Contextualising the cropmark record: the timber monuments of the Neolithic of Scotland

Volume 1: Text

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Abstract

Monuments of stone, earth and wood were built for the first time at the beginning of the Neolithic period in Scotland (4000 BC). While archaeological attention and investigation has focused upon monuments of stone and earth, those of timber have generally received much less attention and remain to be fully accepted and integrated into wider understandings of the Neolithic. This is despite a rich record of cropmark timber monuments held within the aerial archives of the National Monuments Record of Scotland (NMRS) and an increasing number of excavated timber monuments. This thesis is an attempt to remedy this imbalance. It examines all the evidence for timber monuments of Neolithic date currently recorded in Scotland, integrating those recorded as cropmarks with those uncovered during excavation and considers their place within the wider Neolithic repertoire. As the majority of timber monuments have been recorded as cropmarks, this thesis strives to move beyond cropmarks and the morphology of sites and argues that strict typologies serve to constrain the archaeological record. Instead a more contextual approach is taken whereby other factors, such as materialities or the use of space are taken into account. This is particularly put into practice within three case study areas where a landscape approach, employing field visits and a bodily engagement with the location of sites, is combined with GIS analysis and the consideration of the case study areas as a whole.

Consideration of timber monuments, both at a country-wide level and at the more detailed level of the three case study areas, demonstrates the wide range of timber monuments that were constructed and the important part they had to play within the wider monumental repertoire of Neolithic Scotland. Timber monuments can be suggested to reflect wider values and ideals shared by Neolithic communities as well as more local concerns and engagements by individual groups and communities. The monuments built may reflect some of the ways in which communities thought through and transformed their relationships to the forest and the wider environment and provide perspectives upon the importance of place and memory, the influence and important role of the environment, and the regional nature and diversity evident throughout Neolithic Scotland. Ultimately, this thesis demonstrates that timber monuments were important spaces and places that were used by Neolithic communities for many different purposes and so should form an important part of any consideration of the Neolithic period in Scotland.
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1. Introduction

1.1. Introduction and research aims

Monuments of stone, earth and wood were built for the first time at the beginning of the Neolithic period in Scotland (4000 BC), continuing to be built throughout the Neolithic and beyond. Such monuments form an important part of the way in which this period of prehistory is understood, yet those built of wood are much more poorly understood than those built of other materials. Archaeological attention and investigation has tended to focus upon monuments of stone and earth, many of which remain in the modern landscape, rather than upon the timber monuments, which are much more ephemeral in character. Timber monuments survive today only as pits and postholes and so can be approached only through cropmarks revealed on aerial photographs or as chance discoveries during excavations. While aerial photographs contain a rich record of these monuments, the aerial record of timber monuments has been very poorly understood and, until now, has never been examined or characterised in-depth. Additionally, cropmark evidence is rarely combined with that from excavations or wider academic discourse, other than post-defined cursus monuments (e.g. Brophy 1999b; Loveday 2006a; Thomas 2006b; Brophy 2007a).

Finally, despite recent excavation work on a number of timber monuments (e.g. Barclay and Maxwell 1991; Rideout 1997; Thomas 2007), only limited attempts have been made to place these excavations into wider narratives of Neolithic society in Scotland. Despite such a poorly understood record, a tradition of building monuments of timber has been recognised by some authors (e.g. Kinnes 1985; Barclay et al. 2002) for some time, at least in the east of Scotland.

Therefore, while there are suggestions of a rich record of such monuments, timber monumentality is a poorly understood aspect of the Scottish Neolithic and there are a number of unanswered questions concerning timber monuments and their role in the Neolithic of Scotland. For example, how extensively and where have they been recorded in Scotland? What is the nature of these monuments and their relative dates? How do they fit within existing narratives of the Scottish Neolithic? Accordingly, an in-depth examination of all the evidence for timber monuments in Scotland was long overdue and this thesis is an attempt to remedy this imbalance. The main aims of this research are to identify and characterise all the timber monuments of probable Neolithic date currently recorded in Scotland and to interpret and integrate timber monuments within current archaeological
discourse. Additionally, through selected case study areas, it aims to examine a smaller group of timber monuments in more detail from a landscape perspective, so placing them within their wider contexts and constructing richer and more detailed narratives of the timber monuments in these regions and their place within the wider Neolithic.

1.2. Thesis structure

This thesis has been set out in conventional format beginning with a short background to timber monuments, the approach taken and the Neolithic period in Scotland in chapter 1. Chapter 2 deals with the background to this research, considers the limited research that has already taken place and the way in which an understanding of timber monumentality within Neolithic Scotland has developed. It sets out the impact of concerted aerial survey on the recording and understandings of timber monuments as well as the large gaps that remain in our understanding. Chapter 3 discusses the themes and theoretical issues underpinning this research and the methodologies used. It develops a reflexive stance and defines the methods employed both to consider and interpret the cropmarks and to move beyond the cropmarks themselves. Chapter 4 deals with the data for the Neolithic timber monuments in Scotland as a whole. Here a basic characterisation, not intended as a strict typology and based predominantly upon morphology, is outlined and the differing forms of monuments along with their probable dates and functions are described. The second part of this chapter is concerned with some initial general interpretations and summaries, discussing the general distributions, contexts and landscape of the timber monuments in Scotland as a whole.

There is then a shift of scale in chapters 5 to 7 which deal with the three case studies. Chapter 5 is concerned with the Nith Valley, while chapters 6 and 7 deal with Strathearn and East Lothian respectively. Each case study is structured in a similar manner and examines the timber monuments and their contexts in greater detail, taking a landscape approach to the timber monuments within these study areas, building a picture of the timber monuments in each region and the parts they seem to have played within the Neolithic of each area. The picture is shown to be slightly different in each region with the timber monuments, their forms and locations potentially influenced by a complex and differing range of factors. In the Nith Valley, I argue that topography and movement through the landscape may have played an important part in the forms and locations of the monuments built. In Strathearn, the clustering of monuments in specific places is suggested to have been important, while in East Lothian the limited presence of timber monuments
may be a reflection of the distinctive Neolithic of this region and perhaps also a lower level of occupation despite its agricultural potential. Chapter 8 returns to the timber monuments as a whole, revisiting and expanding upon the major themes touched upon in previous chapters and some of the insight gained from the examination of the three case study areas. It interprets the timber monuments of Scotland, dealing with issues such as the materiality and forms of these monuments and the importance of place, and attempts to place them within wider narratives of the Neolithic. Chapter 9 draws together the discussions contained within this thesis, sums up the main outcomes and suggests some directions that future research into timber monuments may take. Finally, a gazetteer of all the timber monuments discussed in this thesis is set out in volume two. This gazetteer is organised alphabetically, an interpretation is given to each individual site and the relevant transcriptions and excavation plans are set out below each entry. As plans and transcriptions are contained within the gazetteer, they are not embedded within the main thesis and so the gazetteer should be consulted for the relevant images, references and basic information about each site.

1.3. The approach

The approach taken by my research considers the timber monuments recorded in Scotland at two different levels. The first deals with the monuments as a whole at a country-wide level, while the second considers specific groups of timber monuments and their contexts in much more detail within three case study areas. This approach is taken in order to determine the extent and character of timber monuments as a whole while also moving beyond the morphologies and ground plans of broad groups of monuments and considering individual monuments, their specific contexts and influences at a much more detailed level. While a general approach can provide information about timber monuments as a whole, it has its limitations and tends to generalise and summarise. It cannot deal with the intricacies and differences evident between monuments and tends to encourage a perception that a particular group of monuments all represent the same thing. A more detailed consideration of sites, which places emphasis upon their wider context and landscape, serves to break apart many of these perceptions and embed them within wider narratives of the Neolithic within a particular region. Such detailed narratives can then feed back into more general understandings of timber monuments and their place within the Neolithic period. I also think it is important that the localised studies are at a level of engagement more similar to that had by people in the Neolithic, rather than the detached national-scale view of the archaeologist.
While this research has been based primarily upon cropmarks, it has not taken a traditional approach to the interpretation of cropmarks whereby interpretation often ends at classification or indeed is really no more than a descriptive process. Instead, the use of strict typologies and traditional classifications are critiqued. I argue that such strict typologies can serve to constrain the archaeological record and the sites contained within the record, emphasising similarities which may have had little meaning in the past and ignoring difference (Brophy 2004b; Thomas 2004b; Brophy 2005a). While it is not the intention of this thesis to reject entirely the use of typologies, as they remain a useful means of summarising the data and are important as a first stage of interpretation and understanding, a more contextual approach is emphasised, taking into account factors such as materialities, context and use of space. This is particularly put into practice in the three case study areas, which permit a much more fine-grained consideration of the timber monuments and their contexts. A landscape approach is taken to the monuments in the case study areas with field visits and bodily engagement with landscape forming an important part of this approach, along with GIS analysis and consideration of the study areas as whole. In this respect, a social approach to landscape is adopted rather than the spatial and supposedly more ‘objective’ approaches traditionally taken by aerial archaeologists, which are usually based solely upon abstract plans and maps (e.g. Stoertz 1997). Such an approach can be argued to deal more fully with the landscape, which can be defined as ‘the world as it is known to those who dwell therein, who inhabit its places and journey along the paths connecting them’ (Ingold 2000, 193), and is one way of considering timber monuments as spaces and places rather than two-dimensional plans, of contextualising these cropmark sites and moving beyond the sites themselves.

A reflexive approach is taken by this thesis, whereby it is recognised that interpretation occurs at all levels of archaeological investigation (Hodder 1999, 103), which is inherently subjective and has elements of bias (Brophy 2005b, 35). While this does not mean that the archaeological record is entirely subjective, it recognises that interpretation is not something that only happens after data collection and description. The aerial record and its interpretation are not exempt from this. Accordingly, it is considered important to be aware of the nature of the record, the approaches taken and their inherent biases and limitations. By being critically aware of such subjectivities, biases and preconceptions and the way in which the record has gathered, then a much richer and considered picture of Neolithic Scotland and the place of timber monuments within it can be constructed.
1.4. **Timber monuments: a definition**

Neolithic timber monuments may be defined as structures built of wood, associated with actions of a specialised kind (see section 3.2.2 for a fuller discussion of this definition). The structures encompassed by this definition vary considerably, though most appear to have been built of large upright timbers. As they are primarily revealed as marks in cereal crops, the aerial record forms the main focus of this research, though the smaller proportion discovered during excavation are also considered. Timber monuments leave no trace above ground and little survives beyond pits and postholes cut into the subsoil. They are revealed by the differential growth of the cereal crops above these features, creating marks in the crops. On aerial photographs they are defined by differential crop colouration, outlining a specific shape or structure and all, or at least most, of the pits are assumed to have held a timber and so formed a structure. Similarly, when uncovered during excavation, timber monuments are revealed as patterns of pits and postholes, dug to take upright timbers. Those excavated provide the context and material basis for the interpretation of those recorded only as cropmarks.

The remains of these structures, then, are very slight and frequently damaged by ploughing, yet ironically it is often this agricultural activity that creates the conditions for these sites to be discovered and recorded. Without the cultivation of cereal crops in these locations, the majority of timber monuments known in Scotland would not have been recorded. However, I argue that it is also important to look beyond these cropmarks and any excavated postholes and consider these monuments for what they were: significant structures built and used by Neolithic people. Ultimately these were important spaces and places where particular activities and ceremonies took place and they form one part of a wider network of activities. They were built from a very specific material, wood cut from the surrounding forest, which would have had particular properties and meanings to the communities who lived within the forest, used and manipulated it (Noble 2006b). They were constructed within specific contexts and environments and in response to the needs and values of communities. Taking serious consideration of such poorly understood monuments may add new perspectives to current narratives of the Neolithic, meaning that the timber monuments recorded in Scotland may potentially add much to what is currently understood about the communities that built these monuments and Scotland’s Neolithic as a whole. This thesis shall explore these timber monuments and their place within the Neolithic of Scotland.
2. Background to Research

While timber monuments of many different forms are now known to have been constructed during the Neolithic period in Scotland, thirty years ago it seemed unlikely that such monuments could play a part in our understanding of the Neolithic. This growth in the understanding and existence of timber monuments has taken place primarily through the aerial survey programme of the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS), which commenced in 1976 (Maxwell 1978, 37), allowing cropmark sites to be identified in some numbers for the first time. Subsequently, a selected number of these cropmarks were excavated. An understanding and acceptance of the place of timber monuments within narratives of Scotland’s Neolithic has however been slow to develop partly due to an unwillingness to adequately interpret the cropmarks recorded but also due to real problems integrating the increasing understanding of these sites into academic discussions of the Neolithic. As a result, although timber monuments are now largely understood to have been built during the Neolithic period, there are still large gaps in our understanding and these sites still tend to remain peripheral to academic discussions of the Neolithic period (e.g. Thomas 1999b; e.g. Malone 2001).

2.1. Before 1976

2.1.1. Excavations

Prior to 1976, the Neolithic period in Scotland was understood largely in terms of stone monuments such as chambered cairns and a few large earthwork sites, primarily situated in the uplands or in the Northern or Western Isles (Barclay 1995; 2004). Timber monuments were understandably very poorly understood and only a handful were known, largely confined to timber structures found below excavated burial mounds such as those uncovered at Dalladies long barrow (Piggott 1973) and Pitnacree round barrow (Coles and Simpson 1965); only one free-standing timber circle was recognised, excavated at Croft Moraig stone circle, Perth and Kinross (Piggott and Simpson 1971), although the chronology of this site has been challenged recently (Bradley and Sheridan 2005).

With such limited recognition of timber monumentality, it is perhaps no surprise that problems were encountered when timber sites were uncovered during excavation. For example, the timber circle at Cairnpapple was initially interpreted as a stone circle by the
excavator (Piggott 1949; 1950) and only subsequent re-interpretation (Mercer 1981; Barclay 1999) led to the recognition that this was in fact a circle of timber. Indeed, there were some very real problems associated with the recognition and interpretation of timber monuments as a whole. This can be explained by a number of factors. In a country where the Neolithic period was understood to consist primarily of stone monuments in the upland zone, there was no expectation that timber monuments would be uncovered or understanding that Neolithic timber monuments may exist in the archaeological record and archaeologists had very few examples of timber monuments on which to draw to help understand and explain any that were uncovered. As a result timber monuments were not always recognised when they were excavated, although there were a few notable exceptions, already mentioned.

Added to this was the fact that Neolithic sites in general tended to be interpreted through parallels drawn with sites in England rather than those within Scotland (Barclay 2001b), some of which may have been unhelpful for the interpretation of the Scottish sites. For example, in order to aid the interpretation of the timber setting at Croft Moraig it was compared with Durrington Walls, the Sanctuary and Normanton Down in Wiltshire, Bleasdale Circle in Yorkshire and Meine-Gwyr and Penmaenmawr in Wales (Piggott and Simpson 1971; Barclay 2000). At Cairnpapple, Piggott interpreted what are now understood to be post-pits as stone holes as they were ‘precisely similar in type to undoubted stone-holes (such as those at Avebury)’ (Piggott 1950, 86) and he also compared them to the Arbor Low henge monument in Derbyshire. It must be remembered though that comparable data was very sparse. Only a handful of timber monuments were recognised before 1976 and the data for the Neolithic as a whole was relatively sparse. Indeed, such misidentifications were not confined to timber monuments; other Neolithic sites were also wrongly interpreted and the Cleaven Dyke, for example, was thought to be a Roman monument until the 1980s (Barclay and Maxwell 1998, xv). As a result, there were few comparable examples within the country as a whole.

Therefore, although it is possible to understand some of the reasons why archaeologists looked to England to help explain some of the Neolithic sites that were appearing in Scotland, it did not help to advance the general recognition or understanding of timber sites nor the regional differences evident in Scotland. The small number of timber sites that had been recognised were components of larger monuments and so there was as yet no understanding of the existence of timber sites as monuments in their own right. However,
the dataset for the Neolithic of Scotland in general was still limited and it was the beginning of aerial survey in Scotland that helped change this.

2.1.2. Early aerial survey

Although 1976 marks the turning point in terms of aerial survey in Scotland, some early aerial survey did take place before 1976 in the form of flights undertaken by O.G.S. Crawford and later from Cambridge University by J.K.S. St Joseph (e.g. St Joseph 1976). These flights were limited in terms of both scope (Crawford and St Joseph were primarily looking for Roman sites) and logistics (being largely based in the south, reconnaissance could only take place sporadically). Nevertheless, this early aerial reconnaissance was very important as it marked the very beginnings of aerial survey in Scotland and demonstrated both the existence of cropmarks in Scotland and the potential of this new technique. Indeed, as early as 1929 Crawford had recognised this potential stating that ‘certain lowland regions, such as the Vale of Strathmore and the coastal plain near Edinburgh, where oats and barley predominate, are admirably suited to this method’ (Crawford 1929, 455). A year later Crawford undertook the first archaeological aerial survey in Scotland following the route of Roman roads to the Antonine wall and exploring Roman sites in Perthshire (Crawford 1930; St Joseph 1976; Jones 2005). Crawford’s short description of this flight (Crawford 1930, 275, 276) confirms that his primary focus was to look for Roman sites. However, a brief mention of the Iron Age fort of Woden Law illustrates the potential of this new technique for examining sites of all periods. No photographs appear to have been taken on this flight, and it was not until 1939 that Crawford undertook aerial reconnaissance in Scotland once more (Crawford 1939), this time in order to contribute to the preparation of the third edition of the Ordnance Survey map of Roman Britain. Once again, this reconnaissance had a strong Roman focus. However, sites of other periods also appear to have been recognised and recorded: for example Crawford (1939, 289) mentions that ‘native forts were so numerous that it was difficult, and sometimes impossible, to check them on the map’ and notes the occurrence of strip-lynchets. However, it was not until St Joseph began flying in Scotland that the cropmarks of timber sites began to be recognised.

The beginning of the war prevented Crawford from undertaking any more flying and it was St Joseph who re-started aerial reconnaissance in Scotland towards the end of the war, flying from Scone airfield in 1944 and later as part of the training programme of the RAF (St Joseph 1976). In 1948 St Joseph was appointed Curator of Aerial Photography at
Cambridge and continued regular reconnaissance into Scotland from Cambridge. The primary purpose of these flights was to look for Roman sites and to follow known Roman roads (Jones 2005, 89) again resulting in a strong bias towards the recognition and recording of Roman sites. However, sites of other periods were not ignored entirely and a large number of these were recorded, including a small number of timber sites. Few of these timber sites though were initially recognised for what they were. The cursus monument at Inchbare, for example, was described as a possible Dark Age palisaded enclosure when recorded by St Joseph (1976, 57) and only subsequently re-interpreted as a pit-defined cursus monument as similar sites came to be recognised elsewhere in Scotland. The palisaded enclosure of Meldon Bridge, again recorded by St Joseph, was published by RCAHMS as a pit-alignment (RCAHMS 1967, 169) and before excavation was thought to represent a boundary of Iron Age or Roman date. Excavation subsequently demonstrated that it was a large timber palisaded enclosure dating to the Late Neolithic period, a form of site previously unknown in Scotland (Speak and Burgess 1999). Finally, the rectilinear enclosure at Douglasmuir was described simply as a ‘rectangular palisaded enclosure’ (RCAHMS 1978, 15) and although no specific date or function was ascribed to it, a later prehistoric date was implied.

Despite these problems the early reconnaissance by Crawford and St Joseph was extremely important as it marked the beginning of aerial survey in Scotland, recognised cropmarks within previously archaeologically empty areas and identified previously unknown forms of sites. The importance of these early flights cannot be over-emphasised. However, these first flights were very strongly biased towards the recording of Roman sites, a factor that cannot have entirely aided either the discovery or interpretation of timber monuments nor indeed sites of other periods in general. As the investigator was concerned with looking for the characteristic straight lines of a Roman site, it is likely that sites of very different character and subtlety would have been missed and this strong Roman bias undoubtedly also led to the interpretation of new sites from a Romanist perspective, which resulted in misinterpretations. When sites of different periods were recognised, the examples given above demonstrate that those interpreting them did not always fully understand what they represented. This is not entirely surprising as this early aerial survey began to record as cropmarks forms of sites which had not been seen before, making the interpretation of these cropmarks very difficult. These new forms of sites included timber monuments. It has really only been through subsequent investigation, excavation and continued aerial survey that new light has been thrown upon the interpretation of such sites.
2.2. **RCAHMS aerial photography**

Although, as outlined above, the Cambridge University Collection of Air Photographs (CUCAP) had undertaken some aerial photography in Scotland before 1976, this was very limited and concentrated primarily upon Roman material. Only 23 individual timber monuments had been recorded by this aerial survey, few of which seem to have been recognised as such. Therefore, the RCAHMS aerial survey programme was the first serious programme of flying in Scotland, the fruits of which were obvious from the very beginning. Maxwell’s (1978) analysis of the first three years of RCAHMS aerial survey discusses the large number of pit-alignments and pit-defined structures recognised, the increasing number of pit-circles being found as well as the discovery and subsequent excavation of the Neolithic timber hall at Balbridie. Although not assigning a Neolithic date to all of these sites (and indeed many probably were not), Maxwell’s analysis illustrates the large number of sites recognised from the very beginning and the fact that timber monuments were among those being recognised and added to the archaeological record. Even at this early stage Maxwell was able to recognise patterns beginning to emerge from the sites recorded.

Figure 2.1 illustrates very clearly the impact that RCAHMS aerial survey had upon the number of timber monuments recorded in Scotland. While timber monuments had been recorded at a low but steady level by CUCAP and others before the beginning of the RCAHMS survey programme, the combination of the flying programmes of both CUCAP and RCAHMS alongside the very good cropmark years of 1976 and 1977 resulted in a massive increase in the number of timber monuments recorded. Almost 50 sites were recorded as cropmarks in the period from 1975 to 1979 as opposed to only four in the previous five year period. Since the beginning of RCAHMS aerial survey programme, the number of timber sites recorded has remained well above the pre-1976 levels until very recently, although the numbers recorded have fluctuated. These fluctuations can be correlated with changing weather conditions; for example the peak relating to the period 1990-1994 can be correlated to the very good cropmark year of 1992. Clearly, differing weather conditions can have quite a dramatic effect upon the recording of cropmarks. Interestingly, the sudden drop in sites recorded recently could be attributed to the effect of global warming upon Scotland’s weather patterns. In contrast to the fluctuations in the number of sites recorded by aerial survey, those recorded during the course of excavation have remained largely constant, though there does seem to have been a slight peak.
recently, largely attributable to sites uncovered during the excavations ahead of the upgrading of the A1 in East Lothian (Lelong and MacGregor 2008).

Figure 2.1 The number of timber monuments recorded since 1945 according to method of discovery. Only excavated examples which were new finds are counted and not excavations of known sites.

Although timber monuments have been recorded since aerial survey began in Scotland, not all timber sites were initially recognised for what they were. Indeed, aerial photography identified many sites, not just those belonging to the Neolithic, for which there was no parallel at the time and only subsequent investigation has allowed these sites to be interpreted. The majority of the sites recorded before 1976 were not recognised as timber monuments until a later date, although the problem was perhaps greatest in Scotland immediately following 1976 because of the large increase in the number of sites recorded, many of which had never been recorded before. The best known site is Balbridie (Reynolds 1978; Fairweather and Ralston 1993), which was initially interpreted as an Early Historic timber hall because of its morphological similarity to other known and excavated timber hall sites, but was subsequently shown by excavation to date to the Neolithic. It stands to reason therefore, considering the vast nature of the cropmark record, that more sites may still await re-interpretation.

This process of interpretation and re-interpretation is ongoing and may result in a significant time lag between initial discovery and subsequent interpretation, often influenced by particular fashions in interpretation (Brophy and Cowley 2005, 15,16). This is well illustrated by cursus monuments (Figure 2.2) where, although the greatest number
of new cursus discoveries took place immediately after the beginning of RCAHMS aerial survey in 1976, it was not until the mid-1980s and later in the 1990s that these sites began to be interpreted specifically as cursus monuments, following the work of individual researchers. Therefore, for some sites it was several decades after initial discovery that the cursus interpretation was applied. There is now a greater awareness of the existence of cursus monuments in Scotland, meaning that any new examples subsequently discovered can be interpreted as soon as they are found. Research and re-interpretation, then, can quite clearly feed back into existing interpretations of cropmarks and the way in which sites are recognised, interpreted and understood can be influenced by the wider archaeological context. When we apply this principal to timber monuments in general, it is clear that the early excavations of timber monuments influenced the interpretation of some of the cropmarks recorded during the beginnings of aerial survey in Scotland but, as only piecemeal research has occurred subsequently, the interpretation of cropmarks as Neolithic timber monuments has also occurred in a piecemeal manner. Undoubtedly future research will continue to influence the way in which timber monuments recorded as cropmarks are interpreted. Further, the descriptive nature of the NMRS and the use of differing terms for similar sites have, at times, made searching, understanding and interpreting this record a little difficult. However, the recent implementation of a thesaurus should help to make the description of sites more consistent and so easier to search and incorporate into wider archaeological discourse.

Figure 2.2 The cursus monuments of Scotland (from Brophy and Cowley 2005, 16).

A: First CUCAP flight into Scotland
B: RCAHMS aerial survey commenced
C: Loveday/Barclay
D: Brophy/RCAHMS

The first years of RCAHMS aerial survey were remarkably fruitful in terms of the discovery of new sites and can quite confidently be said to have changed the face of the
prehistory of Scotland with the discovery of a large quantity of previously unknown sites and new forms of sites. The effect upon the understanding of Neolithic timber monuments was especially dramatic. Most fundamentally, aerial photography has meant that timber monuments could begin to be recognised more widely and added to the Neolithic repertoire. Despite some initial problems of recognition, the advent of aerial survey demonstrated the existence of a large array of timber sites, of all dates, and has led to the recognition of sites previously unknown in Scotland, most notably the pit-defined cursus monument and Neolithic timber hall sites. However, the interpretation of cropmarks is an ongoing process and it has really only been through the continued discovery and re-examination of cropmarks and the excavation of a small number of timber sites that it has been possible to attribute some of these cropmark sites to the Neolithic period and to begin to interpret some of the new forms of sites revealed with a greater degree of assurance.

