the proliferation of weapons during the Late Bronze Age – suggests that cattle raiding became a significant threat to communities who responded with the construction of "fortified villages" (ibid: 150). There is no mention of unenclosed settlements, outside of the acknowledgement that the dominance of defended enclosures during this period is misleading, and that less substantial settlements might be unrecognisable or have been ploughed away (ibid: 144). There is also little discussion of the evidence for arable cultivation, and instead the authors adopt a similar approach to Cunliffe (2010: 594), who argues that much of Wales was dominated by pastoralist communities during the first millennium BC. No mention is given to the environmental evidence from the Breiddin which – although not entirely conclusive – suggests that arable cultivation also occurred as part of a mixed farming regime on the hilltop during the Late Bronze Age (Musson et al. 1991: 175).

Following the publication of *Prehistoric Wales*, there have been several regional studies on Bronze Age settlement in Wales (Halstead 2005; 2011; Makepeace 2006; Bell 2013; Waddington 2013; Darvill and Wainwright 2016). The evidence from south-east Wales has been discussed in some detail (Halstead 2005; Makepeace 2006; Bell 2013), but this has been largely concentrated on the uplands or on the Severn Estuary region. Aside from a series of important publications on the excavations at Llanmaes (Gwilt 2006; 2009; 2011; 2015), there has been no recent discussion of the settlement evidence from Glamorgan. The Welsh Marches (Halstead 2005; 2011) and the Late Bronze Age evidence from north-west Wales (Waddington 2013) have also been discussed in some detail, with both regions providing strong evidence for Late Bronze Age and Iron Age settlement (Musson 1991; Halstead 2011: 66-72; Waddington 2013).

Within the last few years, several studies have been published which review and discuss the evidence for Bronze Age settlement in west Wales (Murphy and Mytum 2012; Driver 2013; Davill and Wainwright 2016). The region has also long been recognised for its abundance of burnt mounds (Ehrenberg 1991: 43-4; Halstead 2012: 57; CA 2005), but it is only recently that these have seriously been discussed within a settlement context (Halstead 2011; Darvill and Wainwright 2016). Although their function has been debated for decades, a recent environmental study (Brown et al. 2016) of Middle to Late Bronze Age Irish burnt mounds – known natively as *Fulachtaí Fiadh* – has suggested that they could have been used to process and dye textiles (ibid: 259). Radiocarbon dates from excavated Welsh burnt mounds suggest that they principally date from the Early to Middle Bronze Age (Lynch 2000a: 89-90; CA 2013; CA 2014a; Hart *et al.* 2014), but examples have also been excavated which date to the Late Neolithic and the Iron Age (Hart *et al.* 2014).

In his study of Bronze Age settlement in the Welsh Marches, Halstead (2005) identifies such settlement as synonymous with "…structures associated with residues of domestic consumption and production…" which have been radiocarbon dated to the Bronze Age (ibid: 8). He then identifies settlement patterns based on the distribution of contemporary artefacts and monuments within the settlement locale (ibid: 8-9). Makepeace adopts a similar approach, but his study area is the uplands of south-east Wales, and he adopts a broader approach whereby he dates sites based on their contextual relationship with monuments and artefacts (2006: 73-100). The dating of settlements is the greatest issue of Makepeace's study, and there is no justification as to why he has assigned a Bronze Age date to many of the newly surveyed hut circles when they are just as likely to belong to the Iron Age (2006: 98-109). For example, the author ascribes hut circles associated with irregular enclosures with a Bronze Age date (2006: 104-5), but excavated examples from elsewhere in Wales, such as at Crawcwellt, Merioneth, have shown that they dated to the Iron Age (Lynch 2000a: 91). Whilst it could be argued that Bronze Age examples of this site-type have been found in Dartmoor, absolute dating is absent for the majority of these settlement sites. Furthermore, most of the excavated stone-walled roundhouses in Wales have been found to date to the Iron Age or Romano-British periods, but it must be acknowledged that the bulk of this evidence comes from north Wales.

Although it does not focus specifically on the Bronze Age, the *Welsh Roundhouse Project* (Ghey et al. 2007; 2008) is another important study which looks at the development and significance of the roundhouse in Wales from the mid second millennium BC up to the end of the first millennium AD. Their study highlights the division between the insubstantial roundhouses constructed during the third millennium BC, and the appearance of the more substantial roundhouses during the second millennium BC (Ghey et al. 2007). They also note

that many of the earlier roundhouses occur beneath later funerary monuments (Ghey et al. 2007), emphasising the problem of assigning 'domestic' and 'ritual' functions to Early Bronze Age sites. The authors include those examples which have "…ambiguous evidence for use…", but it is perhaps significant to view these funerary monuments within the context of the biography of the house; that they could be a means of monumentalising the death of the house, and its occupants. The authors also note the problem of site visibility for houses dating to the Bronze Age, which is a consequence of several factors including; (1) the use of wood as a construction material; (2) a vulnerability to modern arable land exploitation; and (3) the lack of enclosures around many of these settlements making them difficult to identify from aerial surveys (Ghey et al. 2006). The authors suggest that stone and clay walls are favoured in north Wales, and that post-built structures are more common in the south (Ghey et al. 2006), but the majority of stone roundhouses have been dated to the later Iron Age and Romano-British periods (Crew 1989; 1998; Waddington 2013). Stone roundhouses in south Wales are rare in comparison to north Wales (Lynch 2000), and this would suggest that there were regional – not chronological – differences in the use of stone as a construction material for roundhouses. With reference to the third and second millennium BC, the authors suggest that roundhouses might not have been the standard unit of settlement, and that occupational evidence might be represented by less substantial features such as pits and hearths (Ghey et al. 2006). There is however no mention of burnt mounds by the authors (Ghey et al. 2007; 2008), and it can only be assumed that the authors do not interpret these as an indication of settlement.

Another general study worth discussing here is Burrow's publication *Shadowlands: Wales 3000 – 1500 BC* which – as the title suggests – summarises the Later Neolithic to Early Bronze Age in Wales (Burrow 2011). Much of the book is dedicated to the summarisation of

artefacts and ritual monuments, but Burrow also makes a point of discussing the significance of Early Bronze Age settlement during this period. Like Lynch, Burrow suggests that the small unenclosed farmstead was the typical form of settlement during this period, but he acknowledges the scarcity of settlement and the case for transient societies. Conversely, he also argues that the ephemeral nature of these structures makes them susceptible to erosion or ploughing, and that cut features – such as pits – found beneath later settlements could be all that is left of Early Bronze Age settlement (ibid: 154-155). Burrow also emphasises the concentration of burnt mounds in west Wales, and that their size suggests that – whatever their function was – they were used to service communities larger than a single family (ibid: 156-8); but he does not directly associate these features with settlement, and instead emphasises their significance as a meeting place for communities (ibid: 158-9). Although it could be argued that burnt mounds do not represent direct evidence of settlement, recent work along the South Wales Gas Pipeline revealed one site where a Middle Bronze Age burnt mound was found within close proximity to a settlement site which saw episodic occupation from the Early Neolithic up to the Middle Bronze Age (Cotswold Archaeology 2014a, 2014b). This could suggest that burnt mounds were on the periphery of settlement sites whose main features are to be found beyond the immediate vicinity of burnt mounds.

Murphy and Mytum's (2012) study on Iron Age enclosures in west Wales includes several sites which have been found to date to the Late Bronze Age/Early Iron Age transition period. Based on the evidence from several excavations in the area, they argue that oval enclosures – some of which have palisaded components – and sites located on coastal promontories, and on areas of rolling plateau, are Late Bronze Age in origin (Murphy and Mytum 2012: 299). They also emphasise that, whilst some of these sites also display earlier

evidence for occupation, there is no evidence of continuity of occupation (Murphy and Mytum 2012: 299). Driver (2013) suggests a similar situation in north Ceredigion, highlighting the more recent excavation evidence from west Wales which suggests that Late Bronze Age/Early Iron Age enclosures were more widespread than initially thought (Driver 2013: 31-2). Driver also places more of an emphasis on settlement morphology, highlighting that the majority of these transitionary settlements are univallate, and that many of these enclosures incorporate a wooden element in their 'defences' (e.g. palisades, timber-laced or boxed ramparts) (Driver 2013: 33-4). There are however several examples of later Iron Age settlements which possessed a primary palisaded phase, such as Castell Henllys (Mytum 2013), and this demonstrates the issue of assigning palisade features with a Late Bronze Age date in the absence of absolute dating. Although Driver suggests that the larger univallate forts of north Ceredigion hold the greatest potential for discovering Late Bronze Age/Early Iron Age hillforts, he acknowledges that there are fundamental problems with this interpretation (Driver 2013: 35). The excavation of Castle Ditches, Llancarfan, a large univallate hillfort in the Vale of Glamorgan, revealed that the hillfort was probably constructed in the Middle Iron Age (Hogg 1976). Although there was evidence for an earlier stone-walled enclosure found beneath the Middle Iron Age ramparts, this was not dated to the Late Bronze Age. Castle Ditches does however demonstrate the problem of interpreting univallate enclosures as single-phase structures, and Driver also highlights this issue in his study area, as well as the issue of misinterpreting complex hillforts as multi-period constructs (Driver 2013: 35).

Bell's (2013) recent publication is a summary of decades of work carried out in the Severn Estuary region. The author largely supports Bruck's (1999) description of Early Bronze Age communities as being relatively mobile, and he emphasises that settlements

"are often represented by pits and ephemeral traces" (Bell 2013: 319). In contrast, the Middle and Late Bronze Age is typically associated with an increase in settlement and land divisions, but Bell argues that this situation is not reflected in the archaeology of the Severn Estuary region (Bell 2013: 322). From the Middle Bronze Age, there is a marked increase in activity in the maritime-dominated parts of the Severn Estuary region (Bell 2013: 336). The nature of this activity is suggested by the author as representing small-scale transhumance seasonal grazing of upland and coastal areas (Bell 2013: 320), and this seems to be largely supported by the flimsy nature of the Middle Bronze Age structures at Redwick (Bell 2013: 156). The artefact assemblage from Redwick and Cold Harbour was also very small, which suggests short-lived occupation, but the diversity of artefacts indicates that a wide range of domestic activities took place on the site (Bell 2013: 161).

Although Waddington's (2013) study focuses on settlement in north-west Wales from the Late Bronze Age to the Early Medieval period, she does offer some insight into the nature of earlier Bronze Age settlement in the region; noting that the eastern and central parts of Snowdonia are largely devoid of Late Bronze Age settlement, but rich in clearance cairns and funerary monuments such as round barrows which "…hint at the location of earlier settlement" (2013: 85). Waddington acknowledges the problem of linking settlement form with function or chronology (2013: 6), but rarely does she provide an example of a site with no justification for the period that has been assigned to it (2013:119-260). Her study highlights the presence of distinct cultural zones in the Late Bronze Age/Early Iron Age based on differences in the settlement record, and that the preferential location of larger hillforts along the north and north-western coast indicates the presence of larger communities, which were evenly spaced, and likely competing for the control of local territories (Waddington 2013: 85). Smaller hillforts were also found to be well represented

throughout all the hillfort zones, but there is an absence of larger hillforts towards the south, which suggests that this region was made up of small, neighbouring communities (Waddington 2013: 85-6). Another significant aspect of Waddington's study is her emphasis on the chronological development of settlement sites, particularly hillforts, which were occasionally built to incorporate earlier monuments or expanded upon during a later period (2013: 99-101). There has been little attempt by previous authors to incorporate the evidence for earlier/later activity into their discussions of settlement, but Halstead (2011) has recently discussed this in his PhD on settlement patterns from the Late Neolithic to the Late Bronze Age in the central Welsh border region (ibid: 249-258).

The most recent publication to address the evidence for Bronze Age settlement in south-west Wales is a chapter by Darvill and Wainwright (2016: 55-222), which discusses the evidence for Neolithic and Bronze Age activity in Pembrokeshire. For the Early Bronze Age, the authors identify two distinct phases of settlement; a Beaker period, and a post-Beaker period (ibid: 121-122). They argue that settlement is typically concentrated around the southern coast during both periods, but the authors note the wide distribution of burials with collared urns from the early second millennium BC (ibid: 129). This, they argue, could be indicative of a sectored landscape with settlement to the south and ceremonial sites for upland areas to the north, or it could suggest that "…settlement was more extensive than the few recorded occupation sites might suggest…" (ibid: 129). The principal issue with this is the lack of definition, and it is unclear what criteria a site needs to achieve to be classified as an occupation site. The authors' section on settlement during the later periods of the Bronze Age is also noticeably underdeveloped in contrast to the Early Bronze Age, and just over a single page of text is dedicated to settlement in the Middle Bronze Age (ibid: 182-4), and two pages of text for the Later Bronze Age (ibid: 190-192). This is more a reflection of

the evidence itself, and the authors note that evidence dating to the later periods of the Bronze Age is surprisingly scarce due to the difficulty in detecting them. This is partly true, as excavations across Wales have shown that Late Bronze Age activity is often found beneath later activity (e.g. Dale Promontory Fort (Benson and Williams 1987), Breiddin Hillfort (Musson et al. 1991), Cwm George (Alcock 1963; Davis 2017)), but it also needs to be asked why occupational activity dating to this period is less evident than in earlier periods. In her study on Middle to Late Bronze Age settlement in southern England, Bruck (2007: 2) found that 42% of the Late Bronze Age sites included in her study were unenclosed, but there are very few examples of these from south Wales.

To summarise, the chronological framework of Bronze Age settlement in Wales appears to largely follow that of southern England. Early Bronze Age roundhouse settlements are rare, but there is a general acceptance that settlement is also represented by cut features associated with artefact debris, and food processing. The Middle Bronze Age is still regarded as a period where settlement becomes more visible, with the construction of substantial roundhouses, linear banks, and field systems. In the uplands of south Wales, stone roundhouses and field systems are tentatively dated to the Bronze Age because of a more favourable climate in the Early and Middle Bronze Age, as well as through comparison with dated settlement sites from Dartmoor. There is a growing appreciation that some of these upland settlements are likely to date to the Iron Age, but the lack of excavated settlement sites makes dating problematic. The function of burnt mounds is still open to interpretation, but they are often discussed alongside settlement in the Early and Middle Bronze Age, particularly from the southern Pembrokeshire and southern Carmarthenshire.

Settlement in the Late Bronze Age is recognised by the construction of univallate enclosures of circular and sub-circular shape, and this period is often discussed in tandem with the earliest evidence for Iron Age settlement. The narrative of Late Bronze Age settlement in south-east Wales is noticeably underdeveloped in contrast to the south-west, but there has been some discussion of this in recent Iron Age settlement studies (Gwilt Davis 2017). The majority of studies also do not discuss the evidence for open settlements dating to the Late Bronze Age, and this is likely to be a result of the lack of evidence for open settlements dating to the early first millennium BC. There is however some acknowledgement of the evidence for pre-enclosure occupation in the Late Bronze Age, especially in the south-west, but the significance of this has yet to be explored.

3. Methodology

3.1 Research Aims and Objectives

Aims

- To further our understanding of the character, distribution, and extent of Bronze Age settlement in south Wales.
- To present the results of this project to other archaeologists, to aid further research and excavation strategies.
- To highlight the settlement record of a region which has been largely ignored in the archaeological literature on the later prehistory of Britain.

Objectives

- To review the Historical Environments Record (HER), the National Monuments Record, and the literature concerning excavated Bronze Age settlement in Wales.
- To problematise the concept of settlement in the British Bronze Age.
- To emphasise the importance of *occupation features* in furthering our understanding of Bronze Age settlement patterns.
- To explore the concepts of 'domestic' and 'ritual' in the context of settlement in the Early Bronze Age.
- To discuss the significance of burnt mounds in relation to Early and Middle Bronze Age settlement.

- To challenge the notion that there was a shift in the settlement pattern during the Middle Bronze Age towards a more permanent, nucleated settlement.
- To explore the relationship between enclosed and unenclosed settlement in the Late Bronze Age, within the context of a settlement hierarchy.
- To identify any regional settlement patterns.
- To identify changes in the settlement record over time, and explore the relationship between earlier and later occupation.

3.2 Data Collection

This study brings together the extensive range of evidence for settlement that is made available through examination of the Historic Environments Record (HER), the National Monuments Record (NMR), and published and unpublished sources. As this study is principally focused on dated settlement sites, radiocarbon dates are extremely important. The National Museum of Wales' radiocarbon database of sites from within Wales and the Borders (Burrows and Williams 2008) has been of particular use to this study. All radiocarbon dates were then calibrated using Oxcal v. 4.2 software to produce consistent, and up-to-date calibrations.

A database for these settlement sites was created in Excel, with the following data fields: site name, community, settlement type, period, earlier activity, later activity, PRN (project reference number used by HER or NMR), and references. Definitions of the settlement types used in this study are as follows:

Single Roundhouse – This settlement type comprises of isolated roundhouses which do not appear to be associated with other settlement sites.

Nucleated Roundhouses – This category consists of two or more unenclosed roundhouses which are located close together, and which appear to be contemporary.

Occupation Features – This category typically consists of cut features which do not clearly represent the remains of a roundhouse, including pits, postholes, stakeholes, and hearths. The inclusion of this category was a direct result of the recommendation to place greater importance on small sites and features, as outlined by CIfa Wales (Sharples *et al*. 2016).

Burnt Mound – Burnt mounds consist of an oval or crescent-shaped low mound of burnt stone (Hart *et al*. 2014). Although they have been discussed within the context of prehistoric settlement, there has been little attempt to explore their relationship with settlement sites. Several burnt mounds were excavated as part of the South Wales Gas Pipeline Project, and this offers the opportunity to explore their relationship with Bronze Age settlement in the study area.

Hillfort – An enclosure which sites on the crest of a hill or ridge.

Promontory fort – An enclosure where at least one side is defined by cliff, or steep edge.

Enclosure - An enclosure which is situated on a hill-slope, or a plateau.

Trackway – This category consists of a series of parallel wooden features which appear to form part of a trackway. Although they do not necessarily indicate direct settlement, and they could be associated with non-settlement activity (Bell 299-300), their presence suggests repeated movement through the landscape.

Spatial data was obtained from the HER, NMR, and the literature, and then recorded in the database of sites. These sites were then plotted as XY coordinates within ARCGIS Pro (Version 2.0.1), and displayed over a Digital Terrain Map (DTM) of the study area. All mapping data was obtained from Edina Digimap (http://digimap.edina.ac.uk/). 1:50,000 scale DTM tiles were downloaded and combined using the Mosaic to New Raster tool, and the OS GB National grid system selected. These were then clipped to an outline of the Welsh region, which was obtained by downloading the GB Overview Tiff file at 1: 5,000,000 scale. The same elevation values as Waddington's study (2013) were used, and these were then assigned separate colour codes for clarity.

3.3 Boundaries of the study area (Figure 2)

South Wales is bordered by England to the east, St George's Channel and the Celtic Sea to the west, and the Bristol Channel to the south. Ceredigion marks the north-western limit of the study area, whilst the River Usk is used to define Southern Powys, and the north-eastern limit of the study area. The discovery of several prehistoric sites along the route of the South Wales Gas Pipeline Project was the principal reason for including southern Powys, a region which has a dearth of direct evidence for prehistoric settlement.

It must also be emphasised that the division between the study area and the other parts of Wales, and Britain, is not meant to represent a border between distinct cultural zones. The use of modern borders when studying past societies is extremely problematic, and it must be noted that this study does not intend to propagate the idea that south Wales experienced its own Bronze Age. With this in mind, any cultural zones argued to exist in this study might be incomplete – particularly along the northern and eastern boundaries.

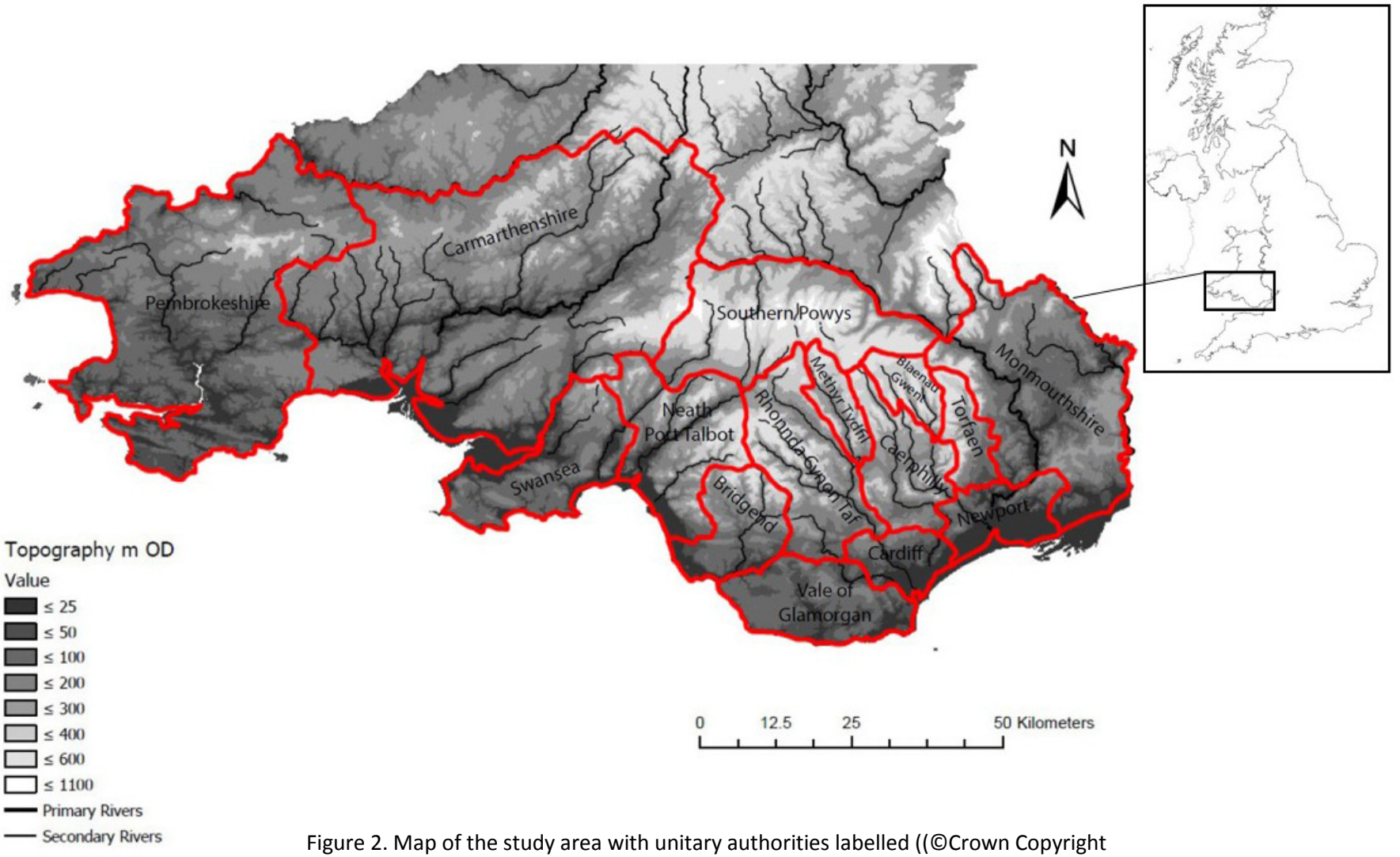

Figure 2. Map of the study area with unitary authorities labelled ((©Crown Copyright and Database Right 2017. Ordnance Survey (Digimap License)).

3.4 Chronology

This study is divided into three periods: the Early (c. 2500 – 1500 BC), the Middle (c. 1500 – 1100 BC), and the Late (c. 1100 – 600 BC) Bronze Age. Previous studies have preferred to divide the Bronze Age into an earlier and later phase (Lynch et al. 2000), but the first phase of permanent, nucleated settlement in southern England occurs between c. 1500 – 1150 BC (Needham 1996). With this in mind, the inclusion of the Middle Bronze Age is a useful source of comparison with southern England, and it serves to highlight any similarities or differences within the study area.

The decision to include what some authors describe as the Earliest Iron Age, which covers the period c. 800 – 600 BC, is largely because of the degree of continuity which is assigned to the material culture which dates to this period (Gwilt et al. 2016). In the literature, assemblages dating to this period are often described as Late Bronze Age/Earliest Iron Age (Gwilt et al. 2016; Davis 2017: 13), and it indicates that there was a significant degree of overlap between the two periods. Where radiocarbon dating indicates activity between the period c. 800 – 600 BC, I will however describe this as Late Bronze Age/Earliest Iron Age, for those that prefer this definition.

4. Defining 'settlement'

As Bruck and Goodman (1999) rightly pointed out almost 20 years ago, "the term settlement is more ambiguous and complex than at first sight" (Bruck and Goodman 1999: 2). Terms such as 'domestic', 'house', and 'household' are not neutral terms, and their social and political meanings need to be examined (Bruck and Goodman 1999: 2). For this study, only the terms 'domestic' and 'house' will be discussed, as I believe that a more detailed exploration of the material and structural assemblages is necessary to understand the nature of Bronze Age 'households'.

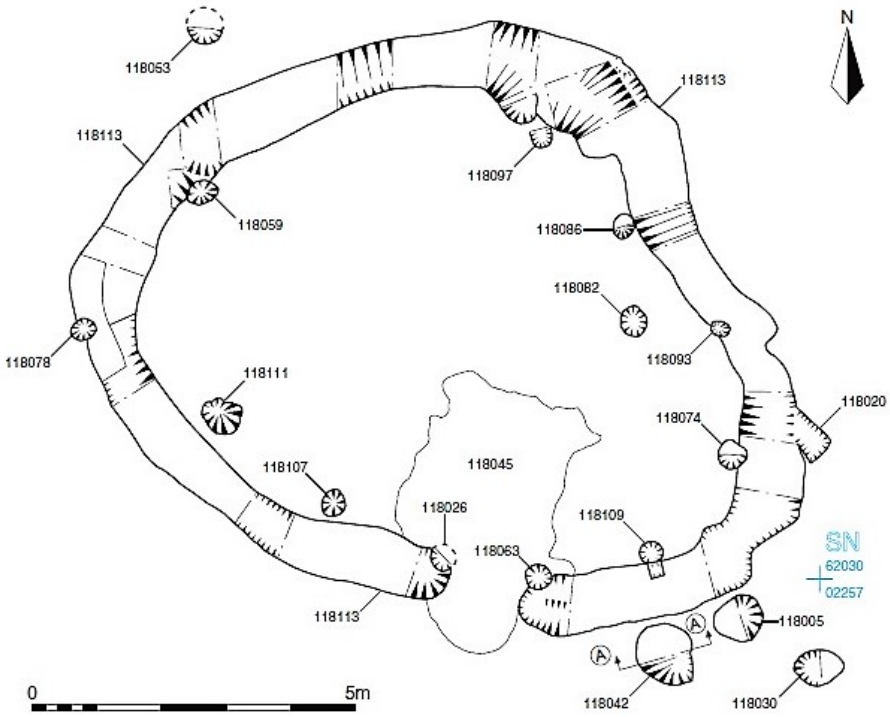

Figure 3. Plan of archaeological features found at Site 01.18 (Cotswold Archaeology 2013g)

Often, the recognition of a settlement is dependent on our ability to identify 'domestic activity' (i.e. cooking, eating, and sheltering). The modern Western 'house' provides the locus for these activities, and this has resulted in archaeologists focusing on houses as a major source of information about past societies. This also leads to the expectation that settlements should be easily identified in the archaeological record based on the presence of a 'house' and 'domestic activity', but this is not always the case. For example, at Site 01.18, Swansea, a possible Early Bronze Age roundhouse was found during an excavation along the path of the South Wales Gas Pipeline (Figure 4; Cotswold Archaeology 2013g). The absence of any evidence for domestic activity has resulted in the conclusion by the author that this might not be a settlement, and that it could have formed part of a ceremonial monument (Cotswold Archaeology 2013g: 7). Due to the lack of supporting evidence, it is possible to interpret this structure in numerous ways, and this is entirely dependent on our personal understanding of what settlement is. This example has been included in the dataset of this study, and it is my opinion that – based on its relatively small size and single, formalised entrance – this is an ancillary building associated with a nearby settlement. Nevertheless, it demonstrates the importance that archaeologists assign to the presence of domestic activity in helping us define prehistoric settlement.