2.3. Excavations in the 1970s and 1980s

A number of excavations of timber monuments during the 1970s and 1980s helped to contextualise the cropmark record. Most dealt with cropmark sites recorded through aerial photography. All but one, namely the excavation of Balbridie, were excavated in advance of development. The first timber cropmark site to be excavated was the palisaded enclosure at Meldon Bridge (Figure 2.3) (Speak and Burgess 1999). First recorded from the air by St Joseph and interpreted as an Iron Age or Roman boundary (RCAHMS 1967, 169), excavations between 1974 and 1977 demonstrated that it was a large timber palisaded enclosure dating to the Late Neolithic period, a form of site previously unknown in Scotland. The excavation and dating of this site meant that when the palisaded enclosures of Forteviot (St Joseph 1978), Dunragit and Leadketty were subsequently recorded as cropmarks, they too could be assigned a Neolithic date.

The site that has perhaps had the greatest impact is Balbridie (Reynolds 1978; Fairweather and Ralston 1993). This site was recorded during the first year of flying by RCAHMS (Maxwell 1978, 44) and was immediately thought to be an Early Historic timber hall because of its similarity to the excavated site of Doon Hill, Dunbar (Hope-Taylor 1966). Excavations began in 1977 and it was during the second season of excavation that radiocarbon dates and finds demonstrated the Neolithic date of the building (Fairweather and Ralston 1993, 314, 315). This revelation began to cast doubt upon the Early Historic interpretations of similar sites (Maxwell 1978; Brown 1983; Maxwell 1987) and
demonstrated for the first time the existence of substantial timber structures within the Neolithic of eastern Scotland.

Figure 2.3 The palisaded enclosure of Meldon Bridge during excavation in 1977 (© Crown Copyright RCAHMS).

Timber circles received some attention when excavations were undertaken at the henge monuments of Balfarg (Mercer 1981) and North Mains (Barclay 1983) in 1977-78 and 1978-79 respectively and at the stone circles at Temple Wood (Scott 1991), excavated between 1974 and 1979, and Machrie Moor, Arran (Haggarty 1991), excavated during 1978-79 and 1985 (see section 4.7). On the basis of the excavations at Balfarg, Mercer (1981, 155) was able to suggest that the ring of uprights at Cairnpapple, which Piggott (1950) interpreted as a dismantled stone circle, were in fact made of timber, thereby identifying the presence of an additional timber circle.

The post-defined enclosure at Douglasmuir, Angus, excavated in 1978 and 1980 (Kendrick 1995), was the first rectilinear pit-defined enclosure to be investigated. Recorded as cropmarks on aerial photographs by CUCAP in 1970, excavation demonstrated that it was a rectilinear enclosure defined by posts, dating to the Early Neolithic. It was split in two by a transverse line of posts and may have been constructed in more than one phase. Following the excavation of this site, two further pit-defined enclosures, also originally recorded as cropmarks, were excavated at Cowie Road, Bannockburn (Rideout 1997)
During 1984-5. Only one of these proved to be a timber structure; the second enclosure was defined by pits. Both were Neolithic in date, though the pit-defined enclosure was slightly earlier in date than that defined by posts, and had the appearance of segmented boundaries, suggesting that both were constructed in discrete sections. Two more post-defined rectilinear structures were excavated a few years later at Balfarg Riding School (Barclay and Russell-White 1993) in advance of their destruction. Although neither of the timber structures were recorded prior to excavation, a curvilinear enclosure had been recorded as cropmarks on aerial photographs. Excavation of this enclosure and its surroundings revealed two rectilinear timber structures, one of which lay within the enclosure which was slightly later in date. Both structures consisted of a long, narrow boundary fence surrounding freestanding timbers. They were interpreted as having a mortuary function and dated to the second half of the 4th millennium BC.

These important excavations began to provide a Scottish basis upon which unexcavated cropmarks could be interpreted, so lessening the need to look for external parallels to explain these sites. They demonstrated and confirmed both the Neolithic date and timber nature of a range of structures, many of which had originally been recorded as cropmarks, and began to show the wide variety of Neolithic timber structures within the archaeological record and the value of investigating sites discovered by aerial survey. They also began to provide a basis upon which cropmarks could be interpreted and, as in the case of Balbridie and Balfarg, had the potential to challenge existing interpretations and suggest re-interpretations of previously excavated sites. However, all but one of these excavations were driven by the need to excavate ahead of development and they largely represent isolated investigations with no formal research design linking them. There was no coherent investigation of timber monuments and certainly no Scotland-wide understanding of the range of Neolithic timber monuments recorded by aerial photographs. Indeed Maxwell (1983b) bemoaned the lack of appreciation and exploitation of cropmarks. He argues that ‘the impact of aerial photography on the study of the prehistoric and post-Roman periods has been surprisingly slight’ (Maxwell 1983b, 27) despite the growth of material held by the National Monuments Record of Scotland (NMRS) and CUCAP. This of course includes Neolithic timber monuments. Certainly the evidence of the excavations described above suggests that this was indeed the case with, on the whole, cropmarks of timber sites only being investigated when they were under threat and certainly no coherent follow-up to any new sites discovered through aerial photography. It would appear that individuals such as Maxwell appreciated the variety of Neolithic and other timber sites which were being
revealed in the cropmark record, but that the value of this material was not appreciated more widely, especially in an academic context.

2.4. **Ian Kinnes**

In 1985 Kinnes published a review summarising the strengths and weaknesses of research on the Scottish Neolithic which largely confirmed this state of affairs. This review was a comprehensive summary of the state of research into the Scottish Neolithic in the mid 1980s written on the invitation of the Society of Antiquaries of Scotland. His ‘outsider’ perspective (he was based in the British Museum in London) made obvious the areas in which research was moving forward, but also areas in which progress was still to be made. It gives a good indication of the degree to which the aerial photographic discoveries and excavations of timber monuments had been integrated into the understanding of the Neolithic in Scotland.

Timber monuments do indeed feature in Kinnes’ review and the majority of timber sites excavated by 1985 are described and discussed, some in detail. Unexcavated cropmarks of timber sites are mentioned, though these take much less prominence than their excavated counterparts or indeed any other form of evidence presented, and are primarily discussed within the context of mortuary enclosures in eastern Scotland. As Kinnes had a major research focus on non-megalithic burials, it is unsurprising that he focused upon such sites. Here Kinnes points out the neglect of cropmarks in relation to these mortuary enclosures, stating that ‘the increasing presence of apparent mortuary enclosures – and their cursus descendants – established by aerial survey has been effectively ignored in syntheses’ (Kinnes 1985, 39). A similar neglect seems apparent in other areas of Scotland and in relation to the cropmarks of other forms of timber monument as Kinnes seems largely unaware of the majority of sites recorded outwith eastern Scotland. Although at this time there probably were relatively few.

As a result, Kinnes saw timber monuments as an eastern Scotland and specifically Perthshire phenomenon. Other than the small number of sites excavated outside Tayside, such as Meldon Bridge, it is not made clear if timber sites exist elsewhere in Scotland and only a limited range of timber sites was discussed. By 1985 many forms of timber monuments had been recorded as cropmarks by aerial survey both throughout eastern Scotland and elsewhere. However, it appears that the general lack of communication of the results of aerial survey, lack of interpretation of cropmarks and research into these
cropmarks meant that Kinnes was only able to discuss a restricted range of sites within a small area. Clearly, then, the cropmark record continued to be both poorly understood and underutilised, despite the explosion of data provided by aerial survey since 1976. Despite efforts by Maxwell (1978; 1983b) to highlight the value of the cropmark record there continued to be little research and integration of this material into the understanding of the Neolithic as a whole. Despite these issues, there were some positive signs. Timber monuments were beginning to be integrated, albeit to a limited degree, into the discussion of the Neolithic as a whole. There was clearly an acceptance that timber monuments did form a part of the Neolithic repertoire and a better understanding of timber monuments in general due to the excavations of the 1970s and 1980s. However, Kinnes’ paper highlighted the fact that there was still a long way to go before timber monuments were generally accepted or understood to be an important part of the Neolithic of Scotland or even that cropmarks formed a very important source of information about the Neolithic. This paper was to prove, though, to be an important catalyst for further research.

2.5. The beginnings of research

Not long after the publication of Kinnes’ paper, the first of a number of research projects concerned with timber monuments was undertaken in the form of an undergraduate dissertation (Tolan 1988) focused upon cropmark pit-circles. This dissertation provided the first summary of the cropmark evidence for pit-circles in Scotland and offered tentative interpretations for some of these sites. It attempted to differentiate between pit-circles dating to the Neolithic and Iron Age and highlighted some of the problems involved in the classification of these sites. Although some of these interpretations have subsequently been proven incorrect, most notably that of Romancamp Gate (Barclay 1993) which was shown to represent the remains of later prehistoric roundhouses rather than the ceremonial timber circle that Tolan suggested, this unpublished dissertation is still a valuable summary of the cropmark evidence of pit-circles, some of which may date to the Neolithic period. It was the first time that all possible Neolithic pit-circles recorded in the (NMRS), or indeed any form of potentially Neolithic timber site recorded as cropmarks, had been brought together and presented as a whole. Despite such a positive step forward, there was little follow-up to this piece of work until my own Masters dissertation research (2003) which examined all the pit-circles and curvilinear pit-defined sites in Scotland. Indeed, a lack of follow-up appears to have been a general failing, as Barclay has often lamented (1992; 1995). Tolan’s dissertation, however, was the first concerted piece of research dealing at least partially
with a group of cropmarks, some of which may be Neolithic timber monuments, though it was very limited in interpretation and overly reliant on statistics.

From the mid-1990s onwards there has been a number of excavations and projects focused upon the cropmarks of timber monuments, although these have concentrated almost exclusively upon sites located in Perthshire and southwest Scotland. These include the excavation of the timber structure at Littleour (Barclay and Maxwell 1998), the timber circle and rectilinear structure at Carsie Mains (Brophy and Barclay 2004) and the timber enclosure at Castle Menzies, Perthshire (Halliday 2002). Timber buildings similar to Balbridie have been excavated at both Claish (Barclay et al. 2002) (Figure 2.4) and Warren Field (Fraser and Murray 2005; Murray 2005; Murray et al. 2009) and excavations at the Dunragit palisaded enclosure (Thomas 1999a; 2001b; 2002) have revealed much detail about this complex site, even demonstrating the presence of a previously unknown cursus monument pre-dating the palisaded enclosure. Small-scale excavation has also been undertaken at the cursus monuments of Holm and Holywood North (Thomas 2007) and cursus monuments have formed the focus of ongoing research (Brophy 1999a). In addition a timber circle and cursus monument were excavated at Upper Largie, Argyll (Terry 1997; Ellis 2000) and recent excavations have taken place at the palisaded enclosure at Forteviot (Brophy and Noble 2007). Only at Castle Menzies and Upper Largie have these excavations been developer-funded; the rest have been undertaken as research projects. All of these projects, apart from that at Upper Largie, have been concerned with cropmark sites and several (e.g. Barclay and Maxwell 1998; Barclay et al. 2002; Thomas 2007) have provided the opportunity to examine and discuss the wider context of the sites, beginning to remedy Barclay’s (1992, 118) criticism that ‘the study and excavation of cropmarks has tended to be narrowly site-specific’. There is a greater depth of discussion, made possible by the growing volume of evidence, with a move beyond thinking about isolated sites to a discussion of the cultural context of some of the sites. These discussions, however, are largely limited to eastern Scotland or to one form of timber monument such as cursus monuments. Although the discussions concerned with timber sites in eastern Scotland do reflect the concentration of sites here, they tend to exclude the many sites recognised outside this one area of Scotland. This is not to deny the importance of these discussions; indeed they are largely the first to examine the wider context of certain forms of timber monuments and they illustrate the importance of these sites to our understanding of the Neolithic of Scotland. Nevertheless they are by their very nature limited in scope and are limited by the fact that there has never been a Scotland-wide survey of timber monuments or at least a study that transcends the typology of pitted monuments.
Despite this increasing research and excavation, academic syntheses of the results of these investigations have been very limited. Recent academic summaries of the British Neolithic (e.g. Thomas 1999b; Malone 2001) often fail to acknowledge this work or deal with the evidence from cropmarks. In addition, they often tend to marginalise Scotland (Barclay 2001b). An example of this can be seen in Thomas’s volume *Understanding the Neolithic* where Scotland’s pit-defined cursus monuments merit only a very brief sentence (Thomas 1999b, 77) and their character is never described or discussed. Scottish evidence in general tends to be dealt with in a cursory manner and many of the important excavations of timber monuments (e.g. Littleour, Meldon Bridge) are not included in the discussions. Cropmarks themselves are never mentioned or discussed and indeed the impression given is that the aerial reconnaissance and cropmark excavations of the past thirty years have made little or no impact upon the way in which the Neolithic is understood. In contrast, Malone (2001) cites cropmarks several times as an important source of evidence and includes much more of the Scottish evidence. However, even here the evidence of Scotland’s Neolithic tends to take second place to that further south and at times is presented as a variant or development out of English examples rather than of importance in its own right, e.g. ‘A northern variant of the long barrow tradition is the Scottish long cairn’ (Malone 2001, 124). Malone mentions none of the timber sites excavated in Scotland during the 1990s and only a small number of sites investigated in the 1980s are discussed. As a result a large part of the evidence for the Neolithic in Scotland still remains to be integrated into discussions of the Neolithic in Britain as a whole. Bradley’s (2007) recent synthesis of the prehistory of
Britain and Ireland does integrate some of the excavated timber monuments into the discussions. However, perhaps because of the scope of this volume, they are dealt with only very briefly and little mention is made of cropmark sites.

Scottish timber monuments do, however, feature within syntheses concerned with particular forms of timber monuments within Britain as a whole, specifically Gibson’s discussions of timber circles (Gibson 2005) and palisaded enclosures (Gibson 2001; 2002b) and Loveday’s (1985; 2006a) exploration of cursus monuments. While the focus is upon sites in Britain as a whole, Scottish sites are mentioned and listed within any gazetteers. However, certainly with regard to timber circles, the cropmark record of these sites is not fully taken into account, and discussion tends to focus upon sites that have been excavated. Of the 16 timber circles identified by Gibson in Scotland, only three are cropmark sites. This is something which can be attributed to the limited amount of research into the cropmark record of these sites, the lack of publication of those that are known as cropmarks and so poor awareness of their existence beyond a small number of cropmark specialists.

Only one academic synthesis dealing with the Neolithic of Scotland, Noble’s (2006a) *Neolithic Scotland: timber, stone, earth and fire*, has so far integrated timber monuments into the discussion of Scotland’s Neolithic and presented them on an equal footing with those of stone. Noble discusses a wide range of the timber monuments, summarises the results of the excavations of timber sites in Scotland and places them within their wider Neolithic context. This important publication demonstrates both the wide range of timber structures within the archaeological record and the fact that it is possible to include timber monuments in wider understandings of the Neolithic. Noble, however, rarely strays into the territory of unexcavated cropmarks and does not draw upon the full range of timber sites contained only within the cropmark record, again largely because of the paucity of research into these cropmarks, lack of integration, interpretation and publication of the existence of such cropmarks.

### 2.6. Conclusions

There clearly has been a development in the understanding of timber monuments of the Neolithic since the mid 1970s, from the virtual absence of any such sites in discourse and the archaeological record to the acceptance and range of sites understood today. The volume of sites recorded largely by aerial photography has grown enormously and there is
now a small but growing excavation record to aid interpretation. Work has, as pointed out by Barclay (1992), been largely site-specific until relatively recently and it is only with the excavations of the last few years that the wider context has been discussed. However, even within these discussions, timber monuments are largely seen as a phenomenon restricted to eastern and southwestern Scotland. Despite some small-scale research on specific timber monuments, these sites still remain to be fully accepted and integrated into wider understandings of the Neolithic. There is not yet an academic synthesis of timber monuments as a whole and no universal acceptance or understanding of the role of timber monuments in the Neolithic of Scotland.

Despite the range of discussions and excavations outlined above, only a small number of individuals are actually involved in this discourse and in many cases the Scottish Neolithic continues to be understood in terms of stone and earthwork monuments. In a recent volume concerned with Neolithic monuments in Scotland (Cummings and Pannett 2005) only two of ten papers even mentioned cropmarks and timber monuments (Barclay 2005; Brophy 2005a) and again this was by two of the few individuals involved in the earlier discussions. A slightly greater number of papers in the proceedings of a conference concerned with the Neolithic and Bronze Age of Scotland (Shepherd and Barclay 2004) mention or deal with timber monuments, though even here only a restricted range of timber monuments are discussed. Clearly there is still a long way to go until timber sites receive the same attention as that given to those of stone or are universally accepted as an important part of the Neolithic of Scotland. This is compounded by a lack of knowledge of the full extent of the cropmark record of timber structures in Scotland, the fact that the typology used to classify sites within the NMRS is often confused and contradictory but also perhaps by a lack of understanding of the value of cropmarks and the rich record contained within the NMRS. Two student dissertations (Tolan 1988; Millican 2003) have gone some way to remedying this problem, as has ongoing work on cursus monuments (e.g. Brophy 1999b). These projects, important as they are, by their very nature are limited in scope and concerned only with a small proportion of timber cropmark sites. Neither of the dissertations could go any further than offering possible interpretations for some of the many sites contained within the cropmark record and both of these studies have highlighted the continuing problem of recognition and inconsistent classification of sites. Underlying this problem is the fact that the full range of Neolithic timber sites that exist is not yet fully understood, making it very difficult to construct a coherent system of classification.
Therefore, although the understanding of Neolithic timber monuments has increased dramatically since the 1970s, there are still large gaps in that understanding meaning that it still remains difficult to interpret the cropmark record or to discuss the timber monuments of Scotland as a whole. As a result, a coherent study of these structures is long overdue and this thesis is one attempt to remedy this imbalance. Gaining a better understanding of these monuments and integrating them into discourse will add another perspective to the way in which the Neolithic of Scotland is currently understood.
3. Theory and Methodology

3.1. Introduction

Underpinning my research was a desire to integrate the analysis of timber monuments revealed by cropmarks within the wider understanding of the Neolithic. Broadly, there were two stages in this process. The first was concerned solely with the cropmarks and sites themselves - their collection, analysis, interpretation and classification. The second stage was designed to look beyond the cropmarks and individual sites and was concerned with placing and analysing the cropmarks within their landscape and Neolithic contexts. In practice, though, this was not a linear process; interpretation of the sites was not separate from their collection and analysis. Instead, interpretation took place at every stage of this process, and aspects of the second stage fed into and influenced those of the first. As such, this describes the hermeneutic spiral as outlined by Hodder (1992, chapter 15; 1999, chapter 3), whereby as archaeologists we move back and forth between theory and data, the data is understood through theory and any pre-understandings and the parts can only derive meaning in relation to the whole, while the whole can only be understood in relation to its parts. Consequently, the interpretation of the timber monuments is an ongoing process and subject to revision. The nature of the record, the way in which it has been understood, assumptions made and theories employed all influence the way in which the archaeology can be understood and interpreted. With this in mind, this chapter shall outline the underlying theories and the methods employed to achieve the aims of the research, along with some of the pre-judgements and pre-understandings which influence the data.

3.2. Cropmarks

Cropmarks form the main body of data for this research, and were integrated with information about the relatively smaller number of sites discovered during excavation in order to gain as full a picture as possible. As such, attempts have been made to consider the cropmark and excavation records on an equal footing with one another. However, in order to do this, it is important that the nature of this record is understood. For instance, it is important to understand the way in which the record has been gathered along with some of the issues, processes and perceptions influencing it in order to make best use of the archaeology it records.
There is a traditional view of the detached and therefore objective nature of aerial archaeology due to the fact that the technique and much of the technology used was developed for military purposes, something which is re-enforced by the continued use of military metaphors, such as sorties, reconnaissance or targets, to describe the survey process (Brophy 2005b, 45). The very use of photographs as the ‘raw’ data on which interpretations are based has tended to embed the perception of the photograph as a detached record of what already exists (Baines 2005). The perception that the ‘camera never lies’ and that an aerial photograph gives a true representation of the past has often been left unquestioned by archaeologists (Raczkowski 1999), despite the fact that this perception has been challenged within the discipline of photography itself (Baines 2005, 170). However, an aerial photograph is not an objective record of an archaeological site and a number of issues and biases affect the process of aerial survey itself, which in turn influences the created archaeological record. Similar issues affect the interpretation and subsequent use of aerial photographs. Therefore it is vital that these issues and biases are clearly understood and taken into account if valid interpretations are to be made.

### 3.2.1. Subjectivity and bias

Firstly though it is important to understand the nature of cropmarks themselves. Cropmarks are created by the differential growth patterns of crops above sub-soil features. They give an indication of what lies below the ground but are not archaeological features themselves. This may seem irrelevant, but it is important to be aware of this in order to appreciate exactly what they do represent and the information they provide about the archaeological features they indicate. Interpretation is required to make sense of the marks recorded. Cropmarks are produced through a complex interaction of factors such as soil type, moisture levels and crop type (Evans and Jones 1977; Wilson 2000) and often record the presence of buried archaeological features. However, cropmarks are not just restricted to archaeological features. They can also be produced by non-archaeological features, such as palaeochannels or underlying geology (Wilson 2000), and it is the job of the archaeologist to distinguish between the two, although such additional features may potentially add greater understanding and detail to the wider location of sites. Cropmarks may give only a partial view of an archaeological site and in many cases excavation demonstrates the existence of subtle features which were not revealed by cropmarks. Indeed, the level of detail recorded can vary from year to year and is influenced by factors such as soil and crop type, time of year and weather patterns. On the other hand, when conditions are good,
very detailed outlines of archaeological sites can be recorded and it may be possible to
draw much detail from cropmarks.

Figure 3.1 The distribution of cropmarks across Scotland (Cropmark data © Crown Copyright: RCAHMS. Map data © Crown Copyright Ordnance Survey. An EDINA Digimap/JISC supplied service).

This cropmark record is subject to a number of biases arising from the way in which
cropmarks form and the manner in which the survey process is undertaken. Perhaps most
fundamentally the cropmark record is inherently geographically biased because of the way
in which cropmarks are formed. This is particularly evident in Scotland because of the very
marked differences between regions (Hanson 2005, 75). A complex interaction of factors
such as the availability of moisture during the growing season, the type and depth of the
soil and the type of crop affects the appearance of cropmarks (Evans and Jones 1977; Riley
1987; Wilson 2000). Briefly, cropmarks become visible because of differential growth of
crops above buried archaeological features due to moisture differences within the soil,
produced by factors such as the level of precipitation and type and depth of soil. A low
level of precipitation during the growing season will produce a soil moisture deficit which
can create differences in the growth of crops, resulting in the production of cropmarks. Free-draining soils such as gravels do not hold onto moisture in the same way as, for example, clay soils and relatively shallow soils as opposed to deep soils are more likely to introduce the crop stress that is so important for the production of cropmarks. Added to this is the fact that cereal crops are the most sensitive to these effects, although in severe drought parchmarks may be evident in grass or other crops. Therefore cropmarks tend only to form in agricultural areas where cereal crops are grown, where relatively drier conditions occur during the growing season and on free-draining shallow soils. In Scotland this means that cropmarks are primarily to be found in the lowland agricultural areas of the east and south (Hanson and Macinnes 1991, 157). As a result, the distribution of cropmarks is strongly biased towards these areas (Figure 3.1) and distribution maps of sites based solely upon cropmarks should be treated with caution.

Bias is not just restricted to the geographical nature of the cropmark record; the process of aerial survey itself, of flying and taking photographs and subsequent interpretation has its own inherent biases and subjectivity. A natural tendency to concentrate upon the areas of best return and upon the familiar tends to accentuate the geographical patterns outlined
above (Wilson 2005). This is clearly demonstrated in RCAHMS flying patterns (Figure 3.2) which have tended on the whole to concentrate upon the known cropmark producing areas of the east and south of Scotland, although this is beginning to change. A concentration upon ‘honey-pot’ areas (Cowley 2002, 257-62), that is known concentrations of cropmarks that attract repeat aerial survey, can result in the neglect of less productive areas and a self-perpetuating distribution. This is something that may ultimately influence the distribution of known sites, and so our understanding of the archaeology across that region. In addition, the research interests of the aerial surveyor has the potential to affect where flights are directed and the types of sites that are sought and subsequently photographed (Wilson 2005, 69). For example, the early flights into Scotland were directed towards reconnaissance for Roman sites and so flights concentrated upon known Roman roads and sites (Jones 2005), resulting in the recognition and recording of predominantly Roman sites. Therefore even before any photographs are taken, initial choices by the aerial surveyor about where and when to fly will affect what will be recorded.

Figure 3.3 Keilburn, Aberdeenshire. Greater experience resulted in the re-interpretation of the two pit-circles as the remains of two roundhouses. The roundhouse to the left is unenclosed, while that to the right lies within an enclosing ditch and a souterrain can be seen towards the top of the photograph (© Crown Copyright: RCAHMS).

The decision to photograph a site is itself an interpretative decision and as a result the aerial record cannot be assumed to be an entirely objective record. Wilson (2000, 33) states
“the most important elements in the interpretation have taken place before he presses the button on the camera”. The fact that a decision has been taken to record a site implies the site being photographed is worth recording; the aerial surveyor has made a value judgement. It follows then that other sites may have been rejected because they were not considered of value. Such decisions are themselves influenced by factors such as the experience of the aerial practitioner and their particular archaeological interests; an experienced person will inevitably be better equipped to identify archaeological sites and filter out non-archaeological noise. Therefore, the actual creation of the aerial archaeological record is affected by a number of intertwined issues and biases. All these issues though are outwith the control of the photo-interpreter and the scope of this study but clearly have an effect upon the resulting product. An awareness of the way in which the aerial record is created, the conditions, problems and biases affecting the creation of this record and the manner in which they affect the cropmark record is important if well-informed interpretations are to be made.

These interpretations, though, are themselves influenced by a number of issues and factors. Archaeological interpretation is a learned skill (Bradley 2003b; Brophy 2005b) and one to which we bring our own experiences and biases. The interpretation of cropmarks recorded on aerial photographs, which form the basis of this research, is no different and is itself affected by the experience and interests of the interpreter. The way in which an archaeologist interprets cropmarks is bound up in their own understanding and experience. Inevitably greater experience will result in a better understanding of cropmarks and therefore an increased ability to understand and interpret the forms revealed on an aerial photograph. An example of this can be seen in my own Masters dissertation (Millican 2003). When presented with the cropmarks of pit-circles at the site of Keilburn (Figure 3.3) while researching the pit-circles of Scotland, as an inexperienced air photo interpreter I had nothing within my experience to help me to understand these cropmarks. Therefore as they did not appear to relate to any form of settlement I knew, I interpreted them to be of ritual or ceremonial significance. However, after two years of additional experience interpreting cropmarks, I re-examined these cropmarks and was immediately able to interpret these pit-circles as the remains of roundhouses and even able to identify the presence of a souterrain, a feature that had previously entirely escaped my notice. The reason I was able to so definitely re-interpret these cropmarks was due to the fact that I was now able to draw on past experience and sites I had already seen. As someone still gaining understanding and experience of cropmarks, it is likely that similar mis-identifications may still occur. Through experience I had gained the ability to see through the physical forms of the
cropmarks and assign an interpretation (Brophy 2005b, 40). This is an essential skill for the photo-interpreter, but usually also means that a cropmark is assigned a label, often relating to a typological grouping. These typological labels usually carry with them assumptions about date and function, which has the potential to restrict what can subsequently be said about the sites (Brophy 2005a, 3,4) and may introduce another element of bias into the process of interpretation.

Equally, greater experience can result in a ‘phasing out’ of particular features that are not deemed important. Inexperience usually results in the detailed description of every mark until it is understood which are likely to relate to archaeology and which are not (Brophy 2005b, 40). Conversely, experience can mean that certain features on an aerial photograph deemed unimportant are ignored or simply not registered as important, in my case the presence of tree throws. Tree throws surrounding a site recorded on an aerial photograph were pointed out to me by a colleague (figure 3.4). When asked if I had seen any at any of the other sites I had been examining my immediate answer was no. However, when I went back to re-examine some of the sites I had been interpreting it became obvious that the cropmarks of possible tree throws were in fact visible at a number of sites. Through experience of interpreting cropmarks, I had learned effectively to ignore the presence of possible tree throw cropmarks as part of the background geomorphology. This is despite the fact that the excavation of the timber circle and rectilinear timber enclosure at Carsie Mains (Brophy and Barclay 2004) has demonstrated that tree throws may not be entirely irrelevant to understanding prehistoric sites (see sections 4.6.2 and 8.3.1). Therefore, although at times helpful when examining cropmarks of archaeological sites, this ability to see through and ignore other features may mean that features helpful to the interpretation of a site are missed and other cropmarks subsequently proven to be important are ignored.

The actual process then of the interpretation of aerial photographs contains a large element of subjectivity with experience telling the interpreter whether to accept or reject features as archaeologically significant. It is this subjectivity which often leads to disagreements between interpreters over points of detail (Palmer 1978, 136). Therefore any interpretations made from cropmarks should not be accepted as definitive, and must be subject to re-assessment and re-examination.

Clearly there are a number of issues of subjectivity and bias affecting the recording and interpretation of aerial photographs. An awareness of the problems inherent in the acquisition of information from aerial reconnaissance is essential if the best possible interpretations are to be made from the information gathered. Equally, an awareness of the
issues associated with interpretation itself and the particular biases of the interpreter are important if the cropmark interpretations are to be used correctly. The fact that the assessment of cropmarks has a large element of subjectivity means that, in order to avoid either wild excesses of interpretation or interpretations that are too timid, these should be subject to peer review. For this reason, all of my interpretations were reviewed by a colleague at RCAHMS as a means of firming up them up.

Figure 3.4 Aerial photograph of Balrae pit-enclosure. Many of the cropmarks surrounding this site probably represent tree throws. Inset highlights some of the cropmarks of tree throws (Photo: © Crown Copyright: RCAHMS).

3.2.2. Data collection

The first step towards achieving the aims of this research was a complete search of the NMRS held by RCAHMS in Edinburgh. Initially, I searched for anything of potentially Neolithic date defined by the cropmarks of pits. A search of RCAHMS online Canmore database was undertaken in order to gain a rough idea of the extent, form and consistency of data held by RCAHMS and to identify relevant sites not recorded as cropmarks. There
are, though, problems and inconsistencies with the way in which some of the cropmarks are recorded and classified in the Canmore database; over the years the classifications used to record cropmarks in the database have been far from consistent meaning that similar sites can be classified in very different ways (Brophy 2007b, 80). This meant that multiple searches had to be carried out in order to retrieve as much information as possible; even then all relevant sites may not have been retrieved simply through a database search.

Furthermore, the archive contains sites which had been incorrectly classified, or not recognised as timber monuments at all. Therefore, a complete search of all the oblique aerial photographs of cropmarks held by the NMRS, numbering over ten thousand, was deemed necessary, and undertaken.

A search of the database of the Aberdeenshire Archaeology Service (AAS) was also undertaken in order to identify any additional sites recorded by AAS and the archive of aerial photographs held by CUCAP was also consulted. Despite the obvious potential for previously unrecognised sites contained in these two archives, few new sites were identified, although previously unseen photographs of known sites were viewed. This was largely because a complete search of aerial photographs held by both AAS and CUCAP as undertaken at the NMRS was unfortunately not possible. Neither archive is as accessible to the public as the NMRS and I was only able to consult those photographs provided for me to view. In the case of the CUCAP collection this was based upon a list of sites and photographs compiled from their online database. This database has a GIS based interface meaning that it is only possible to search for aerial photographs by geographical area and not by keyword or classification. Additionally, no systematic classification has been assigned to the majority of the cropmarks; most are defined simply as ‘cropmarks’. This makes searching this database coherently very difficult. Additionally, on arrival at the archive only the boxes containing those photographs I had identified through the database search were taken out from the store for me to view. While it may be possible to undertake a complete search through each aerial photograph held by CUCAP, this would be a massive undertaking on a similar scale to the search of the NMRS already undertaken and so beyond the capabilities of this research.

The AAS archive, on the other hand, is smaller in size than the CUCAP collection but was provided only as folders of contact prints. The small size of these meant that at times it was very difficult to identify smaller features on the aerial photographs. Therefore it is possible that sites were missed during my search simply because the details were too small to be adequately assessed or recognised. In addition, further sites may have been recorded on
photographs to which I was not given access. Therefore it is possible that there remain additional sites in both the AAS and CUCAP collections which I was unable to identify, though the CUCAP collection has the greatest potential for future identifications of new sites. Despite these problems, as comprehensive a search as possible was undertaken of both these archives.

A database of all the Neolithic timber monuments identified from the search of these archives and an assessment of the excavation record (obtained primarily from the Canmore database and *Discovery and Excavation in Scotland*) was constructed. In total 207 individual sites were recorded in my database. Of these 21 are new, that is although recorded on aerial photographs they had not been identified or recorded in Canmore or any other database. At least 18 represent new interpretations of previously recognised sites, though this number may be greater as many interpretations given in Canmore are implicit rather than explicitly stated. Of the 207 timber monuments recognised, 166 of these have been recorded as cropmarks (18 of which have subsequently been excavated) and 41 were discovered during the course of excavation.

Three assumptions were made when gathering the cropmark data and essentially underpin much of this research. The first and most fundamental assumption was that the cropmarks identified do indeed date to the Neolithic period. The small amount of work that has been carried out to date on these cropmarks means that attribution to the Neolithic period can be difficult and often the main criteria used is morphology. Using morphology alone to interpret cropmarks can be dangerous and three excavations by Barclay (1982; 1993; 2001a) have demonstrated just how problematic this can be. At Huntingtower (Barclay 1982), a cropmark interpreted as a possible cursus monument proved on excavation to be a medieval feature, while at Romancamp Gate pit-circles interpreted as ceremonial or funerary timber structures dating to the Neolithic or Bronze Age were found to be Iron Age houses (Barclay 1993). At Upper Gothens (Barclay 2001a) a cropmark enclosure interpreted as possibly dating to the Neolithic period proved instead to be earlier medieval. These should serve as cautionary tales about the problems of interpreting cropmarks using morphology alone and highlight some of the ambiguities involved. However, the finer details of cropmark interpretation is something that archaeologists are still learning and it is only through excavations such as these that we are able to learn lessons and use them to inform future cropmark interpretation.
Some of the more ambiguous cropmarks, such as some of the curvilinear enclosures or timber settings (see chapter 4) have yet to be firmly dated by excavation and so their inclusion could be viewed as problematic. Nevertheless, they are included within the corpus of timber monuments because of similarities and analogies with sites which are more securely dated to the Neolithic (e.g. irregular or segmented pit arrangements). Amorphous or ambiguous cropmarks are often ignored because of difficulties of interpretation and the fact that they are often generically classified within the NMRS as, for example, ‘pit-alignment’ or simply ‘cropmarks’. It was considered important to include such sites within this thesis, despite difficulties of interpretation, in order to highlight their presence within the cropmark record, their possible Neolithic credentials and so prevent them from forever hiding within the NMRS.

It is possible that the construction of some timber monuments may have continued into what is traditionally considered the Bronze Age, and any putative Copper Age. While this may mean that the construction and use of some monuments do not fall within the traditional dates of the Neolithic period, it is impossible to discern this from cropmarks alone. This should not cause too much concern as such period distinctions are a modern construction and would have meant little to the builders of the monuments. Furthermore, it is recognised that there are areas of continuity around and beyond the time of the arrival of beakers and metal, notably in the construction of timber monuments (Sheridan 2008). Therefore, it is important to be aware that some forms of timber monuments may have continued to be built into the second half of the 3rd millennium BC, though without excavation and dating evidence it is impossible to determine which individual monument should be considered to be of later date.

It is very easy to over- or under-interpret cropmarks and a real danger with this research was that a desire to find Neolithic timber monuments could lead to the over-interpretation of some cropmarks. Peer reviewing by colleagues in RCAHMS provided a necessary check. Nevertheless, it is obvious that cropmark interpretation is not an exact science and there are many areas of uncertainty. As a result it is important to be aware that some interpretations may subsequently prove to be incorrect, particularly in the case of site types on which there has been little research or excavation. Nevertheless, every effort was made to base interpretations on sound reasoning and upon information gained from previously excavated sites.
Figure 3.5 Drumrosach, Highland. Example of a roundhouse showing both two detached pits (top, left) representing a porch structure and elongated pits representing pairs of pits (© Crown Copyright: RCAHMS).

Two forms of sites proved to be most problematic when it came to attributing a Neolithic date because of their morphological similarity to sites of very different date: isolated pit-circles and some timber hall sites. The cropmarks of pit-circles can be interpreted as either Neolithic ceremonial/ritual timber circles or as the supporting timbers of later prehistoric roundhouses (Tolan 1988; Millican 2003; 2007). Associated cropmarks may aid interpretation, such as a surrounding ring-ditch, unenclosed settlement or associated souterrain (later prehistoric roundhouse) or location within ceremonial/ritual complexes (Neolithic timber circles). In the case of roundhouses there are a few morphological differences which can allow them to be interpreted as this, such as the presence of pits defining ‘porches’ or radially elongated pits representing pairs of pits (figure 3.5). At some sites it is possible to identify part of a second almost distinct but overlapping ring of pits. This is likely to represent post replacement, repair or reinforcement of existing posts or the replacement of the house in roughly the same position (Maxwell 1978, 113; Wilson 2000). However, when pit-circles are recorded as isolated sites, it can be virtually impossible to interpret them morphologically, as roundhouses and Neolithic timber circles can be virtually identical; they now exist simply as rings of pits. This is something that a landscape approach may help with as the specific landscape context may suggest the most likely interpretation. In addition, identification of regional traditions of building roundhouses may help to suggest regions in which pit-circles are more likely to relate to roundhouses and those in which roundhouses are less likely to be identified. Nevertheless,
there remain a number of sites included in this research that it was not possible to interpret definitely one way or the other without excavation.

Cropmarks of timber halls can also be very difficult to interpret because of the similarities between those dating to the Neolithic period and those of Early Historic date. The Neolithic timber hall at Balbridie was excavated because it was thought to be an Early Historic site (Fairweather and Ralston 1993) and the very similar morphology continues to cause confusion (Brophy 2007b). However, the increasing number of timber halls excavated is giving a slightly better picture of what these sites may have been like and can begin to help to distinguish between sites of Neolithic and Early Historic date. In general Early Historic timber halls appear to be enclosed, located in groups or have annexes, while those of Neolithic date usually appear to be recorded in isolation. Nevertheless, very real problems remain when interpreting the cropmarks of timber halls and morphologically timber halls dating to both periods can appear to be almost identical in form when revealed by cropmarks. Even when excavated confusion can still occur. A case in point is three timber halls excavated at Cheviot Quarry in Northumberland (Johnson and Waddington 2007) which appeared to date to the Neolithic and indeed morphologically were very similar to excavated Neolithic timber halls. Radiocarbon dating however placed the sites within the 5th or early 6th centuries AD and not the Late Neolithic period as was initially thought. Therefore there are still some very real problems involved in the interpretation of timber halls and it is possible that a small number of sites considered in this research may subsequently prove to have been wrongly interpreted.

The second assumption made when gathering cropmark data was that the pits identified on aerial photographs held timbers and therefore the sites identified represent timber monuments. This too can be problematic as pits and postholes cannot be differentiated in cropmarks, which was demonstrated by the excavation of the two Bannockburn Neolithic enclosures (Rideout 1997) and the pit-defined cursus at Milton of Rattray (Brophy 2000a). At Bannockburn, both enclosures were defined by pits on the aerial photographs, but excavation demonstrated only one was bounded by timbers; the second enclosure appears to have been defined simply by pits (see gazetteer). Similarly, the cursus monument at Milton of Rattray (figure 3.6), recorded on aerial photographs as two parallel lines of pits in cropmarks, seems to have been defined by pits which did not hold posts. Whether or not a pit held a timber is something that can only be resolved through excavation, though even excavation cannot determine the presence of posts if the timbers were dug out at the end of the life of the monument, thereby removing all trace. Nevertheless, the balance of
excavated evidence seems to suggest that most Neolithic sites defined by pits were indeed defined by timber posts, though it is important to be aware that there is a possibility that some pits may not have held timbers, something which would have had a major impact upon the form and experience of the monument.

Figure 3.6 Transcription of the pit-defined cursus at Milton of Rattray (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

The third assumption made was that these timber sites were monuments. In archaeology, the word ‘monument’ is used in a very specialised manner. While the dictionary definition of a monument is ‘anything enduring that serves to commemorate or make celebrated’ (Thompson 1996, 645), structures defined as archaeological monuments may not necessarily have been permanent structures, nor even ‘monumental’ in size. Indeed, some of the timber structures examined by this thesis were very small in size, while others were burnt soon after they were erected (e.g. Thomas 2007) and so do not represent permanent or even long lasting structures. Instead an archaeological monument is generally defined (simplistically) as a structure associated with ritual, ceremonial or burial, but not domestic activity (Brophy 2004a, 144). In this respect, then, the timber structures examined by this thesis could be assumed to represent structures entirely separate from everyday life. However, such a clear distinction between ritual and ceremonial activity and the everyday can be problematic and some authors have begun to question this separation. Brück (1999) has suggested that this dichotomy is a modern western construction which did not
necessarily exist in other societies and that many societies may have lacked a concept of ritual as a distinct sphere of activity, while Bradley (2005) contends that the archaeological record does not support such a clear distinction and that ritual would not have been entirely separated from the concerns of daily life. As a result, the distinction between ritual and the everyday becomes quite blurred and the definition of what constitutes a ‘monument’ may not be so clear cut.

In this respect, Bradley’s (2005, 33) definition of ritual as actions of a specialised kind and as a form of performance which does not necessarily need to be associated with religious beliefs is informative. By defining ritual as a practice and not necessarily a part of religious activity, ritual practice need not be viewed as entirely separate from everyday life. Instead, particular aspects of life are selected for greater emphasis, reflecting some of the concerns of communities (Bradley 2005, 34). Such practices take place within a material context and so can be traced in the archaeological record in the form of both artefacts and structures (Thomas 2004d, 171). Ritual can occur in many different settings, from the settlement to the specially constructed monument (Bradley 2003a, 12; 2005, 200-201), and even those contexts which provide evidence for specialised activities often contain artefacts also associated with everyday life (Bradley 2003a, 13). As such, rituals, even those which took place away from the settlement, may not have been entirely set apart from daily life, though this is not to suggest that every aspect of ritual practice necessarily drew upon the domestic sphere (Bradley 2005, 35).

Monuments and associated activities may therefore represent such specialised activity, meaning that monuments could perhaps be better defined as structures reflecting such practices rather than as structures separate from any particular aspect of life. Certainly the structures that this thesis is concerned with and the activities that took place at them seem to have been of a specialised nature, for example the repeated burning and rebuilding of the cursus monuments at Holywood and Holm (see chapter 5). These monuments represent the activities of groups and individuals, sometimes over a long period of time, and appear to have had an important role in Neolithic life. Although physically they appear to have been constructed in locations separate from those in which people lived, conceptually there may have been considerable overlap. This, though, is difficult to define when monuments are recorded only as cropmarks, though as many of the excavated timber monuments show evidence of repetition, reiteration, construction and destruction, apparently representing specialised activities (e.g. Barclay and Maxwell 1991; Thomas 2007), those recorded as cropmarks could also be interpreted as representing such ritualised processes.
3.2.3. Interpretation and transcription

Following these assumptions, it is clear that the interpretation of cropmarks began with the selection of relevant sites at the data collection stage. The next step was the rectification of the aerial photographs and the detailed examination and transcription of the individual cropmarks. Transcription involves the plotting of cropmarks onto maps following the rectification of the oblique aerial photograph and requires detailed examination and interpretation of the cropmarks. The software used for the rectification and transcription of the cropmarks of the timber monuments was Aerial 5.28 provided by RCAHMS. This rectifies digital images and allows on-screen digitisation of selected features. The map base used was OS Landline.Plus multi-scale map data, downloaded from Digimap in NTF format and DTM data (at 1:5000 scale) was provided by RCAHMS as DXF files. Aerial photographs either borrowed from RCAHMS second set of aerial photographs or ordered from CUCAP were scanned at 600dpi resolution. Where prints were not available, a small number of digital scans of negatives were provided by RCAHMS and scanned images of slides were provided by AAS both at a resolution of 400dpi. All images were rectified to a scale of 1:2500 and to a resolution of 400dpi and were output as TIFF files. Photographs were only rectified when relative error margins given by Aerial were below two metres, though sub-metre error levels were usually achieved. Following rectification, archaeological features were digitised on-screen using the tools provided within Aerial and saved as DXF files. Each cropmark timber monument and any archaeological features visible within the immediate vicinity of the monument were transcribed, although greater detail was paid to cropmarks interpreted as Neolithic timber monuments. If necessary AutoCAD was used to tidy the transcribed features and combine multiple DXF files following transcription using Aerial. The final output was a rectified TIFF file along with one or more DXF files of the transcription, all georeferenced. This was then displayed and output using ArcGIS 9.1

The process of transcription is important if the form, shape, dimensions and location of a cropmark site are to be adequately recorded and assessed. Often a transcription is seen as the end product of the process of interpretation and involves the form and dimension of a cropmark being set down in black and white (or any other combination of colours selected by the transcriber) and often produced in hard form. Transcriptions can give the impression of a definitive, final product; this is what the site looks like, its form, dimensions and extent. Indeed, the finality of this product can often mean that transcriptions are never really questioned or re-visited unless there is compelling reason to do so, such as new
features identified on new photography. However, it is important to be aware that a transcription is an interpretation not a representation of reality, that the transcription itself may only be one possible interpretation and is subject to the same issues as the interpretative process as a whole.

The actual process of transcription involves a number of interpretative decisions, such as where to draw a line to represent the extent of a feature, whether it should be drawn along the outside or inside edge of the cropmark, how to represent that feature, how much to transcribe and what to leave out. The thickness of the line used to represent the edge of a feature can affect the dimensions of that feature seen in the final transcription. The process of transcription forces the interpreter to look very closely at the cropmarks and to make definite decisions about form and extent in a way that may not occur if transcription was not to be the end result. It can make interpretations seem more definite, but can also force the interpreter to draw definite edges to a feature when there are in fact none or to enshrine in apparently definitive form incorrect interpretations of features. In other words, it can give the appearance of an authoritative document. However, in respect to this, experience also plays an important part in the transcription process both in terms of the interpretation of archaeological features and familiarity with the transcription software, both of which can affect the quality of the final product. It is therefore important to remember that a transcription should never be the end of the interpretative process. The nature of the final product of transcription though can make reassessment difficult because of the time taken, technical nature of the process and the impression given of a definitive result. Nevertheless, transcription is no less subject to the inherent biases and subjectivity of the rest of aerial archaeology.

The interpretation and transcription of all unexcavated cropmark timber sites identified during the data collection stage was undertaken. Four sites, the cursus monuments at Mill of Fintray, Milton, Purlieknowe and Holywood North were not transcribed because of problems of gaining sufficient control on the aerial photographs to which I had access and, in each case, the existing RCAHMS transcriptions were used. Only two sites, the curvilinear site at Forteviot and timber circle at Lower Slackbuie, could not be transcribed because of lack of sufficient control and had no existing RCAHMS transcription. Transcription was considered necessary in order to produce an accurate record of the cropmarks and gain an understanding of the shape and size of each site as well as an accurate record of location. The process of transcription proved to be very useful in the process of interpretation as it required detailed examination of each cropmark. Also, at this
stage, a small number of sites could not be resolved into definite structures and so were
discarded, such as the cluster of pits recorded at Newton of Cawdor, Invernesshire (figure
3.7) which had previously been recorded as a pit-enclosure. Subsequently, all the
transcriptions were peer reviewed by a colleague at RCAHMS. Re-visitation and re-
transcription may be necessary in the future.

Figure 3.7 - This cluster of pits at Newton of Cawdor, Highland, could not be resolved into a definite
structure and so was discarded (© Crown Copyright: RCAHMS).

First edition OS maps, provided through Edina Digimap’s Historical mapping function,
were also routinely consulted at this stage in order to identify if any modern features could
explain the cropmarks. The potential for modern features identifiable on early maps,
particularly tree plantations which have later been removed, to be wrongly identified from
aerial photographs as prehistoric features has previously been highlighted by Barclay
(2002). However, the importance of this stage in the interpretative process was brought
home to me by my assessment of the cropmarks at Cranstoun Riddel, East Lothian.
Recorded by RCAHMS merely as ‘pits’, I identified these cropmarks as a possible timber
hall similar to that recorded at Balrae. Following transcription and measurement of this
site, I was less sure of my original interpretation considering the large size of both the
possible enclosure and the pits. However, the morphology of the cropmarks was so
compelling that I still considered it a possible example of a timber hall, albeit one that was
quite large. It was only when the 1st and 2nd edition OS maps were consulted that I realised
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that the OS had recorded a plantation of trees in exactly the same configuration as that I had just transcribed. In order to be certain about this, I overlaid my transcription on the OS map (figure 3.8). This revealed a very close correlation between the transcription and depiction on the OS map (the slight discrepancy seen can be explained by unavoidable errors in the process of transcription and slight errors in the OS measurements) and so the only conclusion that could be made was that these cropmarks related to a small plantation of trees removed some time after the creation of the 2nd edition OS map, and were not prehistoric. The consultation of historic maps then is a very important part of the interpretation of cropmarks, although no other sites identified by this research can be explained by features recorded on historic maps.

3.2.4. Classification and typology

After initial interpretation and transcription, the more formal classification of the cropmarks is often the next phase in the interpretative process and was an important stage
in this study. Of course classification can occur at any point in this process and indeed, interpretation occurs throughout the process of the analysis of cropmarks. Nevertheless, classification too has its own issues, problems and limitations and the process of classification and the way in which it is employed can fundamentally affect the manner in which the archaeological record is subsequently structured and understood. Therefore it is important that the principles underlying this stage of the interpretative process are understood and the appropriate methodologies employed.

As Adams (1988, 43) points out the word ‘classification’ can have many different meanings and is often used interchangeably with the word typology by archaeologists. He therefore defines classification as a general term applied to conceptual systems which orders objects into groups according to their relationships and is designed for the purposes of communication. A typology on the other hand is defined as a particular kind of classification which is designed to sort entities into mutually exclusive categories and is often used as the starting point for generalisations and comparisons. The specific types then are defined in relation to these typological systems and essentially are sorting categories. By this definition most cropmark classifications are in fact typologies.