The assumption that settlements should be easily identifiable in the archaeological record has also had an impact on our terminology. In the HER, NMR, and the literature, a range of unexcavated sites are described as 'roundhouses', 'hut circles', 'house platforms', 'hillforts', or 'defended settlements'. These descriptions all have connotations with habitation, and we assume that these sites are the remains of settlement before any excavation has taken place. The same is true of studies such as this one, particularly where 'house' is included in the description of a site, and this will inevitably channel the

interpretation of the reader to assume that these sites are representative of settlement (Pettitt 2015: 120). Whilst this is an issue that needs to be acknowledged in settlement studies, the problem is not so easily solved with a change to more neutral terminology. Instead, it is crucial that we clearly define what we mean by our site definitions, and that we continue to adopt a critical approach to the work of other archaeologists.

Another issue with identifying settlement during prehistory is the fact that evidence for domestic activities is often found in association with non-settlement sites. For example, sherds of pottery, food debris, and fragments of quern are often found in the ditches of henge monuments or round barrows (Bruck 1999a: 54). Along with the rarity of 'houses' in the Early Bronze Age, this has led some archaeologists (Bruck 1999a) to suggest that permanent settlement sites were not a feature of some prehistoric societies. Instead, settlement is seen as shifting across the Early Bronze Age landscape, which includes periodic visits to henges, ring ditches, and barrows (Bruck 199a: 68). Whilst short-term occupation of these sites is possible, I believe that there was a distinction between short-term, periodic occupation at funerary and ceremonial monuments, and long-term settlement at specific locations in the landscape. The evidence for this is more fully explored in the discussion of Early Bronze Age settlement in the study area, but there is sufficient evidence from the study area to suggest that parts of the landscape were primarily used for settlement.

Finally, it is also worth considering how the location and nature of settlement boundaries is not always straightforward (Bruck and Goodman 1999). Domestic refuse often extends beyond the perceived boundaries of a settlement, as is the case with the Neolithic tells of south-eastern Europe (Bailey 1999). This ultimately jeopardises our definition of some settlement sites, and it is entirely possible that some of the *single roundhouses*

included in this study were part of a nucleated settlement – the remains of which exit outside of the excavation trench boundaries. It could be argued that enclosed settlements provide us with the most complete picture of the nature and extent of a settlement, but this is also extremely problematic. Excavations rarely extend further than the boundaries of these settlements, and so it is unknown whether settlement extended beyond the physical boundaries of the enclosure. For example, at Coventry Road, Leicestershire, a Middle Iron Age settlement was excavated which consisted of an enclosure with three internal, and four external roundhouses (Chapman 2004). Due to financial and legislative constraints, it is not always possible to excavate the interior and the exterior of these sites, but it serves to demonstrate that our Western notions of what constitutes the limits of a settlement are sometimes contradicted by the archaeological evidence.

The purpose of this chapter is to make us think of what constitutes a settlement, and to display an awareness of the problems of defining it in both theory, and practice. It also sets out the basic principles of this study, and how the these are employed in the context of the Bronze Age in south Wales.

5. The Bronze Age physical environment

5.1 Geology (Figure 4)

All major geographical elements are found in Wales and the adjacent sea, and for much of the country the differences in geology are reflected in the topography (Howells 2007). In south-east Wales, both the Brecon Beacons and Black Mountains are composed of Old Red Sandstone, which was formed during the late Silurian and early Devonian periods (Howells 2007). Deposits of mudstone and Old Red Sandstone continue into the northern region of Glamorgan, but the southern half is dominated by limestone which was deposited during the early Jurassic period (Howells 2007). The South Wales Coalfield underlies an oval-shaped plateau principally found in Glamorgan and largely consists of shale and mudstone, with the occasional band of sandstone (Howe 1965).

To the south-west, small outcrops of Precambrian rocks occur in Pembrokeshire and Carmarthenshire (Bowen 1965). Northern Pembrokeshire and Carmarthenshire are mostly made up of volcanic Ordovician rock, which is highly weather resistant (Howells 2007). The difference in resistance between these and less competent sedimentary rocks is reflected in the heavily indented northern coastline of St Bride's Bay (Howells 2007). To the south, parts of Pembrokeshire are made up of Old Red Sandstone and Silurian rocks, but limestone deposits are a significant feature of the Castlemartin and Gower peninsulas (Howells 2007).

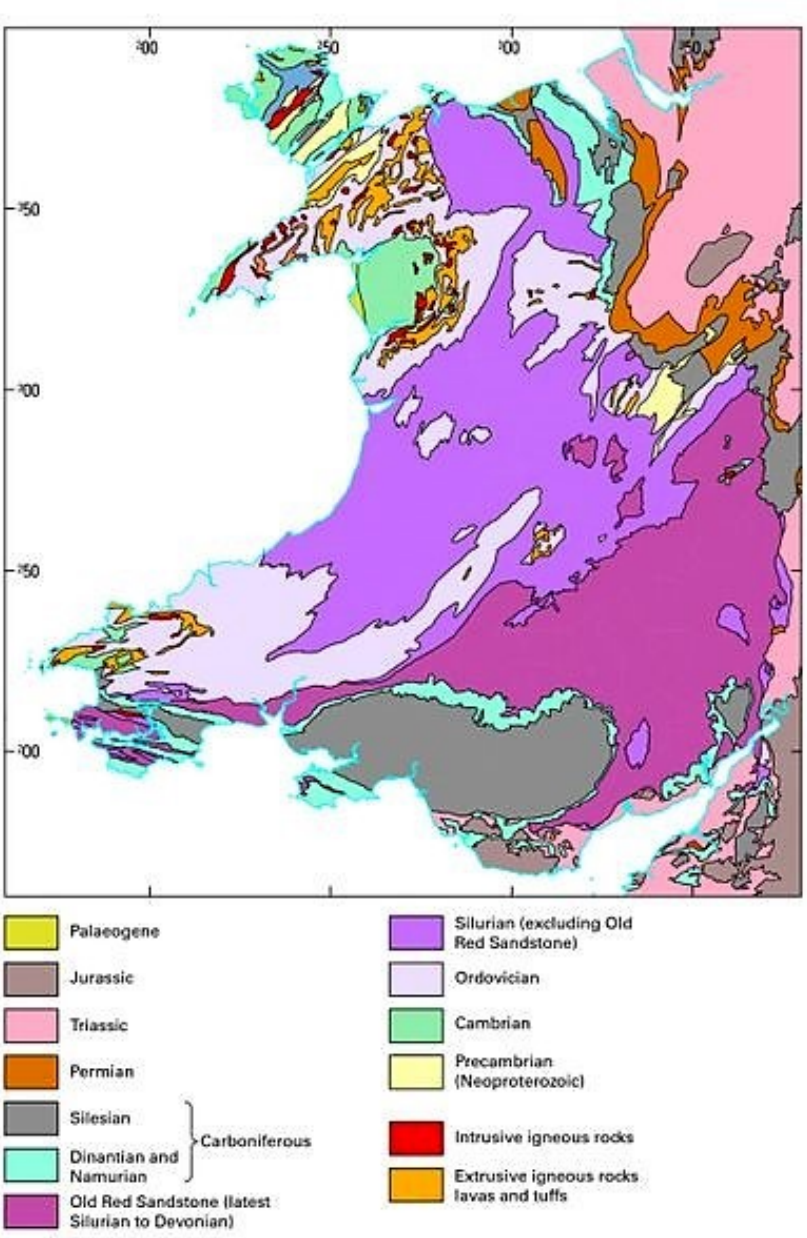

Figure 4. Geological map of Wales (Howells 2007)

5.2 Climate

Climate has played an integral role in understanding British Bronze Age settlement patterns. Since the 1980s it has been understood that the period of mild climate ended during the Middle Bronze Age, and that the resulting climate was wetter, colder, and stormier (Turner 1981: 261). Large areas of exposed hillsides – cleared during the Late Neolithic and Early Bronze Age – would be vulnerable to such conditions, and this resulted in inhibited regeneration of woodland, poor soil fertility, and peat formation (Leighton 2012: 33). Previous studies have emphasised how these conditions would have resulted in the abandonment of the uplands, and that this was followed by a period of social unrest and the widespread construction of fortified settlements (Burgess 1985; Lynch and Davies 2000). However, evidence from northern Britain (Young and Simmonds 1995) and parts of south Wales has shown that woodland clearance continued through the Late Bronze Age and into the Iron Age. Furthermore, numerous upland roundhouse settlement sites – typically dated to the Bronze Age – have been found to date to the Iron Age, which suggests that these communities were far more resilient and adaptable than previously thought (Crew 1989; 1998). With this in mind, it is important to develop a more nuanced understanding of how communities would have responded to climatic changes with various coping strategies (Bell and Walker 2005).

5.3 Vegetation history and land use

The Early Bronze Age is a period of significant landscape transformation across Britain, and several palaeoenvironmental studies have been carried out over the past few decades across southern Britain and south Wales. Evidence from the uplands of south Wales is particularly strong, with several studies carried out across the Brecon Beacons and the Black Mountain Range. From the Late Neolithic onwards, pollen diagrams from the western Beacons show increasing pressure on woodlands which included high levels of oak and alder (Leighton 2012: 31). At Waun-fignen-felen, at a site 530 metres ASL, peat associated with burning began to form during the period 2858 cal. BC – 2297 cal. BC (Smith and Cloutman 1988). These Early Bronze Age samples indicate a decline in elm, woodland clearance, and some local agricultural activity (Smith and Cloutman 1988: 176). At Pen Rhiw-wen and at Nant Helen, a sharp increase in charcoal, sharp fall in birch, and an increase in open-country species has also been dated to this period (Leighton 2012: 31).

By the Middle Bronze Age, some areas such as Coed Taf had become mostly open landscapes after the selective clearance of oak, and the expansion of heath (Leighton 2012: 31). During the Late Bronze Age, woodland regeneration occurs at some sites in the southern uplands, but pollen samples from Mynydd Myddfai indicate further woodland clearance during this period (Leighton 2012: 33-34). This suggests that the uplands were settled during the Late Bronze Age, but it is unclear to what extent.

Evidence from cultural horizons beneath burial mounds on Pen-y-fan and Corn-du point to a local mixed farming regime where the valleys and slopes were used for arable cultivation, and the higher ground reserved for grazing (Leighton 2013: 33). At Fan Foel, heathland and grassland were established by the time a cairn was constructed in 2140 –

1270 BC (Hughes and Murphy 2013). At Pen Rhiw-wen, a more open landscape was established by c. 1650 BC, with the majority of activity occurring on the south side of Garreg Lwyd (Leighton 2013: 33). Environmental work at a round barrow site on the summit of Fan Foel, located on the northern escarpment of Mynydd Du, also indicates an expansion of heathland during the Late Neolithic and Early Bronze Age which – combined with the fluctuations in arboreal and non-arboreal pollen – suggests an increase in human activity (Caseldine and Murphy 2013: 137).

Environmental evidence from the lowlands and south-west Wales is much more difficult to discuss, given that the majority of studies have focused on the Brecon Beacons and the Black Mountains. Evidence from a post-glacial raised bog at Llanllwch indicates that oak and hazel woodland dominated the Late Neolithic and Early Bronze Age landscape, with alder woodland found near the raised bog (Thomas 1965). A limited evaluation of a core sequence from Martin's Pill, Pwllcrochan, shows that alder dominated the local woodland on the valley floor, with hazel and oak on the valley sides, and a pastoral component in the Early Bronze Age (Bates et al. 2010). Work along the South Wales Gas Pipeline Project has provided a series of sampled, dated, and studied organic sequences from Felindre to Brecon, and Milford Haven to Aberdulais (Rackham and Challinor 2014). The results suggest a heavily wooded landscape between Felindre and Brecon for much of the Bronze Age, but there is evidence for significant forest clearance in some areas. One sequence taken from Mynydd Myddfai at 350m above Ordnance Datum shows that significant forest clearance had already occurred by the Early Bronze Age, and this sequence also included evidence for cereal cultivation (Rackham and Challinor 2014: 148). At the lowland sample sites, pastoral lands do not appear to constitute a significant part of the landscape, and evidence for cereal cultivation is evident from the Middle Bronze Age onwards (Rackham and Challinor 2014:

149). To summarise, the authors suggest a patchwork landscape, where flatter areas with good soil were cleared for pastoral and cereal cultivation, whereas the narrow valleys, hillsides, and wetland sites remained wooded for much of the Bronze Age (Rackham and Challinor 2014: 149). This contrasts with the evidence from Porth y Rhaw, where the local economy appears to be largely pastoral, with limited evidence for cereal cultivation (Caseldine and Griffiths 2010).

On the Gwent Levels, significant episodes of woodland clearance also occurred on many sites throughout the Bronze Age (Brown 2013). Small-scale woodland clearance occurs at Caldicot (Nayling and Caseldine 1997) and Vurlong Reen (Walker et al 1998) during the Late Neolithic and Early Bronze Age, and the absence of cereal pollen is taken as an indicator for pastoral activity (Brown 2013: 281). Major landscape transformations occur throughout the Bronze Age at sites such as Llandevenny, with a sharp decline in oak and hazel occurring during the Early Bronze Age, followed by an increase in plants indicative of meadows, pasture, and cultivated land (Brown 2013: 281). As of yet, there is no archaeological evidence for Bronze Age activity in the vicinity of Llandevenny, but the author suggests that this is likely to have been located away from the wetland edge (Brown 2013: 282). The trends seen at Llandevenny are also broadly similar to those at other sites at the wetland edge of the Gwent Levels, and clearance is associated with the occasional cereal grain which suggests an arable component to a largely pastoral subsistence economy (Brown 2013: 285).

6. Early Bronze Age settlement

6.1 Distribution of Early Bronze Age settlement sites (Figure 5).

Out of the 35 dated settlement sites, 21 are found towards the south-west of the study area (Figure 5). This bias is more a reflection of recent work along the South Wales Gas Pipeline where 11 out of 13 Early Bronze Age sites are in Carmarthenshire and Pembrokeshire, and it would be premature to argue that this region was more densely occupied in contrast to south-east Wales.

The majority of sites across both areas are situated between 0 – 50m above sea level, located close to the coast, or to secondary and primary river valleys. Only one roundhouse settlement has been found between 0 and 25m above sea level, and this is the nucleated settlement found at Old Market Street, Usk. The other roundhouse settlements are primarily located on sloped ground, many of which would have had prominent views of the local landscape (Lewis 1974; Cambria Archaeology 2007).

The evidence from the uplands is restricted to only two sites in south-east Wales, but this is undoubtedly due to the lack of excavation and absolute dating evidence. The uplands of south-west Wales are devoid of any dated evidence for settlement in the Early Bronze Age. There is also limited evidence for Early Bronze Age settlement in the Tywi Valley, which runs eastward through Carmarthenshire and into Powys, particularly towards the southern end where there are several burnt mounds.

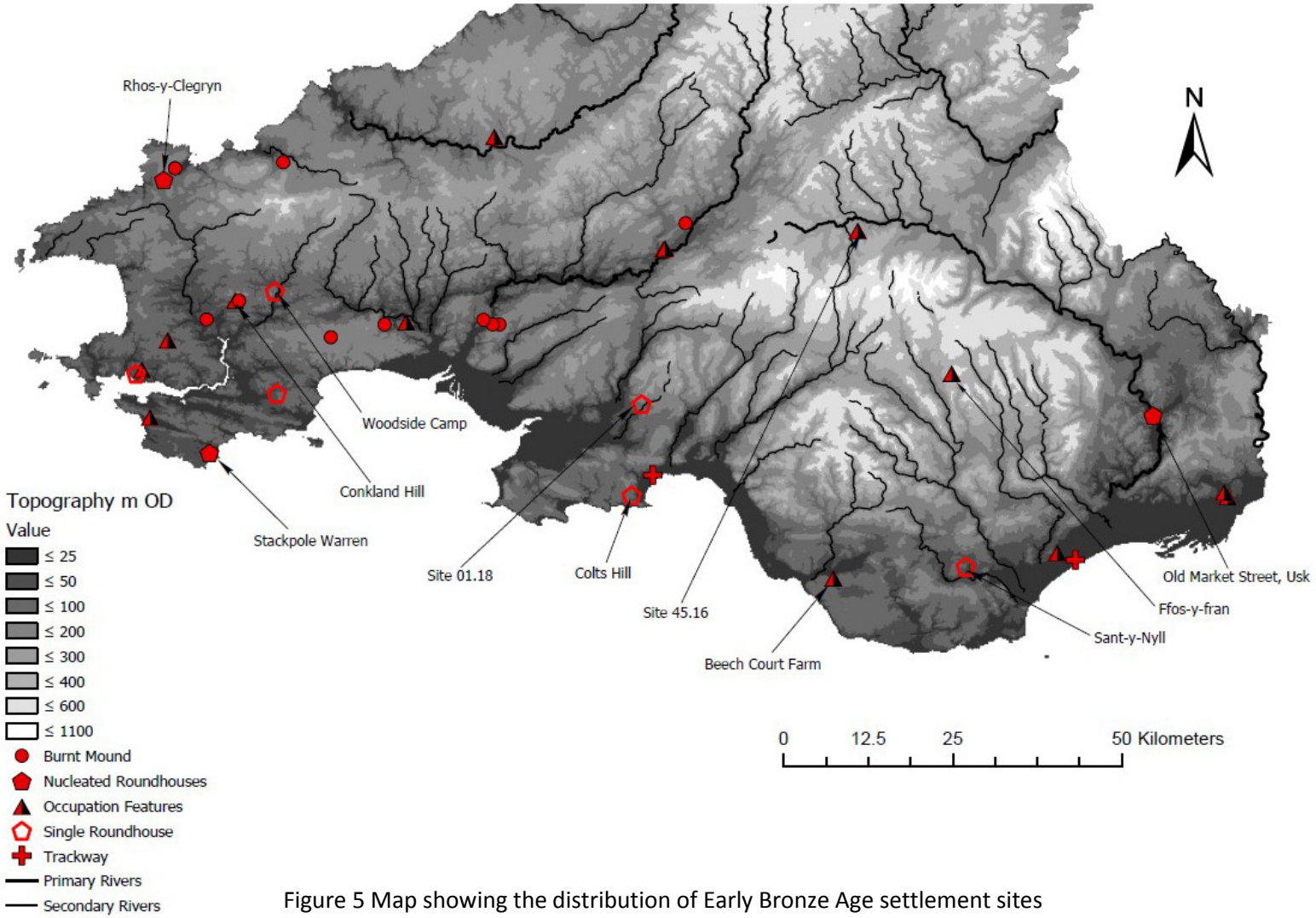

Figure 5 Map showing the distribution of Early Bronze Age settlement sites with key sites labelled (©Crown Copyright and Database Right 2017. Ordnance Survey (Digimap License)).

6.2 Domestic or ritual?

Perhaps the most striking observation to be made about several Early Bronze Age settlement sites is their association with ceremonial monuments. This relationship has increasingly become a topic of focus for studies on Early Bronze Age settlement (Bruck 1999a; 2000; Halstead 2005; 2011), where it has been suggested that settlement sites were not physically, or conceptually distinguished from the rest of the Early Bronze Age landscape, and that "a class of settlement sites cannot be recognised" (Bruck 1999a). Settlement is instead suggested as shifting across the landscape, and this includes short-term occupation at ceremonial, and funerary monuments (Bruck 1999a: 70; Halstead 2011: 53).

This relationship between domestic and ritual can be observed across several sites in the study area. In south-east Wales, timber roundhouse structures were found beneath a cairn on Colts Hill, Mumbles, and a round barrow at Sant-y-Nyll, Glamorgan (Savory 1969, 1972, 1984). In the case of Sant-y-Nyll, three oval structures were found above an old land surface which contained sherds of Neolithic simple rimmed bowls, Bronze Age Beaker and Food Vessel sherds, and a small assemblage of worked flint (Savory 1962: 24; Burrow 2006: 341). The presence of Neolithic pottery, and the possibility that Hut A was later than Hut B or C (RCAHMW 1976a: 100-1), suggests that the two earlier huts could be Neolithic. It is for this reason that the site has been classified as a *single roundhouse* settlement, rather than a *nucleated settlement*.

A similar situation is seen in the south-west, but the two settlements which are associated with ceremonial monuments are of an entirely different character to those found in the south-east. At Stackpole Warren (Figures 6 and 7), the destruction phase of

roundhouse 146 was radiocarbon dated to the periods 2134 – 1700 cal. BC (95.4% probability) and 1876 – 1457 cal. BC (95.4% probability) (Benson *et al.* 1990: 187, 239). Sealed beneath this was a central hollow which contained a red clay lining and traces of burning which continued up the sides – suggesting that it functioned as a hearth (Benson *et al.* 1990: 187). Finds from the destruction debris included flint, collared urn, small quantities of animal and human bone, and flotation of 52kg of this fill produced 63 cereal grains – mostly barley – and weed seeds (Benson *et al.* 1990: 187). Three further hollows were found, as well as a series of post and stake-holes in the eastern area of the site, and these are likely to represent further Early Bronze Age structures based on the presence of Beaker sherds (Benson *et al.* 1990: 187). What is significant is that some of the post-holes were found in the upper layers of the destruction layer (Benson *et al.* 1990: 189). It is possible that these post-holes represent the remains of a secondary structure which was constructed directly over the remains of the primary Early Bronze Age roundhouse. In the Middle Bronze Age, the site became a focus for ceremonial activity when a standing stone was set into the hollow placed above roundhouse 146, and a series of over 2000 stones were found to radiate eastwards from the standing stone (Benson *et al.* 1990: 190).

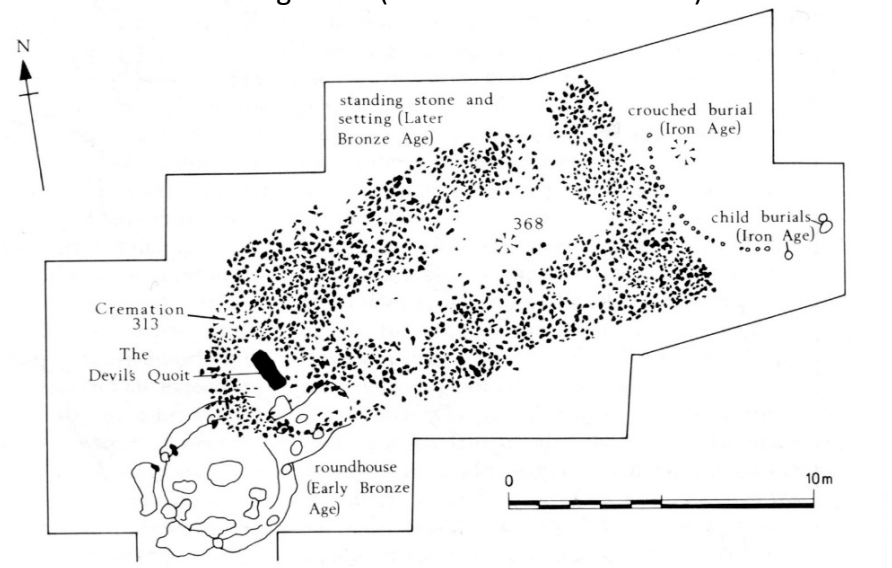

Figure 6. Plan of main features at Stackpole Warren (Benson *et al.* 1990).