Classification and the creation, definition and maintenance of typologies are central to archaeological practice in general and are used widely within aerial archaeology, often uncritically. The purposes of classification are effectively summed up by Doran and Hodson (1975, 159) as ‘the summarisation of data for descriptive purposes and a means for generating fruitful hypotheses’. Classification then is designed to serve two purposes: to order and summarise archaeological data and to facilitate the interpretation of this data. The long history of archaeology in Britain has resulted in the evolution of well established classes and types for upstanding archaeology (Whimster 1989, 26). However, the beginning of aerial survey in Britain resulted in the recording of large numbers of cropmarks which could not fit comfortably into the existing typologies (Edis et al. 1989) and so new classification schemes began to be devised, based upon functional attributes or morphological characteristics.

Within aerial archaeology the classification of cropmarks is an issue that has sparked much debate (e.g. Maxwell 1983a; Bewley 1984; Edis et al. 1989; Bewley 1991; Palmer 1991; Walker 1997). This debate has centred around the manner in which cropmarks should be classified, whether cropmark sites should be fitted into existing typologies for upstanding sites, whether morphology is a valid means of classification, how subjective or objective
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the method should be and the scale at which classification should take place. There have been many differing opinions as to the way in which cropmark sites should be classified often arising from the differing concerns of those involved and the differing purposes to which the classified material would be put. Most often the methods devised have been driven by the need for standardised systems of recording for the ordering and management of sites into databases such as National Monuments Records. As a result, computerised and systematic methods based upon morphology have often been favoured as a means of ‘objectifying’ the process and producing consistent typologies (Edis et al. 1989; Whimster 1989; Redfern 1997). However, such methods have received criticism (Hingley 1991; Palmer 1991) as, although they provide a means of organising the cropmark record, they add little to the actual understanding of the sites in question.

On the whole, though, there has been no universally accepted manner of classification, although notable recent cropmark studies (Stoertz 1997; Jones 1998) have taken the approach of initial morphological classification followed by an evaluation of archaeological significance, often fitting some of the sites into known and established typologies. At present this seems to be, at least implicitly, the accepted method of dealing with the classification of cropmarks. It is generally accepted that some cropmark sites are ploughed down versions of upstanding sites and can be fitted into these existing typologies, for example cursus monuments (Brophy 1998; 1999a) or long barrows (Jones 1998), whereas for other sites it may still be necessary to construct a new classification usually based upon morphology alone. There is little consistency however in terms of the relation of excavated or upstanding sites with those recorded only as cropmarks. In some cases cropmark sites continue to be dealt with separately from their upstanding or excavated counterparts, often emphasised by differing terminology employed for cropmarks and upstanding or excavated sites. For example cropmark timber circles continue to be referred to as pit-circles (Millican 2007, 12). Nevertheless, some of the typologies designed specifically to deal with this cropmark data have gradually made their way into general usage. For example ‘long mortuary enclosures’ or ‘pit-defined cursus monuments’ now often have as much currency as, say ‘henge monument’, in archaeological discourse and it is often common to speak about ‘mortuary enclosures’ when describing a particular type of Neolithic cropmark site (Loveday 2006a) (though the mortuary interpretation is problematic). Some cropmark types then are becoming embedded within archaeological discourse, although without the long histories of some of the longer established typologies and are not always as well-defined as these longer used terms.
However, the use of these typologies, and specifically those used in Neolithic studies, have recently been critiqued (Russell 2002; Brophy 2004b; Thomas 2004b; Brophy 2005a). As Thomas (2004b, 100) states, there is ‘a residual belief in archaeology that cultural phenomena should resolve themselves into natural types, providing that we can identify the correct variables on which to base our typologies’. Typologies therefore come to be viewed as natural groupings (e.g. Palmer 1976, 166) which existed independently in the past and that archaeological sites should naturally fall into particular ‘types’. As a result, the typological labels we give things have at times tended to take on a life of their own and have been seen as ‘real’ in the past (Brophy 2005a, 5). As a result, we expect any new discoveries to fit neatly into the system; the definition of types creates groups within which there is no room for sites which do not conform. However, rarely do all archaeological sites fit neatly into our categories; sites which do not are often labelled as ‘problems’ or anomalies and have to be explained away or are ignored because they are too undiagnostic (Poller 2005, 74).

When typologies are created, superficial characteristics that are considered important by archaeologists such as particular aspects of morphology or dimensions are inevitably used to define the class (Brophy 2005a, 8). Similarities are emphasised whereas differences tend to be ignored, often allowing patterns to develop even when there really are none, encouraging a perception of classes of monuments as homogenous entities (Waddington 2001; Russell 2002, 19; Brophy 2005a, 4) and effectively simplifying the archaeological record (Barclay 1989, 260). The difficulty comes in deciding what features are important and often the decision can be little more than arbitrary. What archaeologists perceive as vital to a class of sites may in fact have been of little importance to those who constructed the individual monuments and therefore of little relevance to understanding the sites. It is important to remember that typologies are artificial constructs; they are constructed by archaeologists as a means of understanding their data better and are influenced by the specific research agendas and methodologies of the archaeologists themselves (Poller 2005, 67). Therefore the process of selecting attributes to define a typology is inherently subjective and the attributes selected may not have had the same significance in the past, although it is perhaps overly pessimistic to say that they cannot give us any insights into the past.

However, despite this, in many cases such typologies have come to represent cultural groupings and typology has been used as more than just a technique to order the data (Brophy 2005a). When discussing the theory of archaeological classification Read (1982,
57) states this very explicitly; ‘In order for classifications to help examine past societies …
they must be a measure of cultural concepts rather than simply the means to group objects
of the classification’. Others are not so explicit, but there can be a tendency to accept this
principle without question and as a result established typologies are seen to represent the
cultural concepts, function and purposes behind the creation of monuments. This in turn
can affect the way in which sites are understood. For example, a henge is generally
understood to be a ritual monument, whereas causewayed enclosures have come to
represent a particular type of Neolithic economic and social organisation (Brophy 2004b,
39). As a result any site classified as either a henge or causewayed enclosure is
immediately understood in a particular way and approached with particular pre-
understandings and expectations. Hodder’s (1992, 213-40; 1999, 34-9) excavations of the
Haddenham causewayed enclosure in Cambridgeshire are a case in point, where the
identification of this site as a causewayed enclosure from aerial photographs led to certain
expectations of what should be found based upon what was already understood about this
type of site. This in turn influenced the way in which the site was approached and the
method of excavation employed. Therefore, the expectation of what constituted a particular
typological form influenced the manner in which the site was initially understood and
approached and it was only through detailed excavation and the uncovering of unexpected
evidence that this understanding was challenged and altered. Typology, and the
understandings associated with these typologies, then, has the potential to structure the way
in which we understand the archaeology and can constrain and to some extent control what
it is possible to say about the sites we are studying as we try to fit the data into the
limitations of our typologies and preconceived notions of what they represent.

In aerial archaeology, and more widely, morphology is often the most important factor
used to classify sites. There is a real problem here in the assumption that it is possible to
equate function with form and that sites grouped together by a small number of
predetermined factors reflect particular phenomena (Thomas 2004b, 107). Very different
forms of sites may in fact have been capable of performing the same function whereas sites
of similar form may have functioned in very different ways (Brophy 2007b). For example
Thomas (2004b) draws attention to the similarities in the control of space between henge
monuments and the Later Neolithic palisaded enclosure of Dunragit, suggesting
connections between the two despite their differing morphology and rightly highlights the
dangers of understanding monuments as collections of typological traits rather than spaces
constructed by human beings. The emphasis on morphology is upon the external
boundaries rather than the spaces they enclose and it may be the internal areas that are important rather than the external boundaries that we so often study.

Figure 3.9 Elongated cropmark enclosures compared with excavated barrow sites presented as ‘floating’ plans (from Jones 1998, 87).

Such a method based upon external boundaries also has a tendency to de-contextualise the sites being studied (Poller 2005, 81-85). Comparisons and descriptions are often based upon maps or plans of sites, detached from their context and often presented as ‘floating’ plans of cropmarks (figure 3.9). Even where contextual information such as landscape is taken into consideration this is usually based upon transcriptions overlaid on maps (e.g. Stoertz 1997), themselves abstractions of the real world, while the process of classification is rarely combined with field visits to the sites themselves. As a result, typologies tend to be based almost exclusively upon abstractions of the ground plans revealed by cropmarks. However, the nature of cropmarks means that they inevitably give a composite view and may in fact represent multiple phases of use and construction. Typologies based upon morphology alone cannot take into account the potentially complex biographies of sites, although without excavation this can be very difficult to disentangle. This is particularly pertinent when considering many of the timber monuments constructed during the
Neolithic period as on excavation some have proven to have been subject to multiple phases of construction, destruction and rebuilding (e.g. Thomas 2007; Lelong and MacGregor 2008). Typologies based solely upon the ground plans of sites revealed by cropmarks cannot take these complexities into account.

Considering all of these criticisms, are typologies still a valid way of dealing with cropmark archaeology? If we recall that one of its main functions is to order data, then typologies may potentially still be an effective way of doing this and can allow us to deal with the archaeological record a little more easily. Problems arise when typologies become more than this and, as we have seen, the way in which sites are classified can potentially restrict what it is possible to say about them. In addition, typology alone is inadequate in helping us understand the archaeological record. Clearly factors other than just morphology must have affected the monuments that were built. Therefore it is very important that we draw in other factors, such as topography, materiality, associations, possible function or date, as well as typology when trying to understand sites. Typology alone is not enough. In addition, Thomas’ (2004b, 100) point that monuments were constructed spaces rather than merely boundaries highlights the fact that often when constructing typologies we are basing them upon a perspective that was not necessarily available to the people who constructed the sites. We tend to view sites, particularly those discovered through aerial survey, in plan from above and tend to concentrate almost exclusively upon the boundaries. Viewing them as constructed spaces rather than morphological forms and studying sites on their own merits both in plan and on the ground, perhaps taking into account the way in which a site would have been experienced, can potentially add much to our understanding of these sites.

How then do we actually deal with problems such as these? Brophy (2005a, 9) presents three reactions to the problems surrounding typological classification. The first is to ignore it, the second to reject typologies altogether and the third is to critically examine members of typological groupings and so identify similarities, differences and ambiguities. The problems are so compelling and have such an effect upon archaeological discourse that it seems very unwise to ignore them altogether. On the other hand the rejection of existing typologies, as employed by Russell (2002) in his study of Neolithic monuments, merely results in the establishment of new and different typologies, often still with many of the same problems. Therefore it seems that it is impossible to get away from the use of types when thinking about and discussing archaeological sites. It is very difficult if not
impossible to study the archaeological record as a series of disparate sites, so grouping sites into classes can make it easier to deal with and facilitate communication.

Clearly we still need something which will help us deal with and discuss archaeological sites, but how do we get around the very real problems associated with existing typologies? Perhaps Brophy’s third suggestion is a way of dealing with these existing typologies. He suggests working with existing typologies but questioning and examining them through the detailed study of individual sites, and bringing in data other than just morphology such as topography, construction and materiality. By such detailed examination we may see existing typologies becoming more blurred, hopefully leading to a deeper understanding of the sites in question and the practices and processes surrounding them. A similar approach is suggested by Thomas (2004b) who advocates the necessity for a contextual approach in which categories such as practice, function and the role of agents are taken into account. He too does not see the need to entirely reject existing typologies, but suggests that it is necessary to question them and not remain so rigidly bound to them. He advocates considering monuments as used spaces rather than just boundaries on the principle that people made explicit choices to organise space in particular ways within a given topographical setting and that these choices were not just the reproduction of tradition. Therefore conventional methods of classification are unable to take into account the variability seen in Neolithic monuments. By considering Neolithic monuments as spaces and places and examining other factors such as possible function, use and topography it may be possible to see new linkages between monument types that were not obvious before.

Perhaps then it is necessary to construct a classification and then to take it apart through more detailed study. It is clearly important to take into account factors other than just morphology when examining sites and it may be necessary to look at sites in a different way than has traditionally been the case in order to understand them fully. Certainly the wholesale rejection of typologies does not seem to be helpful, but neither are rigid classifications particularly productive in helping us to understand the archaeological record. By constructing a classification we may be able to deal with the archaeological record a little easier, but by detailed examination and considering other factors such as topography, function and so on it may be possible to illustrate the differences and the multiple narratives contained within the record. Such an approach has the potential to begin to view monuments as places rather than just simple boundaries and may allow us to move beyond individual sites. It also draws on information from other approaches such as
the study of the landscape, allowing a rather more contextual approach. Therefore typological classification can only ever be just one stage in the process of understanding Neolithic monuments and on its own can never help us fully understand these sites. Clearly the monuments constructed reflected in some way the beliefs and values of those who made them, but it is unlikely that typological characteristics alone drawn from cropmark evidence can help us gain an insight into those beliefs.

Therefore my research has adopted a more contextual approach towards classification. It is not the intention of this research to entirely reject the use of traditional typologies nor the use of basic morphological classification. Both are seen as useful tools to help deal with the large amounts of data generated, gain a superficial understanding of the extent and forms of the sites recorded and to aid communication. Instead, the use of typologies was viewed as only the first stage in the process of investigating and understanding the sites studied, as an interim method to be used and as a tool to aid the assessment of the information gathered. They serve to provide a general understanding of the sites studied. At this stage, the typologies were not necessarily assumed to relate to function, that is all sites classified as, for example ‘timber circle’, were not assumed to have the functioned in the same way. An initial basic morphological classification was undertaken and those sites which could be attributed to traditional typologies were at this stage. This was followed by more detailed study, both of sites attributed to particular classifications and in three case study areas, which was used to inform the final interpretation of these sites and break down and move beyond these basic typologies. This included the assessment of any relationship to other sites, close consideration of any excavated sites, the consideration of the use of space, comparison of other monuments of similar date and site visits. I will now discuss the process of developing theory into practice.

3.3. **Beyond cropmarks**

In the past, classification has often been seen as the end point of a cropmark study partly because those who took and dealt with the aerial photographs were often not research active archaeologists. One of the key aims of my research was to take interpretation beyond the cropmarks themselves and to place the timber monuments within their wider landscape, enhancing the record of a large group of cropmark sites. This was achieved through the integration of a number of approaches, beyond aerial photographs, such as map analysis, field visits and GIS, focused upon three case study areas.
3.3.1. Landscape

Landscape is central to archaeological understanding and has been part of archaeology almost since its inception as a discipline (Stoddart 2000b), although only since the 1970s has the concept of the landscape been widely applied within archaeological research (Darvill 1997, 1). Essentially a landscape approach considers the whole landscape rather than just the individual site (Chapman 2006), recognising that people did not just exist within definable sites identified archaeologically today but occupied territories and regions which would have had many different meanings (Darvill 1997). It usually combines a variety of different forms of evidence in order to create a wider understanding.

From the very beginning of aerial archaeology, the potential of the aerial photograph to aid the understanding of landscape was clearly understood (Crawford and Keiller 1928; Whimster 1989; Stoddart 2000a; Wilson 2000, 16-17). As early as 1923, Crawford had grasped the value of using aerial photographs to help the understanding of wider archaeological landscapes, publishing an article outlining the use of aerial photographs in helping to understand the layout of Celtic fields of southern England (Crawford 1923). The perspective provided by aerial photographs is uniquely placed to help study landscapes. Landscape itself, though, is a difficult concept to pin down and obtaining a definitive definition is difficult both within and outwith archaeology. There are a plethora of theoretical studies each providing varying definitions depending upon the particular focus of the study (e.g. Bender 1993b; Ingold 1993; Tilley 1994; Darvill 1997; Knapp and Ashmore 1999; Cummings et al. 2002). Essentially, however, there is often a division in the way in which landscape study and therefore landscape itself is approached and understood between environmental approaches or ‘objective’ methods of analysis and social or more ‘subjective’ approaches to the landscape (Thomas 1993b; Tilley 1994; Thomas 2001a; Cummings et al. 2002; Chapman 2006).

The first approach tends to view landscape as spatial in character and sees space as an abstract container in which activities took place (Tilley 1994, 9), which can be viewed in a detached manner through mathematical, and supposedly objective, methods of representation such as maps and plans. This approach tends to concentrate upon the physical remains of past landscapes, often using scientific analysis and reconstructions of past landscape, investigating landscapes as aggregates of landforms and only later considering how they were perceived by people in the past (Thomas 1993b; Chapman 2006). In this perspective, there is a perceived separation between human beings and the
world and a clear distinction between ‘culture’ and ‘nature’ (Thomas 2004a, chapter 4). This tends to be the way in which aerial archaeologists have viewed landscape, generally basing studies of landscape solely upon abstract maps and plans (e.g. Stoertz 1997).

The alternative, social approach to landscape, sees space as a medium for action rather than a container. Landscape is not just confined to the physical aspects of the environment; it also embodies metaphysical and social aspects. It is not abstract and is always experienced. Landscape is, according to Ingold (2000, 193), ‘the world as it is known to those who dwell therein, who inhabit its places and journey along the paths connecting them’. It can be viewed as a network of places revealed through people’s habitual activities and interactions (Thomas 2001a, 173), is created by people through their engagement and experience of the world (Bender 1993a, 1) and experienced and known through the movement of the human body through space and time (Tilley 1996, 162). People dwell through these places (Thomas 1993b, 28) and the character of places emerges through the experiences of living in and through them (Ingold 1993, 155). Landscape is linked to social practice, therefore by engaging with landscape and the remains of past human activity we can begin to generate an understanding of some of the ways in which particular ways of knowing the world might have been obtained. This approach tends to emphasise the experience of the landscape, viewing maps, plans and aerial photographs as abstractions of the world which cannot be relied upon alone when interpreting what it is to be within the landscape (Chapman 2006).

This second, social approach, has been adopted by this study. As such, landscapes are viewed as essentially social constructions. Spaces are not seen as neutral containers for human action but are socially constructed through routine and everyday practice. Human beings are viewed as acting within a world rather than upon it, drawing meaning from that environment through an engagement with it (Ingold 2000, 357; Thomas 2006a). Landscapes are created through people’s engagement with and experiences of the world (Bender 1993a, 1). While some social approaches have tended to reject the use of aerial photographs and maps (e.g. Tilley 1994), seeing them as abstractions of the world, perpetuating a particular western view of the world not available to prehistoric people, a more balanced view is to accept that such photographs and plans are just one among many ways of looking at the world (Thomas 1993a, 27) and so should be integrated with other methods of study and analysis in order to gain as wide an understanding as possible.
3.3.2. A landscape approach to cropmarks

Arising from this approach to landscape is the recognition of the embodied nature of the experience of place and the landscape. In this perspective the world around us is always experienced, not as abstract two-dimensional space, but through the physical engagement of the human body (Tilley 1994, 14; 2004, 2-14; Brück 2005, 47). This has led to the development of a methodology stressing the significance of experience and bodily engagement in the interpretation of prehistoric features (e.g. Thomas 1993b; Brophy 1999b; Tilley 2004). Underpinning some phenomenological approaches is the assumption that the embodied engagement with landscape can come close to the actual experience of people in the past (e.g. Tilley 1994; 2004). This has been critiqued (Brück 2005). Instead, phenomenology can be seen as one means of exploring some of the ways in which people and places may have interacted, of gaining insight into places and their interpretation and of adding new perspectives to the interpretation of archaeological evidence and encouraging fresh understandings of place and landscape. It may also help us to confront the situated nature of our interpretations and recognise just how differently places and landscapes were experienced in the past (Fraser 2004).

Phenomenological perspectives are also one means of moving beyond morphological considerations of sites and of transforming traditional classifications. They force the consideration of sites as three dimensional spaces and real places and can add new perspectives to the way in which a site is understood. However, most phenomenological studies have tended to focus upon upstanding monuments such as chambered cairns, where the monuments themselves are still visible and can be approached and experienced in the manner espoused by these approaches. Cropmark sites are rarely approached through field visits, largely because there is nothing to see above ground and so any engagement with their locations requires much more imagination and subjectivity than that of upstanding sites (Brophy 1999b, 8). Is it possible then to translate these approaches to plough flattened cropmark sites which can no longer be seen on the ground?

Three studies, Tilley’s (1994) phenomenological walk along the largely ploughed down Dorset cursus, Brophy’s (1999b) field visits to the cropmark cursus monuments of Scotland and Poller’s (2005) field visits to cropmark Iron Age sites in Wigtownshire suggest that a landscape approach to cropmarks is possible, and indeed is vital if richer understandings of the cropmark sites are to be approached. In all three studies, the experience of visiting these cropmark sites was integral to the interpretation and
understanding of the sites, and the field visits themselves were used to inform their interpretation. Obviously, visiting cropmark sites requires much more imagination than visiting sites which can still be seen today. However, the situation and setting of these sites can give insights into other aspects of the monuments and their contexts. Even most of the upstanding sites that have been subject to such approaches themselves survive in only denuded form and a certain amount of imagination is required here too in order to appreciate how they may have appeared in the past (Poller 2005, 156). Therefore, field visits to cropmark sites are not so far removed from those of upstanding sites and can be used to add to and inform interpretations.

Therefore field visits and a bodily engagement with landscape formed an important part of this research. The field visits were focused primarily upon three case study areas, although a small selection of sites outwith the case study areas were also visited. Each field visit was based upon the transcription of the site in question and observation of the aerial photographs. The transcriptions themselves proved to be essential in locating the position and orientation of each site. Each site visit involved locating the site itself as accurately as possible using the transcription and a compass, estimating the dimensions of the site and walking across and around the site. Where linear monuments such as cursus monuments were visited the length of these sites was walked as far as possible in terms of available access. The general location of each site was noted, as were the views from and to the site. Photographs of the site location and the views to and from the site were taken as a record. Visual analysis was the primary means of analysis as this was found to be the most accessible manner of gaining an understanding of the location of sites. As far as possible, the probable effects of tree cover were noted when considering the sites.

This was an engagement with cropmark sites within a modern landscape, something brought home to me by the way in which my access and approach to sites was constrained by modern field boundaries and plantations, and was not intended to be a means of getting into the prehistoric mindset. Instead, it was seen as a means of ‘grounding’ cropmark archaeology, placing cropmarks back within their landscape setting, beginning to engage with that setting and thinking about these cropmarks as spaces and places rather than just two-dimensional plans. It was a way of contextualising the cropmarks and moving beyond individual sites, but was also important in feeding back into interpretations of the cropmark sites and breaking down the basic typological groupings constructed. Ultimately, however, field visits were only one of the methods used to help gain an understanding of the
Neolithic timber monuments, albeit a very important one, and were integrated with other methods such as map analysis and GIS.

3.3.3. GIS

One important tool that is used to aid this study of past archaeological landscapes is a Geographical Information System, or GIS. GIS can be defined as ‘computer systems whose main purpose is to store, manipulate, analyse and present information about geographic space’ (Wheatley and Gillings 2002, 9) and as such they are tools which allow the analysis of landscapes and the manipulation of large datasets. As a tool for the storage and representation of spatial data a GIS is invaluable. However, its real strength lies in the analyses which it can perform and the way in which data can be manipulated, potentially giving valuable insights into archaeological data and its relationship to landscape. Often though it has been seen as an objective tool separate from theory and can at times be used uncritically within archaeological research, often leading to interpretations that are essentially environmentally deterministic (Wheatley and Gillings 2002, 20) and over-simplified (Winterbottom and Long 2006, 1356). GIS comes with its own assumptions, biases and issues meaning that it is important to be aware of the limitations of using this technology and the theoretical issues associated with its use if relevant interpretations are to be made using this technology.

GIS analysis can sometimes be viewed as an objective process and as a computer programme which can be used simply to solve problems; the data and problem is input and the ‘result’ is output. These results can give the impression of a representation of reality rather than merely one possibility. However, despite impressions, a GIS cannot give a definitive representation of reality, instead any results represent possibilities and not definitive results (Wheatley and Gillings 2000, 6). Interpretation does not begin after an analysis has been performed (Cripps et al. 2006), but is implicated throughout the process. The very decision to analyse a particular aspect or location is an interpretative choice, as are the choice of parameters and the data input by the user. The resulting output depends greatly upon choices made by the user. Therefore, rather than giving a definitive ‘result’, a GIS should be viewed more as a tool for interpretation (Harris 2000) and a space in which the archaeologist can explore ideas and think about the data. Indeed, this is a real strength of GIS analysis as it gives the archaeologist the opportunity to explore data in some depth and to study relationships in different ways. Obviously the quality of the analyses
themselves and any resulting interpretation is dependent upon the quality of the original data.

Some of the criticisms of GIS have, like maps and aerial photographs, centred around the fact that it too represents an essentially Cartesian view of the world (Cummings et al. 2002, 58). However, if used critically and within the context of landscape theory, useful interpretations can still be made and at the very least can make us aware of how different understandings may have been in the past. For example, movement of an individual through the landscape is clearly influenced by factors such as slope and vegetation cover, both factors traditionally considered within GIS analyses, but can also be affected by social factors (Llobera 2000) such as the social control of movement. Such factors are obviously much more difficult to take into account within GIS analyses, but by being critically aware of these issues it may be possible to identify just how different factors such as movement may have been.

A GIS has the capability to provide access to the whole of the landscape regardless of the presence or absence of archaeological sites (Gaffney et al. 1995) which means that by using a GIS it is possible to move beyond site-specific studies and truly study the whole of the landscape. Although visibility studies are among the most common method of analysis (Winterbottom and Long 2006, 1357), the tools of a GIS provide the archaeologist with the opportunity to explore landscape in many different ways which may not be possible on the ground and has the potential to offer the archaeologist a method of getting at and visualising how a landscape may have been seen and experienced in the past through techniques such as viewsheds and cost surfaces. There is no escaping the fact that GIS offers a distinctly abstracted method of looking at the world, at variance with social approaches to landscape. However, as with the use of aerial photographs and maps, it is perhaps enough that we are aware of this limitation and that there are other ways of viewing landscape. Essentially a GIS is just one tool that can be employed by the archaeologist and cannot be rejected just because of the issues and limitations associated with its use. As long as it is used with awareness of the limitations and in conjunction with other methods of analyses it can be a very useful and powerful tool.

Therefore a GIS was used in this research as an analytical tool for exploring the case study areas and their locations in more detail. ArcGIS 9.1 software was used and all map and spatial data was downloaded from Edina Digimap; the 1:10000 DTM data proved the most useful data source and most analyses were based upon this. Spatial and point data for all
three case study areas was assembled, including OS 1:10000 and 1:50000 base maps, hillshade models, transcription files and point data of all the timber monuments and other sites of probable Neolithic date, creating maps with multiple layers and permitting the visual analysis of the study areas as well as the presentation of the data. Basic cost-path analyses were undertaken as a means of investigating the relationship of timber monuments to possible routeways. Essentially, cost-path analyses calculate the easiest route between two points according to parameters defined by the user. In the case of the three case studies, this was based upon slope, whereby a steep slope will have a greater cost to movement than a flat area. In addition, estimated sea level and probable marshy areas were defined as having a higher cost to movement. While it is recognised that this analysis is very basic and it did not fully take into account the effect of rivers or direction of movement for example, it was seen as a means of assessing the usefulness of this analysis in the study of timber monuments and gaining a good impression of the potential relationships of these sites to possible pathways. However, it must be borne in mind that such an analysis models possible pathways and not actual pathways existing in the past. Additionally, the GIS was used to store and present all point data recording the locations of all timber monuments in Scotland.

3.3.4. The case studies

Three case study areas were selected for more in-depth study using the range of approaches outlined above. These were the Nith Valley in Dumfries and Galloway, Strathearn in Perth and Kinross and East Lothian council area (figure 3.10). These case study areas provided an opportunity to look at the timber monuments recorded in each region in greater detail, but also to place them within their specific contexts. Each was selected for slightly different reasons.

Strathearn represents a well-defined area, relating to the valley of the River Earn, within which there is a rich concentration of cropmarks of many differing forms of Neolithic timber monuments. Indeed it displays one of the most concentrated areas of cropmarks of timber monuments anywhere in Scotland. The Nith Valley is another well-defined area within which there is a small concentration of cropmarks, many of which relate to only one form of monument, the post-defined cursus monument. The final case study area of East Lothian represents a region of absence where, despite intense aerial survey and a rich ditched enclosure cropmark record, very few timber monuments have been recorded.
Recent excavations, though, have revealed Neolithic timber monuments which did not show as cropmarks and caused the reinterpretation of a supposed Iron Age pit-alignment.

![Figure 3.10 Location of case study areas (Map © Crown Copyright Ordnance Survey. An EDINA Digimap/JISC supplied service).](image)

Each case study was conceived as a landscape study and spatial data, such as the transcriptions of each site, the locations of any other Neolithic sites and findspots (obtained from RCAHMS Canmore database) and base DTM data (downloaded from Edina digimap) were imported into the GIS. Basic cost-path analyses were calculated in order to investigate the possible relationship of the timber monuments to routeways. Each site within the case study areas was visited on the ground in order to record landscape location and consider the contexts of the sites in more detail and, as far as was possible, the physical environment existing during the Neolithic period was taken into consideration from existing information in order to provide a richer understanding of the Neolithic context of each case study area.

### 3.4. Summary

In summary then, one of the main aims of this research was to characterise and gain a deeper understanding of the timber monuments of Scotland and their relationship to
existing Neolithic discourse. This was achieved through a number of methods, but essentially involved detailed examination and interpretation of cropmarks and their relationship to excavated sites, and in-depth landscape study focused upon three case study areas. This was designed to achieve both a general understanding of timber monuments in Scotland, their form and extent, but also an in-depth understanding of the sites and their landscape context within the three case study areas as well as their place within wider archaeological discourse. The remainder of this thesis shall deal with the results and insights achieved when putting these theories and methodologies into practice.
4. The Neolithic timber monuments of Scotland

4.1. Introduction

In total, 207 Neolithic timber monuments have been recorded in Scotland, both as cropmarks recorded on aerial photographs and during excavation. These timber monuments encompass a wide variety of forms and span the whole of the Neolithic period with some continuing to be constructed into the second half of the third millennium BC. As such a variety of monuments have been recorded some means of ordering, filtering and breaking up this data is required in order to begin to discuss and interpret these sites. Therefore, a basic classification, based primarily upon morphology from transcribed form or excavated plan and making use of any existing typological categories such as cursus monuments, has been undertaken. The sites will be discussed within these categories. The usage of categories such as these, though, can be constraining and potentially limit what can be said about the sites they encompass (see section 3.2.4), therefore the categories used here are primarily envisaged as a useful shorthand and are a means of beginning to make initial general interpretations. They are not necessarily intended to indicate function and all sites encompassed by an individual typology may not represent the same thing, though some general interpretations are suggested. They are not mutually exclusive and this is not a strict typology; some sites could equally fit into more than one classification and so may be discussed more than once. Essentially, this is a starting point permitting us to begin to understand, interpret and discuss a diverse range of sites. The transcriptions and excavation plans of each site mentioned in the text can be found next to the relevant entry in the gazetteer, which also sets out basic information about each site, including locational information.

4.2. Avenues

Avenues comprise two roughly parallel lines of posts and are defined by their narrow width relative to length. As cropmarks they are defined by pits (presumably representing postholes), may curve slightly along their length and are usually open-ended. A number of avenues of varying sizes have been recorded in Scotland, either free-standing or part of a larger monument (figure 4.1). Free-standing timber avenues can be more than 60m in length. Only four of these have been recorded in Scotland, all as cropmarks. These are Kirklands, Dalswinton Roads and Kirkmabreck and a possible fourth avenue has been
recorded at Park House. Kirklands, Dalswinton Roads and Kirkmabreck all measure between 6 and 7m in width and curve slightly along their length, while the possible Park House avenue has a width of around 13m. Kirkmabreck is the longest in length, measuring more than 227m, while the remainder measure between 60m and 80m in length. An avenue of comparable dimensions (c.52m by 4m) was recorded as cropmarks at Holm in Dumfries and Galloway. This was shown on excavation to have been defined by pits rather than posts (Thomas 2007), as was an avenue excavated at Upper Largie in Kilmartin, Argyll (Terry 1997; Ellis 2000; Cook 2005). While this may suggest that all avenues recorded as cropmarks were pit rather than post-defined, small-scale excavation at a number of similar sites in northern England, discussed below, has demonstrated the presence of posts defining some avenues, and of course it is important to be aware that the dismantling of such monuments may have removed all trace of any posts.

Figure 4.1 Comparison between free standing avenues and entrance avenues to palisaded enclosures.

Five shorter avenues can be identified at Gallow Hill, Logierait, Drumflower, Sprouston and Burnbank. Again, all are known only from cropmarks. These sites are all relatively short, measuring between 14m and 21m in length and 5m or less in width. In terms of their
dimensions, these shorter avenues are much more comparable to the avenues which form the entrances to the palisaded enclosures (figure 4.1, section 4.9), which range in length from 14m to 33m and measure 4m to 8m in width. The excavation of the entrance avenue at Forteviot (Brophy and Noble 2007) has demonstrated that this avenue was defined by a series of large posts (see section 4.9). While all of the shorter avenues appear to represent free-standing structures, the cropmarks surrounding the avenue recorded at Drumflower could suggest another possible interpretation for this site. The scattering of pits recorded within the field to the north of the avenue could resolve themselves in such a way that this avenue forms the entrance to a larger palisaded enclosure (figure 4.2). As the recorded cropmarks do not, as yet, appear to form a coherent enclosure, the avenue recorded at Drumflower has been tentatively interpreted as a free-standing avenue, but future reconnaissance may alter this classification.

![Figure 4.2 Transcription of the cropmarks at Drumflower showing the pits (in red) which could represent part of a larger palisaded enclosure (possible extent dotted in grey) (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).](image)

It is difficult to be certain if the entire length of these avenues has been recorded. The avenue at Dalswinton Roads may not extend much further west than that recorded on the original 1960s aerial photograph as no further cropmarks of pits have been recorded in this direction despite the crop apparently remaining sensitive to cropmarking. While the eastern end does seem relatively well-defined, the soil becomes less responsive to cropmarking in
this direction meaning that it is possible that there were additional post-pits which have not
been recorded as cropmarks. Similarly, the avenue at Kirklands seems very likely to have
extended further south into soil that is less responsive to cropmarking. Indeed the presence
of what may be a pair of pits located a short distance to the southeast of the avenue may
suggest that it is much longer than currently recorded, and it may curve towards the
southeast, suggesting a substantial monument measuring more than 100m in length.
Finally, despite representing the longest avenue yet recorded in Scotland, the avenue at
Kirkmabreck may have been even longer than is currently recorded as the northern end is
defined by a modern field boundary and the southern end extends into soil that has not
produced cropmarks. Turning to those avenues that are much shorter in length, they all
appear to be well-defined as cropmarks and so may have been no longer than is currently
recorded, though the possibility of longer length must always be borne in mind.

4.2.1. Date

The similarities between these free-standing avenues and the entrance avenues to palisaded
enclosures are clear (figure 4.1). In particular attention can be drawn to the strong
morphological similarity between the avenue forming the entrance to the Late Neolithic
Dunragit palisaded enclosure and the nearby avenue at Drumflower. This may suggest that
the free-standing avenues are also of similar Late Neolithic date to those forming
components of palisaded enclosures. However, this picture is complicated somewhat by
the fact that the excavations at Holm provided an early Bronze Age date of 2280–1970 cal.
BC (SUERC-2119) (Thomas 2007, 254), while the excavations at the Upper Largie pit
avenue showed that it pre-dated a post-defined cursus monument (Terry 1997; Ellis 2000;
Cook 2005) and so may be Early Neolithic in date. Excavation at a small number of
avenues in northern England have demonstrated the presence of posts and provided Later
Neolithic or Early Bronze Age dates. The avenue at Milfield North, Northumberland,
appears to have comprised two rows of upright posts, forming an avenue around 50m in
length and 2m wide, dating to between 2400 to 2100 cal BC (BM-1650, 1652, 1653)
(Harding 1981; Loveday 2006a, 111). The Marton-le-Moor timber avenue in North
Yorkshire was dated to 2828-2308 cal BC (Tavener 1996, 184-186), while a similar
avenue excavated at Boroughbridge, also in North Yorkshire, provided radiocarbon dates
of 3022-2580 cal BC (RCD-1596) and 3332-2669 cal BC (RCAHMS 1997, 117). Some of
these though appear slightly different in form, often being longer (up to several hundred
metres) and much narrower (as little as 2m in width) than those recorded in Scotland. Only
the Kirkmabreck avenue is comparable in length to some of these long avenues.
Other than the avenue entrances to palisaded enclosures, there appear to be few similar equivalents outwith Scotland for the shorter avenues, although a small number have been recorded leading up to timber circles such as, for example, at the Durrington Walls north circle and leading up to the Bronze Age timber circle at Ogden Down in Dorset (Gibson 2005), again suggesting a Later Neolithic or Early Bronze Age date. Therefore, the radiocarbon dates provided by excavations in both Scotland and northern England means that it is possible to suggest that timber avenues were constructed during the Later Neolithic with construction extending into the Early Bronze Age and dates ranging from perhaps around 3000BC to as late as 1800BC. Most of those excavated have been shown to be defined by posts, although this cannot be determined from cropmark evidence alone.

4.2.2. Context and function

Only the avenues forming entrances to palisaded enclosures appear to be directly associated with another monument. The apparently free-standing avenues show no evidence of leading up to or directing access to any other site, though Kirklands, Dalswinton Roads and Kirkmabreck have all been recorded in close proximity with other cropmark sites. The Dalswinton Roads avenue passes between a ring-ditch, which is likely to represent a round barrow, and the cropmarks of a possible henge. Kirklands is adjacent to the cropmarks of a possible barrow, which lies around 23m to the east of the avenue, while the avenue at Kirkmabreck intersects with a post-defined cursus monument. Of the avenues that are shorter in length, only Drumflower and Gallow Hill appear to be in close proximity to other sites; the cropmarks of a curvilinear site lie immediately to the west of Drumflower and the cropmarks of a timber circle have been recorded around 70m from the avenue at Gallow Hill. However, at Burnbank additional sites of varying dates which include two curvilinear sites (see section 4.8) of possible Neolithic date, have been recorded within a few hundred metres of the possible avenue and so may conceivably be associated with it in some way.

Exactly what each of these avenues represent is difficult to determine. Those forming components of palisaded enclosures are clearly entrance features, directing and controlling access into the interiors of these larger enclosures and, as well as restricting physical access, they may also have served to restrict visual access into the interiors of the enclosures (Gibson 2002a; 2004b). However, none of the free-standing sites recorded in Scotland show any evidence of similarly directing access towards or into anything, yet the form of these avenues strongly suggests the channelling, direction and control of
movement. It has been suggested that the Milfield North avenue in Northumberland may have formed part of a processional route across the Milfield plain (Waddington 1999, 159-162) and so it is possible that the avenues recorded in Scotland may also have defined elements of routeways across the landscape, perhaps between sites and monuments that have not been recorded as cropmarks. Equally, some of these avenues may have formed monuments in their own right and parallels may be drawn between some of the larger avenues and cursus monuments, although cursus monuments appear to be much earlier in date than the avenues. Parallels have also been drawn with stone avenues, such as those found in Dartmoor (Loveday 2006a, 112), or that recorded approaching the henge at Broomend of Crichie (Burl 1993, 58-9), though the difference in material may suggest a very different purpose behind the construction of these monuments and stone avenue chronology is unclear. Here we could point to the role of the term ‘avenue’ in leading to the expectation that such a monument should lead to something. Clearly, this may not necessarily have been the case, particularly as there is little suggestion from the cropmarks that many of the free-standing avenues functioned in conjunction with other monuments. Other possible functions which may be suggested include barring movement or access to particular locations (something that is suggested for the avenues within the case study areas, see sections 5.3.2 and 7.4.3), marking a distinction, separating out different parts of the landscape or connecting different locations. If we forget the preconceptions that come with the term ‘avenue’, then it is perhaps easier to consider the possibility that some of these sites may have been monumental forms in their own right. Whatever their function, the larger avenues in particular must have formed impressive monuments.

4.3. Timber settings

Timber settings are open-ended trapezoidal or rectangular structures and appear in cropmarks as two lines of three or four pits. All are relatively short in length. In total, 13 timber settings have been recorded, though some of the short avenues could also be classified as timber settings suggesting an overlap between these two classifications. Some settings are almost as wide as they are long and widen towards one end, while others are defined by evenly spaced parallel pits (figure 4.3). The sites of Ardmuir, Tarscavaig, Millhills 1 and 2, Earls Haugh, Forteviot and perhaps Dargill belong to this former group, while Carfraemill, Kingsdale, Halls, Black Wood and Court Hill belong to the latter group. Only Bennybeg does not quite fit either of these two descriptions, the setting here defined by two widely spaced, roughly parallel lines of pits.
Small rectangular and trapezoidal settings of posts recall structures leading up to the facades of long barrows in England (Kinnes 1992, 92, figure 4.4). Examples include the post-structures excavated in the forecourts at Kemp Howe and Street House in Yorkshire and Fussell’s Lodge and Waylands Smithy in Wiltshire. The first, trapezoidal group of timber settings bear the strongest morphological relationship to these post settings and it may be that the settings recorded in Scotland had a similar mortuary or ceremonial role. However, none of these Scottish sites have yet been excavated and so this hypothesis remains unproven. The settings at both Court Hill and Millhills 1 appear to be associated with round barrows, the latter perhaps leading up to the barrow. No dates are available for these barrows, which could date anywhere from the middle Neolithic into the Bronze Age (Woodward 2000). It is possible then that some of these settings had a mortuary role but were not subsequently covered by a barrow or mound. Alternatively, it is possible that any associated monuments have not been recorded as cropmarks, perhaps a mound with no immediate sub-surface elements, such as the Pitnacree round barrow (Coles and Simpson 1965).

Trapezoidal structures excavated within a Late Neolithic settlement at Willington, Derbyshire (Wheeler 1979), though, do suggest that a non-mortuary role should also be considered. Of the three trapezoidal structures uncovered at this site, two appear similar to the cropmark trapezoidal post settings. Interpreted as possible small buildings by Wheeler (1979, 67), it may be that some of the timber settings recorded in Scotland may also be interpreted in a similar manner. This should certainly be considered a possibility, though the post-spacing and dimensions of some (for example Ardmuir which measures between 14 and 16m in width with postholes 5 to 6m apart) suggest that roofing such structures may have been difficult without additional supports. Therefore, considering the possible barrow associations noted above and the dimension of some of these structures, it seems unlikely that all timber settings could be interpreted in this way, though it certainly remains a possibility. It is also possible that some of these settings may comprise parts of much larger avenues, the remainder of which have not yet been recorded. Finally, of note is the fact that two settings have been recorded within the Later Neolithic palisaded enclosure at Forteviot.
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4.4. Post-defined cursus monuments

Cursus monuments are long rectilinear enclosures defined by a ditch and bank, pits or posts (Brophy 1998, 92). Each form of cursus monument is known in Scotland, though it is the post-defined variety that shall be discussed here. Cursus monuments constructed of timber posts are predominately a Scottish phenomenon; the only known English examples are the pit-defined enclosure recorded at Bainton in Cambridgeshire and the burnt double row of posts found beneath the Stanwell cursus in West London (Topping 1982; Brophy...
In Scotland 30 timber monuments can so far be identified as post-defined cursus monuments, most of which are revealed on aerial photographs as long rectangular enclosures defined by pits, though there is much variation in terms of form and dimensions. Most measure more than 100m in length. The only exceptions to this are the cursus monuments at Trailflat, Tibbers and Bannockburn (whose full extents are unknown), the excavated site at Douglassmuir (65m in length) and Kirkmabreck which is around 51m in length. The longest recorded post-defined cursus monument is that at Milton in Angus, around 570m long. The width of these monuments varies from 14m to 45m and can also vary within a monument itself.

Figure 4.5 Transcription of the cursus at Kinalty highlighting the larger terminal pits. The boundary of this cursus is also irregular and the pits vary in size.

At least one closed terminal has been recorded at most sites, though both terminals are known at only a handful of sites; therefore the full extent of most sites still awaits discovery, though at some sites it is possible that only one closed terminal was ever constructed. The terminals tend to be either squared or rounded, defined in some cases (Castle Menzies, Kinalty, Dunragit) by pits which seem to be much larger than those defining the sides of the enclosures (figure 4.5), suggesting that the terminals were emphasised and enhanced by the erection of larger posts. In addition, the pits recorded as cropmarks do not always appear to be of uniform size, suggesting the use of differently sized timbers, and are not always uniformly spaced. Many post-defined cursus monuments
have one or more internal divisions. These divisions are often accompanied by changes in width as the cursus sides curve inwards to meet them (Brophy 2000a, 15), something which can be seen at Douglassmuir, Woodhill and Kinalty, while in other cases (e.g. Balneaves Cottage) the cursus changes width either side of the division. Added to this is the fact that the boundaries of some cursus monuments are distinctly wobbly and most appear to be ‘segmented’ in appearance, then this suggests different episodes of construction (Brophy 2000a, 15). Therefore many of these cursus monuments may represent longer-term projects that were re-constructed and added to rather than one-off events. Indeed the excavations at the cursus sites of Holywood North and Holm support this, indicating that episodic destruction and reconstruction took place at both these sites. This may also explain the multiple pit-alignments recorded lying parallel to the cursus monuments at Inchbare North and South, perhaps indicating that the boundaries of these cursus monuments shifted over time as these monuments were repeatedly reconstructed.

4.4.1. Date

A good selection of post-defined cursus monuments have now been excavated, including the sites at Douglassmuir, Bannockburn, Castle Menzies, Dunragit, Upper Largie, Eweford, Holywood North and Holm. Taken together, these excavated sites have provided radiocarbon dates which indicate that post-defined cursus monuments date from between around 4000 to 3600 cal BC (Thomas 2006b, 233) (figure 4.6), the only real exceptions to this being the cursus at Eweford East, with dates as late as around 2400 BC (SUERC-5344, 5345) (Lelong and MacGregor 2008, 53 and see chapter 7), and Bannockburn (Rideout 1997). The dates provided for post-defined cursus monuments in general are earlier than that suggested for earthwork cursus monuments (Thomas 2006b, 233) and appears to indicate that post-defined cursus monuments were constructed prior to the earthwork cursuses. It is possible then that ditch and bank cursus monuments developed from these post-defined sites. If this is the case, then one site which may encapsulate this development is the cursus monument at Holywood North (Thomas 2007) where a post-defined cursus monument, which was reconstructed on several occasions, was replaced by a much larger bank and ditch cursus,(see section 5.3.3 for details). The post-defined cursus monument at Holywood North and most of the others that have been excavated were subject to catastrophic destruction at the end of their lives and others have demonstrated continued burning and post replacement; Douglassmuir, Holywood North, Holm, Dunragit and possibly Bannockburn were all burnt down, something that is a general feature of Early Neolithic timber structures (Noble 2006a, 45). While limited material culture has been
recovered from these excavated cursus sites, oak seems to be the predominant wood type used for construction.

Figure 4.6 Radiocarbon dates for cursus monuments.

4.4.2. Spatial associations

Around a third of all post-defined cursus monuments have been recorded in close proximity with other sites and monuments, including ring-ditches, pit-circles and even
other cursus monuments. At both Star Inn Farm and Fourmerkland a ring-ditch (possibly a barrow) lies on the line of one side of the cursus boundary, though which is earlier is impossible to tell from cropmark evidence alone. Other sites (Mill of Fintray, Woodhill and Purlieknowe) have ring-ditches located within the area enclosed by the cursus, while the site of Lochbrow appears to be aligned on at least one, if not two, barrows. In addition, several post-defined cursus monuments appear to be spatially associated with timber circles. At Bennybeg, a very distinctive timber circle lies around 45m to the east of the cursus, while both Kinalty and Lochbrow appear to be closely associated with two timber circles each, the east side of the Kinalty cursus passing through the centre of the larger timber circle (figure 4.5). The possible cursus at Eweford lies immediately to the south of a large timber circle and a timber circle which was later replaced by a ring-ditch was found in close proximity to the cursus at Holm (section 5.3.2). Finally, the post-defined cursus at Upper Largie was shown by excavation to precede a timber circle which had been constructed over the terminal of the earlier cursus (Ellis 2000) and the east end of the Castle Menzies cursus is defined by an arc of large posts reminiscent of some timber circles or even mortuary facades at long barrows (Halliday 2002, 16).

Other spatial associations include a curvilinear enclosure recorded to the north of the Tibbers cursus, the earlier pit-defined enclosure excavated immediately to the east of the Bannockburn cursus, the possible causewayed enclosure (which alternatively may be a much later fort) located close to the cursus at West Lindsaylands and various pits and pit-alignments. As well as being in close proximity to one another (they lie around 200m), both Inchbare North and South cursus monuments share similar alignments and have several associated pit-alignments on the same alignment as the monuments themselves which, as has similarly been suggested for the excavated cursus site at Holm (Thomas 2007), may suggest the destruction, reconstruction and shifting of the location of the cursus over time. In addition, a small rectilinear enclosure lies immediately to the south of the Inchbare South cursus, perhaps a smaller version of the much larger post-defined cursus monument. Finally, the cursus monument at Dunragit precedes the large Later Neolithic palisaded enclosure in the same location; this enclosure appeared to acknowledge the presence of the earlier cursus monument (Thomas 2004c). The largest posthole of the middle ring of the palisaded enclosure and only find of material culture of any kind from this ring was found precisely where the middle ring of the enclosure cut across the western side of the cursus (Thomas 2004b, 103).
Almost all of the monuments associated with or in close proximity to the cursus monuments are circular or curvilinear in form. Whether these cursus monuments were added to or were positioned in the location of earlier monuments is difficult to determine from cropmarks alone. However, most of these relationships suggest that the cursus monuments were primary. The excavations at Dunragit, Upper Largie, Holm and Holywood North have all demonstrated that these cursus monuments were replaced by later monuments. In addition, timber circles and barrows are generally later in date than cursus monuments (see below) and so it would appear that such monuments are likely to have been located with reference to the cursus monuments rather than the other way around. In other words, in most cases, later circular monuments appear to have been built in association with the earlier rectilinear cursus monument and indeed this has been shown by excavation in England at the cursus at Springfield, Essex (Buckley et al. 2001).

4.4.3. Function

The use and function of these sites has been the subject of a certain amount of debate (e.g. Brophy 1998; Harding 1999; Loveday 2006a). The linear nature of cursus monuments in general (regardless of boundary form) lends themselves to suggestions that they may have been processional ways or formalised routes, though other functions suggested include structures aligned on a place or astronomical event or linking important areas, barriers between areas of differing significance, symbolic projects, symbolic rivers, an area marked off and given over to the gods or ancestors or for controlling trade or access (Barclay and Maxwell 1998, 114-115; Parker Pearson and Ramilisonina 1998; Loveday 2004; 2006a, 125-126). Others have suggested a connection between cursus monuments and long mortuary enclosures (e.g.Harding 1999; Loveday 2006a), while both Loverday (2006a) and Thomas (2006b) have suggested a relationship between post-defined cursus monuments and Earlier Neolithic timber halls. An individual cursus monument may have encompassed several of these functions, though the wide variation in size and shape evident indicates that no one function is likely to encompass all cursus monuments. Therefore a single unitary purpose cannot be used to explain these sites. Nevertheless, all are linked by their distinctly linear nature, by the fact that all excavated sites seem to have been constructed of oak and that most of those excavated seem to have been destroyed by fire.
4.4.4. Wider context

Looking more widely, while post-defined cursus monuments have been recorded almost exclusively in Scotland (Brophy 1999a, 125), cursus monuments defined by a ditch and bank have a much wider distribution and been recorded throughout Britain (Loveday 2006a). They are often considered alongside the post-defined variety and are certainly connected by their morphological form. Additionally, similar functions have been suggested for both (see above). However, ditch-defined cursus monuments are generally of later date, usually dating to sometime after around 3600 BC (Thomas 2006b, 233), something which may suggest that the spatially restricted, timber built, cursus monuments were replaced by a much more widespread distribution of ditch and bank cursus monuments (Thomas 2006b, 239). It may be that the monuments formed by a bank and ditch developed out of the post-defined variety, something which may be suggested by the replacement of a post-defined cursus by a ditch-defined one at Holywood North (Thomas 2007 see above and section 5.3.2). It is also possible that the differing forms and methods of construction represent differing inspirations and ideas (Thomas 2006b, 239; 2007, 242). Whatever the reasons for the construction of these cursus monuments, it is clear that post- and ditch-defined cursus monuments formed separate, if related, monumental forms. Ditch and bank cursus monuments are beyond the scope of this thesis and have been dealt with in more detail elsewhere (e.g. Brophy 1999b; Loveday 2006a).