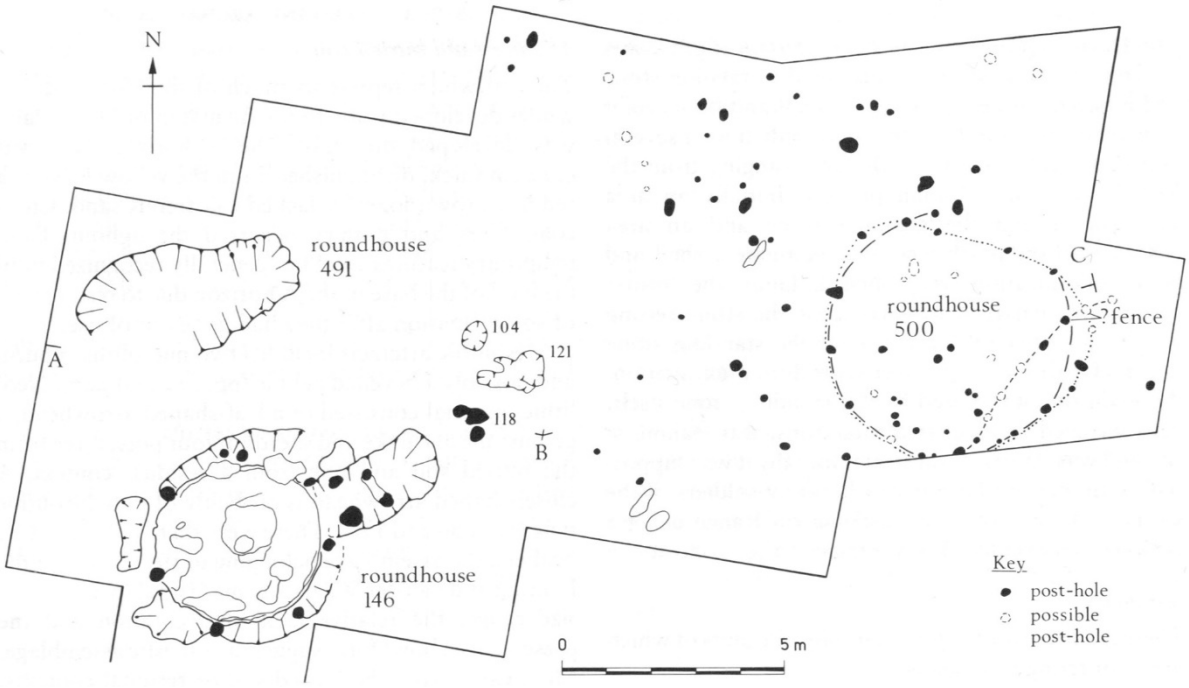

Figure 7. Early Bronze Age features at Stackpole Warren (Benson *et al.* 1990)

The second site in Pembrokeshire to display this relationship is at Rhos-y-Clegryn, Pencaer (Figure 8), where up to seven sub-rectangular structures were also found beneath a standing stone and stone setting (Lewis 1974). The site is problematic in terms of dating due to the lack of finds, and the only radiocarbon sample obtained from the site returned a modern date (Lewis 1974). Some authors favour a Neolithic date based on the phasing between the earlier structures and the later Bronze Age ceremonial complex (Darvill and Wainwright 2016: 70). On the other hand, Brittain has argued that these two phases were only separated by a short period of time, and that the structures could also date to the Early Bronze Age (Brittain 2004). It is apparent that not all the structures were contemporary, as Hut III was constructed over Hut I, and Hut VII over Hut II (Figure 6.2.3), and so it is possible that at least part of the settlement dates to the mid-third millennium BC. With this in mind,

the site has been included in this study, but it should be understood as one of the least reliable examples of Early Bronze Age settlement in the region. In contrast to Stackpole Warren, there is no evidence for destruction by fire. Instead, it appears that each house was dismantled carefully at the end of its life cycle where the post-holes, and hearths, were filled with clay and small stones (Brittain 2004). The lack of finds from each of the occupation layers suggests short-term occupation (Lewis 1974: 33), but this could also be a result of the dismantling process, where the majority of finds were collected and deposited elsewhere. A third site at St Ishmael's, Pembrokeshire (Williams 1988), also displays a relationship between a standing stone and possible structures, but the evidence for occupation is far less convincing compared to Stackpole Warren and Rhos-y-Clegryn. Instead, it is interpreted here principally as a ceremonial site where the evidence for occupation is not significant enough to warrant it being included as a settlement site.

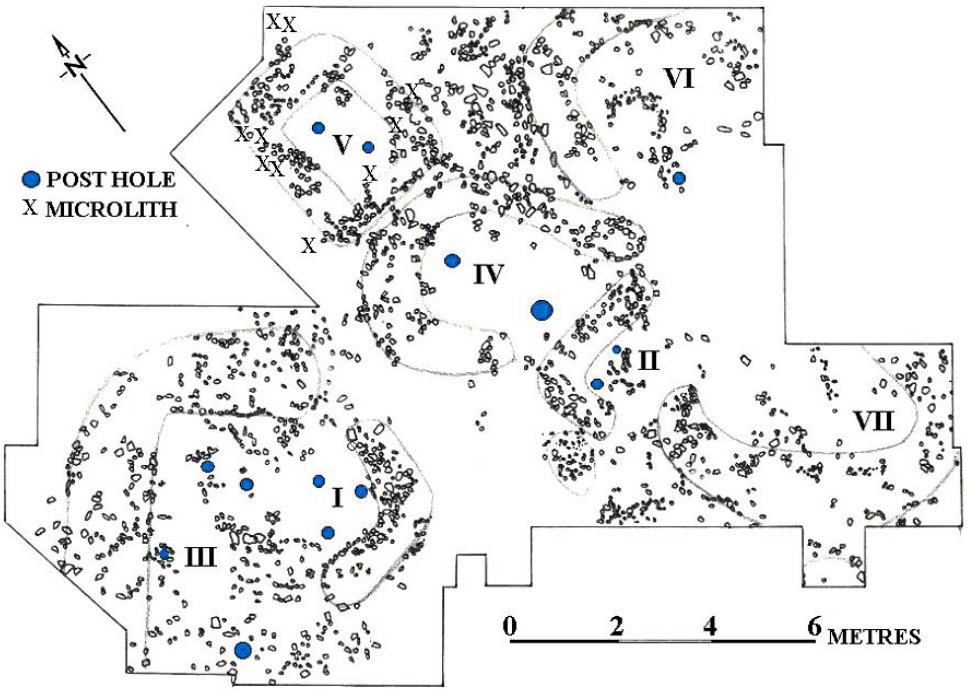

Figure 8. Plan of structures at Rhos-y-Clegryn (Brittain 2004)

The above examples highlight the transient nature of Early Bronze Age settlements in the study area. It is proposed here that these sites began as temporary settlements associated with the construction of insubstantial structures, some of which suggest nucleated settlement, or at the very least repeated settlement of a specific location. In the south-west, the end of a settlement was marked with the erection of a standing stone and stone setting. In the south-east, it can be argued that the construction of round barrows or cairns marked the end of single household settlements. The interpretation that these earlier structures did not exist purely as a form of settlement must also be acknowledged, but it is significant that human remains are not recorded as being present in the early stages of these settlement sites. It is only when these sites undergo a physical change (i.e. their development into a permanent ceremonial complex) that we see the inclusion of funerary deposits, and this would suggest that the primary phase of these sites was predominantly associated with settlement. In addition to this, the *nucleated settlement* found at Old Market Street, Usk, displayed little evidence for ceremonial or funerary activities. Up to seven small, sub-circular structures were found at Old Market Street (Marvell 1998b), but the results of the excavations have not been published in full. No pottery was found, but Late Neolithic or Early Bronze Age lithics were found along with an Early Bronze Age gold earring (Marvell 1988; Peterson and Pollard 2004: 68). What is apparent however is the lack of evidence for ritual or ceremonial activities, and this would suggest that the site primarily functioned as a form of permanent settlement in the Early Bronze Age.

Returning to the case made by Bruck (1999a) and Halstead (2011) of shifting settlement in the landscape, it is instead suggested here that long-term settlement was a feature of the Early Bronze Age. Both Rhos-y-Clegryn and Sant-y-Nyll demonstrate the fluidity of sites in the Early Bronze Age, and how settlement might later become a focus for

ceremonial and funerary monuments. This would imply that these sites were important, and that the erection of standing stones was a means of drawing attention to their significance in the landscape.

6.3 Occupation Features?

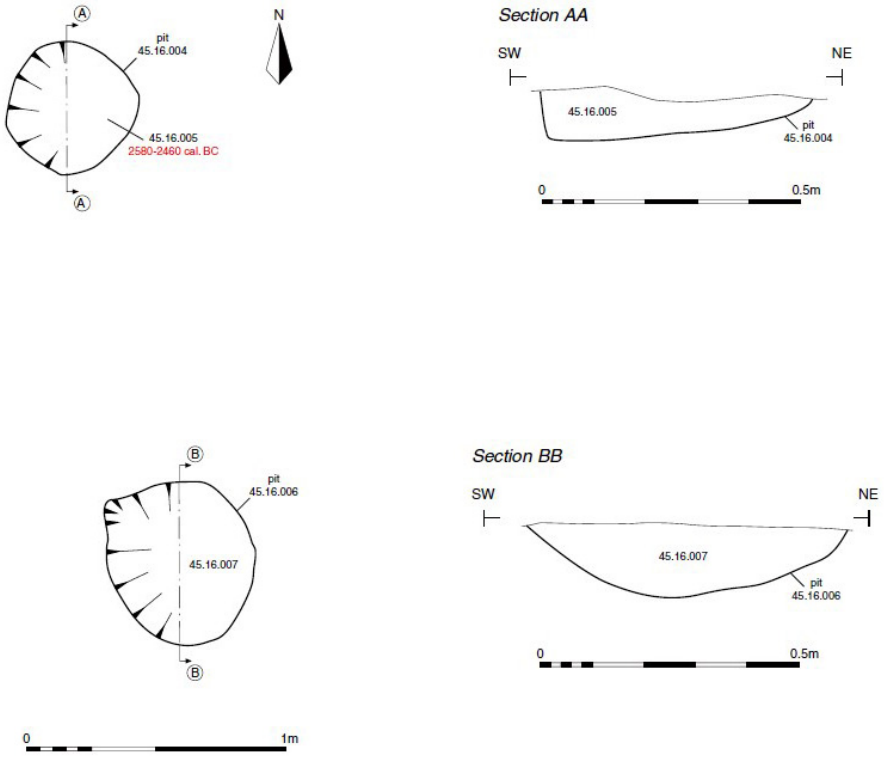

Figure 9. Plan and sections of the two small Early Bronze Age pits from the South Wales Gas Pipeline Project, Site 45. 16 (Cotswold Archaeology 2013l).

The most common form of Early Bronze Age settlements found in the study area are classified as *occupation features*. Although these sites are amongst the least exciting in terms of their archaeological components, it has long been suggested that these sites might be all that remains of Early Bronze Age settlement sites (Gibson 1982; Lynch 2000: 85; Burrow 2011: 155). More recently, Halstead (2005; 2011) has mapped the distribution of lithics and metalwork in the landscape, with the aim of furthering our understanding of settlement patterns in the Welsh Marches. The main issue with lithics – and in some cases metalwork – is that many of them are undiagnostic and only a proportion of finds can be

dated to the Late Neolithic or Early Bronze Age (Halstead 2011: 107). They are not associated with any cut features which might contain charcoal for radiocarbon dating, or pottery which can be used to determine a tighter chronological framework. Metalwork is also absent from most Early Bronze Age settlement sites (Lynch 2000: 99-103), and only Old Market Street, Usk, provided evidence for a single gold earring which has since been dated to the Early Bronze Age (Peterson and Pollard 2004: 68). In addition to this, the majority of Early Bronze Age metalwork is found in association with funerary or ceremonial monuments across Wales, and Britain (Lynch 2000: 99-103). This suggests that the deposition of metalwork was not primarily associated with occupational or utilitarian reasons, and it is more likely that it represents complex ritual and ceremonial acts conducted in parts of the landscape not associated with settlement.

In terms of distribution, *occupation features* dating to the Early Bronze Age have been found across the study area in coastal, lowland, and upland contexts (Figure 5). They are also the only form of uplands settlement which has been dated to the Bronze Age, let alone the Early Bronze Age. Site 45.16 is located at 270m above sea level, on the northern slopes of a 400m high hill which overlooks the River Usk (Cotswold Archaeology 2013l). The results of the excavation are limited to two small pits (Figure 9), whose fills contained fuelwood charcoal, flint debitage and flakes, limited evidence for Bronze Age pottery, and charred hazelnut shells (Cotswold Archaeology 2013l: 5-6). One of the pits was radiocarbon dated to 2578-2410 cal. BC (95.4% probability), and it can be presumed that the other pit was contemporary based on their proximity to one another, as well as their similar fills and finds.

Although these sites do not provide much in terms of archaeological evidence, they are nevertheless important to the study of settlement during this period of British prehistory. In her brief discussion of occupational debris, Lynch argues that these types of sites do not add to our understanding of the "fundamental economy" of the Early and Middle Bronze Age (Lynch 2000: 85). Although some of the pottery and flint finds which come from these sites are largely insignificant, and often undiagnostic, the environmental potential for these sites is much more significant. For example, the evidence from Site 45.16 confirms that wild resources, such as hazelnuts, were being exploited in the uplands of south-east Wales during the Early Bronze Age – a period where we have little direct evidence for subsistence activities within the region. Other Early Bronze Age *occupation features* have also provided evidence for charred hazelnut shells such as Site 514 (Cotswold Archaeology 2014a) – near to South Hook, and Site 502 (Cotswold Archaeology 2013b).

The above has highlighted how *occupation features* are useful in understanding the nature of occupation in the Early Bronze Age, and it is possible that these are all that remains of ephemeral settlement. However, it is equally as possible that we are not excavating large enough areas, and it is significant that several *occupation features* have been found on the edge of the excavation area. This is seen at Crickhowell Road, Cardiff, where a single Early Bronze Age pit was located near to the northern limits of the excavation area (Brett *et al.* 2009). It is possible that further evidence of occupation was located outside of the excavation area, but within the confines of the development area (Brett *et al*. 2009). Similarly, the excavations along the South Wales Gas Pipeline have resulted in the discovery of several Early Bronze Age *occupation features*, but the nature of the project meant that the excavation trenches were very narrow.

6.4 Pre-enclosure settlement in the Early Bronze Age

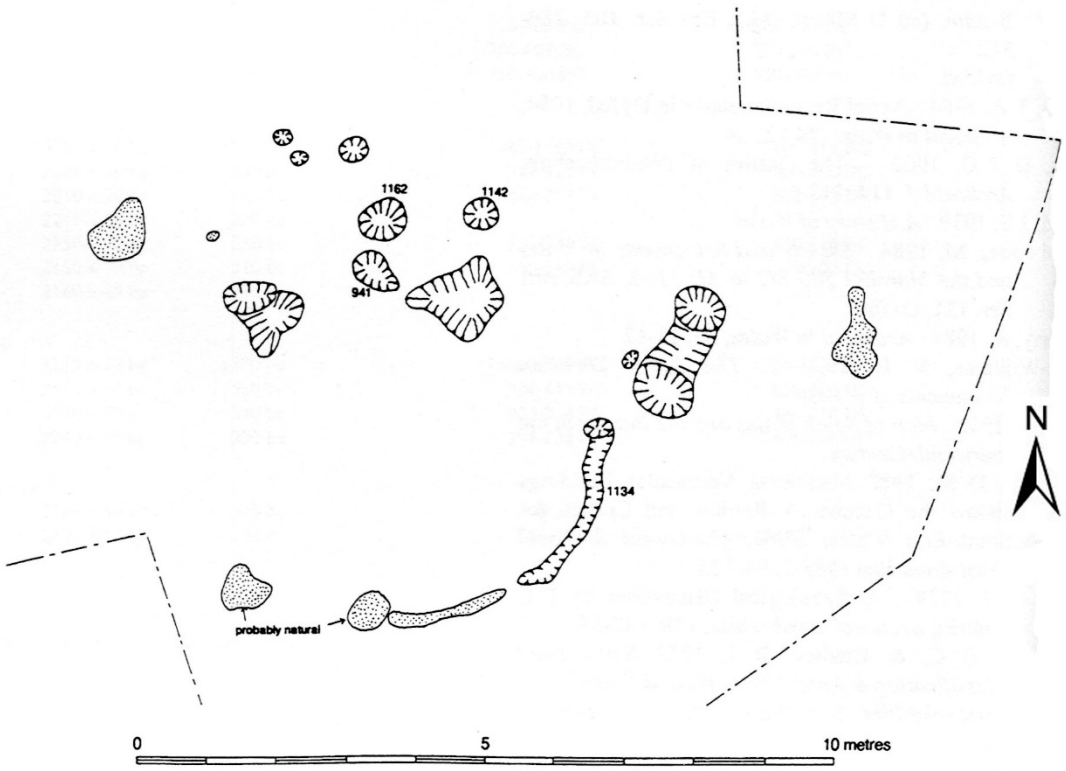

Figure 10. Plan of Early Bronze Age features from Woodside Camp, Llawhaden (Williams and Mytum 1998).

Another recent development is the recognition that some later prehistoric enclosures were also occupied during the Early Bronze Age. At Woodside Camp, Llawhaden, a series of features including a wall gully, possible stakeholes, and several pits were sealed beneath pre-enclosure soils (Williams and Mytum 1998: 16; Figure 10). The presence of a wall gully and the layout of the features suggests that they, in part, represent the remains of an ephemeral roundhouse. Some of the features contained flint and pottery, and one of the pits was radiocarbon dated to 1974-1627 cal. BC (95.2% probability) (Williams and Mytum 1998: 16).

The other site which provides evidence for pre-enclosure occupation in the Early Bronze Age is Beech Court Farm, Vale of Glamorgan (Bayliss *et al.* 2011: 524-6). Samples obtained from a double posthole and a stakehole adjacent to a hearth suggest occupation between 1964-1659 cal. BC (95.4% probability) and 1878-1664 cal. BC (95.4% probability) (Bayliss *et al* 2011: 525). The nature of this occupation is not entirely clear, and so the site has been included in this study under the *occupation features* classification. It is possible that the hearth and stakeholes are all that remains of an Early Bronze Age roundhouse, but the two postholes are harder to interpret as being part of a single structure.

It is difficult to interpret the significance of these sites being occupied in the Early Bronze Age, and then later enclosed in the Iron Age. At Woodside Camp and Beech Court Farm, there is no evidence to suggest that these Early Bronze Age settlements would have been visible during the Iron Age. This contrasts with the evidence from some other sites within the study area, which appear to enclose and respect Early Bronze Age funerary monuments. On the summit of Moel Trigarn, Crymych, are three large stone cairns which are likely to be Early Bronze Age funerary monuments, and it is significant that they were never plundered for stone or seemingly altered during the construction of the hillfort (www4). Outside of the study area in East Lothian, an Iron Age ditched enclosure was preceded by an Early Bronze Age ring-ditch, which contained a central Beaker burial (Alexander and Watkins 1998). The Iron Age enclosure appears to respect the boundary of the ring-ditch, and it would suggest that the Early Bronze Age monument was in some way visible during the first millennium BC (Alexander and Watkins 1998: 244).

The decision to enclose these sites during the Iron Age suggests that these locations were an important part of the landscape, and that later communities were associating

themselves with earlier settlements. The act of enclosure could have been a means of controlling access, or drawing attention to the significance of these sites. In terms of location, Woodside Camp is located on almost level ground at nearly 90m above sea level, between 60-70m away from a rounded hilltop, with good views to the south and south-east (Williams and Mytum 1988). Beech Court Farm lies at 84m above sea level, enclosing a low rise, the south and west of which drops sharply to the Afon Alun (Bayliss *et al*. 2011: 524). Both sites are situated in prominent positions, and it is likely that this made them attractive locations for settlement in the Early Bronze Age, and enclosures in the Iron Age.

6.5 Summary of Early Bronze Age settlement

Settlement in the Early Bronze Age appears to have been focused primarily along the coast and the lowlands, but there is limited evidence for settlement in the uplands. Most importantly however, is the evidence for sustained settlement at Rhos-y-Clegryn, Stackpole Warren, and Old Market Street. Both Rhos-y-Clegryn and Stackpole Warren were also followed by a highly structured sequence of abandonment, and then re-appropriated into ceremonial complexes. That these sites were re-used and re-appropriated throughout prehistory suggests that they were significant locations in the landscape, and the erection of standing stones would have drawn attention to the potency of these sites. A similar situation can be seen with pre-enclosure settlements, but the act of enclosure in later prehistory would suggest that the control of access to these locations was also a feature of these sites.

There are also hints of an emerging regionality during this period, particularly evident through the distribution of burnt mounds. This is also supported by the evidence for re-appropriated settlements where, in the south-west, the erection of standing stones

marked the end of nucleated settlement sites; and in the south-east, the end of some settlement sites appears to have been marked by the construction of a round barrow or cairn.

7. Middle Bronze Age settlement

7.1 Distribution of Middle Bronze Age settlement sites (Figure 11).

Compared to the Early and Late Bronze Age, the distribution of Middle Bronze Age settlement is less widespread. 14 out of 33 sites are found along or close to the Gwent Levels below 25m OD; 4 sites are found adjacent to the Eastern Cleggau river in Pembrokeshire at 0m – 100m OD; and 6 burnt mounds are found adjacent to the River Tywi at 25m - 100m OD. The remaining settlement sites are predominantly found along the rest of the south-eastern coast, or in southern Pembrokeshire at 0m – 100m OD.

As is the case with the Early Bronze Age, the Middle Bronze Age burnt mounds are only found towards the south-west of the study area. By comparison, the vast majority of structures have been found in the south-east, with only one *single roundhouse* having been found in the south-west at Newton, Llanstadwell, at c. 50m OD. The Atlantic Trading Estate, Barry, is the only example of a nucleated settlement dating to this period, and this was found at c. 5m OD directly adjacent to the coast.

It would be hasty to suggest that the above areas are the primary regions of occupation during this period. Extensive fieldwork has been carried out along the Gwent Levels for the past few decades, and this has ultimately resulted in a wealth of information on the nature of Middle Bronze Age settlement in the Severn Estuary region (Bell 2013). Without this, and the results of the South Wales Gas Pipeline Project, the evidence for Middle Bronze Age settlement in the study area would be confined to but a handful of sites.

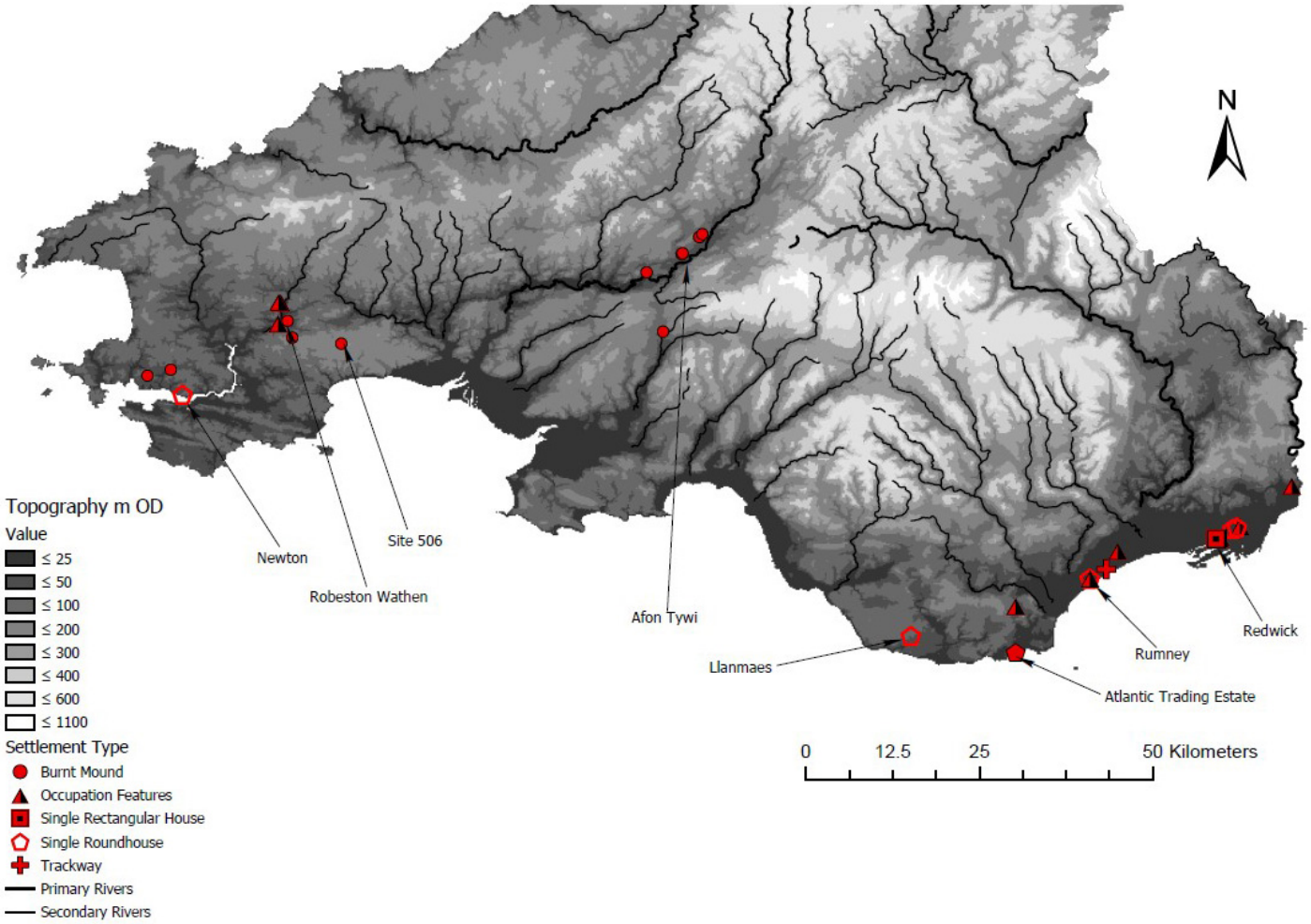

Figure 11. Map showing the distribution of dated Middle Bronze Age settlement sites with key sites labelled (©Crown Copyright and Database Right 2017. Ordnance Survey (Digimap License)).

7.2 A shift in settlement pattern?

As shown in Figure 11, there is relatively little evidence for Middle Bronze Age *nucleated roundhouse* settlements. In fact, there are less known nucleated settlements dating to this period than the Early Bronze Age. In southern England, the evidence for nucleated settlement is greater, and it is argued that the Middle Bronze Age marks a drastic shift from mobile settlement to fixed settlement locales (Bruck 1999b; 2000). This does not, however, appear to be applicable to the study area, and the concentration of settlement sites along the Gwent Levels would suggest a seasonal transhumance model, as suggested by Bell (2013).

What is also significant is that there is little evidence for continuity in Early Bronze Age settlements. The majority of earlier settlements appear to have either been abandoned, or re-appropriated during this period, and this suggests that there was an inherent change in the Middle Bronze Age settlement pattern. The continued presence of burnt mounds which are directly adjacent to, or overlooking the Afon Tywi, indicates the continued importance of this landscape. With this in mind, it is possible that evidence for nearby settlement exists at higher altitudes, perhaps to the north of Banc Melyn where an enclosure, field system, and a group of clearance cairns have been recorded (Murphy *et al.* 2009: 32). Outside of the study area, these types of settlement have been dated to the Middle and Late Bronze Age (Manley 1990; Johnston 2001; Burgess and Spratt 1985b; Fleming 1988), and there are several examples which have been recorded across south Wales. At present however, none of these settlement sites have undergone excavation, and dating is problematic.

Most of these upland hut circles are also characterised by the presence of a single stony bank; oval or circular in plan (Leighton 2012: 97). However, almost all Bronze Age roundhouses from south Wales were constructed from timber, and this continues to be the trend into the Early and Middle Iron Age (Ghey *et al.* 2008). It could be that stone roundhouses were chronologically later than the Bronze Age – a general trend recognised by the Welsh Roundhouse Project (Ghey *et al.* 2008: 1) – but it could also reflect regional differences. In north Wales, the majority of later prehistoric roundhouses are constructed from stone, and this also appears to be the case with Early Bronze Age roundhouses (Waddington 2013: 90). The difference in environmental and social factors in the uplands of south Wales could facilitate the development of a different regional identity to those of the lowlands, and it is possible that these regional differences were being expressed through a preference to construct more permanent, stone roundhouse settlements.

The clear majority of settlement sites are, however, concentrated along the Gwent Levels, and it is important to note the comparatively limited evidence for Early and Late Bronze Age occupation here. The four rectangular buildings found at Redwick are not substantial structures, and the relatively low quantities of artefacts indicates that these settlement sites were perhaps only constructed for short-term occupation (Bell 2013: 156). The presence of several rectangular structures is unusual, and they have currently only been found along the Gwent Levels, which would imply that they only occur in wetland contexts. Bell has suggested that they might have functioned as a *hafod* – a summer dwelling where cattle were brought for grazing and dairying (Bell 2013: 320). This is supported by the presence of cattle footprints (Bell 2013: 151-3), and the absence of cereal pollen from palaeonvironmental studies in the local area would suggest that this was a largely pastoral environment (Brown 2013: 282). This form of seasonal transhumance would not require the

wholesale movement of a community, and it is probable that the spring-time movement of cattle to the saltmarsh was only conducted by a portion of the community. It is likely that the rest of the community continued to reside at permanent nodes of settlement, and these might be found on along the wetland-dryland edge, further inland at higher altitudes, or along the major river valleys.

7.3 Burnt Mounds

7.3.1 Introduction

Burnt mounds are comprised of an oval or crescent-shaped low mound of heat cracked burnt stone, and they are often found in association with hearths or troughs (Hart *et al.* 2014: 135). They are found across Britain and Ireland in a wide variety of landscape contexts, but in south Wales they are predominantly found in the lowlands adjacent to rivers or streams (Fig. 12). Excavated examples have been found to range in date from the Late Neolithic to the Iron Age, but the vast majority of radiocarbon dated burnt mounds from south Wales have been dated between the mid-third and the mid-second millennium BC (Burrow and Williams 2008). Taking this into account, the undated burnt mounds included in this study are presumed to date to the Early and Middle Bronze Age, although they could conceivably date to earlier or later periods.

The function of burnt mounds is unclear, largely due to the lack of material culture which would otherwise indicate what activities might have taken place. It is generally accepted that the remains of these mounds are related to the heating of water, as they are often located adjacent to a source of water and are sometimes accompanied by troughs and hearths (Hart *et al.* 2014). The first experimental study into the function of burnt mounds

was carried out by O'Kelly in the 1950s, and it was suggested that they could have functioned as a place for boiling joints of meat (O'Kelly 1954). This was the dominant school of thought until the 1980s when it was suggested that burnt mounds might also have functioned as saunas (Barfield and Hodder 1987). More recent studies have also suggested that they could have also been used for brewing or leather tanning (O'Drisceoil 1988: 671), but it is likely that they fulfilled a combination of these activities (Beamish and Ripper 2000). The lack of definitive evidence makes it impossible to know with any certainty what their function was, but it is unlikely that they were used for cooking, as we would expect to find some animal or crop remains within the fill, or in a nearby midden. This raises the question over whether excavation techniques need to adapt. A recent study of Irish burnt mounds has provided evidence for elevated heavy metals at two sites, which suggests the use of off-site soils, urine, or ash – all of which could have functioned as a mordant (Brown *et al*. 2016: 286). Taking this into account, it would be worth replicating the authors' multi-element analysis of soil material from troughs during future excavations of burnt mounds across Britain and Ireland.

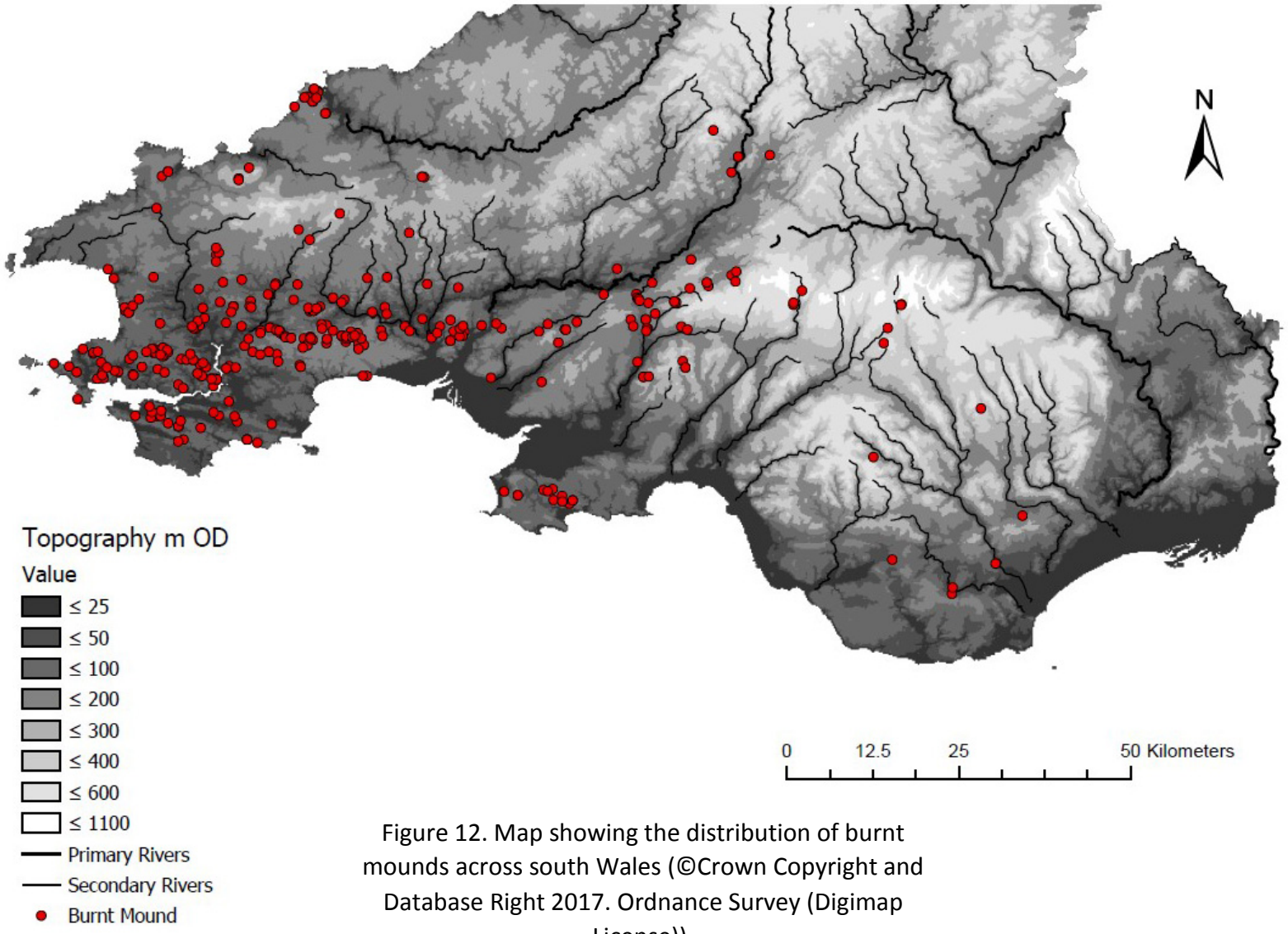

Figure 12. Map showing the distribution of burnt mounds across south Wales (©Crown Copyright and Database Right 2017. Ordnance Survey (Digimap License)).

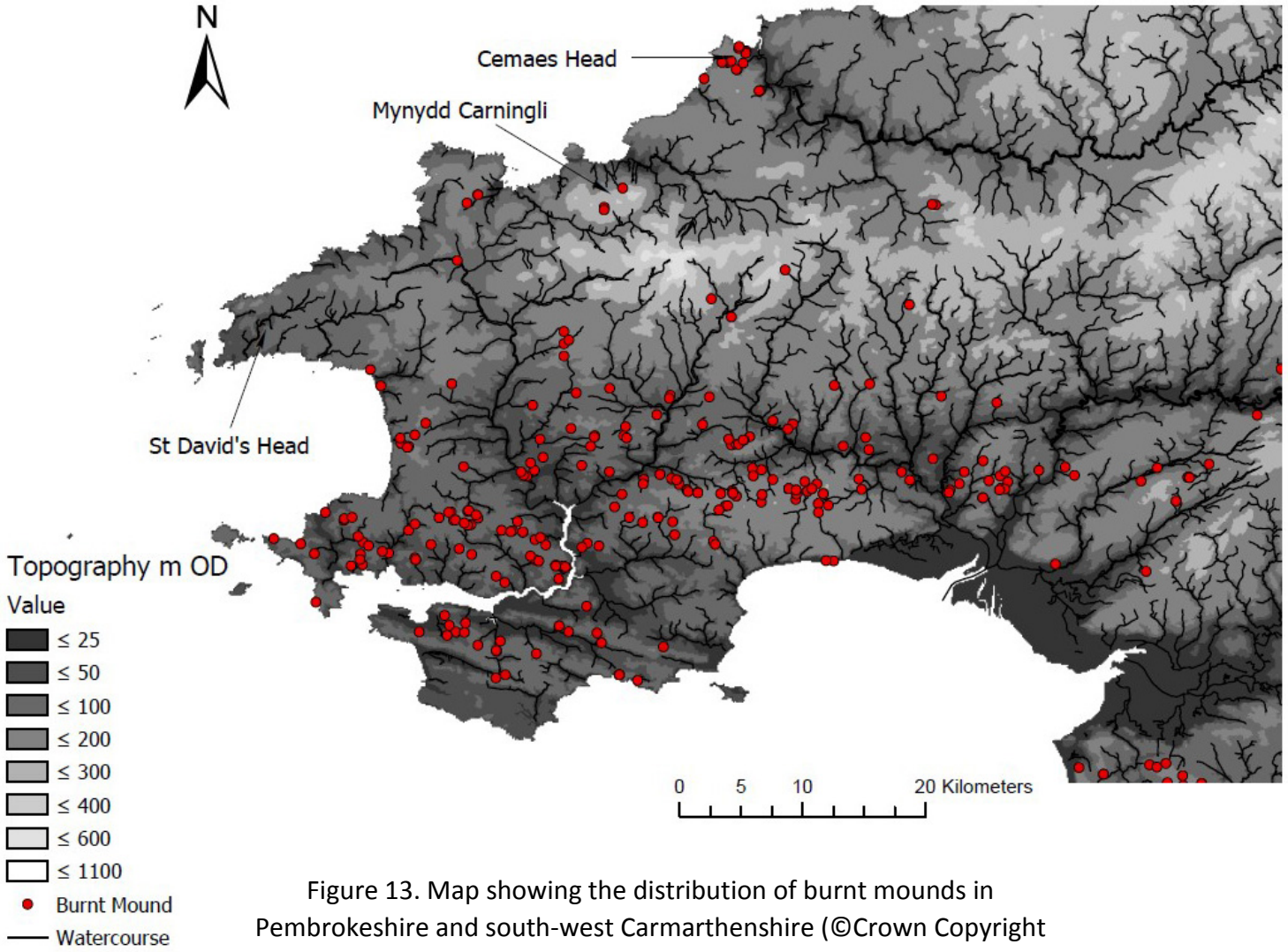

Figure 13. Map showing the distribution of burnt mounds in Pembrokeshire and south-west Carmarthenshire (©Crown Copyright and Database Right 2017. Ordnance Survey (Digimap License)).

7.3.2 Distribution of burnt mounds in south-west Wales (Figure 12 and 13).

In terms of overall distribution, burnt mounds are heavily biased towards the south-west of the study area, within the county boundaries of Pembrokeshire and Carmarthenshire (Figure 13). In both counties, they are focused towards the southern half, in and around river valleys, and they are almost exclusively found between 26 – 100m above sea level (Fig. 1). They appear in a limited capacity between 101 – 200m above sea level, and none have currently been found over 201m above sea level in this part of the study area.

It must also be acknowledged that some of the burnt mounds included in this study were not located during the latest survey carried out by the Dyfed Archaeological Trust (Williams 1995), or during later site visits. The addition of these sites did not, however, create any discrepancies in the overall distribution of burnt mounds observed. These sites have been included anyway, as it is possible that their remains are no longer visible due to ploughing or overgrown vegetation, or even because the co-ordinates are not entirely accurate.

In terms of their association with other forms of settlement, burnt mounds do not appear to be associated with contemporary post-built structures (Figures 5 and 11). At Robeston Wathen, the later phase of a burnt mound was radiocarbon dated to the period 1207-976 cal. BC (95.4% probability), and this compares well with the date range of 1122-919 cal. BC (95.4% probability) that was obtained from a posthole at Canaston Bridge – located 1.4km to the south-west (Schlee 2009a; 2009b; 2010). At Site 510, a radiocarbon date of 1947-1768 cal. BC (95.4% probability) was obtained from a burnt mound (Cotswold Archaeology 2013c). This compares with the radiocarbon date range of 1890-1682 cal. BC (94.9% probability), which was obtained from a ditch found at Site 508 (Cotswold

Archaeology 2014d). These two sites are located roughly 620m from each other on the slopes of Conkland Hill, but it is not entirely clear what function the ditch at Site 508 served, and whether the source of the radiocarbon sample came from another feature (Cotswold Archaeology 2014d).

Burnt mounds are noticeably absent from St David's Head, which is also devoid of any dated evidence for Early and Middle Bronze Age settlements. The presence of a large coaxial field system with irregular and smaller-scale enclosures or fields suggests a later prehistoric component, but it is not certain whether this dates to the later Bronze Age, or the Iron Age. It is noticeable that the majority of prehistoric sites recorded here are enclosures or promontory forts (Crane and Murphy 2010: 53-4). This would suggest that St David's Head was predominantly settled during the first millennium BC, but it is possible that the coaxial field system found here could date to the Middle Bronze Age (Darvill and Wainwright 2016: 182-3), or that evidence for Middle Bronze Age settlement exists beneath the later prehistoric enclosures.

There are two distinct clusters of burnt mounds which occur between 101 – 200m above sea level at Cemaes Head, and the boundary between south-east Pembrokeshire and south-west Carmarthenshire. There is very little evidence for burnt mounds occurring between 201 – 300m above sea level, but there are a handful which are to be found on the slopes of Mynydd Carningli, which lends credit to the suggestion that at least some of the prehistoric settlements located here date to the earlier parts of the Bronze Age.

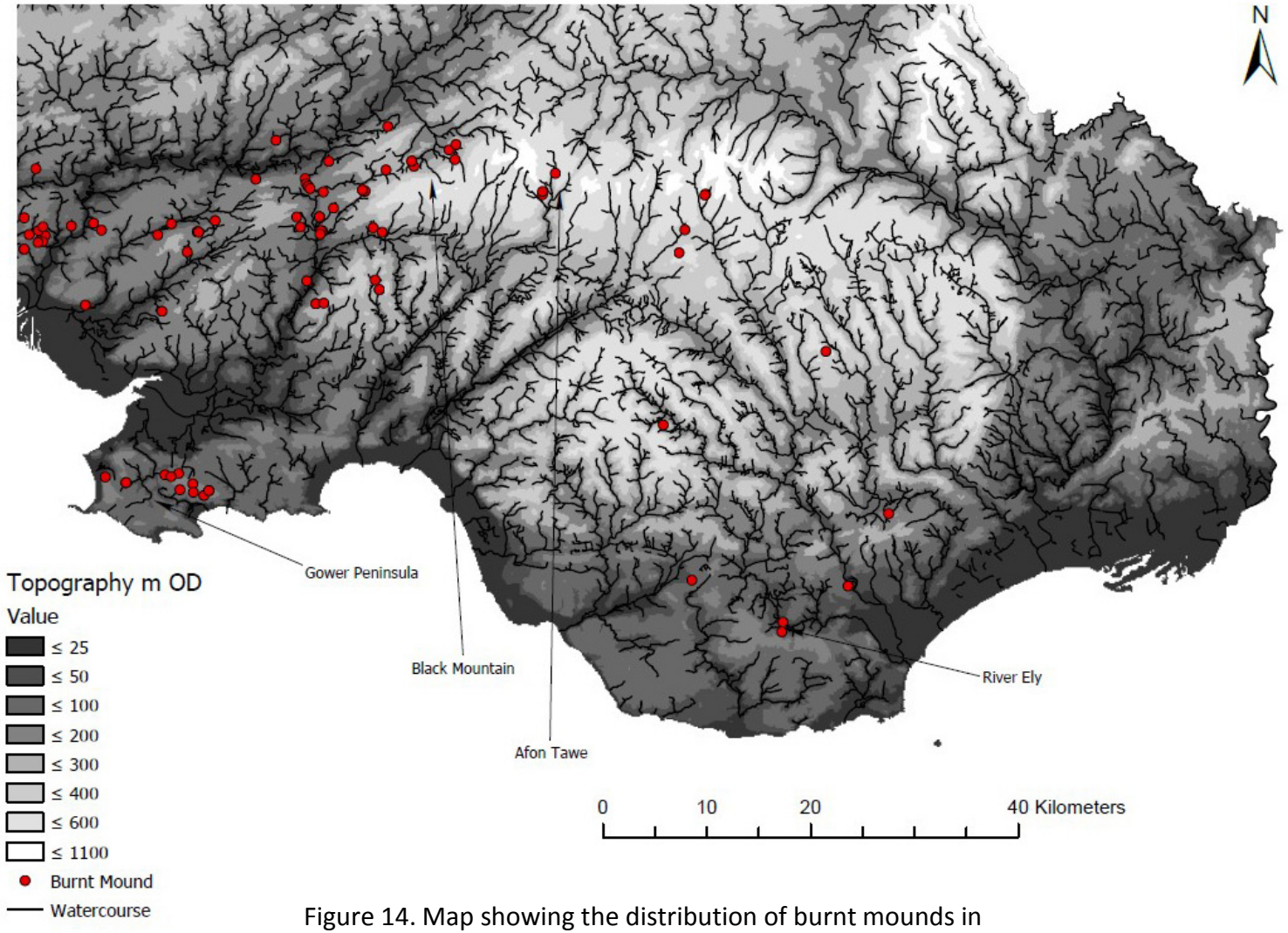

Figure 14. Map showing the distribution of burnt mounds in south-east Wales (©Crown Copyright and Database Right 2017. Ordnance Survey (Digimap License)).

7.3.3 Distribution of burnt mounds in south-east Wales (Figures 12 and 14).

In comparison to south-west Wales, burnt mounds do not appear to be a widespread feature of settlement in south-east Wales during the Early and Middle Bronze Age. Based on the latest survey by the Glamorgan-Gwent Archaeological Trust, a total of 43 sites were recognised as being probable burnt mounds (Higginbottom *et al.* 2007: 9). Several sites from this survey have not been included in this study's database, either because they were primarily described as a hearth-like feature, or because they were associated with non-Bronze Age material culture (e.g. GGAT PRN 01000m).

The clearest observation here is the dearth of burnt mounds in comparison to south-west Wales. Dated evidence for Early and Middle Bronze Age settlement has been found across the Vale of Glamorgan, but there is a lack of burnt mounds in this region. Similarly, no burnt mounds have been identified in Gwent, which has been suggested as reflecting the lack of fieldwork in the area, and the difficulty of identifying some of these features from the ground (Higginbottom *et al.* 2007: 9). It could be argued, however, that burnt mounds might not have been a major feature of this region. Based on the distribution of burnt mounds in England, there is also a lack of burnt mounds across western and south-western England – particularly around the Severn Estuary (Thelin 2007: 130). South-west England has experienced far more with regards to excavation than south-east Wales (Webster 2007), and this would suggest that there are regions of Britain and Ireland where burnt mounds were not a feature of the prehistoric landscape.

There are only two noticeable concentrations of burnt mounds in south-east Wales based on the current findings. On the Gower Peninsula, eight burnt mounds are found on Cefn Bryn - a prominent ridge of Old Sandstone which lies between 101 – 200m above sea

level. The burnt mounds here do not seem to be associated with major bodies of water, but several are recorded as being associated with heavily peated streams (GGAT PRNs 04788w and 00284w), as well as small streams (GGAT 02144w). There is also a high concentration of burnt mounds to the north-west of the Black Mountain, and these could be associated with some of the prehistoric settlements which have been recorded in the vicinity.

7.3.4 Discussion

Burnt mounds have only recently become a feature of academic discussions of Bronze Age settlement in Britain, and the excavation of these sites is mostly a feature of commercial archaeological units. Writing in 1991, Barber and Russell-White described burnt mounds as "among the most boring sites with which a field archaeologist must deal' (Barber and Russell-White 1990: 59). That these sites rarely produce any artefactual evidence makes them relatively unattractive to research excavations, and it also means that dating of these mounds is restricted to radiocarbon, and thermally stimulated luminescence (TSL) dating. With regards to south Wales, recent archaeological work along the route of the South Wales Gas Pipeline Project between 2005 and 2007 has provided a plethora of information on burnt mounds in the study area (Hart et al. 2014). Out of 39 excavated burnt mounds, eight were radiocarbon dated to the Early Bronze Age, 12 to the Middle Bronze Age, and six to the Late Bronze Age (Hart et al. 2014; Cotswold Archaeology 2014b, c, d, e, g, h, i, j, k, l, n, o, p, r, s, u). Previous to these examples, only six burnt mounds had been excavated and radiocarbon dated, and so the results of the South Wales Gas Pipeline Project provide a wealth of new information on the archaeology of burnt mounds from across south Wales.

Although the South Wales Gas Pipeline Project has added greatly to our knowledge of burnt mounds, the nature of the project has meant that only narrow transects of land

have been archaeologically investigated. For example, at Glan-ryd Bridge (Cotswold Archaeology 2014i), between seven and ten burnt mounds were found along a short stretch of bank. The discovery was highly unusual given the density of burnt mounds, which ranged in date from the Late Neolithic to the Middle Bronze Age (Cotswold Archaeology 2014i: 3), and there is the possibility that the foci of settlement lay beyond the northern limit of the excavation trench. Similarly, most other excavation trenches did not extend much further than 5m from the edges of the burnt mound (Hart *et al.* 2014: 136, 141-2, 144), and this leaves open the possibility that further settlement features might be found outside of their immediate surroundings.

The South Wales Gas Pipeline Project has also provided the opportunity to examine the longevity of use of burnt mounts, and whether they fit into the model of seasonality for Bronze Age settlement in the study area. The eight burnt mounds from Site 506 (Cotswold Archaeology 2014i) were subject to a programme of radiocarbon dating, which revealed that the site was used intermittently from 2891-2677 cal. BC (95.4% probability) to 1413-1236 cal. BC (95.4% probability) (Cotswold Archaeology 2014i). This would suggest that settlement in the locality remained attractive over a period spanning c. 1400 years, but it is unclear how long each mound was used for. It would more convincing to view the formation of these burnt mounds as the result of a series of episodic visits, rather than the remains of a single event.

It has already been noted that the majority of burnt mounds do not appear to be located close to settlement locales in the Early and Middle Bronze Age. This is also the case elsewhere in Britain where only a few excavated examples have been found within, or on the edge of, contemporary settlements (Brossler *et al.* 2004; Hardy 1999). Although it is

possible that nearby settlement might exist at some sites in the study area, it is more likely that they were located away from the main focus of settlement activity. They are nevertheless indicators of broader settlement patterns, and it is likely that these sites maintained a close relationship with settlement sites within their locality. Their distribution across the study area also indicates the development of regionality during the Early and Middle Bronze Age, and it is apparent that they were a distinct cultural feature of parts of south-west Wales, and the Gower Peninsular.

Figure 15. Plan of burnt mound, pits, and troughs from Site 510 (Cotswold Archaeology 2013c)

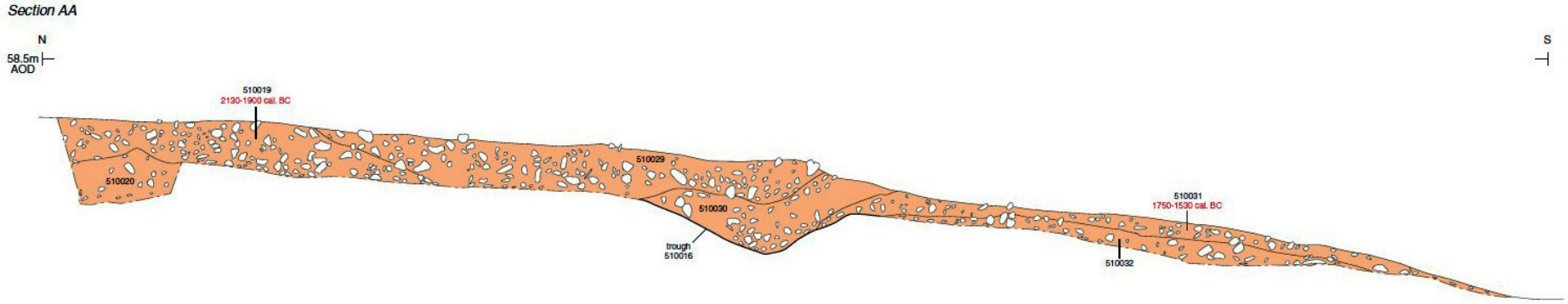

Figure 16. Section of burnt mound from Site 510 (Cotswold Archaeology 2013c)

7.4 Summary of Middle Bronze Age settlement

The limited evidence for Middle Bronze Age settlement locales suggests that coastal landscapes retained their significance, but the distribution of sites is far less widespread. In the south-east, settlement along the Gwent Levels suggests that the exploitation of saltmarsh environments was an important aspect of pastoral societies in the south-east. In the south-west, occupation appears to be focused along the Tywi Valley and the Eastern Cleddau, and there is limited evidence for settlement overlooking the Milford Haven estuary.

Although settlement of the lowlands continued to be important, the lack of evidence for continuity with Early Bronze Age settlement suggests that there was an inherent change in the Middle Bronze Age settlement pattern. The fact that several Middle Bronze Age settlements continue to be occupied into the Late Bronze Age suggests a widely dispersed pattern of permanent settlement across the study area. Excavation of recorded settlements in the upland zones might help to fill in these gaps in our knowledge, but a lack of evidence for enclosed settlements in the lowlands suggests a much less intensive pattern of settlement.

8. Late Bronze Age settlement

8.1 Distribution of Late Bronze Age settlement sites (Figure 17)

In total, there are 38 settlement sites from the study area which have been dated to the Late Bronze Age. These include 9 enclosures, 7 burnt mounds, 7 occupation features, 5 promontory forts, 4 single roundhouses, 3 nucleated roundhouse settlements, 2 hillforts, and 1 trackway.

In terms of distribution, the majority of Late Bronze Age settlements have been found in the south-west. There is, however, sufficient evidence to suggest extensive settlement in the south-east, particularly in and around the Vale of Glamorgan. Most sites are located below 100m OD, but the Nevern group of enclosures are found between 101 – 200m OD. The highest recorded Late Bronze Age settlement is Castell Garw, Cilymaenllwyd, an enclosure which lies on a south-east facing slope at c. 210m OD, and this is followed by Coed-y-Bwynydd, Monmouthsire, a hillfort which is located c. 190m OD.

Hillforts and enclosures dating to this period are typically found close to primary and secondary river valleys, and promontory forts are found along the coast of south-west Wales. The continued importance of these coastal zones highlights the importance of these landscapes to prehistoric communities, and this was likely to have been for cultural and practical reasons. The concentration of settlement in the Vale of Glamorgan is likely linked with the continued exploitation of good agricultural soils, as well as good access to the coast, but at present no field system from the region has been directly dated to this period.