4.5. Rectilinear enclosures

Eleven roughly rectilinear enclosures have been recorded as cropmarks. All of the sites included in this group are generally rectilinear in plan though few appear to have been recorded to their full extent (figure 4.7). In form there is a certain amount of variety, and a lack of excavation at these sites means that their attribution to the Neolithic period relies solely upon analogy with other securely dated sites such as cursus monuments and associations with other monuments, meaning that it is possible that some of these sites do not date to the Neolithic. Essentially, this is a disparate group of sites which appear to be of Neolithic date but seem distinctive from other rectilinear monument forms such as longer, narrower cursus monuments.

Typically, rectilinear enclosures measure around 35m or less in length and no more than 28m in width, the only exceptions to this being Melville Muir, 135m long and 62m – 87m wide, and Lochty, measuring 250m long by more than 25m wide. However, for all but
Inchbare and Lauder Barns we do not seem to have recorded the full extent of these monuments. Some of these sites bear a superficial resemblance to post-defined cursus monuments, most notably Melville Muir, Broich Road Farm, Bridge of Keltie and Lochty and so may potentially belong to the same tradition. Other than Inchbare only three other sites appear to be associated with other monuments. The small horse-shoe shaped enclosure at Lauder Barns lies within a much larger timber circle, the enclosure at Millhaugh is only around 40m north of a possible timber circle while the cropmarks of a barrow have been recorded within the enclosure at Melville Muir.

Figure 4.7 Examples of rectilinear enclosures.

4.6. Timber halls

The term ‘timber hall’ is one that was originally used to describe early historic buildings but has more recently also been used to refer to a group of rectilinear timber structures, largely recorded as cropmarks, dating to the Neolithic period (Brophy 2007b, 75). 32 sites can be interpreted as Neolithic timber halls, 12 of which have been excavated. Most have been recorded as cropmarks, though seven were uncovered during excavation. Neolithic halls have proven to be very similar in form to Early Historic timber halls, leading to a certain amount of confusion and difficulties in interpreting these sites from cropmarks. Indeed the cropmark timber hall at Balbridie was excavated because it was thought to be a good example of an Early Historic hall, until proven to be Neolithic (Reynolds 1978; Fairweather and Ralston 1993). This was the first timber hall site at which a Neolithic date was demonstrated and led to a certain amount of re-assessment of similar cropmark sites.
4.6.1. Roofable timber halls

The earlier group of timber halls are represented by the sites excavated at Balbridie (Fairweather and Ralston 1993), Claish (Barclay et al. 2002), Warren Field (Fraser and Murray 2005; Murray 2005; Murray et al. 2006; Murray et al. 2009) and Lockerbie (Kirkby 2006). All are remarkably similar in morphology (figure 4.9), size and date. All appear to date between 3900 and 3600 cal BC (Brophy 2006, 33 and see figure 4.8) and represent substantial timber structures which could have supported a roof, measuring between 22m and 27m in length and 8 to 11m in width, and were burnt down at the end of their life. Each site had a number of internal divisions defined either by individual posts or by continuous slots, dividing the interior space up into several distinct compartments. Entrance gaps were noted within the short ends of all four sites. Where the type of wood used could be identified, the predominant wood type seems to have been oak, though other types of wood were also used, usually for the smaller elements of these buildings. Quantities of material culture and cereal grains have been recovered from all of these sites. Neolithic pottery was recovered from all four, though the pottery and flint found within the timber hall at Warren Field came from distinct areas within the structure, perhaps...
suggesting functional differences between different parts of the building, and a remarkable wooden bowl with carvings was also recovered (Fraser and Murray 2005, 2). Wheat predominates within the cereal assemblages, though at Balbridie the greatest concentration of cereals was found within only one posthole (Fairweather and Ralston 1993, 316), possibly a ‘hoarded’ deposit.

Figure 4.8 Radiocarbon dates for timber halls (from Brophy 2007).

There are some constructional differences between the halls. While Balbridie and Warren Field were defined by foundation trenches containing substantial timber posts, the hall at
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Claish was defined by individual post-pits and the Lockerbie hall seems to have been constructed from a combination of these two methods. The timber hall at Claish had a greater concentration of internal posts at the south end of the structure, which was tentatively suggested by the excavators to indicate the presence of an upper floor (Barclay et al. 2002, 104), while in the central area in which there were fewer posts two pits were uncovered in which a variety of deposits had been placed before fires were lit within them. Finally, at Warren Field, one end may have been an unroofed ‘yard’, while the other appears to have been roofed. Large pits, which do not appear to have had a structural function, were excavated at each end of this hall and these may have held large timbers, which were subsequently removed.

All of these sites are generally thought to have been capable of supporting a roof, and so are usually interpreted as roofed structures (Fairweather and Ralston 1993, 315-6; Barclay et al. 2002, 98; Murray et al. 2009). This is based upon structural elements such as the symmetry of the ground plan and presence of possible roof supports (Murray et al. 2009), the substantial and apparently unitary nature of the structures (Fairweather and Ralston 1993, 316; Barclay et al. 2002, 98) and nature of any artefact assemblages suggesting protection beneath a roof (Fairweather and Ralston 1993, 316). Additionally, the intensity of burning at each site indicates that there was more to burn than simply free-standing posts, suggesting roofed and walled structures (Barclay et al. 2002, 98), while the burnt debris in the top of features at Warren Field may relate to the collapse of a roof after the structure was fired (Murray et al. 2009).

A small number of unexcavated cropmark sites (figure 4.9) appear similar enough to these Earlier Neolithic sites to be interpreted as probable roofed timber halls. They are of comparable dimensions and form to the excavated sites and most have internal divisions; a characteristic feature of the excavated examples. Similarities between these excavated sites and the cropmark sites recorded at Noranbank and Whitmuirhaugh, Sprouston have been noted elsewhere (Smith 1991; Barclay et al. 2002; Brophy 2007b). In addition the timber hall recorded at Boysack also appears to be morphologically similar to these excavated sites, while one of the structures recorded at Muircambus appears reminiscent of the way in which the hall at Warren Field was recorded prior to excavation. The site at Whitmuirhaugh, Sprouston arguably bears the strongest similarities to Claish, Warren Field, Balbridie and Lockerbie. It lies to the south of a cropmark possible causewayed enclosure and Early Historic settlement and has two v-shaped end walls and a number of internal divisions defined by posts. The cropmarks of a large pit obscures the northwest
corner of the hall and a cropmark barrow lies at the southwestern terminal of this structure, perhaps located with reference to the presumably earlier timber hall. The Sprouston hall is narrower than the other early timber halls, measuring only around 5m across, though it is around 19m long. The side walls appear to be defined by spaced pits which coincide with the internal transverse divisions. The close proximity to an extensive cropmark Early Historic settlement may suggest an historical date for this timber hall and it is strongly reminiscent of the Doon Hall A structure which is likely to be Early Historic. However, earlier activity is also attested to within this area, notably the barrow and a possible Neolithic causewayed enclosure (Smith 1991) and the unmistakable similarity in plan to Balbridie could suggest a Neolithic interpretation.

Figure 4.9 Comparative plans of (top) excavated roofed timber halls (from Murray et al 1999) and (bottom) cropmark sites.

A similar interpretative quandary exists with the structure recorded at Boysack. The cropmarks have only ever been recorded rather distantly, which makes obtaining a clear
picture of this site difficult. Nevertheless, this site is also defined by posts, some of which may be organised into transverse divisions though definite patterning is not clear. It appears to have squared ends and has been recorded to the north of an extensive cropmark complex of an unenclosed settlement, which includes characteristic Early Historic timber hall-like structures. However, similarity to the excavated Early Neolithic sites and dissimilarity to known Early Historic halls suggests a prehistoric origin should not be dismissed. Finally, the sites at Noranbank and Muircambus may also be of Neolithic date. That at Noranbank is in the same general area as Balbridie and Warren Field and is similar in size, measuring around 31m by about 8m in width. It is defined by a continuous trench and has one squared and one rounded end, appears to narrow towards the western end before opening out to form the rounded terminal and has at least one internal division and a small number of internal pits. Two possible halls have been recorded at Muircambus and, as one of these is very similar to the Warren Field cropmark, it can tentatively be suggested as a possible roofed hall. Measuring around 28m by 16m (though the full extent of this site has not been recorded), this hall is defined in cropmarks by a continuous trench, or possibly adjoining postholes, with one axial pit at the north end.

The functions of these Balbridie-type buildings have been the subject of much debate, and increasingly the original interpretation of Balbridie as a domestic structure has been called into question (e.g. Topping 1996; Barclay et al. 2002). The finds of cereal grains, pottery and a wooden bowl at these sites could certainly support a purely domestic role. However, a number of odd features have been found at each site excavated: the ‘hoard’ of cereals at Balbridie, the fire-pits in the centre of Claish and the large pits at both ends of the timber hall at Warren Field, suggesting a function beyond the purely domestic. The relative scarcity of these structures in the archaeological record, and large size suggests that they may have played a specialised role within Neolithic life (Brophy 2007b) and attention has been drawn to the division of space within Balbridie and Claish, suggesting control of movement rather than separation into functional spaces or ‘rooms’ (Topping 1996, 164-166; Barclay et al. 2002, 125-127). Ralston (Barclay et al. 2002, 122) has noted the similarity between the western terminal of Balbridie and the facade of the Lochhill long cairn, suggesting that Balbridie and other timber halls were perhaps mimicking mortuary architecture associated with long cairns. Bradley (2005, 65) has equated Balbridie with the concept of ‘big houses’, massively enlarged versions of domestic structures which would have been important to whole communities rather than just the homes of particular groups of people. Therefore, it seems that these roofed timber halls cannot be considered to be purely domestic structures or farmsteads, but instead may have held significance to whole
communities, playing a central role in the life of individuals during the early part of the Neolithic period.

4.6.2. Unroofable timber enclosures

The second group of timber halls, which comprise rectangular enclosures of free-standing timbers (figure 4.10), were constructed several centuries later. Although they are very similar in ground plan to the earlier halls, they do not have the same internal divisions or obvious entrance structures and do not seem to have been able to support a roof. The five excavated examples at Balfarg Riding School 1 and 2 (Barclay and Russell-White 1993), Littleour (Barclay and Maxwell 1998), Carsie Mains (Brophy and Barclay 2004) and Laigh Newton (James et al. 2007) are slightly shorter than the earlier structures, measuring 15m-22m in length, and they do not appear to have burnt down as the earlier structures did. Very little material culture has been recovered at any of these sites. Radiocarbon dates fall between around 3300 cal BC and 2600 cal BC (figure 4.8) and they have generally been assigned mortuary or ceremonial roles.

Two structures at Balfarg Riding School, both consisting of an outer boundary of posts (probably supporting a fence) and internal free-standing post structures, were assigned a mortuary role by the excavator although there was no direct evidence for this (Barclay and Russell-White 1993). The excavator suggested that the internal arrangements of posts may have supported excarnation platforms. Both structures measured around 18m by 9m. Structure 1 was later cut by an Early Bronze Age ring-ditch, while structure 2 appears to have been mounded over and ‘replaced’ by a henge.

The sites at Littleour (Barclay and Maxwell 1998) and Carsie Mains (Brophy and Barclay 2004), were defined by apparently free-standing timbers. The site at Littleour lies only around 250m northeast of the Cleaven Dyke, an earthwork cursus monument. It comprised a boundary of roughly parallel post-pits which bowed outwards slightly along its length, had rounded ends, one large axial pit at the eastern end and measured 22m by 7-8m. Only limited quantities of material culture were recovered from this site, most finds coming from a small posthole within the north side of the structure, which was probably a later addition to the site. The Carsie Mains structure (Brophy and Barclay 2004) is located adjacent to a timber circle and comprised an outer boundary of posts and two internal lines of posts forming two ‘aisles’. It measured 17m long by 7m. As at Littleour, this site was characterised by a lack of material culture. However, charcoal recovered from this site
suggests that the side walls were constructed from oak, while hazel and birch had been used for aisle posts and internal features. A possible tree pit was found to lie at the eastern end of the structure where an axial post might have been expected, and it has been speculated (Brophy and Barclay 2004, 19) that this may represent the enclosure of a pre-existing tree. Both Littleour and Carsie Mains have been interpreted as ceremonial rather than mortuary structures.

Figure 4.10 Comparative plans of (top) excavated unroofable timber enclosures (from Brophy and Barclay 2004, 18) and (bottom) examples of cropmark equivalents.

The only other excavated site is Laigh Newton (James et al. 2007). This comprised a structure measuring 15.5m by 6.5m defined by apparently free-standing timbers. However, instead of a posthole the southwest corner was defined by a pit which has been interpreted as a tree throw, suggesting that either a timber post was set into this pit, or that a living tree
was incorporated into the structure. As with many of the other sites, there was a general lack of material culture.

All of these later timber halls are usually interpreted as unroofed structures, based upon a number of the structural elements and the ground plans of each site. At the two Balfarg Riding School structures, the uneven layout of the internal posts, evidence of post replacement in the interior in contrast to the absence of post replacement in the boundary posts and the spacing of the internal posts relative to the external boundaries all serve to suggest that they were not roofed (Barclay and Russell-White 1993, 176). The spacing of the posts at Littlelour, misalignment of the ‘walls’ and presence of only one axial post also suggests that it was not intended to support a roof (Barclay and Maxwell 1998), while at Carsie Mains the width of the separation between the outer wall posts would have made roofing such a structure difficult (Brophy and Barclay 2004).

A number of morphologically similar cropmark sites (figure 4.10) have been recorded at Westerton, Turfachie, Gilchrist, Balrae, Nether Kelly, Fortingall, Burnbank, Inchbare Cramflat and Nine Wells. Strong similarities to the four excavated structures suggest that they too may belong to this unroofable group of sites. All of these structures are defined by spaced post-pits, although the end walls of two (Nine Wells and Cramflat) may be defined by a continuous trench. The forms of these structures range from rectangular (e.g. Westerton and Fortingall) to boat shaped (Balrae) and, for those sites for which the entire length has been recorded, dimensions range from around 15m to 28m in length and around 4-9m in width. Few have internal features, though a small number seem to have axial posts and, interestingly, the cropmarks of possible tree throws appear to be associated with the boundary posts at the structures at Westerton, Balrae and Nether Kelly.

Taking all of these enclosures together, most appear to exist in isolation although the Balfarg Riding School structures lie within 40m of one another, Carsie Mains is adjacent to a broadly contemporary timber circle, the possible timber hall at Inchbare lies adjacent to a post-defined cursus and the structures at Balrae and Burnbank are located within a few hundred metres of one another and are a little less than 1km from Carsie Mains. Ring-ditches, probably barrows of later date, are found close to Rossie Drain and Shiel's (see below). Finally Cramflat lies adjacent to the cropmarks of an unenclosed settlement. Such later prehistoric associations could cast doubt on the Neolithic date of these sites.
The superficial similarity of these sites to the earlier roofed halls at ground plan level is obvious, even down to the inclusion of architectural elements normally associated with roof support such as axial posts or ‘aisle’ posts. It has been suggested (Brophy 2006; 2007b) that this indicates the survival of an idea or template across the centuries and the mimicking of earlier architectural features, albeit in a non-functional form. It may reflect some kind of shared ‘architectural vocabulary’ (Barclay et al. 2002, 110), or it may be echoing connections between longhouses and long barrows in central Europe (cf. Bradley 1998b; 2002), the survival of the shells of burnt timber halls and a possible association with death and the ancestors resulted in the copying of these architectural forms (Brophy 2005a; 2006; 2007b). Certainly the architectural similarities between these two forms of timber halls indicates some form of shared connection, despite the centuries separating their construction, and a change in function and role.

4.6.3. Other sites

There are a number of other timber structures in the cropmark record which also appear to represent timber halls, though whether they belong to the roofable or unroofable groups or whether they form a distinct group of their own is difficult to discern. However, the lack of internal features and similarity to sites interpreted as mortuary structures suggests that they can be equated with the Later Neolithic halls. These sites include those at Shiells, Berryhill and Rossie Drain, and all comprise structures defined by a continuous trench, some with axial pits. There are pairs of timber halls at Muircambus and Berryhill.

A possible timber hall was excavated at Courthill, North Ayrshire, in 1872 (Cochran Patrick 1972-4). Described as a rectangular stake built structure measuring 14m by 6m which had been burnt, this site was interpreted as a timber mortuary house below a round barrow (Coles and Simpson 1965), although it may also represent a timber hall. However, it has also been interpreted as an Early Historic timber hall below a motte (Linge 1987). It is still not entirely clear which interpretation is correct, though Linge’s (1987) argument currently seems the most persuasive. Finally, a timber structure excavated at Dreghorn, Station Brae (Addyman 2004) and described as three parallel rows of regularly spaced posts may relate to an unroofed Neolithic timber hall, while the disturbed remains of two slots or posts holding burnt timber uprights at Wardend of Durris (Russell-White 1995) and dated to the fourth millennium BC may represent the remains of another, possibly roofed, timber hall.
4.6.4. Wider context

Looking more widely, there are few direct parallels for the roofed timber halls outside Scotland (Barclay et al. 2002, 127-9; Brophy 2007b, 89). Substantial timber halls of the form uncovered in Scotland remain elusive in England and Wales, though a possible example may have been recorded by aerial photography in eastern England (Oswald et al. 2001, fig. 3.14). The small number of rectangular timber buildings that are known from England and Wales (Darvill 1996; Bradley 2007) are generally of much smaller dimensions, simpler form and lighter construction than the Scottish examples, while associated material culture, although broadly comparable, does not contain the same cereal assemblages (Darvill 1996) suggesting differing functions and uses. As a result, these sites appear to bear little comparison to the much more substantial roofed timber halls.

Comparisons have, however, been drawn with the increasing number of rectangular timber buildings excavated in Ireland (Cross 2003). Again, though, these are much smaller in size and of differing construction to the Scottish timber halls and may have had very different functions to the timber halls excavated in Scotland; Irish timber buildings are argued to have been used for feasting (Cross 2003), evidence of which is lacking at Scotland’s timber halls.

Again, there appear to be few direct parallels for the unroofable timber enclosures of Later Neolithic date, though comparisons have been drawn with timber mortuary structures (Brophy 2007b, 89). Sites classified as long mortuary enclosures in England and Wales may bear the strongest comparison, though sites of similar morphology and constructed of spaced posts remain to be identified.

4.7. Timber circles

Timber circles are roughly circular enclosures defined by posts. In total 85 have been recorded, making them the largest group of Neolithic timber monuments recorded in Scotland. Most have been recorded only as cropmarks, though a small number were discovered by chance through excavation. The interpretation of timber circles from cropmarks alone remains difficult as circles of pits in cereal crops can represent Neolithic timber circles, timber structures erected prior to the construction of later barrows or later prehistoric roundhouses. Nevertheless, there are some distinguishing features which can aid the interpretation of these sites from cropmarks, although some difficulties and
ambiguities remain meaning that for a small number of sites it is still impossible to provide a definitive interpretation without excavation.

4.7.1. Excavations

Most timber circles have been recorded only as cropmarks, though a total of 23 have now been excavated, in a restricted range of contexts. Timber circles have been uncovered within the henges of Cairnpapple (Piggott 1950; Barclay 1999), Moncrieffe (Stewart 1985) Balfarg (Mercer 1981) and North Mains (Barclay and Russell-White 1993) and have been shown to pre-date the stone circles at Temple Wood (Scott 1991), Machrie Moor (Haggarty 1991) and Croft Moraig (Piggott and Simpson 1971) (although this site has been recently re-interpreted (Bradley and Sheridan 2005)). What may have been a timber circle was found within Callanish II stone circle on the Isle of Lewis during peat stripping in the 1850s (Ashmore 1995, 13, 16). Timber circles were found within the Later Neolithic palisaded enclosure at Meldon Bridge (Speak and Burgess 1999) and Forteviot (Brophy and Noble 2009), associated with a complex of features at Upper Largie (Cook 2005) and adjacent to a Late Neolithic timber hall at Carsie Mains (Brophy and Barclay 2004). Finally, a possible timber circle was destroyed in 1951 during quarrying at Auchinteck (Stewart and Feachem 1950-51) while a timber circle excavated within the recumbent stone circle at Strichen has been dated to the Late Bronze Age (Phillips et al. 2006).

These excavations have provided invaluable information about Scotland’s timber circles. They have shown that there is variety in terms of the size of these sites, with diameters ranging from 47m at Upper Largie to 2.5m at one of the Meldon Bridge timber circles, and that not all timber circles are truly circular, with many shown to have been elliptical. The use of ramps to assist the erection of individual timbers was demonstrated at North Mains, Machrie Moor I and Temple Wood. Where it has been possible to estimate the diameters of timbers used, they appear to range from 0.15m to a maximum of around 0.6m, though most cluster around the larger end of this scale. The type of wood used for these posts has been recovered at only three sites (Temple Wood, North Mains and Carsie Mains), which means that it is very difficult to make any general statements. Nevertheless in all three cases oak was identified, suggesting that it was the preferred in the construction of these monuments, in line with other Neolithic timber monuments (Noble 2006a, 57).

Limited quantities of material culture have been recovered from these sites, the only exceptions being Balfarg, where substantial quantities of Neolithic pottery, flint, burnt
bone and charcoal were found associated with the southern and western postholes of the main circle (Mercer 1981, 84-101), and Machrie Moor I, where finds of Grooved Ware pottery, pitchstone and flint were associated with the postholes of the main timber ring of this complex site (Haggarty 1991, 62-63). At other sites very little or no material culture has been recovered. Internal features have been uncovered at around half of the excavated timber circles, most taking the form of slight features such as postholes or pits, though the exact form of these features varies from site to site and is unclear.

![Radiocarbon dates for timber circles.](image)

Figure 4.11 Radiocarbon dates for timber circles.

Only a small number of these sites have been securely dated. Gibson (2005, 62) suggests most sites across Britain can be dated to between 2800BC and 1000BC, although some less reliable dates from timber circles could extend this range slightly in either direction. Of those dates obtained for timber circles in Scotland (figure 4.11), most appear to fall within the earlier end of this date range. Carsie Mains (Brophy and Barclay 2004, 8) and Temple Wood both produced earlier dates than this, though the date provided for Temple Wood may be from old wood or residual material, so could be several centuries too early (Scott
1991, 93) and should be treated with caution. In addition, it has been suggested (Gibson 2005, 46) that timber circle B at North Mains (see gazetteer) may have a similarly early origin. A recently obtained radiocarbon date for this site (Barclay 2005, 86, 88) indicates that the henge bank was constructed several centuries after timber circle A, and so both timber circles uncovered within this henge must have originally existed as free-standing circles. This may also have been the case at other henge sites, and indeed this has been suggested for the timber circle at Cairnpapple (Barclay 2005, 88). While this suggests that many of Scotland’s timber circles were built during the Late Neolithic, Bronze Age dates are indicated for timber circles at Croft Moraig (Bradley and Sheridan 2005) and Strichen (Phillips et al. 2006), both of which appear to have been built within existing stone circles, and possibly also for the timber circle excavated within the Broich cursus at Crieff High School (Haines in prep).

Taking this together, this suggests that, of those sites which have been dated in Scotland, many are a Later Neolithic phenomenon, though an origin earlier in the Neolithic may be suggested for some, and the construction of timber circles continued into the Bronze Age, in some cases the 2nd millennium BC. Those of later date tend to be on the smaller end of the scale in terms of dimensions. Looking more widely, this is comparable to the dating suggested for timber circles within Britain as a whole (Gibson 2005), though dates such as those obtained for the timber circle at Carsie Mains suggests that some timber circles in Scotland may be slightly earlier in date than those currently known elsewhere. Scotland’s timber circles also seem to conform to a general pattern of simple small diameter timber circles built at both the beginning and end of this sequence, and the larger more elaborate timber circles in the centuries either side of 2500 BC (Gibson 2005, 75-77).

4.7.2. Cropmarks

Added to these excavated timber circles are a large and growing number of cropmark sites. In all, 63 sites have been recorded as cropmarks and have not been excavated. These sites are found in a range of contexts and vary in size and form (figure 4.12). All are roughly circular on plan, though not all form a true circle and many are actually elliptical or oval. A small number have been found in association with the cropmarks of henge monuments (Easter Cadder, Forteviot, Shannas, Berryley, Coldrochie, Mains of Ballindarg), while the majority of the rest appear to be free-standing circles, though many are in proximity with other monuments.
Taking all of the timber circles together (excavated and cropmark), a certain amount of variety is obvious. They range from 2.5m in diameter to around 75m in diameter, where there is a hiatus between the largest timber circle and the much larger palisaded enclosures (section 4.9), at more than 200m in diameter. The timber circles range from truly circular to oval in plan and the dimensions and spacing of the post-pits can vary considerably. Although the dating of these sites from cropmarks alone is problematic, it is possible to suggest that those of larger diameter and recorded within henge monuments are likely to be of later Neolithic date, while small diameter timber circles could date to either earlier or later in the sequence (Gibson 2005, 75-77 and see above). Going beyond such general understandings without excavation is, however, difficult, but the preponderance of dating evidence from excavated timber circles is currently weighted to the Neolithic, not Bronze Age. These sites are discussed in far greater detail elsewhere (Millican 2003; 2007).

Figure 4.12 Examples of timber circles recorded as cropmarks showing the variety in specific morphology and dimensions.
4.7.3. Context

Many of the timber circles recorded in Scotland appear to have existed as part of wider complexes of monuments, often comprising other timber monumental forms such as pit-defined cursus monuments, timber halls or palisaded enclosures as well as henges and earthwork cursus monuments. Just over half of the timber circles recorded in Scotland lie in close proximity with other broadly contemporary monuments or within henge monuments. From this evidence, it appears that many timber circles seem to have functioned as part of a larger complex of sites. Whether these complexes grew around existing timber circles, or the timber circles were secondary developments added to existing sites is difficult to determine, especially for cropmark sites. However, where timber circles are recorded in conjunction with post-defined cursus monuments, the relative dating of these monuments (see section 4.4.1 and above) does suggest that the timber circles are likely to be secondary additions to earlier cursus monuments.

Where timber circles have been excavated within henge monuments, they have often been proven to pre-date the later henge (Gibson 2005, 46). A similar sequence of events can be seen at sites where timber circles were later replaced by stone. It is possible then that many of the timber circles recorded on aerial photographs similarly formed the primary component of larger complexes, though it would be unwise to assume the same sequence at each site and a certain amount of variety should be expected. However, proximity of cropmark sites does not necessarily mean that the sites in question were actually associated, given the ‘temporary’ nature of timber. Whether earlier sites were still visible when later sites were constructed is impossible to determine from cropmark evidence alone. Nevertheless, all timber circles identified as part of a monumental complex are associated with sites which could be dated very broadly to the Neolithic period. Therefore it seems reasonable to assume that there was some relationship between the sites or they were at least constructed in a shared significant place.

The rest of the timber circles in Scotland, just under half of those recorded, appear to have existed on their own. Many of these sites though have proven difficult to interpret. Nevertheless, on current evidence it is possible to suggest that they probably do date to the Neolithic period, or perhaps less likely the Bronze Age, and demonstrate that timber circles could exist and function as free-standing structures and as monuments in their own right. Examples include Westerton, Torr Wood and Meikle Geddes. It may be that these sites
represent timber circles which, for one reason or another, did not ‘develop’ into larger monumental complexes as at other sites.

**4.7.4. Purpose**

The purpose of timber circles is far from clear. Some form of ritual or ceremonial function is usually suggested (Tolan 1988; Millican 2003; Gibson 2005), often relatively undefined, and both the context of many timber circles (in apparent association with other ritual monuments, within henges or replaced by later stone circles) and evidence from excavation (Gibson 2005) appear to add weight to this hypothesis. The lack of material culture at most excavated timber circles and the apparent structured deposition at the few sites at which quantities of material culture are found suggests that these sites were not used for any kind of domestic purpose as we understand it. Neither is there any evidence of any association with mortuary activities. However, few other clues are provided as to what these sites were actually used for. Nevertheless all timber circles define an area of space, marking a distinction between the area within from that without and suggesting a concern with demarcating an area and perhaps controlling access to the interior of the monument. The manner in which the internal area was enclosed, whether simply by spaced posts or by a continuous barrier or fence (for which little evidence survives), will have affected both the function and experience of the internal space.

Looking more widely, evidence from timber circles beyond Scotland may indicate other possible functions. The orientation of entrances and other architectural features of some circles may suggest a focus upon cardinal, lunar or solar orientations, perhaps indicating that these timber circles had some form of calendrical function (Gibson 1994; 2005). For example, the entrance of the Sarn-y-bryn-caled timber circle, Powys, was oriented more or less due south (Gibson 1992; 1994), as was the avenue of the Durrington Walls North circle, Wiltshire (Wainwright and Longworth 1971), while at Balfarg, most finds came from the southern and southeastern parts of the circle (Mercer 1981). The aforementioned avenues leading to some timber circles south of the border suggests formalised entrance and procession, something which may also have taken place at sites where no avenue has been recorded. Certainly, if some timber circles are envisaged as comprising a continuous fence, then formalised entry is likely to have formed a part of the rituals and ceremonies at such a site. Structured deposition clearly took place at some sites, something seen in Scotland at the timber circles of Balfarg (Mercer 1981) and Machrie Moor (Haggarty 1991), but also at sites such as Woodhenge (Burl 1993) and Durrington Walls (Wainwright
and Longworth 1971), both in Wiltshire, and Knowth, Co. Meath (Eogan and Roche 1994; 1997). Therefore, at some sites, the deposition of artefacts may have formed a part of the activities and ceremonies that took place (Gibson 1994, 208; 2005, 106-7).

Timber circles are part of a larger tradition of circular monuments constructed in the Late Neolithic and Early Bronze Age and Bradley (1998b, 109) has suggested that the use of a circle in the construction of monuments may reflect a shared cosmology; a general perception of space which extends outwards from the person and upwards into the sky. This may suggest a broad connection of shared beliefs behind the varied circular monuments of the Late Neolithic and Early Bronze Age. Nevertheless, the diversity evident in size, chronology, specific morphology (figure 4.12) and, from the limited excavation evidence, method of construction indicates that it is unlikely that all performed the same function and it would be dangerous to seek a single unified function for this diverse range of sites.

4.7.5. Wider context

The timber circles recorded in Scotland form one part of a wider context of timber circles. A large corpus of these sites is known, extending throughout England and Wales, with an outlying range of sites in Ireland (Gibson 1994; 2005). The morphology of these timber circles is much more varied than those in Scotland, and many have features such as entrances or multiple circles which are uncommon or not known at all in Scotland. It is difficult to determine why this is the case, though it may be a reflection of the differing functions and purposes of timber circles elsewhere or merely the fact that similar timber circles have yet to be recorded in Scotland either by aerial photography or excavation. Whatever the reason, the timber circles known in Scotland should not be separated from this wider context.

4.8. Curvilinear sites

A small group of curvilinear sites which may resolve themselves into oval enclosures have been recorded, though the full extent of some is not known. The majority have been recorded as cropmarks though one has been excavated. Thirteen such sites have been recorded, although it is suggested below that one (Kinloch) could also be interpreted as a possible palisaded enclosure. Although small, this is a fairly diverse group of sites (figure 4.13) for which very little information is available. Some appear similar to timber circles.
(Redden and perhaps Hall of Aberuthven) and others lie in close proximity to other possible Neolithic timber structures (Drumflower, Tibbers, Meldon Bridge and Forteviot). As so little is known about this group of sites, some may not date to the Neolithic period at all and a small number of sites could also be explained as curving pit-alignments. The large size of the pits recorded at Selvie Wood and Shielhill, the straggling nature of the boundary and the fact that the full extent of neither has been recorded may suggest that these two sites should be interpreted as pit-alignments rather than curvilinear enclosures. Similarly, the large size of the pits recorded at Burnbank 1 and intermittent nature of the boundary may suggest that it too is related to a pit-alignment. Nevertheless, despite these possible alternative interpretations, these sites are included in this group as possible curvilinear enclosures dating to the Neolithic period because of the possibility that all may form coherent curvilinear enclosures, the similarity of some to timber circles and proximity of other sites assigned to the Neolithic.

Five of these sites lie within larger complexes of sites. The enclosure at Drumflower lies immediately adjacent to a short avenue (figure 4.2), while the enclosure at Tibbers has been recorded close to a post-defined cursus monument and pit-alignments. Part of a curvilinear enclosure of ambiguous date was uncovered within the palisaded enclosure at Meldon Bridge (Speak and Burgess 1999, 45-47). Only a small part of this site was excavated (around 30 metres of the circuit of the enclosure). Sherds of pottery recovered from and around this enclosure suggest that a Neolithic date is possible, and it may have been contemporary with the surrounding palisaded enclosure. The two Burnbank enclosures have been recorded within 40m of one another and lie within a wider complex of sites of varying dates, including square barrows and possible grave pits. A possible timber hall or avenue lies only around 100m to the north and the timber hall at Balrae is situated around 270m away. Of interest is the form of the northern Burnbank enclosure. This oval enclosure measures only around 25m by 17m and has what may be an out-turned entrance on the west. Such out-turned avenues are a distinctive part of many Later Neolithic palisaded enclosures and have never been recorded at such a small site, suggesting that this enclosure may share certain architectural traits with the much larger palisaded enclosures. However, the earlier caveats about this group of sites must be borne in mind. In addition, the pits forming the entrance are rather large, and if they do form an avenue entrance then there would be very little room between the posts. They certainly do not resemble any of the avenue pits recorded at any of the palisaded enclosures. All of this does call into question the interpretation of this site as dating to the Neolithic. Without other parallels to draw upon, it is difficult to make a more definite interpretation.
Therefore, the interpretation of this site, and indeed some of the other curvilinear enclosures, remains rather ambiguous.

4.9. Palisaded enclosures

Palisaded enclosures are massive timber enclosures, usually measuring more than 200m across and dating to the Later Neolithic (Gibson 2002b). Five definite and one possible palisaded enclosure have been recorded in Scotland, all but one as cropmarks (figure 4.14). Most sites are defined by individual post-pits with a single entrance in the form of an out-turned avenue and three have a natural feature as one element of their boundary. There is a clear association with other ritual monuments, such as henges or timber circles, which are often contained within the boundaries of the enclosures themselves. Excavations have taken place at the cropmark sites at Meldon Bridge (Speak and Burgess 1999), Dunragit (Thomas 2002; 2004b) and Forteviot (Brophy and Noble 2007; 2009). The upstanding enclosure at Blackhouse Burn (Lelong and Pollard 1998) is also considered to be a palisaded enclosure for the purposes of this discussion. A further palisaded enclosure has also been recorded at Leadketty and part of the circuit of another possible palisaded enclosure can be seen at Kinloch.
The palisaded enclosure at Meldon Bridge (figure 4.14d) encloses a promontory between the Lyne Water and Meldon Burn, with these water courses effectively forming the east and south sides of the enclosure. Excavated between 1974 and 1977 in response to development, it was the first of these sites to be investigated in Scotland (Burgess 1976; Speak and Burgess 1999). Although limited in scale relative to the overall monument, the excavations investigated sections of the timber perimeter itself and some of the interior of the enclosure. The timber perimeter measures around 600m in length, encloses an area of around 8ha (Gibson 2002a, 19) and has a single entrance avenue on the northwest formed by a double line of paired post-pits around five metres apart. It seems to have been erected sometime around 2600 cal BC and was preceded by earlier pit-digging activity, beginning in the early to mid fourth millennium BC.

The timber enclosure itself consisted of large posts, some of which may have stood up to seven metres in height (Gibson 2002b, 14), with two smaller posts set between each larger post. These smaller posts were interpreted as support for cladding of horizontal timbers (Speak and Burgess 1999, 15), therefore the perimeter of the enclosure can be suggested to have comprised a solid ‘wall’. However, the absence of the smaller posts between four of the main posts on the northern section of the enclosure suggests that this part of the enclosure at least was left open. This location coincided with two of the largest post-pits uncovered and the only post-pit which showed evidence for replacement. Speak and Burgess (1999, 20-24) suggested that this may represent a second entranceway, perhaps a double gateway, although an alternative interpretation might be a viewing position permitting people to see into or out of the enclosure. Whatever the interpretation, this raises the possibility of other similar open sections of perimeter within the parts of the enclosure not yet excavated.

The post-pits themselves varied in depth and diameter, as did the post-pipes within the postholes (0.4 to 0.6 metres in diameter), indicating that timbers of varying sizes had been used. In general, larger closer set timbers were used for the posts on the northern section of the enclosure to those on the west, though before making any general statements about the timbers as a whole, it must be borne in mind that only small sections of the perimeter have yet been excavated. Ramps had been used to assist the erection of individual timbers and all the posts had been left to decay in situ. Only one post showed signs of replacement and, as the small numbers of dates available for the timber perimeter are in broad agreement with one another, the enclosure appears to have been a single phase monument, though again larger scale excavation may provide a different picture. A number of internal features
were also uncovered, including stake holes, upright timbers, timber circles, cremations and cists. Some of these were contemporary with the construction and use of the palisaded enclosure and may have been central to the use of this site.

Figure 4.14 Comparative plans of palisaded enclosures; (a) Leadketty (b) Forteviot (c) Dunragit (d) Meldon Bridge (e) Kinloch (f) Blackhouse Burn (Transcriptions: author. Blackhouse Burn: Lelong and Pollard 1998).
Excavations have also been undertaken at Dunragit palisaded enclosure (Thomas 1999a; 2001b; 2002; 2004b). Unusually, it comprises three concentric rings of posts (figure 4.14c), the largest of which has a diameter of just less than 300 metres, while the smallest is around 110 metres across. The middle ring has an out-turned avenue entrance with slightly bowed sides, while the outer ring has a scalloped appearance suggesting either that it was built in separate sections (Gibson 2002a, 17) or that it was constructed around other existing sites or natural features. There are a number of smaller sites associated with this enclosure, including timber circles and ring-ditches, lying both within and outside the enclosure. Only some of the northern section of the palisaded enclosure has so far been excavated. Here an earlier cursus monument which was burnt down was found to pre-date the palisaded enclosure (Thomas 2004b, 102). The largest posthole of the middle ring of the palisaded enclosure was located precisely where it cut across this cursus and a stone axe, the only material culture of any kind found in association with the middle circuit of the enclosure, was found at the base of this posthole. The palisaded enclosure therefore appeared to reference the earlier monument and it has been suggested that the existence of the earlier structure may have influenced the location of the later palisaded enclosure (Thomas 2004b, 103).

The excavations have shown that all three rings were constructed of large timbers set within individual post-pits. However, the postholes of the inner ring were larger than those of the outer two with ramps to aid the erection of the posts (figure 4.15). Smaller postholes were uncovered between the main timbers of the two outer rings but not those of the inner ring, suggesting that the outer rings formed a continuous palisade while the inner ring may have comprised spaced timbers. Most of the timbers were left to decay in situ and only the inner ring was shown to have more than one phase of construction. Here, the second phase of posts diverged from the line of the first phase, perhaps indicating that little remained of the earlier posts to aid the location of those erected later (Thomas 2004b, 103), and that a considerable period of time may have elapsed between the two phases. More material culture was associated with this inner ring and, where a number of posts had been pulled out at the end of the second phase of construction, distinctive deposits had been placed in the hole left.

The differences between the two outer circuits and the inner circuit seem to suggest that the inner was the focus of the monument, while the outer rings may have served to restrict access to the interior. Thomas (2004b, 103) suggests that the whole monument may have been rebuilt on at least one occasion, each phase comprising an inner timber circle.
surrounded by one outer fence. This would mean that the whole monument changed in size substantially between the two phases. This explanation is entirely plausible, but any difference in the dating of the two outer enclosures cannot yet be proven, and it is still possible that both stood at the same time. Certainly, even if they do relate to different phases of construction, the fact that the posts were left to decay in situ may suggest that the earlier circuit could have still been visible when the later was constructed and so may still have formed an integral part of the monument as a whole.

Figure 4.15 Dunragit. A posthole of the inner ring showing the ramped profile, large dimensions and evidence for two phases of use. 878 is the cut of the second phase and the fill is distinctly darker from the first (from Thomas 2004, 181).

The entrance avenue of the palisaded enclosure at Forteviot has recently been excavated (Brophy and Noble 2007). This enclosure was also recorded as cropmarks and comprises an oval enclosure (figure 4.14b) measuring around 265m by 220m and enclosing an area of around 6ha (Gibson 2002a, 18). The western side of the enclosure appears to have been formed by the edge of a natural terrace and the entrance is formed by a double line of posts on the north side of enclosure. Excavation of this entrance demonstrated that the avenue was formed by large posts of varying size, set around four metres apart. Additional smaller features were uncovered around the main posts and a possible tree throw was found on the line and at the end of the eastern side of the avenue. Radiocarbon dates cluster around 2700-2500 cal BC (K. Brophy pers.comm.). Monuments and features have been recorded within the enclosure itself, again as cropmarks. These include a large henge monument with a surrounding timber circle, smaller ring-ditches, pits and pit-settings (referred to earlier). Two henge monuments have been recorded outside the enclosure.
The enclosure at Blackhouse Burn (figure 4.14f) is different in form to the other palisaded enclosures. It comprises as a large oval upstanding banked enclosure around 300m in diameter and does not have the same elaborated entranceway; rather, entrances are defined by breaks in the bank (Lelong and Pollard 1998). It was constructed in a wet location on the edge of a bog, and the double head of the Blackhouse Burn rises within the enclosure itself. Excavation of a small proportion of this large enclosure was carried out in 1985-6 (Lelong and Pollard 1998) and demonstrated that earlier activity had taken place in the form of light stake-built structures and a hearth. Later, two rows of large spaced posts were erected marking out a large oval enclosure and a bank of stones was constructed between the posts. At a later stage, while the posts were still standing, the bank was widened by placing stones around the base of the posts. Then, once the posts had decayed more stone was added to the bank to create the structure we see today. Later still, probably sometime during the Bronze Age, a smaller stone-built enclosure was constructed adjacent to the larger enclosure. Waterlogged oak posts were preserved within some of the postholes of the large enclosure (figure 4.16), one of which provided a radiocarbon date of 2697-2453 cal BC (GU-1983). This enclosure of oak posts with their central bank of stones would have presented a continuous barrier, though whether the posts above the stone bank were free-standing or joined by planks or hurdling cannot be determined. The outer boundary of the enclosure as a whole has a segmented appearance, perhaps suggesting that it was constructed over a period of time or by different groups of people.

Figure 4.16 Blackhouse Burn. Sections through postholes containing waterlogged posts (from Lelong and Pollard 1998, 25).
Two further enclosures have been recorded only as cropmarks. The palisaded enclosure at Leadketty (figure 4.14a) lies only a few kilometres west of the Forteviot enclosure and a similar scattering of internal features have been recorded. No excavation has taken place at this site, but it is similar in form to Forteviot though larger, measuring around 400m from east to west by around 230m. The south side of this enclosure appears to be formed by the edge of a natural terrace and the entrance is formed by an avenue of spaced posts around four metres apart. Finally, a cropmark enclosure recorded at Kinloch (figure 4.14e) may represent an additional palisaded enclosure. This site comprises a long curving line of pits with a similar scalloped appearance to that recorded at Dunragit, perhaps forming one side of a large palisaded enclosure measuring more than 300m across. Neither the full extent of this site, nor an entrance of any form has been recorded; therefore it is possible that it may merely be a pit-alignment. Nevertheless, the enclosure crosses into fields so far not suitable for cropmarks, so may conceivably be much larger than currently known and should be considered a possible palisaded enclosure.

Taking these sites together, it is obvious that these were massive enclosures requiring huge investments of time and resources, each requiring hundreds of trees to construct (Gibson 2002b, 13-15). Earlier activity appears to have taken place at most sites, indicating that the location was important even before the palisade was constructed, and perhaps influenced the choice of location for the final monument. Those that have been excavated appear to have been in use between around 2900 and 2000 BC, though the actual construction of these enclosures can be suggested to have taken place between around 2900 and 2500 BC (figure 4.17). All these enclosures seem to have been constructed using massive oak posts and most are likely to have presented solid barriers, with further timber cladding added to the upright posts, indicating a desire to control access to, and visibility into, the interior of the enclosure. The fact that most have narrow out-turned entrances further suggests that control and restriction of access was a concern and it has been suggested that these entrances may have served to further restrict the visual access of those approaching the enclosures (Gibson 2002a, 9-10). The fact that the entrances at all but Dunragit approach at an angle may suggest that the entrances were designed to further control and restrict visual access to particular parts of the interior as an individual was approaching the enclosure (Gibson 2001, 76). Most palisaded enclosures contain smaller monuments within their boundaries, hinting at the activities that took place within them and the form of some, such as henge monuments, suggests an even greater concern with restriction and control.
4.9.1. Wider context

A small number of similar sites are known from England and Wales, only one of which, Walton, Powys, has the same avenue entrance and spaced pits as Scotland’s cropmark enclosures. The rest are defined by much closer-set posts, some of which are set within palisade trenches (Gibson 2002a, 5). Few appear to have been recorded to their full extent and some, such as the c.24ha Hindwell enclosure, are truly massive and on an even larger scale than the sites recorded in Scotland. The scale of these sites as a whole, but in particular the very large sites, makes recording and recognising them as coherent entities very difficult. It would be very difficult, if not impossible for the cropmarks of sites such as the enclosure at Hindwell to be recorded on a single aerial photograph, and where an enclosure crosses several fields, differing crops may produce cropmarks in different years. Therefore, it is possible that additional palisaded enclosures, perhaps even of different form to those already known, have been recorded already as pit-alignments which have yet to be recognised as coherent enclosures, of which Kinloch is a good example.
Dates obtained from palisaded enclosures excavated in England and Wales indicate that they are roughly contemporary with, or slightly later in date than the palisaded enclosures in Scotland (Gibson 2002b, 6, 7). They include sites such as Greyhound Yard, Dorset (Woodward 2000; Gibson 2002b, 17), of which an arc of closely spaced posts more than 40m in length has been recorded. Excavations here revealed large ramped postpits and a date range centring on 2800-2600 BC. The palisaded enclosure at Mount Pleasant, Dorset (Wainwright and Longworth 1971, 20; Gibson 2002b) was roughly oval in form with contiguous posts set within a palisade trench. Excavation produced dates ranging from c. 2600 to 1900 BC. Two final examples are the palisaded enclosures at West Kennet, Wiltshire (Whittle 1993, 21, 22; 1997; Gibson 2002b), both of which were also defined by substantial contiguous posts set within a palisade trench. Part of the circuit of West Kennet 1 was defined by a double palisade. Dating has proven difficult for West Kennet 2, though the dates obtained for West Kennet 2 centre on c. 2600-2100 BC. As is the case with the palisaded enclosures in Scotland, all of the enclosures excavated in England and Wales were defined by substantial timber posts and would have formed impressive monuments. The main differences from those in Scotland are the method of construction (only the Walton enclosure appears to have been built in the same manner) and possibly the date of some enclosures, which may be slightly later in date. Nevertheless, they all form one part of a Later Neolithic repertoire of monuments, enclosing large areas within substantial timber structures.

4.10. Mortuary structures

A small number of excavated timber structures could be interpreted as mortuary structures. Two main forms of structure are obvious; large post structures over which later barrows were constructed, and palisade structures. In addition, a small number of structures similar to timber halls have also been classified as mortuary enclosures in the NMRS. Whether all of these structures did have a mortuary role is a matter of debate, particularly as only a small number can definitely be shown to be associated with any mortuary deposits.

4.10.1. Split-post structures

Excavations at a small number of long and round barrows in Scotland have demonstrated that these monuments cover timber structures, usually composed of large upright timbers. Such structures have been found beneath the barrows at Lochhill (Masters 1973), Slewcairn (Masters 1983), Pitnacree (Coles and Simpson 1965) and Dalladies (Piggott
1971-2; 1973) and beneath the cairn excavated at Eweford (MacGregor and Shearer 2003). All are remarkably similar in form (figure 4.18), generally comprising pairs of large postholes, which held D-shaped posts, probably the split trunk of a single tree (Masters 1973, 97; Noble 2006a, 71), and sometimes a central posthole, usually holding two smaller posts. All appear to have been left to decay in situ, and some were later replaced by a stone and timber structure, which was burnt down before being covered by a barrow. Long and round barrows and cairns are poorly dated, but activity seems to have taken place between the start and second half of the fourth millennium BC (Noble 2006a, 71) and so it is possible to suggest that the post structures fall within this date range also. The small selections of dates obtained (figure 4.19) do suggest that such structures may have been constructed anytime between 4000 and 3300 BC.

At Pitnacree (Coles and Simpson 1965), two oval pits with ramps were dug to take two massive timbers at some point during the fourth millennium BC. These timbers were left to decay in situ before a stone enclosure with a roofed entrance was constructed around the previous location of the two timbers. Within this enclosure three cremations were placed, these burials were quickly covered by a rectangular stone setting and a round barrow was built covering all these features.

A similar structure was found beneath the long cairn excavated at Slewcairn (Masters 1980; 1983; Noble 2006a, 80-82). Here two outer pits had each held a large D-shaped post, possibly two sides of a single split timber, while the central pit seems to have held two smaller posts. The timbers here were left to decay in situ, and their bases left in place when the remnants were later removed or fell. At a later stage the upper halves of these postholes were the focus of deposits of cremated bone, ‘black soil’ and boulders, and an identical deposit was found filling a wood and stone structure constructed around the earlier position of the postholes. This later structure comprised a rectangular setting of stones with a slight wooden superstructure, subsequently burnt down. Cremations were placed within this structure, which seems to have been constructed and burnt while the outer cairn was being built.

At Lochhill (Masters 1973), the earliest structure again comprised two large D-shaped timbers and a pair of central posts within a single pit. There is no evidence that these posts were removed or burnt, therefore they too seem to have been left to decay in situ. At right angles to these posts was a concave facade comprising a series of posts, all of which seem to have burnt down. A burnt oak plank floor was found between two of the pits and around
this was a rectangular stone setting, underneath and within which pieces of birch bark were found. Several deposits of cremated human bone were found partly on the oak floor and partly within the stone filling of the stone setting. Originally, this was all interpreted as part of a unitary whole. However, this sequence has since been reinterpreted (Noble 2006a, 83) and two distinct periods of construction have been suggested, with the D-shaped timber structure comprising the earliest element which was then left to decay in situ before the stone and timber elements were constructed and burnt. A long cairn was then constructed over these structures. A single radiocarbon date of 4250-3600 cal BC (I-6409) was obtained from a plank of the oak floor.