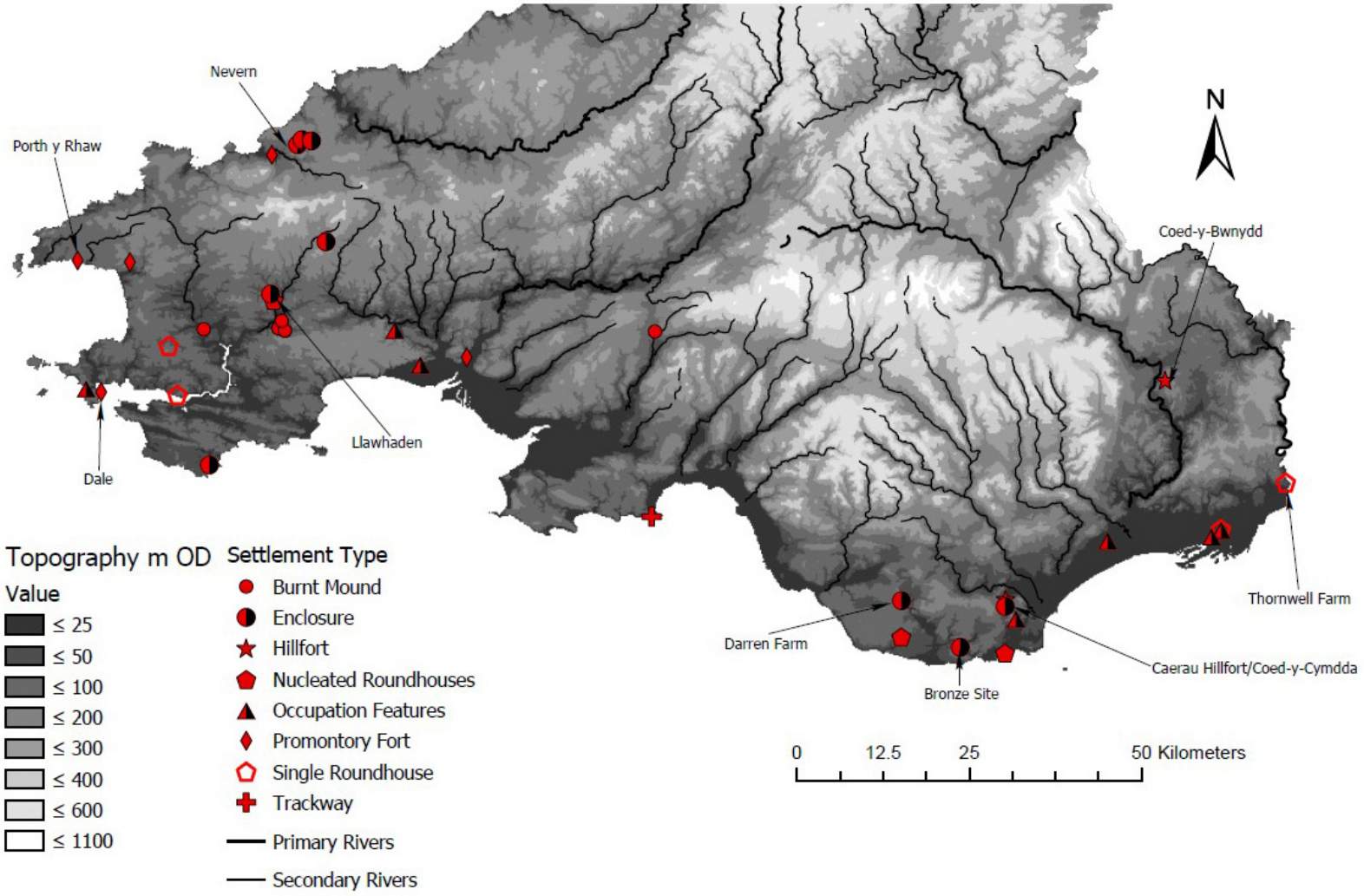

Figure 17. Map showing the distribution of Late Bronze Age settlement sites with key sites labelled (©Crown Copyright and Database Right 2017. Ordnance Survey (Digimap License))

8.2 Hill-slope and plateau enclosures

Across the study area, there is a greater variety of settlement sites compared to the Early and Middle Bronze Age. The principal evidence for this is in the form of oval hill-slope or plateau enclosures, and these typically range from 50m – 80m in diameter. In terms of dating, those sites which have been radiocarbon dated tend to date to the 8th and 7th centuries BC – a period which some authors would describe as the Earliest Iron Age (Gwilt *et al.* 2016). Furthermore, several sites included in this study have produced radiocarbon dates which span from the Late Bronze Age up to the Middle Iron Age. For example, Crugiau Cemmaes produced radiocarbon dates of 756 – 413 cal. BC, but these dates came from a primary fill of a recut ditch which was not bottomed during the excavations (Crane *et al.* 2013). It's ditched entranceway, and the range of artefacts recovered would suggest an Iron Age date (Crane *et al.* 2013), but it is possible that the primary phase of this enclosure was constructed during the Late Bronze Age.

Although enclosures dating to this period and the Iron Age are generally associated with defended settlement (RCAHMW 1976b; Lynch and Davies 2000), the practicality of this has been brought into question within the past few decades (Bowden and McOmish 1987; Sharples 2010). Visibility from many of these sites is restricted to a limited area of the landscape, and the siting of enclosures on hill-slopes undermines any defensive capability to the site should the would-be attackers decide to occupy the summit. It must also be acknowledged that there is little evidence for cut features within the interior of many of these sites. The scale of excavations is undoubtedly a factor here, as only a couple of enclosures in the study area have been extensively excavated (Owen-John 1988; Williams and Mytum 1998). The vast majority of excavations on enclosures are characterised by long,

narrow evaluation trenches, which only provide limited information about the use of the interior, and the function of the enclosure (Howell 2000; Cotswold Archaeology 2015; Parker-Pearson 2015). At Coed-y-Cymdda, a single antler pick was radiocarbon dated to the period 1015 – 756 cal. BC (94.7% probability), which provides a *terminus ante quem* date for the construction of the ditch, but no cut features were found within the interior – over half of which was excavated (Owen-John 1988). The site may have functioned to corral livestock, or for some ceremonial purpose.

Other enclosures do appear to have functioned as settlement sites during the Late Bronze Age, however. At the Bronze Site, an oval enclosure c. 50m x 42m was found to contain postholes and gullies reminiscent of a roundhouse at the centre of the enclosure, but the dating is restricted to two sherds of Bronze Age pottery recovered from the sub-soil (Howell 2000: 12). Animal bones were also found within these later prehistoric contexts (Howell 2000: 18-19), which along with the evidence for roundhouses, would suggest a domestic function to the enclosure. The presence of a roundhouse in the centre of the enclosure is reminiscent of what Waddington has described in her discussion of Late Bronze Age enclosed settlements in north-west Wales (Waddington 2013: 91). This contrasts with the evidence from Porth y Rhaw, Coed y Bwynydd, and Caerau, where roundhouses were found close to the inner ramparts (Babbidge 1977; Crane and Murphy 2010; Davis and Sharples 2014; 2015; 2016). Although very little of the interior of the Bronze Site was investigated, it suggests that occupation within enclosures was restricted to perhaps only one or two roundhouses at a given time. This contrasts with the evidence for the Earliest Iron Age/Early Iron Age occupation at Porth y Rhaw (Crane and Murphy 2010), and the Iron Age occupation at Caerau Hillfort (Davis and Sharples 2014; 2015; 2016), but the construction of enclosure boundaries would have still required assistance from the wider

community – many of whom were likely to have periodically gathered here for social, political, and ceremonial events.

8.3 Hillforts and promontory forts

In contrast to the hill-slope and plateau enclosures, promontory forts and hillforts are in far more visually dominant locations in the landscape. Elevated positions on the summits of hills, ridges, and promontories, provide much more in terms of visibility, suggesting that there was a distinct function to these sites which other types of enclosures did not have. It is also significant that, during the Iron Age, it was these hill-top and promontory forts that became more architecturally complex, typically through the construction of ramparts in the Early Iron Age, and multivallation in the Middle Iron Age (Sharples 2010; Davis 2017). That these sites became more developed, and monumental in nature, emphasises the importance of their locations in the landscape over other types of settlement in the later prehistoric landscape of southern Britain.

From outside of the study area, several hillforts have been recognised as having early origins (Savory 1971; Musson *et al.* 1991; Needham and Ambers 1994). There are, however, only two hillforts in the study area, which have been tentatively dated to the Late Bronze Age. At Caerau, Cardiff, a fence-line which pre-dates the inner rampart could belong to the Late Bronze Age phase, but there are currently no radiocarbon dates to back this up (Davis & Sharples 2016; 41; Davis pers. comm.). At Coed-y-Bwnydd, radiocarbon dating indicates that the second phase of a roundhouse (L15) dates to the period 767 – 372 BC (95.4% probability) (Babbidge 1977). Although these dates are weighted towards the Early and Middle Iron Age, the roundhouse replaces an earlier structure, and it also cuts the fill of a quarry pit (Babbidge 1974: 174-6). Both of these earlier features could feasibly date to the

8th or 7th centuries BC, and it is possible that the hillfort was first established during the Late Bronze Age/Earliest Iron Age.

The majority of excavated hillforts within the study area have, however, been found to date to the Early and Middle Iron Age (Probert 1976; RCAHMW 1976b; Pollard *et al*. 2006; Murphy and Mytum 2011; Davis 2017). In south-west Wales, there is also no direct evidence for a Late Bronze Age hillfort, but this is possibly a result of the lack of excavation. Most hillforts which have been excavated in this region are small, and focused towards south-mid Pembrokeshire, and south Carmarthenshire (Murphy 2003; Murphy and Mytum 2011). The only substantial hillfort from south-west Wales which has been excavated is Y Foel Drigarn, and this was carried out at the turn of the 20th century (Baring-Gould *et al.* 1900). Evidence for Late Bronze Age origins might be found on the larger and more complex hillforts, which were presumably occupied by larger communities for a longer period of time than the smaller hillforts.

In terms of function, hillforts are typically seen as high-status defended settlements in both the Late Bronze Age and the Iron Age (Cunliffe 2010; Halstead 2005: 53; Lynch 2000). A complete dearth of Late Bronze Age material culture from Caerau (Davis 2014; 2015; 2016) and Coed y Bwnydd (Babbidge 1977) makes it difficult to understand the nature of activity on these sites. The presence of multiple roundhouses, and an absence of evidence for social differentiation from the later phases of both sites would however indicate that these were not elite settlements during the Iron Age, and it is feasible to suggest that this was also the case during the Late Bronze Age. Longevity of settlement, as well as their dominant positions in the landscape, does however suggest that these sites had a central relationship with the surrounding landscape (Sharples 2010: 61). These locations

were also likely to have been culturally and historically significant, and this is supported by the presence of a Neolithic causewayed enclosure at Caerau (Davis and Sharples 2015; 2016). The enclosure of these locations would have effectively controlled access to these locations, defining those who were part of the wider community, and those who were not.

In contrast to the distribution of early hillforts in south Wales, there is sufficient evidence to suggest that the enclosure of promontories was a significant development in the Late Bronze Age of south-west Wales. At Berry Hill, an inland promontory fort, a buried soil horizon was found beneath the primary bank (Murphy and Mytum 2011: 298). This was associated with an earlier palisade, and was radiocarbon dated to the period 822 – 550 cal. BC (95.4% probability) (Murphy and Mytum 2011: 298). At Brawdy Camp – another inland promontory fort – radiocarbon dates from a hearth and other occupation features indicate occupation from 756 – 403 cal. BC (95.4%) (Dark 1987). There is also the possibility that Llanstephan Castle originated during the Late Bronze Age, as three radiocarbon dates were obtained from two ditches, and an occupation layer associated with postholes, which indicate activity between c. 800 – 400 cal. BC (Guilbert 1974).

There is also evidence for early origins at two coastal promontories from south-west Wales. At Dale, an occupation deposit associated with the earlier palisade trenches, a bank, and a stone revetment, was radiocarbon dated to the period 1050 – 790 cal. BC (Benson and Williams 1987: 43). At Porth y Rhaw, a multivallate coastal promontory, radiocarbon dates indicate an eighth to second century BC date for seven timber-built roundhouses found in the interior of the fort (Crane and Murphy 2010: 74). A complete absence of later prehistoric pottery makes it difficult to determine whether there was any Late Bronze Age sequence to the site, and the presence of stone spindle whorls would indicate Iron Age

occupation. A possible Late Bronze Age axe-head was, however, found within a fill which contained Roman pottery (Crane and Murphy 2010: 75). It is possible that this was residual and associated with an early phase of the promontory fort - the nature of which is unclear. Radiocarbon dating pre-rampart features at Great Castle Head, another coastal promontory fort, suggests that it could have originated between the ninth and fifth centuries BC, but it is unclear whether these features relate to the primary enclosure (Crane 1999a; Crane and Murphy 2010: 90).

In south-east Wales, there are currently no known Late Bronze Age promontory forts. Although Late Bronze Age/Early Iron Age pottery was found beneath the inner rampart at Dinas Powys, Cardiff, the nature of this activity and its relation to the promontory fort is not well understood (Davis 2017: 13). At Castle Ditches, Llancarfan, the presence of a small enclosure beneath the Middle Iron Age fort would suggest that the site was founded during the Early Iron Age (RCAHMW 1976b: 20). This would suggest that promontory forts were not a feature of the Late Bronze Age in south-east Wales, and that perhaps hillforts were more significant in this part of the study area.

Out of the Late Bronze Age promontory forts, only Porth y Rhaw and Brawdy Camp have provided direct evidence for settlement. The presence of multiple roundhouses within the interior of Porth y Rhaw would suggest that occupation was intensive, and it is likely that hundreds of people would have permanently resided here. Murphy and Mytum have argued that the paucity of structures and finds at Berry Hill suggests that it was unoccupied or only lightly used (Murphy and Mytum 2011: 298). In addition, the unfinished nature of the southern ditch terminal has also lead to the conclusion that the fort was prematurely abandoned, and that a failure to meet the social obligations required to mobilise labour and

resources resulted in it being prematurely abandoned (Murphy and Mytum 2011: 304). If this was the case, then it is significant that there is also no evidence for later activity on the site, and this could suggest that re-occupation of the site was considered taboo – perhaps because of the events tied to its demise.

Alternatively, some promontory forts like Berry Hill might not have had a domestic function, and perhaps they were constructed for ceremonial or ritual purposes. Barker and Driver (2011) have recently suggested that some of the promontories along the coast of Pembrokeshire are too precipitous for settlement, and that a ritual or ceremonial function is more likely. The boundaries of some of these forts are also highly unusual, and these too suggest a non-domestic function. For example, at Mowingword, Stackpole, a narrow finger-like promontory is defined by a rock-cut ditch, but there is no matching bank or rampart (www5). This undermines any defensive function to the site, and apart from a central paved causeway, there are no internal features visible which might indicate settlement. Similar examples might also be found in south-east Wales, where at Cwm Bach, Vale of Glamorgan, an area of 0.3 hectares is cut off by two discrete lengths of banks and ditches (RCAHMW 1976b: 26). The fort occupies the angle between a cliff to the south-west, and a steep-sided valley to the north (RCAHMW 1976b: 26) – a somewhat hazardous position. Even if we take into account the degree of coastal erosion, it is difficult to imagine sites such as these as domestic in nature, and it suggests that occupation was not the primary function.

8.4 Unenclosed settlement

Although enclosed settlements are a significant aspect of settlement in the Late Bronze Age, the majority of the evidence for direct settlement in the study area relates to unenclosed sites. Continuity with earlier settlement is seen at several of these sites, including Llanmaes, Atlantic Trading Estate, Stackpole Warren, Bolton Hill, Chapeltump, Coed-y-Cymdda, and Newton. Radiocarbon dates are available for all of these settlements, except for the Atlantic Trading Estate, but the presence of two structures associated with Late Bronze Age pottery suggests continuity with the Middle Bronze Age settlement (Sell 1996: 22). Burnt mounds at Site 13.01 and 515 of the South Wales Gas Pipeline Project also display continuity with earlier burnt mound activity (Cotswold Archaeology 2013d; h). The trackway at Oystermouth, Mumbles, is located on the south-eastern foreshore of the Gower Peninsular, where an Early Bronze Age trackway was also found – both of which have been radiocarbon dated to their respective periods (Sherman 2011). These examples indicate that parts of the landscape were a focus for settlement throughout the Bronze Age, and even as far back as the Neolithic at Bolton Hill (Johnson and Tinsley 2010). This observation is significant as it suggests that, whilst some sites such as Stackpole Warren and Rhos-y-Clegryn were re-appropriated during the Bronze Age, these landscapes remained a focus for settlement throughout prehistory.

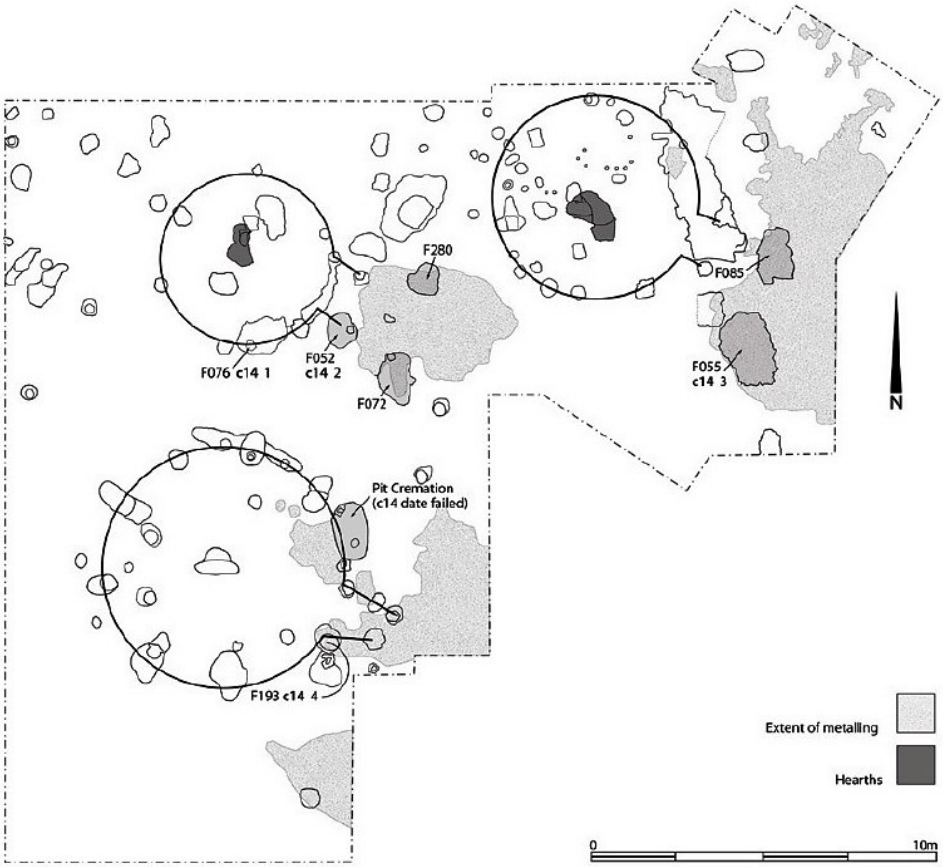

Figure 18. The Midden Field excavation site at Llanmaes, showing settlement features and location of radiocarbon dating samples (Gwilt *et al*. 2016)

Given the paucity of evidence, it is unclear how these unenclosed settlements relate to enclosures, hillforts, and promontory forts. Halstead argues that if hillforts are understood as centres of political power and prestige, then unenclosed settlements – which occupy lower positions in the landscape – can be understood as lower status settlements (Halstead 2005: 57-8). As discussed in the previous section, the impoverished material assemblage from hillforts suggests that these were not centres of prestige. The only evidence for high-status materials associated with a settlement is at Llanmaes, where a substantial midden sealed two Late Bronze Age/Early Iron Age roundhouses (Gwilt *et al*. 2016; Figure 18). Associated with the midden deposits was a large assemblage of bronze

metalwork which included at least five cauldrons, 40 socketed axes, and nine ring-handled bowls – the majority of which were deposited between c. 800 – 600 BC (Gwilt *et al.* 2016: 309). The early deposits of the midden might be contemporary with occupation at these roundhouses, but by the Middle Iron Age the settlement was completely sealed by later midden accumulations (Gwilt *et al.* 2016: 317). Whilst the midden itself appears to be associated with the end of the Late Bronze Age/Early Iron Age settlement, it is significant that this specific location was chosen as a focus for deposition. The presence of gold artefacts associated with the pre-midden settlement suggests that this was a high-status settlement (Gwilt *et al.* 2016: 322). The decision to deposit a midden – which contained large quantities of bronze artefacts – directly over this site suggests that later communities were perhaps aware of the significance of the previous settlement. The agricultural symbolism of the midden might also have connotations with the function of the previous settlement, and this is further supported by the possibility of a later prehistoric field boundary to the north of the site (Gwilt *et al.* 2016: 304). The Late Bronze Age settlement at Llanmaes therefore appears to have been a nucleated settlement of relatively high-status, and it is possible that this was legitimised through agricultural exchange functions.

Llanmaes is, however, the only example of a potentially high-status settlement in the study area. The remaining unenclosed sites are characterised by a dearth of material assemblages, and this makes it difficult to interpret their function. Where roundhouses have been found and suitably recorded at unenclosed settlements, four are quite small and measure between c. 5m - 6m in diameter (Newton - Crane 2004a; Bolton Hill - Johnson and Tinsley 2010; Llanmaes - Gwilt *et al.* 2016). In comparison, the roundhouse at Thornwell Farm, Chepstow, is c. 12.5m in diameter (Hughes 1996), and the roundhouse at Chapeltump, Magor with Undy, is c. 10m in diameter (Bell 2013). That the Llanmaes

examples are quite small suggests that the roundhouse size was not associated with social status, and instead they should be seen as reflecting the scale of residency. The continued existence of single, small roundhouses at Bolton Hill and Newton indicates that independent farmsteads continued to exist in the Late Bronze Age, but both sites have been radiocarbon dated to the tenth and ninth centuries cal. BC (Crane 2004a; Johnson and Tinsley 2010). This makes them somewhat earlier than the enclosed settlements which typically exist from the eighth century cal. BC, but they are roughly contemporary with the nearby Dale promontory fort. With this in mind, it is possible to imagine the Bolton Hill and Newton communities travelling to attend periodic gatherings at the Dale promontory fort, and this suggests a network of relationships between enclosed communities and unenclosed communities.

8.5 Summary of Late Bronze Age settlement

It is apparent that, whilst enclosed settlement was a significant development in the Late Bronze Age, these sites had multiple functions which were not entirely related to occupation. The limited scale of excavation of the interiors of these sites makes it difficult to understand the extent to which they were settlements, and it is apparent that the larger enclosures – such as Coed-y-Cymdda – do not necessarily indicate the presence of large, permanent communities. Continuity of settlement at several unenclosed settlements also indicates that the widespread displacement of populations in the Late Bronze Age did not occur (Lynch 2000: 145), but it is unclear to what extent the uplands were abandoned during this period.

The contrast between the distribution of hillforts in the south-east and promontory forts in the south-west also implies the development of regionality in the Late Bronze Age of

the study area. This undoubtedly relates to the prominence of certain locations in the landscape, particularly as there is a history of Early and Middle Bronze Age settlement along the coast of south-eastern and eastern Pembrokeshire. It is unclear to what extent hillforts can be understood as part of a regional identity in the south-east, largely due to the tentative evidence for Late Bronze Age origins, but it is possible that hillforts were an earlier development here than in the south-west. The Vale of Glamorgan also continues to provide evidence for both enclosed and unenclosed settlement, and it suggests that this region was densely occupied during early first millennium BC.

9. Conclusion

This study has demonstrated the importance of understanding Bronze Age settlement patterns outside of southern England. In some respects, the settlement record of the Late Bronze Age in south Wales is similar to that of south-western England. The prevalence of simple, oval enclosures across the study area - and the presence of some early hillforts and midden sites in the south-east – has been observed in Wessex (Sharples 2010), and it suggests that this was a widespread phenomenon of the Late Bronze Age.

However, this study has also demonstrated that Early and Middle Bronze Age settlement patterns in south Wales were of an inherently different nature to those of southern England. The presence of nucleated and fixed settlement locales has provided an alternative interpretation for Early Bronze Age settlement patterns, and it fundamentally changes how we might approach future evidence. In addition to this, there is little to suggest that permanent, nucleated settlement was a feature of the Middle Bronze Age of south Wales. Instead, settlement appears to be restricted to small, unenclosed farmsteads across the study area. Settlement along the coast remained attractive across the study area, but there is little evidence to suggest continuity with earlier settlement.

By bridging the chronological divides of the mid-third and early-first millennium BC, it has also been possible to observe settlement continuity, as well as different regional narratives within the study area. Burnt mounds were clearly a distinctive cultural phenomenon of the south-west, but their function and relationship with settlement sites remains ambiguous. In the Early Bronze Age, settlement was widespread across both regions of the study, but the ways in which settlements were re-used and re-appropriated suggests that there were cultural differences between communities along the coast of

Pembrokeshire, and in the lowlands of south-east Wales. By the Late Bronze Age, these differences were possibly being expressed through the construction of promontory forts in the south-west, and hillforts in the south-east.

Although we have seen a dramatic increase in the quantity of excavated Bronze Age settlement sites, there are still several problems which face scholars of this region. This study has primarily focused on gathering the evidence for settlement sites, but it is necessary that we carry out more detailed analyses of the material culture so that we can place these settlements within their historic contexts. Our knowledge of upland settlement patterns is also severely limited, as is our knowledge of the use of the interior of Late Bronze Age enclosures, and so future fieldwork should focus on addressing these gaps in our knowledge. Finally, it is integral that we place a greater emphasis on the significance of *occupation features* and – where possible – excavate larger areas, so that we can understand the extent to which these sites represent settlement in the Bronze Age.

9. Appendixes

Abbreviations

PRN – Project Reference Number

GGAT – Glamorgan-Gwent Archaeological Trust

DAT – Dyfed Archaeological Trust

CPAT – Clwyd-Powys Archaeological Trust

10.1 Early Bronze Age Site Gazetteer

Site Name	Community	Site Type	PRN	References
Caldicot Castle Lake	Caldicot	Occupation Features	NPRN 402110	Nayling and Caseldine 2007
Church Road, Caldicot	Caldicot	Occupation Features	N/A	Corney 2009
Crickhowell Road	Cardiff	Occupation Features	GGAT E003139	Brett *et al.* 2009
Ffos-y-fran	Dowlais	Occupation Features	N/A	Tuck 2009
Beech Court Farm	Ewenny	Occupation Features	NPRN 300339	Bayliss *et al.* 2011
Carne Site A	Fishguard	Burnt Mound	N/A	James 1986
Carne Site B.1	Fishguard	Burnt Mound	N/A	James 1986
Sant-y-Nyll	Glamorgan	Single Roundhouse	GGAT 00078s	Savory 1962
Site 514, South Wales Gas Pipeline Project	Herbrandston	Occupation Features	DAT 106718?	Cotswold Archaeology 2014a
South Hook	Herbrandston	Single Roundhouse	DAT 100486	Crane 2007
Site 506 South Wales Gas Pipeline Project (1)	Lampeter Velfrey	Burnt Mound	DAT 106790	Cotswold Archaeology 2014i
Site 214 South Wales Gas Pipeline Project	Llanddowror	Burnt Mound	DAT 106792	Cotswold Archaeology 2013f
Site 502, South Wales Gas Pipeline Project	Llanddowror	Occupation Features	DAT 106806	Cotswold Archaeology 2013b
Parry's Castle Farm	Llandyfaelog	Burnt Mound	N/A	Burrow and Williams 2008
Plasgwyn Farm	Llandyfaelog	Burnt Mound	DAT 42758	Burrow and Williams 2008
Site 213 South Wales Gas Pipeline Project	Llangain	Burnt Mound	DAT 107471	Cotswold Archaeology 2014f

Site Name	Community	Site Type	PRN	References
Site 28.23 South Wales Gas Pipeline Project	Llansadwrn	Burnt Mound	N/A	Cotswold Archaeology 2013m
Woodside Camp	Llawhaden	Single Roundhouse	DAT 3570	Williams and Mytum 1998
Site 45.16 South Wales Gas Pipeline Project	Maescar	Occupation Features	CPAT 131209	Cotswold Archaeology 2013l
Site 26.04 South Wales Gas Pipeline Project (1)	Manordeilo and Salem	Occupation Features	N/A	Cotswold Archaeology 2014g
Site 26.05 South Wales Gas Pipeline Project	Manordeilo and Salem	Occupation Features	N/A	Cotswold Archaeology 2014h
Site 01.18 South Wales Gas Pipeline Project	Mawr	Single Roundhouse	N/A	Cotswold Archaeology 2013g
Colts Hill	Mumbles	Single Roundhouse	GGAT 00465w	Savory 1972
Felindre Varchog	Nevern	Burnt Mound	N/A	Crane 2008
Rhos-y-Clegryn	Pencaer	Nucleated Roundhouses	DAT 2019	Lewis 1974; Brittain 2004
Stackpole Warren	Stackpole	Nucleated Roundhouses	DAT 14281	Benson *et al.* 1990
Brynmill	Swansea	Trackway	N/A	Sherman 2010; 2011
Redberth	Tenby	Single Roundhouse	DAT 43101	Page 2001; 2002
Bolton Hill A	Tiers Cross	Occupation Features	N/A	Johnson and Tinsley 2010
Old Market Street, Usk	Usk	Nucleated Roundhouses	N/A	Marvell 1988a; 1988b
Site 507 South Wales Gas Pipeline Project	Uzmaston, Boulston and Slebech	Burnt Mound	N/A	Cotswold Archaeology 2014c
Peterstone 1	Wentlooge	Trackway	N/A	Bell 2013
Site 508 South Wales Gas Pipeline Project	Wiston	Occupation Features	N/A	Cotswold Archaeology 2014d
Site 510 South Wales Gas Pipeline Project	Wiston	Burnt Mound	N/A	Cotswold Archaeology 2013c

10.2 Middle Bronze Age Site Gazetteer

Site Name	Community	Site Type	PRN	References
Atlantic Trading Estate Foreshore Site	Barry	Nucleated Roundhouses	GGAT 01997s	Sell 1996; 1998
St Brides	Caerwent	Occupation Features	N/A	Bell 2013
Newhouse Park	Chepstow	Occupation Features	GGAT E002220	Robic and Ponsford 2008
Site 511 South Wales Gas Pipeline Project	Herbrandston	Burnt Mound	DAT 108850	Cotswold Archaeology 2014a
Site 506 South Wales Gas Pipeline Project (2)	Lampeter Velfrey	Burnt Mound	DAT 106790	Cotswold Archaeology 2014i
Site 13.01 South Wales Gas Pipeline Project (1)	Llandybie	Burnt Mound	N/A	Cotswold Archaeology 2013h
Site 21.02 South Wales Gas Pipeline Project	Llangathen	Burnt Mound	N/A	Cotswold Archaeology 2013i
Llanmaes 1	Llanmaes	Single Roundhouse	GGAT E003534	Gwilt *et al*. 2016
Newton 1	Llanstadwell	Single Roundhouse	DAT 46961	Crane 2004a; 2004b
Canaston Bridge	Llawhaden	Occupation Features	N/A	Schlee 2009a
Holgan Camp	Llawhaden	Occupation Features	DAT 3573	Williams and Mytum 1998
Pilcornswell	Llawhaden	Occupation Features	DAT 3564	Williams and Mytum 1998
Robeston Wathen 1.1	Llawhaden	Burnt Mound	N/A	Schlee 2009b
Site 516 South Wales Gas Pipeline Project	Llawhaden	Burnt Mound	DAT 106784	Cotswold Archaeology 2013e
Chapeltump	Magor With Undy	Single Roundhouse	GGAT 03979g	Bell 2013
Cold Harbour Pill Site 1a	Magor With Undy	Occupation Features	N/A	Bell 2013
Collister Pill 2	Magor With Undy	Occupation Features	N/A	Bell 2013
Collister Pill Roundhouse	Magor With Undy	Single Roundhouse	GGAT 05770g	Bell 2013
Site 26.03 South Wales Gas Pipeline Project	Manordeilo and Salem	Burnt Mound	N/A	Cotswold Archaeology 2014g
Site 26.04 South Wales Gas Pipeline Project (2)	Manordeilo and Salem	Burnt Mound	N/A	Cotswold Archaeology 2014g
Site 28.08 South Wales Gas Pipeline Project	Manordeilo and Salem	Burnt Mound	N/A	Cotswold Archaeology 2013j

Site Name	Community	Site Type	PRN	References
Site 28.08a South Wales Gas Pipeline Project	Manordeilo and Salem	Burnt Mound	N/A	Cotswold Archaeology 2013j
Site 28.14 South Wales Gas Pipeline Project	Manordeilo and Salem	Burnt Mound	N/A	Cotswold Archaeology 2013k
Site 512 South Wales Gas Pipeline Project	Milford Haven	Burnt Mound	N/A	Cotswold Archaeology 2014b
Redwick 2	Redwick	Occupation Features	N/A	Bell 2013
Redwick Building 1	Redwick	Single Rectangular House	GGAT 07606g	Bell 2013
Redwick Building 2	Redwick	Single Rectangular House	GGAT 07624g	Bell 2013
Redwick Building 4	Redwick	Single Rectangular House	GGAT 07610g	Bell 2013
Redwick Building 5	Redwick	Single Rectangular House	N/A	Bell 2013
Rumney 3.1	Trowbridge	Single Roundhouse	GGAT 02895s	Bell 2013
Rumney 6	Trowbridge	Occupation Features	N/A	Bell 2013
Peterstone 2	Wentlooge	Trackway	N/A	Bell 2013
Coed-y-Cymdda (1)	Wenvoe	Occupation Features	GGAT 00010s	Owen-John 1988

10.3 Late Bronze Age Site Gazetteer

Site Name	Community	Site Type	PRN	References
Atlantic Trading Estate Blackrocks Site	Barry	Nucleated Roundhouses	GGAT 01997s	Sell 1996; 1998
Brawdy Camp	Brawdy	Promontory Fort	DAT 2820	Murphy and Mytum 2011
Caerau Camp	Caerau	Hillfort	GGAT 00093s	Davis and Sharples 2014; 2015; 2016
Thornwell Farm	Chepstow	Single Roundhouse	GGAT 04441g	Hughes 1996
Castell Garw	Cilymaenllwyd	Enclosure	NPRN 304283	Kirk and Williams 2000
Great Pencarn Farm	Coedkernew	Occupation Features	N/A	Bell 2013
Dale Promontory Fort	Dale	Promontory Fort	DAT 30169	Benson and Williams 1987
Great Castle Head	Dale	Occupation Features	DAT 7584	Crane 1999a; 1999c
Coygan Camp	Laugharne Township	Occupation Features	DAT 7451	Wainwright 1967
Coed-y-Bwynydd (Coed-y-Bwnyff)	Llanarth	Hillfort	GGAT 02171g	Babbidge 1977
Site 503 South Wales Gas Pipeline Project	Llanddowror	Occupation Features	N/A	Cotswold Archaeology 2015a
Site 13.01 South Wales Gas Pipeline Project (2)	Llandybie	Burnt Mound	N/A	Cotswold Archaeology 2013h
Llanmaes 2	Llanmaes	Nucleated Roundhouses	GGAT E003534	Gwilt *et al.* 2016
Newton 2	Llanstadwell	Single Roundhouse	DAT 46961	Crane 2004a; 2004b
Llanstephan Castle	Llansteffan	Promontory Fort	DAT 2198	Guilbert 1974
Broadway	Llawhaden	Nucleated Roundhouses	DAT 3565	Williams and Mytum 1988
Canaston Wood Burnt Mound 269034	Llawhaden	Burnt Mound	DAT 106775	Cotswold Archaeology 2014e
Canaston Wood Burnt Mound 285001	Llawhaden	Burnt Mound	DAT 106773	Cotswold Archaeology 2014e
Canaston Wood Burnt Mound 517003	Llawhaden	Burnt Mound	DAT 106774	Cotswold Archaeology 2014e
Canaston Wood Burnt Mound 518032	Llawhaden	Burnt Mound	DAT 106780	Cotswold Archaeology 2014e
Drim Camp	Llawhaden	Enclosure	DAT 3562	Williams and Mytum 1988
Robeston Wathen 1.1	Llawhaden	Burnt Mound	N/A	Schlee 2009b; 2010; 2013
Chapeltump	Magor With Undy	Single Roundhouse	GGAT 03979g	Bell 2013
Chapeltump	Magor With Undy	Occupation Features	GGAT 03979g	Bell 2013

Site Name	Community	Site Type	PRN	References
Cold Harbour Pill Site	Magor With Undy	Occupation Features	GGAT 02530g	Bell 2013
Cwm George (Dinas Powys)	Michaelston	Occupation Features	GGAT 00013s	Alcock 1963; Davis 2017
Oystermouth	Mumbles	Trackway	GGAT 06699w	Sherman 2010; 2011
Bayvil Farm	Nevern	Enclosure	DAT 62206?	Parker Pearson 2015
Berry Hill	Nevern	Promontory Fort	DAT 1612	Murphy and Mytum 2011
Caer Bayvil	Nevern	Enclosure	DAT 1149	Crane and Murphy 2010
Crugiau Cemmaes	Nevern	Enclosure	DAT 99386	Crane *et al.* 2013
Darren Farm	Penllyn	Enclosure	NPRN 305450?	Carlyle and Stevens 2002
Bronze Site	Rhoose	Enclosure	GGAT E002577	Howell 2000
Porth y Rhaw	Solva	Promontory Fort	NPRN 94210	Crane and Murphy 2010
Stackpole Warren Enclosure	Stackpole	Enclosure	DAT 13008	Benson *et al*. 1990
Bolton Hill B	Tiers Cross	Single Roundhouse	N/A	Johnson and Tinsley 2010
Site 515 South Wales Gas Pipeline Project	Uzmaston, Boulston and Slebech	Burnt Mound	N/A	Cotswold Archaeology 2013d
Coed-y-Cymdda (2)	Wenvoe	Enclosure	GGAT 00010s	Owen-John 1988

10.4 Unexcavated Burnt Mound Site Gazetteer

Site Name	Community	Site Type	PRN
NEWHOUSE	Ambleston	Burnt Mound	DAT 9786
PANT-TEG	Ambleston	Burnt Mound	DAT 1281
SCOLLOCK	Ambleston	Burnt Mound	DAT 9784
WALLIS	Ambleston	Burnt Mound	DAT 9787
MIDDLEHILL	Angle	Burnt Mound	DAT 3074
CARN-UCHAF FARM	Begelly	Burnt Mound	DAT 3633
REYNALTON CHURCH	Begelly	Burnt Mound	DAT 3482
TREWERN	Begelly	Burnt Mound;Spoil Heap	DAT 3651
TREWERN	Begelly	Burnt Mound	DAT 3652
CWM MAWR	Brawdy	Burnt Mound	DAT 2779
ASHDALE	Burton	Burnt Mound	DAT 3197
BENTON	Burton	Burnt Mound	DAT 3208
BURTON MOUNTAIN	Burton	Burnt Mound	DAT 3207
GREAT HILL;NASH MOUNTAIN	Burton	Burnt Mound	DAT 3199
HOUGHTON MOOR COTTAGE	Burton	Burnt Mound	DAT 3211
HOUGHTON SCHOOL	Burton	Burnt Mound	DAT 3210
KILMOOR	Burton	Burnt Mound	DAT 11913
KILMOOR	Burton	Burnt Mound	DAT 3465
KILMOOR	Burton	Burnt Mound	DAT 3466
LITTLE DUMPLEDALE	Burton	Burnt Mound;Midden	DAT 3198
UPPER THURSTON	Burton	Burnt Mound	DAT 3212
WILLIAMSTON	Burton	Burnt Mound	DAT 3209
CAUSEWAY	Camrose	Burnt Mound	DAT 2434
TEMPERNESS	Camrose	Burnt Mound	DAT 3305
VENN	Castlemartin	Burnt Mound	DAT 574

Site Name	Community	Site Type	PRN
AFON MAMOG	Cenarth	Burnt Mound	DAT 14970
BANC-Y-FELIN	Cenarth	Burnt Mound	DAT 14954
Unknown	Cilycwm	Burnt Mound	DAT 30513
ABER-GWENLAIS;ABERGWENLAIS	Cilycwm	Burnt Mound	DAT 29904
ABER-GWENLAS;ABERGWENLAIS	Cilycwm	Burnt Mound	DAT 13990
FFYNNON YR ARMY	Cilycwm	Burnt Mound	DAT 11923
FFYNNON-LWYD	Clynderwen	Burnt Mound	DAT 9767
WATERGATE	Clynderwen	Burnt Mound	DAT 3714
PASKESTON	Cosheston	Burnt Mound	DAT 3486
PENTREGALAR	Crymych	Burnt Mound	DAT 7803
CNWC Y GWARTHEG	Cwm Gwaun	Burnt Mound	DAT 9807
CNWC Y GWARTHEG	Cwm Gwaun	Burnt Mound	DAT 9808
CWM-FFRWD;CWMFFRWD	Cwmamman	Burnt Mound	DAT 7805
HAFOD FARM	Cwmamman	Burnt Mound	DAT 557
LITTLE CASTLE POINT	Dale	Round Barrow;Burnt Mound	DAT 2963
Gelligaer Common	Darran Valley	Burnt Mound	GGAT 00644m
LLYGAD LLWCHWR	Dyffryn Cennen	Burnt Mound	DAT 4009
LLYGAD LLWCHWR	Dyffryn Cennen	Burnt Mound	DAT 4010
LLYGAD LLWCHWR	Dyffryn Cennen	Burnt Mound	DAT 4011
LLYGAD LLWCHWR	Dyffryn Cennen	Burnt Mound	DAT 4012
TREGIB	Dyffryn Cennen	Burnt Mound	DAT 885
Unknown	Eglwyscummin	Burnt Mound	DAT 13376
BLAEN WAUN	Eglwyscummin	Burnt Mound	DAT 3894
CARFAN-UCHAF	Eglwyscummin	Burnt Mound	DAT 3811
CARFAN-UCHAF	Eglwyscummin	Burnt Mound	DAT 3812
CARFAN-UCHAF	Eglwyscummin	Burnt Mound	DAT 3813
CARFAN-UCHAF	Eglwyscummin	Burnt Mound	DAT 3814
CWM FAWR	Eglwyscummin	Burnt Mound	DAT 3889

Site Name	Community	Site Type	PRN
GOLDEN GROVE COTTAGE	Eglwyscummin	Burnt Mound	DAT 7802
GRUG Y FFETAN	Eglwyscummin	Burnt Mound	DAT 3888
MOUNTAIN FARM	Eglwyscummin	Burnt Mound	DAT 3806
MOUNTAIN FARM	Eglwyscummin	Burnt Mound	DAT 3817
PAYETT'S WELL	Eglwyscummin	Burnt Mound	DAT 3834
RHOS-GOCH-FAWR	Eglwyscummin	Burnt Mound	DAT 3892
RHOS-GOCH-FAWR	Eglwyscummin	Burnt Mound	DAT 3893
SOUTH CRAIGYFFETAN	Eglwyscummin	Burnt Mound	DAT 3890
WHITE GATE COTTAGE	Eglwyscummin	Burnt Mound	DAT 3809
WHITE GATE COTTAGE	Eglwyscummin	Burnt Mound	DAT 3810
WHITE LION COTTAGE	Eglwyscummin	Burnt Mound	DAT 3807
WHITE LION COTTAGE	Eglwyscummin	Burnt Mound	DAT 3808
WHITE LION COTTAGE	Eglwyscummin	Burnt Mound	DAT 3895
WHITE LION COTTAGE	Eglwyscummin	Burnt Mound	DAT 3896
Unknown	Herbrandston	Burnt Mound	DAT 106718
UPPER NEESTON	Herbrandston	Burnt Mound	DAT 3031
UPPER NEESTON	Herbrandston	Burnt Mound	DAT 3032
Unknown	Hirwaun	Burnt Mound	GGAT 02056m
CHAPEL HILL	Hundleton	Burnt Mound	DAT 581
CHEVERALTON	Hundleton	Burnt Mound	DAT 3233
CHEVERALTON	Hundleton	Burnt Mound	DAT 3234
HOPLASS	Hundleton	Burnt Mound	DAT 3232
LIGHTAPIPE	Hundleton	Burnt Mound	DAT 3251
LIGHTAPIPE	Hundleton	Burnt Mound	DAT 3252
LIGHTAPIPE	Hundleton	Burnt Mound	DAT 3253
MELLESTON	Hundleton	Burnt Mound	DAT 3249
NEATH BRIDGE	Hundleton	Burnt Mound	DAT 3239
RHOSCROWTHER CHURCH	Hundleton	Burnt Mound	DAT 3231

Site Name	Community	Site Type	PRN
UPPER HENTLAND	Hundleton	Burnt Mound	DAT 3230
WALLASTON GREEN	Hundleton	Burnt Mound	DAT 3254
WEST POPTON	Hundleton	Burnt Mound	DAT 3222
Nicholaston Mound	Ilston	Burnt Mound	GGAT 00272w
Cefn Bryn Mound I	Ilston	Burnt Mound	GGAT 00284w
Unknown	Ilston	Burnt Mound	GGAT 02241w
Cefn Bryn Mound II	Ilston	Burnt Mound	GGAT 04788w
DINASTON	Jeffreyston	Burnt Mound	DAT 3629
DINASTON	Jeffreyston	Burnt Mound	DAT 3630
JOHNSTON STATION;CUNNIGAR	Johnston	Burnt Mound	DAT 3349
JOHNSTON STATION;CUNNIGAR	Johnston	Burnt Mound	DAT 3350
COLEMAN FARM	Kidwelly	Burnt Mound	DAT 2124
Unknown	Lampeter Velfrey	Burnt Mound	DAT 106790
COED FFYNON	Lampeter Velfrey	Burnt Mound	DAT 3788
DAN-Y-LAN	Lampeter Velfrey	Burnt Mound	DAT 3789
HILL FARM	Lampeter Velfrey	Burnt Mound	DAT 3774
HILL FARM	Lampeter Velfrey	Burnt Mound	DAT 3775
LAMPETER VELFREY	Lampeter Velfrey	Burnt Mound	DAT 3786
MOUNTAIN LAKE	Lampeter Velfrey	Burnt Mound	DAT 3769
PEN-FFORDD	Lampeter Velfrey	Burnt Mound	DAT 3797
PEN-FFORDD	Lampeter Velfrey	Burnt Mound	DAT 3798
PRINCE'S GATE	Lampeter Velfrey	Burnt Mound	DAT 3776
PRINCE'S GATE	Lampeter Velfrey	Burnt Mound	DAT 3777
PRINCE'S GATE	Lampeter Velfrey	Burnt Mound	DAT 3778
PRINCE'S GATE	Lampeter Velfrey	Burnt Mound	DAT 3779
PRINCE'S GATE	Lampeter Velfrey	Burnt Mound	DAT 3780
PRINCE'S GATE	Lampeter Velfrey	Burnt Mound	DAT 3781
RHYDDGOED FARM	Lampeter Velfrey	Burnt Mound	DAT 3801

Site Name	Community	Site Type	PRN
HODGESTON HILL	Lamphey	Burnt Mound	DAT 3509
LAMPHEY LODGE	Lamphey	Burnt Mound	DAT 3506
LLWYN EVAN PARRY	Llanarthney	Burnt Mound	DAT 648
BLAEN LLIWE	Llanboidy	Burnt Mound	DAT 3744
DYFFRYN MARLAIS;BEILI-MAWR	Llanboidy	Burnt Mound	DAT 3957
FOREST	Llanboidy	Burnt Mound	DAT 3861
NANT YR EGLWYS	Llanboidy	Burnt Mound	DAT 3961
PEN-BACH;LLANLLIWE	Llanboidy	Burnt Mound	DAT 3743
SARN LAS	Llanboidy	Burnt Mound	DAT 3742
GARNFFRWD	Llanddarog	Burnt Mound	DAT 632
GARNFFRWD	Llanddarog	Burnt Mound	DAT 633
GARNFFRWD	Llanddarog	Burnt Mound	DAT 634
GARNFFRWD	Llanddarog	Burnt Mound	DAT 635
TY-BRYCH;BAILIE	Llanddeusant	Burnt Mound	DAT 4061
BLAEN-PEN-TROYDIN	Llanddewi Velfrey	Burnt Mound	DAT 3737
FFYNNON	Llanddewi Velfrey	Burnt Mound	DAT 3700
FFYNNON	Llanddewi Velfrey	Burnt Mound	DAT 3723
FFYNNON	Llanddewi Velfrey	Burnt Mound	DAT 3724
PEN TROYDIN FACH FARM	Llanddewi Velfrey	Burnt Mound	DAT 34441
PEN-CREMINE	Llanddewi Velfrey	Burnt Mound	DAT 3722
PENTROYDIN FAWR	Llanddewi Velfrey	Burnt Mound	DAT 3726
Unknown	Llanddowror	Burnt Mound	DAT 106792
Unknown	Llanddowror	Burnt Mound	DAT 106808
BROADMOOR	Llanddowror	Burnt Mound	DAT 3903
PARCAU	Llanddowror	Burnt Mound	DAT 3886
BLAENCONIN CHAPEL	Llandissilio West	Burnt Mound	DAT 916
CASTELL Y GRAIG;TIR DAFYDD	Llandybie	Burnt Mound	DAT 808
CILCOLL	Llandybie	Burnt Mound	DAT 7524

Site Name	Community	Site Type	PRN
CILCOLL	Llandybie	Burnt Mound	DAT 7525
CILCOLL	Llandybie	Burnt Mound	DAT 803
GARN-BICA	Llandybie	Burnt Mound	DAT 1205
GELLI FAWNEN	Llandybie	Burnt Mound	DAT 873
GELLI SIFFOR;GELLY	Llandybie	Burnt Mound	DAT 838
GELLI SIFFOR;GELLY	Llandybie	Burnt Mound	DAT 839
GELLI SIFFOR;PARC HENRI	Llandybie	Burnt Mound	DAT 9740
GLYN-GLAS	Llandybie	Burnt Mound	DAT 846
PENRHIW	Llandybie	Burnt Mound	DAT 800
RHYD-Y-FFYNNON	Llandybie	Burnt Mound	DAT 798
PLASGWYN	Llandyfaelog	Burnt Mound	DAT 42758
PLAS-MAWR	Llanedi	Burnt Mound	DAT 823
Unknown	Llanelli	Round Barrow;Burnt Mound;Earthwork	DAT 13361
TALGARTH	Llanfair-ar-y-bryn	Burnt Mound	DAT 4155
PANT-MAWR	Llanfihangel Aberbythych	Burnt Mound	DAT 636
RHYD-Y-FFYNNON	Llanfihangel Aberbythych	Burnt Mound	DAT 791
RHYD-Y-FFYNNON	Llanfihangel Aberbythych	Burnt Mound	DAT 795
RHYD-Y-FFYNNON	Llanfihangel Aberbythych	Burnt Mound	DAT 796
RHYD-Y-FFYNNON	Llanfihangel Aberbythych	Burnt Mound	DAT 797
Cwm Crew W mound	Llanfrynach	Burnt Mound	CPAT 26350
Ffynnon Tyle-brith	Llanfrynach	Burnt Mound	CPAT 23806
GAER FAWR Y	Llangadog	Burnt Mound	DAT 7530
LLAN;LAN	Llangadog	Burnt Mound	DAT 4067

Site Name	Community	Site Type	PRN
LLWYN-Y-WENNOL	Llangadog	Burnt Mound	DAT 4066
PARC OWEN	Llangadog	Burnt Mound	DAT 898
PWLL-Y-FUWCH	Llangadog	Burnt Mound	DAT 4053
TY'R CWM	Llangadog	Burnt Mound	DAT 34446
TY'R CWM	Llangadog	Burnt Mound;Round Barrow	DAT 34447
Unknown	Llangain	Burnt Mound	DAT 107471
BROAD OAK;DERWEN FAWR	Llangathen	Burnt Mound	DAT 14133
Rhossili Down	Llangennith, Llanmadoc and Cheriton	Burnt Mound	GGAT 00021w
Druid's Moor Mound I	Llangennith, Llanmadoc and Cheriton	Burnt Mound	GGAT 00137w
Druid's Moor Mound II	Llangennith, Llanmadoc and Cheriton	Burnt Mound	GGAT 05864w
TALLY-HO	Llangwm and Hook	Burnt Mound	DAT 3187
TALLY-HO	Llangwm and Hook	Burnt Mound	DAT 3188
TROOPER'S INN	Llangwm and Hook	Burnt Mound	DAT 3364
BLAENAU	Llangyndeyrn	Burnt Mound	DAT 1692
PANT TEG;TOR-Y-COED-ISAF	Llangyndeyrn	Burnt Mound	DAT 1691
BLAEN-GORS	Llangynin	Burnt Mound	DAT 3865
FFYNNON-DAGRAU	Llangynog	Burnt Mound	DAT 2139
GELLI	Llangynog	Burnt Mound	DAT 2178
LLANDILO ABERCOWIN	Llangynog	Burnt Mound	DAT 2176
LLANDILO ABERCOWIN	Llangynog	Burnt Mound	DAT 2177
PENTRE-NEWYDD	Llangynog	Burnt Mound	DAT 2152
Unknown	Llanharan	Burnt Mound	GGAT 01282s
Unknown	Llanrhidian Lower	Burnt Mound	GGAT 02144w
Unknown	Llanrhidian Lower	Burnt Mound	GGAT 02239w
Unknown	Llanrhidian Lower	Burnt Mound	GGAT 02240w

Site Name	Community	Site Type	PRN
LEONARDSTON	Llanstadwell	Burnt Mound	DAT 3185
LEONARDSTON;MASCLE BRIDGE	Llanstadwell	Burnt Mound	DAT 3191
CWMLLYFRAU	Llansteffan	Burnt Mound	DAT 2162
FFYNNON-OLCWM	Llansteffan	Burnt Mound	DAT 2189
FFYNNON-OLCWM	Llansteffan	Burnt Mound	DAT 2190
LLWYN-GWYN	Llansteffan	Burnt Mound	DAT 2216
MAESGWYN	Llansteffan	Burnt Mound	DAT 2211
MAESGWYN	Llansteffan	Burnt Mound	DAT 2212
MAESGWYN	Llansteffan	Burnt Mound	DAT 2213
PEN-PICILLION	Llansteffan	Burnt Mound	DAT 2215
PENGELLI-ISAF	Llansteffan	Burnt Mound	DAT 2214
Unknown	Llawhaden	Burnt Mound	DAT 106773
Unknown	Llawhaden	Burnt Mound	DAT 106774
Unknown	Llawhaden	Burnt Mound	DAT 106775
Unknown	Llawhaden	Burnt Mound	DAT 106780
Unknown	Llawhaden	Burnt Mound	DAT 106784
CILFODEN	Llawhaden	Burnt Mound	DAT 3623
CILFODEN	Llawhaden	Burnt Mound	DAT 3624
COTLAND	Llawhaden	Burnt Mound	DAT 3560
DEBORAH'S INN	Llawhaden	Burnt Mound	DAT 3549
DEBORAH'S INN	Llawhaden	Burnt Mound	DAT 3550
DRIM WOOD	Llawhaden	Burnt Mound	DAT 3574
Allt Fach	Llywel	Burnt Mound	CPAT 12305
Trawsnant	Llywel	Burnt Mound	CPAT 23721
Capel Callwen	Llywel	Burnt Mound	CPAT 788
DAK THE	Manorbier	Burnt Mound	DAT 4214
SWANLAKE I	Manorbier	Burnt Mound	DAT 4190
SWANLAKE II	Manorbier	Burnt Mound	DAT 4191

Site Name	Community	Site Type	PRN
SWANLAKE III	Manorbier	Burnt Mound	DAT 4192
CONNERMOOR	Marloes and St Brides	Burnt Mound	DAT 3134
CONNERMOOR	Marloes and St Brides	Burnt Mound	DAT 3135
CONNERMOOR	Marloes and St Brides	Burnt Mound	DAT 3136
MARLOES BEACON	Marloes and St Brides	Burnt Mound	DAT 2947
MARLOES CHURCH	Marloes and St Brides	Burnt Mound	DAT 2945
WESTHOOK	Marloes and St Brides	Burnt Mound	DAT 7579
WINDMILL PARK	Marloes and St Brides	Burnt Mound	DAT 3137
BLACKPOOL BRIDGE	Martletwy	Burnt Mound	DAT 3609
BROOMHILL	Martletwy	Burnt Mound	DAT 3597
EWETON	Martletwy	Burnt Mound	DAT 3627
HIGHGATE	Martletwy	Burnt Mound	DAT 3626
NASH FARM	Martletwy	Burnt Mound	DAT 3596
NEWTON FARM	Martletwy	Burnt Mound	DAT 3610
PRETTYLAND	Martletwy	Burnt Mound	DAT 3459
PRETTYLAND	Martletwy	Burnt Mound	DAT 3460
TEDION	Martletwy	Burnt Mound	DAT 3458
PARC-Y-GARN	Mathry	Burnt Mound	DAT 9824
Graig Fawr Mound III	Mawr	Burnt Mound	GGAT 00344w
PEN-YR-HEOL	Meidrim	Burnt Mound	DAT 2247
BARRETTS;BARRETTSHILL	Milford	Burnt Mound	DAT 3183
Unknown	Milford Haven	Burnt Mound	DAT 106731
GWASTAD-BACH	Mynachlog-ddu	Burnt Mound	DAT 9823
PARR'S CASTLE	N/A	Burnt Mound	DAT 42757
PEN Y GRAIG FARM	Nevern	Burnt Mound	DAT 11345
LLANDRE BRIDGE	New Moat	Burnt Mound	DAT 1404
LLANDRE BRIDGE	New Moat	Burnt Mound	DAT 1405

Site Name	Community	Site Type	PRN
DERLLYS	Newchurch and Merthyr	Burnt Mound	DAT 2267
CARN FFOI	Newport	Burnt Mound	DAT 105466
DRUIDSTON	Nolton and Roch	Burnt Mound	DAT 3122
DRUIDSTON	Nolton and Roch	Burnt Mound	DAT 3123
DRUIDSTON	Nolton and Roch	Burnt Mound	DAT 3126
DRUIDSTON CROSS	Nolton and Roch	Burnt Mound	DAT 3119
DRUIDSTON CROSS	Nolton and Roch	Burnt Mound	DAT 3120
DRUIDSTON CROSS	Nolton and Roch	Burnt Mound	DAT 3121
NOLTON CROSS	Nolton and Roch	Burnt Mound	DAT 3129
PINCH COTTAGE	Nolton and Roch	Burnt Mound	DAT 2805
SIMPSON HILL	Nolton and Roch	Burnt Mound	DAT 3108
KINGSFOLD	Pembroke	Burnt Mound	DAT 585
NORTH DOWN	Pembroke	Burnt Mound	DAT 3512
WARRESTON	Pembroke	Burnt Mound	DAT 3267
FFYNNON DRUIDION	Pencaer	Burnt Mound	DAT 9922
RHOS CARNE COCH	Pencaer	Burnt Mound	DAT 8498
RHOS CARNE COCH	Pencaer	Burnt Mound	DAT 8499
Ty'n-y-Pwll Mound I	Pendoylan	Burnt Mound	GGAT 00182s
Ty'n-y-Pwll Mound II	Pendoylan	Burnt Mound	GGAT 00183s
Penrice Mound I	Penrice	Burnt Mound	GGAT 00191w
Unknown	Pontardawe	Burnt Mound	GGAT 00361w
Unknown	Pontardawe	Burnt Mound	GGAT 05865w
Graig Fawr Mound I	Pontardulais	Burnt Mound	GGAT 00342w
Graig Fawr Mound II	Pontardulais	Burnt Mound	GGAT 00343w
CILCARW	Pontyberem	Burnt Mound	DAT 1705
Cooking Mound East of Taff Terrace	Radyr and Morganstown	Burnt Mound	GGAT 00599s

Site Name	Community	Site Type	PRN
Unknown	Reynoldston	Burnt Mound	GGAT 02238w
BASTLEFORD	Rosemarket	Burnt Mound	DAT 3171
EAST MOOR	Rosemarket	Burnt Mound	DAT 3189
EAST MOOR	Rosemarket	Burnt Mound	DAT 3190
STEMBER WOOD	Rudbaxton	Burnt Mound	DAT 2450
COLDBLOW	Slebech	Burnt Mound	DAT 3552
SLEBECH HALL	Slebech	Burnt Mound	DAT 3588
PENRHEOL	St Clears	Burnt Mound	DAT 2138
ZABULON	St Clears	Burnt Mound	DAT 3868
BRYNCWS FACH	St Dogmaels	Burnt Mound	DAT 14233
BRYNCWS FACH	St Dogmaels	Burnt Mound	DAT 14234
CWM YR ESGYRN	St Dogmaels	Burnt Mound	DAT 14222
CWM YR ESGYRN	St Dogmaels	Burnt Mound	DAT 14220
CWM YR ESGYRN	St Dogmaels	Burnt Mound	DAT 14221
CWM YR ESGYRN	St Dogmaels	Burnt Mound	DAT 14223
ESGYRN FACH	St Dogmaels	Burnt Mound	DAT 14224
ESGYRN FACH	St Dogmaels	Burnt Mound	DAT 14225
ESGYRN FACH	St Dogmaels	Burnt Mound	DAT 14226
GERNOS	St Dogmaels	Burnt Mound	DAT 14218
GERNOS	St Dogmaels	Burnt Mound	DAT 14219
GLAN Y MOR	St Dogmaels	Burnt Mound	DAT 14227
GLAN Y MOR	St Dogmaels	Burnt Mound	DAT 14228
GLAN Y MOR	St Dogmaels	Burnt Mound	DAT 34445
GLAN-Y-MOR	St Dogmaels	Burnt Mound	DAT 11761
PENRHYN	St Dogmaels	Burnt Mound	DAT 14229
PENRHYN CASTLE	St Dogmaels	Burnt Mound	DAT 34444
TRE CWN	St Dogmaels	Burnt Mound	DAT 14235
PONTEROSA LA	St Florence	Burnt Mound	DAT 3537

Site Name	Community	Site Type	PRN
MONKHILL	St Ishmael's	Burnt Mound	DAT 2992
MOOR	St Ishmael's	Burnt Mound	DAT 2993
NORTH HALL	St Ishmael's	Burnt Mound;Midden	DAT 2990
NORTH HALL	St Ishmael's	Burnt Mound	DAT 2991
SANDY HAVEN	St Ishmael's	Burnt Mound;Ore Processing Site	DAT 106547
SANDY HAVEN	St Ishmael's	Burnt Mound	DAT 3020
UPPER WINSLE	St Ishmael's	Burnt Mound	DAT 2974
WINSLE LEYS	St Ishmael's	Burnt Mound	DAT 2920
BOG BRIDGE	Templeton	Burnt Mound	DAT 3767
GROVE GATE	Templeton	Burnt Mound	DAT 3759
GROVE GATE	Templeton	Burnt Mound	DAT 3760
GROVE GATE	Templeton	Burnt Mound	DAT 3761
SOUTHFIELDS	Templeton	Burnt Mound	DAT 3757
SOUTHFIELDS	Templeton	Burnt Mound	DAT 3758
UPPER HOATEN;TALBENNY AIRFIELD	The Havens	Burnt Mound	DAT 3145
ANNYKELL	Tiers Cross	Burnt Mound	DAT 3343
BOLTON HILL	Tiers Cross	Burnt Mound	DAT 3339
BOLTON HILL	Tiers Cross	Burnt Mound	DAT 3340
BOLTON HILL	Tiers Cross	Burnt Mound	DAT 3341
BOLTON HILL	Tiers Cross	Burnt Mound	DAT 3342
FERNY CASTLE COTTAGE	Tiers Cross	Burnt Mound	DAT 3345
FERNY CASTLE COTTAGE	Tiers Cross	Burnt Mound	DAT 3346
HIGHWAY PARK	Tiers Cross	Burnt Mound	DAT 3344
JOHNSTON CHURCH;BWLFORD	Tiers Cross	Burnt Mound	DAT 3351
JUBILEE COTTAGE	Tiers Cross	Burnt Mound	DAT 3348
SUNNY HILL	Tiers Cross	Burnt Mound	DAT 3347
THORNBURY	Tiers Cross	Burnt Mound	DAT 3019

Site Name	Community	Site Type	PRN
GILFACHYBETWS	Trelech	Burnt Mound	DAT 39333
Unknown	Treorchy	Burnt Mound	GGAT 00055m
Unknown	Uzmaston and Boulston	Burnt Mound	DAT 106748
Unknown	Uzmaston and Boulston	Burnt Mound	DAT 107265
COTTS PARK	Uzmaston and Boulston	Burnt Mound	DAT 3333
OLD OVEN	Uzmaston and Boulston	Burnt Mound	DAT 3319
UZMASTON CHURCH	Uzmaston and Boulston	Burnt Mound	DAT 3354
UZMASTON FARM	Uzmaston and Boulston	Burnt Mound	DAT 3353
Unknown	Van	Burnt Mound	GGAT 02903m
GREAT HOATON;EAST WINSLE	Walwyn's Castle	Burnt Mound	DAT 2989
LITTLE RICKESTON	Walwyn's Castle	Burnt Mound	DAT 3014
REDBERTH	Walwyn's Castle	Burnt Mound	DAT 3167
WOODS END COTTAGE	Walwyn's Castle	Burnt Mound	DAT 3166
Unknown	Wiston	Burnt Mound	DAT 106763
FENTON	Wiston	Burnt Mound	DAT 3332
HOLMES	Wiston	Burnt Mound	DAT 1340
MOUNTJOY	Wiston	Burnt Mound	DAT 9785
NEWPARK	Wiston	Burnt Mound	DAT 3540
WISTON POST OFFICE	Wiston	Burnt Mound	DAT 3545
WISTON POST OFFICE	Wiston	Burnt Mound	DAT 3546
WISTON WOOD	Wiston	Burnt Mound	DAT 3553
Cefn Esgair Carnau	Ystradfellte	Burnt Mound	CPAT 33633

Bibliography

Alcock, L. 1963. *Dinas Powys, an Iron Age, Dark Age and Medieval Settlement in Glamorgan.* Cardiff.

Allen, J.R.L. 1996. Three final Bronze Age occupations at Rumney Great Wharf on the Wentlooge Level, Gwent. *Studia Celtica* 30, 1-16.

Armit, I and Braby, A. 2002. Excavation of a burnt mound and associated structures at Ceann nan Clachan, North Uist. *Proc Soc Antiq Scot* 132, 229-258.

Babbidge, A. 1977. Reconnaissance excavations at Coed y Bwynydd, Bettws Newydd, 1969-71. *Monmouthshire Antiquary* 3, 159-178.

Bailey, D. W. 1999. What is a tell? Settlement in fifth millennium Bulgaria. In. Brück, J & Goodman, M. 1999. *Making places in the prehistoric world: themes in settlement archaeology*. London: UCL Press, 94-111.

Barber, A. 2003. RAF St. Athan. *Morgannwg* 47, 65.

Barber, A., Cox, S. and Hancock, A. 2004 *DARA Hangar Site, RAF St. Athan, Vale of Glamorgan. Post-excavation assessment and updated project design for DARA*. Unpublished report. Cotswold Archaeology. 04006, project 1541.

Barber, J & Russell-White, C., 1991. Introduction to the 'Scottish Selection', In. Buckley, V. *Burnt Offerings: International Contributions to Burnt Mound Archaeology.* Dublin: Wordwell.

Barfield, L. and Hodder, M. 1987. Burnt mounds as saunas, and the prehistory of bathing. *Antiquity* 61, 370-379.

Baring-Gould, S., Burnard, R. & Anderson, I.K. 1900. Exploration of Moel Trigarn. *Archaeologia Cambrensis* 17 (5th series), 189–211.

Barker, L. & Driver, T. 2011. Close to the edge: New perspectives on the architecture, function and regional geographies of the coastal promontory forts of the Castlemartin Peninsula, South Pembrokeshire, Wales. *Proceedings of the Prehistoric Society* 77, 65–87

Bates, M., N. Cameron, S. Jones, M. Walker, J. Whittaker. 2010. *Proposed Natural Gas Pipeline, Pembroke. Palaeonvironmental report*. Cambrian Archaeological Projects Ltd.

Bayliss, A., Whittle, A., Healy, F., Ray, K., Dorling, P., Lewis, R., Darvill, T., Wainwright, G. & Wysocki, M. 2011. The Marches, south Wales and the Isle of Mann. In A. Whittle, F. Healy & A. Bayliss (eds). *Gathering Time: Dating the early Neolithic enclosures of southern Britain and Ireland*. Oxford: Oxbow Books, 521–61.

Beamish, M. and Ripper, S., 2000. Burnt mounds in the East Midlands. *Antiquity* 74, 37-8.

Bell, M. 2001. Interim report on the excavation of a Middle Bronze Age Settlement at Redwick, 2000-1. *Archaeology in the Severn Estuary* 12, 99-117.

Bell, M. 2013. *The Bronze Age in the Severn Estuary*. York: Council for British Archaeology Research Report 172

Bell, M. and Neumann, H. 1999 'Intertidal survey, assessment and excavation of a Bronze Age site at Redwick, Gwent 1999', *Archaeology in the Severn Estuary* 10, 25-37.

Bell, M., Caseldine, A. and Neumann, H. 2000 *Prehistoric Intertidal Archaeology in the Welsh Severn Estuary*. London.

Bell, M. and Walker, M. J. C. 2005. *Late Quaternary environmental change. Physical and human perspectives*. Harlow: Pearson Education.

Benson, D. and Williams, G.H. 1987. Dale promontory fort. *Archaeology in Wales* 27, 43.

Benson, D.G., Evans, J.G., Williams, G.H., Darvill, T. and David, A. 1990. Excavations at Stackpole, Warren, Dyfed. *Proceedings of the Prehistoric Society* 56, 179-245.

Best, J. and Gent, T 2007 Bronze Age burnt mounds and Early Medieval timber structures at Town Farm Quarry, Burlescombe, Devon. *Archaeological Journal* 164, 1-79.

Bowden, M. & McOmish D. 1987. The required barrier. *Scottish Archaeological Review* 4, 76–84.

Bowen, E. G. 1967. The South-West. In Bowen, E. G. (ed.). *Wales: a physical, historical and regional geography*. London: Methuen and Co. Ltd, 329-52.

Bowen, E.G. 1967. Race and Culture. In Bowen, E. G. (ed.). *Wales: a physical, historical and regional geography*. London: Methuen and Co. Ltd, 131-40.

Bradley, R. 1978a. Colonisation and land use in the Late Neolithic and Early Bronze Age. In Limbrey and Evans (eds.). *The effect of Man on the landscape: the lowland zone*. Council for British Archaeology Research Report No. 21. London: Council for British Archaeology, 95-103.

Bradley, R. 1978b. Prehistoric field systems in Britain and north-west Europe. *World Archaeology* 9, 265-80.

Bradley, R. 1978c. *The prehistoric settlement of Britain*. London: Routledge and Keegan Paul.

Brassil, K. 1993. Ty Tan y Foel, Cerrig y Druidion. *Archaeology in Wales 33*, 50.

Brett, M., McSloy, E.R. & Holbrook, N. 2009. A Roman enclosure at Crickhowell Road, Trowbridge, Cardiff: Evaluation and excavation 2005-6. *Archaeologia Cambrensis* 158, 131–66

Brittain, M. 2004. Layers of life and death: aspects of monumentality in the early Bronze Age of Wales. In V. Cummings and C. Fowler (eds.), *The Neolithic of the Irish Sea: Materiality & traditions of practice.* Oxford, Oxbow. 224-232.

Brossler, A., Early, R. and Allen, C., 2004. *Green Park (Reading Business Park): Phase 2 Excavations 1995: Neolithic and Bronze Age Sites* (No. 19). Oxford Archaeological Unit.

Brown, A. 2013. Bronze Age vegetation history and human activity at Llandevenny and in the wider Severn Estuary region. In Bell, M. 2013. *The Bronze Age in the Severn Estuary*. York: Council for British Archaeology Research Report 172, 274-86.

Brown, A., Davis, S.R., Hatton, J., O'Brien, C., Reilly, F., Taylor, K., Dennehy, K.E., O'Donnell, L., Bermingham, N., Mighall, T. and Timpany, S. 2016. The Environmental Context and Function of Burnt-Mounds: New Studies of Irish Fulachtaí Fiadh. *Proceedings of the Prehistoric Society* 82, 259-290.

Brück, J. 1999a. What's in a settlement? Domestic practice and residential mobility in Early Bronze Age Southern England. In Brück, J & Goodman, M (eds), *Making Places in the Prehistoric World: themes in settlement archaeology* (London: UCL Press), 52-75

Brück, J. 1999b. Houses, Lifecycles and Deposition on Middle Bronze Age Settlements in Southern England. *Proceedings of the Prehistoric Society* (Vol. 65,), 145-166

Brück, J. 2000. Settlement, Landscape and Social Identity: The Early-Middle Bronze Age Transition in Wessex, Sussex and the Thames Valley. *Oxford Journal of Archaeology*, *19*(3), pp.273-300.

Brück, J. 2007. The character of Late Bronze Age settlement in southern Britain. *The Earlier Iron Age in Britain and the Near Continent. Oxford: Oxbow*, 24-38.

Brück, J & Goodman, M. 1999. *Making places in the prehistoric world: themes in settlement archaeology*. London: UCL Press.

Brück, J & Fokkens, H. 2013. Bronze Age settlements. In Harding, A. and Fokkens, H. eds., 2013. *The Oxford Handbook of the European Bronze Age*. OUP Oxford.

Burgess, C. 1985a. Population, climate and upland settlement. In Spratt and Burgess (eds.). *Upland settlement in Britain: the second millennium BC and after*. Oxford: British Archaeological Report 141, 195-230.

Burgess, C. and Spratt, D.A. 1985b. *Upland settlement in Britain: the second millennium BC and after*. Oxford: British Archaeological Report 141.

Burrow, S. 2006. *Catalogue of the Mesolithic and Neolithic Collections*. Cardiff: National Museum and Galleries of Wales.

Burrow, S. 2011. *Shadowland: Wales 3000-1500 BC*. Cardiff: Amgueddfa Cymru – National Museum Wales.

Burrow, S. and Williams, S. 2008. Unpublished. The Wales and Borders radiocarbon database. Amgueddfa Cymru, National Museum of Wales.

CA (Cotswold Archaeology). 2013a. *South Wales Gas Pipeline Project, Site 519, Land West of Thornton, Tiers Cross, Pembrokeshire*. CA typescript report 13260.

CA (Cotswold Archaeology). 2013b. *South Wales Gas Pipeline Project, Site 502, Land South of Mylett Llanddowror, Carmarthenshire*. CA typescript report 13247.

CA (Cotswold Archaeology). 2013c. *South Wales Gas Pipeline Project. Site 510, Land South of Scurtle, Wiston, Pembrokeshire*. CA typescript report 13253.

CA (Cotswold Archaeology). 2013d. *South Wales Gas Pipeline Project. Site 515, Land South of Uzmaston, Uzmaston and Boulston, Pembrokeshire*. CA Typescript report 13257.

CA (Cotswold Archaeology). 2013e. *South Wales Gas Pipeline Project. Site 516, Land East of Canaston Wood, Llawhaden, Pembrokeshire*. CA typescript report 13258.

CA (Cotswold Archaeology). 2013f. *South Wales Gas Pipeline Project, Sites 214 and 223, Land West of Vaynor Farm, Llanddowror, Carmarthenshire*. CA typescript report 13300.

CA (Cotswold Archaeology). 2013g. *South Wales Gas Pipeline Project, Site 01.18, Land West of Crwca, Mawr, Swansea*. CA typescript report 13263.

CA (Cotswold Archaeology). 2013h. *South Wales Gas Pipeline Project, Site 13.01, Land North of Ammanford, Llandybie, Carmarthenshire*. CA typescript report 13265.

CA (Cotswold Archaeology). 2013i. *South Wales Gas Pipeline Project, Sites OEA11 and 21.02, Land East of Cilsan, Llangathen, Carmarthenshire*. CA typescript report 13338.

CA (Cotswold Archaeology). 2013j. *South Wales Gas Pipeline Project, Sites 28.08 and 28.08a, Land East of Bail y Llwyd, Manordeilo and Salem, Carmarthenshire*. CA typescript report 13303.

CA (Cotswold Archaeology). 2013k. *South Wales Gas Pipeline, Site 28.14, Land North-East of Bail y Llwyd, Manordeilo and Salem, Carmarthenshire*. CA typescript report 13305.

CA (Cotswold Archaeology). 2013l. *South Wales Gas Pipeline, Site 45.16, Land West of Maescar, Maescar, Powys*. CA typescript report 13321.

CA (Cotswold Archaeology). 2013m. *South Wales Gas Pipeline Project, Site 28.23, Land West of Aber-Marlais Park, Llansadwrn, Carmarthenshire*. CA typescript report 13307.

CA (Cotswold Archaeology). 2014a. *South Wales Gas Pipeline Project. Site 511/514, Land South-East of Upper Neeston, Herbrandston, Pembrokeshire*. CA Typescript report 13254.

CA (Cotswold Archaeology). 2014b. *South Wales Gas Pipeline Project. Site 512, Land North of Steynton, Milford Haven, Pembrokeshire*. CA Typescript report 13355.

CA (Cotswold Archaeology). 2014c. *South Wales Gas Pipeline Project. Site 507, Land East of Church Hill, Uzmaston, Uzmaston and Boulston, Pembrokeshire*. CA Typescript report 13250.

CA (Cotswold Archaeology). 2014d. *South Wales Gas Pipeline Project. Site 508, Land at Conkland Hill, Wiston, Pembrokeshire*. CA typescript report 13251.

CA (Cotswold Archaeology). 2014e. *South Wales Gas Pipeline Project. Sites 269, 285, 517 and 518, Canaston Wood, Llawhaden, Pembrokeshire*. CA typescript report 13215.

CA (Cotswold Archaeology). 2014f. *South Wales Gas Pipeline Project, Site 213, Land at Gilfach, Llangain, Carmarthenshire*. CA typescript report 13142.

CA (Cotswold Archaeology). 2014g. *South Wales Gas Pipeline Project, Sites 26.02, 26.03 and 26.04, Land South of Dolau Farm, Manordeilo and Salem, Carmarthenshire*. CA typescript report 13279.

CA (Cotswold Archaeology). 2014h. *South Wales Gas Pipeline Project, Site 26.05, Land West of Cwmifor, Manordeilo and Salem, Carmarthenshire*. CA typescript report 13308.

CA (Cotswold Archaeology). 2014i. *South Wales Gas Pipeline Project, Site 506, Land East of Glan-rhŷd Bridge, Lampeter Velfrey, Pembrokeshire*. CA typescript report 13249.

CA (Cotswold Archaeology). 2015a. *South Wales Gas Pipeline Project. Site 503, Land East of Vaynor Farm, Llanddowror, Carmarthenshire*. CA typescript report 13328.

Carlyle, S. and Stevens, C. 2002. Cowbridge, Darren Farm (SS 9830 7485). *Archaeology in Wales* 42, 113.

Caseldine, A. E. 1995. Cadw environmental archaeology report. *Archaeology in Wales* 35, 81-2.

Caseldine, A.S. 2004. Environmental Archaeology. *Archaeology in Wales* 44, 200.

Caseldine, A.S. 2005. Environmental Archaeology. *Archaeology in Wales* 45, 204.

Caseldine, A.S. 2006a. Environmental Archaeology. *Archaeology in Wales* 46, 239.

Caseldine, A.S. 2006b. The environment and deserted rural settlements in Wales: potential and possibilities for palaeoenvironmental studies. In K. Roberts (ed.). *Lost farmsteads: Deserted rural settlements in Wales*. York: Council for British Archaeology Research Report 148, 133-153.

Caseldine, A. S. and Griffiths, C. 2010. Environmental Evidence. In Crane, P. and Murphy, K. The excavation of a coastal promontory fort at Porth y Rhaw, Solva, Pembrokeshire, 1995–98. *Archaeologia Cambrensis* 159, 86-9.

Chambers, F. M. 1981. Date of blanket peat initiation in upland South Wales. Quaternary Newsletter 35, 24-9.

Chambers, F. M. 1982. Two radiocarbon-dated pollen diagrams from high-altitude blanket peats in South Wales. Journal of Ecology 70, 445-59.

Champion, T. 2002. The Later Bronze Age. In. John Hunter and Ian Ralston (eds.). *The Archaeology of Britain: An Introduction from Earliest Times to the Twenty-First Century*. London: Routledge. 125-148.

Chapman, P. 2004. Iron Age settlement and Romano-British enclosures at Coventry Road, Hinckley, Leicestershire. *Trans. Leicestershire Archaeol. and Hist. Soc.* 78, 35-82.

Cloutman, E. W. 1983. *Studies of the vegetational history of the Black Mountain Range, South Wales*. Unpublished doctoral thesis, University of Wales.

Cook, N. 2003. Prehistoric funerary and ritual sites in Carmarthenshire. *Carmarthenshire Antiquary* 39, 5-21.

Cook, N. 2006. Prehistoric funerary and ritual sites in Pembrokeshire. *Pembrokeshire Historical Society* 15. http://www.pembrokeshirehistoricalsociety.co.uk/prehistoric-funerary-ritual-sites-pembrokeshire-nikki-cook/

Corney, M. 2009. Archaeological Excavations off Church Road, Caldicot, Monmouthshire. *Archaeology in Wales* 49, 11-24.

Crampton, C.B. and Webley, D.P. 1963. The correlation of prehistoric settlement and soils: Gower and the South Wales coalfield. *Bulletin of the Board of Celtic Studies* 20, 326-7.

Crampton, C.B. and Webley, D.P. 1964. Preliminary studies of the historic succession of plants and soils in selected archaeological sites in south Wales. *Bulletin of the Board of Celtic Studies* 20, 440-49.

Crane, P. 1999a. Great Castle Head, Dale (SM 7992 0565). *Archaeology in Wales* 39*,* 88-90.

Crane, P. 1999b. Porth y Rhaw, Solva (SM 796 242). *Archaeology in Wales* 39, 91.

Crane, P. 1999c. Iron Age promontory fort to medieval castle? Excavations at Great Castle Head, Dale, Pembrokeshire, 1999. *Archaeologia Cambrensis* 148, 86-145.

Crane, P. 2003 'Waterston, Newton', *Archaeology in Wales* 43, 110.

Crane, P. 2004a *Excavations at Newton, Llanstadwell, Pembrokeshire*. Draft Report. Unpublished report. Cambria Archaeology. 2004/73, project record 46961.

Crane, P. 2004b. Excavations at Newton, Llandstadwell, Pembrokeshire. *Archaeology in Wales*, 44, 3-32.

Crane, P. 2007. *South Hook Liquid Natural Gas Pipeline, Milford Haven, Pembrokeshire: Archaeological Post Excavation Research Design*. Project Record No. 52787.

Crane, P. 2008. Felindre Varchog, A487 (SN 0905 3896 - SN 0950 3874). *Archaeology in Wales* 48, 119.

Crane, P. Day, A. Murphy, F. and Wilson, H. 2013. *Excavations at Crugiau Cemmaes, Pembrokeshire 2013: interim report*. Report No. 2013/66. Event Record No. 105811. Carmartheshire: Dyfed Archaeological Trust.

Crane, P. and Murphy, K. 2010. The excavation of a coastal promontory fort at Porth y Rhaw, Solva, Pembrokeshire, 1995–98. *Archaeologia Cambrensis* 159, 53-98.

Crew, P. 1989. Excavations at Crawcwellt West, Merioneth, 1986-1989. *Archaeology in Wales* 29, 11-16.

Crew, P. 1998. Excavations at Crawcwellt West, Merioneth 1990-1998: a late prehistoric upland iron-working settlement. *Archaeology in Wales* 38, 23-35.

Dark, K. 1987, 1988, 1990, & 1991*. Excavations at Brawdy Hill-fort.* Unpublished interim reports. Copies deposited with the Dyfed Historic Environment Record, Dyfed Archaeological Trust.

Darvill, T. and Wainwright, G. 2016. Neolithic and Bronze Age Pembrokeshire. In James, H., John, M., Murphy, K. and Wainwright, G. *Pembrokeshire County History, Volume I*: *Prehistoric, Roman and Early Medieval Pembrokeshire*. Haverfordwest: Pembrokeshire County History Trust, 55-222.

Davies, J. & Lynch, F. 2000. The Late Bronze Age and Iron Age. In F. Lynch, S. Aldhouse-Green & J. Davies (eds), *Prehistoric Wales*, 139–219. Stroud: Sutton

Davies, M. 1955. Field patterns in the Vale of Glamorgan. *Transactions of the Cardiff Naturalists' Society* 84, 5–14

Davies, T., Davis, O. & Seaman, A. 2015. The Eastern Vale of Glamorgan Palaeoenvironmental Resource Assessment Project: Summary report. *Archaeology in Wales* 54, 164–7

Davis, O. 2017. Filling the gaps: the Iron Age in Cardiff and the Vale of Glamorgan. *Proceedings of the Prehistoric Society*, 1 – 32.

Davis, O.P. & Sharples, N. 2014. *Excavations at Caerau Hillfort, Cardiff, South Wales, 2013: An interim report*. Cardiff: Cardiff Studies in Archaeology 34.

Davis, O.P. & Sharples, N. 2015. *Excavations at Caerau Hillfort, Cardiff, South Wales, 2014: An interim report*. Cardiff: Cardiff Studies in Archaeology 35.

Davis, O.P. & Sharples, N. 2016. *Excavations at Caerau Hillfort, Cardiff, South Wales, 2015: An interim report*. Cardiff: Cardiff Studies in Archaeology 36.

Dorling, P. and Chambers, F.M. 1990. Field Survey, excavation and pollen analysis at Mynydd y Drum, Ystradgynlais, Powys, 1983 and 1987. *Bulletin of the Board of Celtic Studies* 37, 215-246.

Dresser, Q. 1985. University College Cardiff radiocarbon dates I. *Radiocarbon*, 27(2B), 338-85.

Driver, T, 2007. *Pembrokeshire Historic Landscapes from the Air*. Aberystwyth: Royal Commission on the Ancient and Historical Monuments of Wales.

Driver, T. 2013. *Architecture, regional identity and power in the Iron Age landscapes of Mid Wales: the hillforts of North Ceredigion*. BAR British Series 583.

Fleming, A. 1984. The prehistoric landscape of Dartmoor: wider implications. *Landscape History* 6, 5-19.

Fleming, A, 1988. *The Dartmoor Reaves. Investigating prehistoric land divisions*. London: Batsford.

Fox, C. 1932. *The Personality of Britain: Its influence on inhabitant and invader in prehistoric and early historic times*. Cardiff: National Museum of Wales.

Gardner,

Ghey, E., Edwards, N., Johnston, R. and Pope, R. 2007. Characterising the Welsh roundhouse: chronology, inhabitation and landscape, *Internet Archaeology*, 23, http://intarch.ac.uk/journal/issue23/johnston_index.html. Accessed 21/03/2017.

Ghey, Eleanor., Edwards, Nancy., and Johnson, Robert. 2008. Categorising Round House Settlements in Wales: Concentric circular settlements a case study. *Studia Celtica*, 42, 1-25.

Gibson, A. 1982. *Beaker Domestic sites: A study of the late third and early second millennium B.C. in the British Isles*. British Archaeological Report 107.

Griffith, R.J. 1906 'Hen Dre-R Gelli: a buried prehistoric town in the Rhondda Valley', *Archaeologia Cambrensis* **6** 6th series, 281-307.

Guilbert, G. C. 1974. Llanstephan Castle: 1973 interim report. *The Carmarthenshire Antiquary* 10, 37-48.

Gwilt, A, Lodwick, M., Deacon, J., Wells, N., Madgwick, R. & Young, T. 2015. Ephemeral Abundance at Llanmaes: Exploring the residues and resonances of an Earliest Iron Age midden and its associated archaeological context in the Vale of Glamorgan. In Koch, J. & Cunliffe, B. (eds.), Celtic from the West 3; Rethinking the Bronze Age and the Arrival of Indo-European in Atlantic Europe, Oxford: Oxbow Books, 294-328.

Halstead, J. 2005. *Bronze Age settlement in the Welsh Marches*. Oxford: British Archaeological Report 384.

Halstead, J. 2011. *Settlement patterns from the Late Neolithic to the Late Bronze Age: The central Welsh border region in context*. Unpublished PhD thesis, University of Birmingham.

Hamilton, D. H., Haselgrove, C. and Gosden, C. 2015. The impact of Bayesian chronologies on the British Iron Age. *World Archaeology* 47:4, 642-660.

Hart, J., Rackham, J., Griffiths, S. and Challinor, C. 2014. Burnt mounds along the Milford Haven to Brecon gas pipeline 2006-07. *Archaeologia Cambrensis*, 163, 1-40.

Hedges, J. 1977 Excavation of two Orcadian burnt mounds at Liddle and Beaquoy. *Proc Soc Antq Scot* 106, 39-98.

Higginbottom, G. Thomas, C. and Sherman, A. 2007. *Burnt Mound Southeast Wales*. Unpublished report, GGAT Report No. 85. Swansea: Glamorgan-Gwent Archaeological Trust.

Hill, J.D. 2012. How did Middle and Late Iron Age societies in Britain work (if they did)? In T. Moore & L. Armada (eds), *Atlantic Europe in the First Millennium BC: Crossing the divide*. Oxford: Oxford University Press, 242–63.

Houlder, C. 1974 *Wales: An Archaeological guide.* London.

Howe, G. M. The South Wales Coalfield. In Bowen, E. G. (ed.). *Wales: a physical, historical and regional geography*. London: Methuen and Co. Ltd, 353-400.

Howell, J.K. 2000 *'Bronze Site' Car Park, Cardiff International Airport: Archaeological field evaluation.* Project no. A642 Site 429. Unpublished report. GGAT. 2000/077.

Howells, M F. 2007. *British regional geology: Wales*. Keyworth, Nottingham: British Geological Survey. http://earthwise.bgs.ac.uk/index.php/British_regional_geology:_Wales Accessed: 01/06/2017

Hughes, G. 1996. *The Excavation of a Late Prehistoric and Romano-British Settlement at Thornwell Farm, Chepstow, Gwent, 1992*. BAR British Series 244. Oxford.

Hughes, G. 2003. *A Research Framework for the Archaeology of Wales: Southwest Wales – Early Prehistoric*. CIfa Wales.

Hughes, G. and Murphy, K. 2013. Fan Foel round barrow, Mynydd Du, South Wales: archaeological excavation and palaeoenvironmental analysis, 2002-04. *Archaeologia Cambrensis* 162, 105–146.

James, H. J. 1986. Excavations of burnt mounds at Carne, near Fishguard, 1979 and 1981. *Bulletin of the Board of Celtic Studies* 33, 245-65.

Jobey, G. 1985. The unenclosed settlements of the Tyne-Forth: a summary. In Spratt and Burgess (eds.), 177-94.

Johnson, B. and Tinsley, A. 2010. *Archaeological excavations at Bolton Hill Quarry, Pembrokeshire*. Report No. 2010/50. Derbyshire: Archaeological Research Services Ltd.

Johnston, R. 2001. *Land and society: the Bronze Age cairnfields and field systems of Britain*. Unpublished PhD thesis, University of Newcastle upon Tyne.

Kirk, T. and Williams, G. 2000. Glandy Cross: a later prehistoric monumental complex in Carmarthenshire, Wales. *Proceedings of the Prehistoric Society* 66, 257-95.

Lawler, M., Walker, M.J.C. and Locock, M. 1997. A cairnfield at Cefn-yr-esgyrn, Mid-Glamorgan: an archaeological and palaeo-environmental study. *Studia Celtica* 31, 83-105.

Leighton, D. 2012. *The Western Beacons: the archaeology of Mynydd Du and Fforest Fawr*. Royal Commission on the Ancient and Historical Monuments of Wales.

Lewis, J.M. 1967. Rhos y Clegryn, St. Nicholas. *Archaeology in Wales* 7, 9.

Lewis, J.M. 1974. Excavations at Rhos-y-Clegryn prehistoric site, St Nicholas, Pembs. *Archaeologia Cambrensis* 123, 13-42.

Locock, M. 1997. A prehistoric trackway at Cold Harbour Pill, Redwick, Gwent. *Archaeology in the Severn Estuary* 8, 9-12.

Locock, M., Robinson, S. and Yates, A. 1998. Late Bronze Age sites at Cabot Park, Avonmouth. *Archaeology in the Severn Estuary* 9, 31-6.

Locock, M. 2003. *A Research Framework for the Archaeology of Wales: Southeast Wales – Early Prehistoric*. CIfA Wales.

Lynch, F. M. 1993. *Excavations in the Brenig Valley: a Mesolithic and Bronze Age landscape in North Wales*. Cardiff: Cambrian Archaeological Monograms, 5.

Lynch, F. 2000. The Late Neolithic and Early Bronze Age, In Lynch, F., Aldhouse-Green, S. and Davies, J.L. (eds) *Prehistoric Wales*. Stroud: Tempus, 79-138.

Lynch, F. and Davies, J.L. 2000 The Late Bronze Age and Iron Age in Lynch, F., Aldhouse-Green, S. and Davies, J.L. (eds) *Prehistoric Wales*. Stroud: Tempus, 139-219.

Lynch, F., Aldhouse-Green, S. and Davies, J.L. 2000 (eds). *Prehistoric Wales*. Stroud: Tempus.

Makepeace, G. 2006. *The Prehistoric Archaeology of settlement in south-east Wales and the Borders*. Oxford: British Archaeological Report 427.

Manley, J. 1990. A Late Bronze landscape on the Denbigh Moors, north-east Wales. *Antiquity* 64, 514-216.

Martin, C. and Phipps, R. (eds) (2003) 'A research framework for the archaeology of Wales: southwest Wales - radiocarbon dates from archaeological sites'. Welshpool: Clwyd - Powys Archaeological Trust. Available from: http://www.cpat.org.uk/research/swrada.htm

Marvell, A.G. 1988a 'Usk', *Archaeology in Wales* 28, 55.

Marvell, A.G. 1988b 'Summary Report of Excavations at Usk 1986-8', *Siluria* 2, 4-9.

Murphy, K, 2001. A prehistoric field system and related monuments on St David's Head and Carn Llidi, Pembrokeshire. *Proceedings of the Prehistoric Society* 67: 85–100.

Murphy, K. and Mytum, H. 2011. Iron Age enclosed settlements in west Wales. *Proceedings of the Prehistoric Society* 78, 263-313.

Murphy, F. Ramsey, R. and Page, M. 2009. *Scheduling Enhancement Project 2009: Prehistoric sites fieldwork – Carmarthenshire*. Report No. 2009/11.

Murphy, F. Page, M. Ramsey, R. & Wilson, H. 2010. *Scheduling Enhancement Project 2010: Prehistoric Sites Fieldwork – Pembrokeshire*. Report No. 2009/63

Musson, C, Britnell, W J and Smith, A G, 1991. *The Breiddin hillfort: A later prehistoric settlement in the Welsh Marches*. London: Council for British Archaeology (Research Report 76).

Nayling, N. and Caseldine, A. E. 1997. *Excavations at Caldicot, Gwent: Bronze Age palaeochannels in the lower Nedern Valley*. York: Council for British Archaeology.

Needham, S. P. and Ambers, J. 1994. Redating Rams Hill and reconsidering Bronze Age enclosure. *Proceedings of the Prehistoric Society* 60, 225-43.

Newman, R. and Parkin, L. 1986. Atlantic Trading Estate, Barry (ST132673). *Archaeology in Wales* 26, 55.

Ó'Drisceoil, D. A. 1988. Burnt mounds: cooking or bathing? *Antiquity* 62, 671-680.

O'Kelly, M.J. 1954. Excavations and experiments in ancient Irish cooking places. *Journal of the Royal Society of Antiquities of Ireland* 84, 105-155.

Owen-John, H.S. 1986. A small group of cairns near Penrhiw Cradoc, Mountain Ash, Mid Glamorgan (ST 0283 9938). *Bulletin of the Board of Celtic Studies* 33, 266-82.

Owen-John, H. S. 1988. A hill-slope enclosure in Coed y Cymdda, near Wenvoe, South Glamorgan. *Archaeologia Cambrensis* 137, 43–98.

Page, N. 2001. A477 Sageston-Redberth Bypass. *Archaeology in Wales* 41, 124.

Page, N. 2002. *A477(T) Sageston-Redberth Bypass. Excavation of a Neolithic Occupation Site 2001*. Unpublished report. Cambria Archaeology.

Page, M., Barker, L. Driver, T. and Murphy, K. 2008. Remote sensing and the Iron Age promontory forts of Pembrokeshire. *Archaeology Wales* 48, 27 – 38.

Parker Pearson, M. 1993. *English Heritage book of Bronze Age Britain*. London: Batsford/English Heritage.

Parker Pearson, M, 2015. Research Grant Report: Stone of Stonehenge in Preseli. *Royal Archaeological Institute Newsletter* 50, 3–4.

Pettitt, R. 2015. *Materiality in Early Bronze Age Wales*. Unpublished PhD thesis. The University of Manchester.

Pollard, J., Howell, R. Chadwick, A. and Leaver, A. 2006. *Lodge Hill Camp, Caerleon and the Hillforts of Gwent*. BAR British Series 407.

Probert, L.A. 1976. Twyn-y-Gaer hill-fort, Gwent: an interim assessment, in G.C. Boon & J.M. Lewis (eds), *Welsh Antiquity; Essays Mainly on Prehistoric Topics Presented to H.N. Savory upon his Retirement as Keeper of Archaeology*. Cardiff: National Museum of Wales, 105–19.

Quartermaine, J. and Leach, R.H. 2011. *Cairns, fields, and cultivation: The Lake District National Park Survey*. Lancaster: Imprints No. 19.

Rackham, J. and Challinor, D. 2014. The palaeoenvironmental evidence. In Hart, J., Rackham, J., Griffiths, S. and Challinor, C. 2014. Burnt mounds along the Milford Haven to Brecon gas pipeline 2006-07. *Archaeologia Cambrensis* 163, 148-50.

RCAHMS. 1967. *Peebleshir. Vol.I.* Edinburgh: HMSO.

RCAHMW. 1911. *An Inventory of the Ancient Monuments in Montgomeryshire*. London: HMSO

RCAHMW. 1912. *An Inventory of the Ancient Monuments in Flintshire*. London: HMSO

RCAHMW. 1913. *An Inventory of the Ancient Monuments in Radnorshire*. London: HMSO

RCAHMW. 1914. *An Inventory of the Ancient Monuments in Denbighshire*. London: HMSO

RCAHMW. 1917. *An Inventory of the Ancient Monuments in Carmarthenshire*. London: HMSO

RCAHMW. 1921. *An Inventory of the Ancient Monuments in Merionethshire*. London: HMSO

RCAHMW. 1925. *An Inventory of the Ancient Monuments in Pembrokeshire*. London: HMSO

RCAHMW. 1937. *An Inventory of the Ancient Monuments in Anglesey*. London: HMSO

RCAHMW. 1976a. *An Inventory of the Ancient Monuments in Glamorgan volume I: Part 1: The Stone and Bronze Ages*. London: HMSO

RCAHMW. 1976b. *An Inventory of the Ancient Monuments in Glamorgan volume I: Part 2: The Iron Age and Roman occupation*. London: HMSO.

Roberts, B.W. 2013. Farmers in the Landscape or Heroes on the High Seas? Britain and Ireland in the Bronze Age. In H. Fokkens and A. Harding (eds.) *The Oxford Handbook of Bronze Age Europe*. Oxford: Oxford University Press, 531-49.

Robic, J. Y. and Ponsford, M. 2008. *Newhouse park, Chepstow, 1995–2007: A prehistoric and Roman site on the Severn Estuary, Post Excavation report*. Report 2009/09. Cardiff: Cardiff Archaeological Consultants.

Savory, H. N. 1962. The excavation of a Bronze Age cairn at Sant-y-nyll, St Brides-super-Ely (Glam.), *Transactions of the Cardiff Naturalists Society* **89**, 9-30.

Savory, H. N. 1965. The Bronze Age. In Idris Lewelyn Foster and Glyn Daniel. *Prehistoric and Early Wales*. London, Routledge and Kegan Paul. 71-108.

Savory, H.N. 1969. Recent archaeological excavation and discovery in Glamorgan. *Morgannwg* 13, 108-110.

Savory, H. N. 1971. *Excavations at Dinorben, 1965-9*. Cardiff: National Museum of Wales.

Savory, H. N. 1972. Copper Age cists and cist-cairns in Wales: with special reference to Newton, Swansea, and other "multiple cist" cairns. In F. Lynch and C. Burgess (eds) *Prehistoric Man in Wales and the West*. Bath, 117-40.

Savory, H. N. (ed). 1984. *Glamorgan County History Volume II: Early Glamorgan*. Glamorgan County History Trust Ltd.

Schlee, D. 2009a. Canaston Bridge, A40. (SN 0692 1513). *Archaeology in Wales* 49, 99.

Schlee, D. 2009b. Robeston Wathen, Woodford Lane. (SN 0832 1543). *Archaeology in Wales* 49, 101.

Schlee, D. 2010. *Excavations on the A40 bypass at Robeston Wathen, Pembrokeshire, 2009*. Unpublished report, Project Record No. 98579. Carmarthenshire: Dyfed Archaeological Trust.

Schlee, D. 2013. A burnt mound at Robeston Wathen, (SN 0832 1543). *Archaeology in Wales* 52, 135–140.

Sell, S. H. 1996. *Archaeological desk-based assessment: Atlantic Trading Estate, Barry*. Unpublished report, project no. A320. Swansea: Glamorgan-Gwent Archaeological Trust.

Sell, S.H. 1998. Excavations of a Bronze Age settlement at the Atlantic Trading Estate, Barry, South Glamorgan. *Studia Celtica* 32, 1–26.

Sharples, N. 2010. *Social relations in later prehistory: Wessex in the first millennium BC*. Oxford: Oxford University Press.

Sharples, N. Richards, C. Jones, A. M. Robinson, G. Cummings, V. Gwilt, A. and Rees, C. 2016. *Research Framework for the Archaeology of Wales 2016 'Refresh': Neolithic and Early Bronze Age*. CIfA Wales.

Sherman, A. 2010. Oystermouth foreshore, Swansea (SS 6171 8852). *Archaeology in Wales* 50, 91.

Sherman, A. 2011. Recently discovered trackways in Swansea Bay. *Studia Celtica* 45, 1–25.

Smith, A.G. & Cloutman, E.W. 1988. Reconstruction of the Holocene vegetation history in three dimensions at Waun-fignen-felen, an upland site in South Wales. *Philosophical Transactions of the Royal Society (B)* 322, 159-219 (No. 1209).

Spratt, D. and Burgess, C. (eds.). 1985. *Upland settlement in Britain: the second millennium B.C. and after*. Oxford: British Archaeological Reports 143.

Thelin, V. 2007. *Were burnt moulds derived from prehistoric copper production activities?*. Durham theses: Durham University. Available at Durham E-Theses Online: http://etheses.dur.ac.uk/2478/

Thomas, K.W. 1965 The stratigraphy and pollen analysis of a raised peat bog at Llanllwch, near Carmerthen. *New Phytologist* 64, 101-17.

Tuck, M. 2009. Merthyr Tydfil, Ffos-y-fran (SO 0790 0687). *Archaeology in Wales* 49, 98.

Turner, J. 1981. The Iron Age. In Simmons and Tooley (eds.). *The environment in British prehistory*. London: Duckworth, 250-81.

Turner, R. 2002. Fish weirs and fish traps. In A. Davidson (ed), *The coastal archaeology of Wales*. York: Council for British Archaeology, 95-107.

Valentin, J. 2000. 11A Westgate Street, Cowbridge, *Morgannwg* 44, 135.

Valentin, J. and Robinson, S. 2001. *11A Westgate Street, Cowbridge, Vale of Glamorgan (NGR SS99197478). Assessment report on the results of the excavation with proposals for further analysis, publication and deposition of archive.* Unpublished report. AC Archaeology.

Waddington, K. 2013. *The settlements of north-west Wales from the Late Bronze Age to the end of the medieval period*. Cardiff: University of Wales publications.

Wainwright, G.J. 1967 *Coygan Camp. A prehistoric, Romano-British and Dark Age settlement in Carmarthenshire.* Cardiff.

Walker, M.J.C., Bell, M., Caseldine, A.E., Cameron, N.G., Hunter, K.L., James, J.H., Johnson, S. and Smith, D.N., 1998. Palaeoecological investigations of middle and late Flandrian buried peats on the Caldicot Levels, Severn Estuary, Wales. *Proceedings of the Geologists' Association* 109 (1), 51-78.

Webster, C. (ed). 2007. *The Archaeology of South West England: South West Archaeological Research Framework. Resource Assessment and Research Agenda*. Somerset: Somerset County Council.

Whittle, A. 1989. Two later Bronze Age occupations and an Iron Age channel on the Gwent foreshore. *Bulletin of the Board of Celtic Studies* 36, 200-23.

Whittle, E. 1992 *A Guide to Ancient and Historic Wales: Glamorgan and Gwent.* Cardiff.

Williams, G. 1982. Llawhaden (SN 1709). *Archaeology in Wales* 22, 19-21.

Williams, G. 1988. Recent work on rural settlement in later prehistoric and early historic Dyfed. *Antiquaries Journal* 68, 30-54.

Williams, G. and Mytum, H. 1998. *Llawhaden, Dyfed: excavations on a group of small defended enclosures, 1980-4*. Oxford: British Archaeological Reports.

Young, R. and Simmonds, T. 1995. Marginality and the nature of later prehistoric upland settlement in the north of England. *Landscape History* 17, 5-16.

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Web Sources

www1 - http://www.archaeoleg.org.uk/pdf/neolithic/version2neolitihicandearlybronze.pdf

www2 - http://www.archaeoleg.org.uk/pdf/neolithic/VERSION%2001%20NEOLITHIC%20AND%20EARLIER%20BRONZE%20AGE.pdf

www3 - http://www.archaeoleg.org.uk/pdf/refresh2016/neolithicearlybronze2016.pdf

www4 - http://www.coflein.gov.uk/en/site/94948/details/foeltrigarnmoel-trigarnfoel-drygarn-hillfort

www5 - http://www.coflein.gov.uk/en/site/409694/details/mowingword-promontory-enclosure