![Comparative plans of split-post structures](image1)

Figure 4.18 Comparative plans of split-post structures (Masters 1973, 98; Kinnes 1992, 207; Coles and Simpson 1965, 39; Piggott 1971-2, fig 8; Lelong and MacGregor 208, 22).

![Radiocarbon dates for split-post structures](image2)

Figure 4.19 Radiocarbon dates for split-post structures.
The timber structure excavated below the long barrow at Dalladies (Piggott 1971-2; 1973) comprised three large D-shaped pits, with an additional pair of small postholes at the northwest end. This time, though, the large pits were interpreted as holding several smaller posts, though Noble (2006a, 83) suggests that the large size of these pits, presence of ramps and similarity to other sites (see above) suggests that these pits also held massive posts, the smaller posts representing re-use. These posts seem to have been left to decay in situ, after which a timber and stone structure was constructed, comprising a three-sided stone enclosure within which a timber structure of lateral horizontal timbers with a birch bark roof was built. The two small posts at the northwest end were renewed and the whole structure was burnt down. The only mortuary deposit associated with this monument, comprising an unburnt fragment of human skull, was found on the floor of the timber and stone enclosure (Piggott 1973, 33).

One of the timber structures excavated below the cairn at Eweford (MacGregor and Shearer 2003; Lelong and MacGregor 2008 and see section 7.4.1) bears a strong resemblance to those already described. This too was defined by three large pits, each of which held a substantial timber. Around this, a rectangular stone and timber structure had been constructed, which had been burnt down before a long barrow or cairn was constructed.

These post structures represent the earliest constructions on these sites and are remarkably similar to one another, each comprising what is probably a single tree trunk split in two with additional posts. The fact that they have been found beneath cairns and barrows within which human remains have been found has led to their interpretation as supports for timber mortuary structures; Scott (1992) has suggested that they may represent excarnation platforms. However, the function of these structures has recently been reconsidered as none actually appear to be directly associated with mortuary deposits (Noble 2006a). Instead, any mortuary deposits seem to be associated with later stone and timber structures. Additionally, the fact that the timbers were left to decay in situ before later activity suggests a considerable period of time may have elapsed before the later structures were built and so the purpose of these earlier structures may have been different from those that replaced them. Nevertheless, the later structures and barrows were clearly located with reference to the earlier post structures; later stone and timber constructions were located exactly over the positions of the earlier post structures. Such an exact and consistent replacement of the earlier structures may suggest an element of continuity of use or
purpose. It may be that such a progression was intended and planned and that remnants of the original structure may have still been visible.

Looking more widely, comparable split-post structures have been excavated beneath barrows and cairns in England and Ireland (Kinnes 1992; Noble 2006a). Most of these are remarkably similar in form to the split-post structures in Scotland, generally comprising pairs of D-shaped postholes probably holding two sides of a split tree trunk. Similarly, some were also left to decay in situ and may have formed free-standing elements prior to the construction of a later cairn or barrow (for example, Wayland’s Smithy in Wiltshire and Haddenham in Cambridgeshire, see Noble 2006a). However, there are some differences. Several of the structures have more definite mortuary associations, so may indeed have been built to accommodate burials, while some form integral parts of larger timber structures (e.g. Street House, Yorkshire, and Nutbane, Hampshire). Finally, the split-post structures excavated at Street House and Dooney’s Cairn, Ireland, were burnt rather than being left to decay and may form part of regional traditions of ‘crematoria’ (Kinnes 1992, 84). Despite such differences it is clear that the split-post structures in Scotland formed only one part of a wider tradition of such structures and the differences seen may merely reflect the limited number of split-post structures excavated north of the border.

4.10.2. Palisade structures

A small diverse group of rectilinear or trapezoidal palisade structures have been excavated (figure 4.20), namely Eweford West, Pencraig Hill (Lelong and MacGregor 2008), Kintore (Cook and Dunbar 2004), Kirkburn (Cormack 1962-3) and Inchtuthil (Barclay and Maxwell 1991), some of which appear to have been mounded over at the end of their lives. At some of these sites the mortuary role seems more assured. To the northwest of the Eweford structure already described was a three-sided rectangular structure, open at one end, comprising two parallel slots linked by a perpendicular slot (MacGregor and Shearer 2003). These seem to have held timbers which were subsequently burnt down. Within the slots occasional pieces of burnt bone were recovered, suggesting a mortuary role. At Pencraig Hill (McLellan 2003b; Lelong and MacGregor 2008), a sub-trapezoidal timber structure which was open to the southwest was excavated. Three palisade trenches, which appear to have been constructed in sections and holding wooden fencing were uncovered. The two side sections of this wooden structure consisted of flat wooden planks held in place by redeposited natural, while the front facade comprised individual timber posts and
possibly a wattle screen. A small sub-oval timber structure lay close to the front facade, centrally placed between the two side sections. It had been burnt and was associated with cremated bone. This has been interpreted as a cremation pyre and the whole structure is probably Early Neolithic in date. It may have subsequently been covered by an earthen long barrow.

Figure 4.20 Plans of excavated palisade structures; (a) Pencraig Hill (Lelong and MacGregor 2008, 34) (b) Kirkburn (Cormack 1962-3, fig 3) (c) Inchtuthil (Barclay and Maxwell 1991, 34) (d) Eweford West 1 (Lelong and MacGregor 2008, 23).

A burnt structure excavated at Kirkburn in 1961 (Cormack 1962-3) seems similar. Two trenches holding timbers which appear to have been burnt down were found in association with a number of pits. Fragments of burnt bone were recovered from one of these trenches. The two wooden fences were around 5m apart, widening to the west, and are arranged in such a way that they may have formed part of a larger trapezoidal structure similar to that excavated at Pencraig Hill. However, at the time of excavation this site appears to have suffered badly from ploughing and so it is possible that some features may have been lost.

The timber rectilinear structure excavated at Inchtuthil was also defined by a palisade (Barclay and Maxwell 1991). This structure was defined by what the excavators referred to as a ditch which held a fence of oak posts linked by timbers of mature oak. At least two phases of fencing were set in this ‘ditch’. The first was left to rot or was removed, after
which the ‘ditch’ was recut though not to the original depth or width. A second fence was then erected within the ditch and subsequently burnt. It appears to have fallen or been pushed over towards the interior while still burning (the charcoal band produced by this indicated that the upright posts had been linked to form a continuous barrier). Gravel and sand were deposited over the structure while still burning. Charcoal samples from this fence produced Early Neolithic dates. There are indications that the east end of the structure was elaborated, perhaps forming a post-defined forecourt, though it had been disturbed by a later Roman pit (the site lies within a Roman legionary fortress) and tree-hole. Barclay and Maxwell (1991, 38-40) interpreted this structure as a long mortuary enclosure and speculated that it may have been mounded over to form a long barrow. However, no artefacts or evidence of mortuary activity was found.

A similar structure (albeit badly damaged by 19th century quarrying) has recently been excavated at Kintore (Cook and Dunbar 2004; 2008). Wooden fences were erected in the re-cut of ditches which formed a slightly trapezoidal enclosure. This enclosure surrounded two earlier long mounds and had a rounded western end and two transverse ditches separating the two mounds. Wooden fences were also erected within these transverse ditches. The timbers of the perimeter fence were of oak and have been interpreted as a post and plank fence forming a possible revetment for the earlier mound. They seem to have been burnt in situ. In contrast, only one of the transverse fences seems to have been burnt in situ; the second seems to have been removed and the ditch backfilled. The two fences within the transverse ditches were constructed slightly differently. This timber phase has been dated to 3980-3760 cal BC (SUERC-1371).

This group of sites is linked by their construction method, a mortuary interpretation and the fact that they were all burnt at the end of their lives. In addition, most seem to have been mounded over, recalling the post structures described previously. Eweford, Pencairig Hill and Kirkburn do have evidence for some form of mortuary activity, the most convincing of which is the trapezoidal enclosure at Pencairig Hill with its possible pyre structure. Both Pencairig Hill and Kirkburn are associated with burnt bone and so may have comprised rectilinear enclosures within which human remains were processed and cremated. The structure at Eweford was also associated with burnt human bone. However, there is no direct evidence that the structures at Inchtuthil or Kintore had a similar function, though both have been equated with long mortuary enclosure and long barrow traditions (Barclay and Maxwell 1991; Cook and Dunbar 2004). Both certainly seem to have been the focus of repeated activity, but a mortuary connection remains questionable.
4.10.3. Other structures

Four additional structures have also been identified as mortuary structures, though again a mortuary role remains unproven. A rectilinear timber setting at Brownsbank has recently been excavated, defined by nine individual posts within a segmented ditch (Brophy and Noble 2006). A leaf-shaped arrowhead within one posthole suggests a Neolithic date.

Finally, three possible timber hall sites have also been interpreted as mortuary enclosures: Courthill (section 4.6.3) and Balfarg Riding School (section 4.6.2). Courthill is problematic and was discussed earlier. The two Balfarg Riding School structures were interpreted (Barclay and Russell-White 1993) as rectilinear fenced structures enclosing exposure platforms, although there is no direct evidence to indicate that this was the case. Structure 2 was later mounded over and surrounded by a henge.

4.10.4. Summary

This then is a very varied group of sites. Although dating is not available for all sites, most would appear to have been constructed in the early part of the Neolithic. The only factor connecting them is the fact that many were mounded over at the end of the life of the timber structure. The split-post structures with later timber and stone enclosures certainly seem to form a coherent group and it is interesting that these post structures were not burnt while the later timber and stone structures which replaced them and most of the other structures included in this group were. All these structures have, at some point, been associated with mortuary activity. However, as has been discussed above this cannot be proven for each site. Those probably associated with mortuary activity include the later timber and stone enclosures at Dalladies, Pitnacree, Lochhill, Slewcairn and Eweford and the palisade enclosures at Kirkburn, Eweford and Pencraig Hill. The rest appear to have no direct association with mortuary activity. However, if such sites were not used to excarnate or deposit the remains of the dead then other explanations must be sought. Noble (2006a) has suggested that the split-tree structures below barrows emphasised the importance of trees in Neolithic life and that they were symbols that highlighted the processes of life and death. Certainly all the sites seem to have been subject to repeated activity and may have formed a focus for ceremonial activity over a period of time.
4.11. Chronology

The timber monuments described above span the whole of what is traditionally considered the Neolithic period (figure 4.21). However, only a relatively small proportion and often only minor elements of these sites have been reliably dated, which means that any consideration of the chronology of these sites must be viewed as provisional. Nevertheless, the dates that are available do allow some discussion of the chronology of these monuments. Amongst the earliest timber structures erected were the split-post structures, all of which seem to have been constructed during the first half of the fourth millennium BC. Palisade mortuary structures are likely to be of similar date, though few dates are yet available for these. Similarly, although none of the timber settings have yet been excavated, their similarity to facade structures associated with long barrows may also indicate an early fourth millennium BC date, though a later date is also suggested by the association of some timber settings with palisaded enclosures. Post-defined cursus monuments and roofable timber halls also date to the earlier part of the Neolithic period, and both forms seem to have been constructed between around 4000 and 3600 cal BC (Brophy 2006, 33; Thomas 2007, 233). Although no dates are available for the small group of rectilinear enclosures, they may be of similar date to cursus monuments. Timber circles and the second group of timber halls fall into the later part of the Neolithic period as both seem to date between around 3300 and 2600 BC. Some of the curvilinear enclosures may also be of similar date because of the similarity of some to timber circles, while palisaded enclosures also date to the third millennium BC; those that have been excavated appear to have been in use between around 2900 and 2000 cal BC. Finally, the avenues may date to between around 3000 and 1800 cal BC though none of these have yet been excavated in Scotland other than the pit-defined avenue at Holm which produced an early Bronze Age date (Thomas 2007, 254).

These dates indicate that monuments were built of timber throughout the whole of the Neolithic period. Indeed, some of these sites may have been amongst the earliest monumental forms constructed in Scotland. However, the sites that have been reliably dated so far seem to suggest two distinct episodes of timber monument building with a hiatus of perhaps a couple of centuries between the two. The various forms of mortuary structures, timber settings, post-defined cursus monuments, rectilinear enclosures and roofable timber halls have all provided dates within the first half of the fourth millennium BC, while unroofable timber enclosures, timber circles, curvilinear enclosures, palisaded enclosures and perhaps avenues all seem to date sometime after around 3300 BC. Whether
future dates will confirm this division remains to be seen and many of these sites as yet remain undated, so this division should be considered with caution. However, the Later Neolithic has often been seen as a distinct phase of the Neolithic with a definite change between the earlier and later part of the Neolithic (Noble 2006a, 140) and this may be reflected in the timber monuments constructed in Scotland.

![Diagram showing the date ranges of timber monuments.](image)

**Figure 4.21 The date ranges of timber monuments.**

There are also distinct differences between the two groups of sites which serve to emphasise this division. Firstly, all the earlier structures were roughly rectilinear in form, while the later monuments also included circular and curvilinear forms. Secondly, the way in which these two groups of sites were treated at the end of their lives also differs. While the majority of excavated Earlier Neolithic timber monuments were burnt down at the end of their lives, none of the later structures have yet shown any evidence for such catastrophic burning and instead were left to decay in situ. This may indicate distinctly different beliefs, practices and ideas behind the construction and destruction of monuments within the Earlier and Later Neolithic. Indeed, Thomas (2000; 2004c) has suggested that these two practices relate to different ways of remembering: those that were burnt were consigned to memory through spectacular events which would then require to be actively brought back to memory, while the gradual decline of monuments left to decay would have demonstrated that the past was receding from the present, encouraging recollections of past
events and experiences as individuals visited their locations at intervals. Their continuing
presence as monuments would also have linked the present with the past. Such differences
may suggest a distinct change in the way in which communities remembered and
considered the past. However, the continuity of monument building across the whole of the
Neolithic and apparently continuing importance of place across this division, outlined
below, suggests that things may have been a little more complex.

4.12. Distribution and context

4.12.1. General distribution

Figure 4.22 Distribution map of the timber monuments recorded in Scotland (Map data © Crown
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The number of timber monuments recorded in Scotland currently stands at 207. The
distribution map (figure 4.22) indicates that these sites have a wide distribution across the
country, though most have been recorded in the east and south with a small concentration
around Inverness. However, as the majority of timber monuments have been recorded as
cropmarks, this distribution is largely a reflection of the cropmark producing areas of Scotland and the inherent bias of cropmark data in Scotland (see chapter 3). Indeed the distribution of timber monuments generally follows the distribution of cropmarks (figure 4.23). Nevertheless, even within the restricted areas within which timber monuments have been recorded some interesting patterns can be drawn out (see figure 4.24 for council area locations).

![Map showing the distribution of timber monuments overlaid on cropmarks](image)

Figure 4.23 The distribution of timber monuments (black) overlaid on the general distribution of cropmarks (red) (Map data © Crown Copyright Ordnance Survey. An Edina Digimap/JISC supplied service).

The greatest concentration of timber monuments has been recorded in Perth and Kinross. This is not wholly surprising considering the concentration of cropmarks recorded in this area, and certainly timber monuments follow the general distribution of cropmarks recorded in this location (figure 4.23). Smaller concentrations are obvious in the Inverness area, around Dumfries and in the southwest of Scotland, again following the distribution of cropmarks in general. This pattern though does not continue into East Lothian and the Borders where only a handful of sites have been recorded. This is surprising if one considers that East Lothian is probably the most intensively flown regions of Scotland.
because of its intense arable cultivation and proximity to RCAHMS Edinburgh base (Hanson 2005, 76), meaning that one would reasonably expect any timber monuments here to have been recorded by now. Most of those that are known were discovered through excavation. This then appears to be a real absence, and may suggest that timber monuments were not constructed in this area to any great extent during the Neolithic period (see Chapter 5).

Figure 4.24 The council areas of Scotland (Map data © Crown Copyright Ordnance Survey. An Edina Digimap/JISC supplied service).

Another area in which timber monuments seem largely absent is Aberdeenshire, northeast Scotland. Only a small scattering of timber monuments have been recorded in this area. This may be largely a reflection of the fact that fewer cropmarks have been recorded in this area in general, though it has had regular aerial coverage by AAS and so may also be another reflection of Aberdeenshire’s very distinctive Neolithic, seen in the concentration of recumbent stone circles in this area to the almost total exclusion of henge monuments (Barclay 2004, 39; 2005, 85 and figure 4.30).
Another notable gap is the very north and northwest of Scotland: Caithness, Sutherland, Orkney, Shetland and the Western Isles. This must reflect, to a certain extent, the fact that cropmarks are not recorded in these areas. However, despite extensive archaeological work in Orkney and Shetland where Neolithic structures of stone are well known (e.g. Richards 2004a; Bradley 2007), no monuments of timber have yet been uncovered. Considering the increasing number of timber structures uncovered during excavation elsewhere in Scotland and the extensive excavation work undertaken within the Northern Isles, one would perhaps expect that some timber monuments would have been identified by now if they existed. This, then, seems to indicate that there was a real absence of timber monuments in these regions during the Neolithic. A large part of this must be due to the fact that there was limited tree cover in the north of Scotland (Tipping 1994, 12, 23), and indeed Orkney itself may have been devoid of trees by around 3000BC (Tipping 1994, 24), so the materials required to construct such monuments are unlikely to have been readily available. Therefore, it is possible to suggest that the limited tree cover within Orkney and Shetland, but also Caithness, Sutherland and perhaps the Outer Hebrides may have precluded the construction of monuments of timber.

A small number of sites have been discovered through excavation in the less intensively flown and non-cropmark producing areas in the west of the country, extending the distribution of timber monuments into these areas (e.g. Argyll, Ayrshire coast) and hinting at a much more widespread distribution than that currently known. Furthermore, although the distribution map indicates that timber monuments extended to the border between Scotland and England, they did not stop here. Indeed the fact that a small number of timber monuments, such as the timber hall at Sprouston on the Tweed (see gazetteer), are disposed along the border indicates strongly that similar monuments were also constructed south of the modern border.

4.12.2. Distribution: Earlier Neolithic

Reflections on the distribution of timber monuments as a whole however, can only have limited value considering the wide variation in form and chronology encompassed by these monuments. If the distributions of individual site types are examined then further patterns begin to emerge. Turning to the sites identified as mortuary enclosures first, these seem to be fairly evenly distributed in most of the areas in which timber monuments have been recorded (figure 4.25a), although they have not been recorded in the north or southwest. Timber settings on the other hand, some of which may bear some relation to long barrows
or mortuary enclosures, are almost exclusively found in the east and southeast of the country (figure 4.25b). Post-defined cursus monuments have a predominantly eastern and southern distribution, and there is an interesting cluster of sites in the south in the Nith valley (figure 4.25c). Rectilinear enclosures have been recorded primarily in the east of Scotland (figure 4.25d).

If we look first at timber halls as a whole (figure 4.26), these sites cluster predominantly in Perth and Kinross, though a small number of sites have been recorded in Invernesshire, the Borders and Ayrshire, perhaps indicating that these sites had a much more widespread distribution than that currently revealed. None have been recorded in East Lothian or in the southwest of Scotland. If this distribution is subdivided into the probable earlier and later forms of timber hall (figure 4.27), it becomes obvious that the two, as currently interpreted,
have almost mutually exclusive distributions, the only real overlap occurring between Balbride and Warren Field and the possible timber hall excavated at Wardend of Durris. The later forms cluster almost exclusively in Perth and Kinross, and fill in the centre of the distribution of earlier halls. No later halls have yet been recorded in the south of the country. However, difficulties remain with the interpretation of these sites and, as many of these sites have been recorded only as cropmarks and have not been dated, future investigations may change this picture somewhat.

Figure 4.26 Distribution of timber halls (Map data © Crown Copyright Ordnance Survey. An Edina Digimap/JISC supplied service).

Figure 4.27 Distribution of timber halls of probable (a) Earlier and (b) Later Neolithic date (Map data © Crown Copyright Ordnance Survey. An Edina Digimap/JISC supplied service).
Taking all of the timber monuments of probable Early Neolithic date together along with other monuments probably constructed during the Earlier Neolithic (figure 4.28), then the northeast of Scotland is very obviously distinctive from the very beginning of the Neolithic and not just later in the period as is inferred from the distributions of henge monuments and recumbent stone circles (Barclay 2004, 39; 2005, 85). As a whole timber monuments coincide broadly with the distribution of non-megalithic cairns and barrows, although in Perth and Kinross an absence of long barrows has been noted (Telford 2002, 304), while barrows extend into the northeast of Scotland where timber monuments have not been recorded. It may be that the mounds in northeast Scotland fulfilled similar functions to the timber monuments further south.

If the distribution of megalithic chambered cairns is taken into consideration, then a broad divide between monuments of timber and earth in the east and stone in the west is obvious. Such a distinction has been noted before (e.g. Kinnes 1985; Telford 2002) and, certainly in terms of timber monuments, must reflect to a certain extent the differing preservation of monuments within these regions and the manner in which they have been identified. However, Telford (2002) also suggests that the differences may be associated with differing subsistence strategies within these regions. Certainly, it seems unlikely that the
distinct regional patterning can entirely be explained by differing preservation and raw material availability, though these must certainly play a part. The fact that this divide appears to break down to a certain extent later in the Neolithic (see below) does suggest that this distinction may reflect to some extent a real difference in the materials used and forms of monuments constructed in eastern and western Scotland during the earlier part of the Neolithic.

4.12.3. Distribution: Later Neolithic

Figure 4.29 Distribution of (a) timber circles (b) curvilinear sites (c) palisaded enclosures (d) avenues (Map data © Crown Copyright Ordnance Survey. An Edina Digimap/JISC supplied service).

The distributions of timber monuments of probable Later Neolithic date provide a slightly different picture. Timber circles unsurprisingly follow the general distribution of timber monuments (figure 4.29a) as these sites make up a large proportion of the timber monuments a whole. Curvilinear enclosures largely cluster in Perth and Kinross, though
this group of sites is so small that little more can usefully be said about their distribution (figure 4.29b). Similarly, the small number of palisaded enclosures known can provide only limited information, (figure 4.29c) though a southern distribution is obvious. All but Forteviot and Leadketty appear to be relatively isolated. A predominantly southern distribution is again obvious when considering avenues (figure 4.29d); all of the longer avenues are located in southern Scotland. A greater number of timber monuments have been recorded in the west of the country than those of probable earlier date. These are predominantly timber circles though Later Neolithic timber halls are also known.

![Distribution of stone circles, recumbent stone circles, henge monuments and timber monuments of probable Later Neolithic date.](image)

When added to the distributions of other monuments of Later Neolithic date (figure 4.30), then it is clear that there is no longer a distinction between the east and west of the country in terms of the monuments constructed: timber monuments, predominantly timber circles, can be seen to extend into the west of the country while stone circles also have an extensive distribution. Henge monuments have a similar distribution to timber monuments and in particular there is a concentration of these monuments in Perth and Kinross. Although this is likely to be at least partly a reflection of the cropmark nature of many henge monuments, it may suggest that the same regional traditions of monument building encompassed both henges and timber monuments. In particular, the henge distribution is
very similar to that of timber circles, which may suggest a connection between the two. Indeed the fact that some henges enclosed timber circles may further emphasise this link.

None of the timber monuments, then, are evenly distributed across Scotland and many appear to reflect, to a lesser or greater extent, some kind of regional tradition. If the chronology of these sites is taken into consideration then the northeast of the country, with its general absence of timber monuments, can be seen to be distinctly different from the very beginning of the Neolithic. East Lothian also seems to be different, although it does not stand out as much as the northeast during the earlier part of the Neolithic as a small number of Early Neolithic sites have been recorded here. In addition, only a limited number of probable Early Neolithic timber monuments have been recorded around Inverness; the cluster of monuments noted on the general distribution of timber monuments relates predominantly to timber circles, which are probably of Late Neolithic date. While difficulties remain in terms of the bias of the distribution of timber monuments, current evidence does suggest a divide between the monuments built in the east and west of the country during the Earlier Neolithic, something which then seems to break down later in the Neolithic period. Such general distributions, though, based upon broad categories of monuments can give only a very generalised and partial picture. In particular the differences evident within the different categories of monuments indicates that the picture is much more complex than that suggested by the distribution maps, while the bias in terms of the locations of cropmark sites means that future investigations may alter this picture somewhat.

4.12.4. Context

To consider timber monuments in isolation can only ever give a partial picture. Most are associated with, or at the very least situate close to, other sites and monuments and very few exist in total isolation. Only around thirty sites have no other site(s) in close proximity, though this can only be a provisional observation for cropmark sites. Therefore a consideration of the context of the timber monuments and the sites associated or located close to them is of importance if they are to be understood as fully as possible.

Around a quarter of the timber monuments are directly associated with other sites, that is they are covered over, surrounded by, over- or underlain by these other sites. The remainder lie in close proximity to other monuments and sites or are found within wider complexes of sites. Where monuments are directly associated with other sites, these most
often take the form of presumably later monuments and structures. For example, the post structures at Pitnacree, Dalladies, Lochhill, Slewcairn and Eweford were all replaced by later stone and timber structures and then mounded over. The mortuary structures at Pencaig Hill, Eweford, Kintore and Balfarg Riding School were also mounded over. The presence of mounds at other cropmark sites cannot be ruled out.

The cursus monuments at Fourmerkland and Star Inn Farm both have probable barrows lying on the line of the cursus boundary and, while an assessment of chronology from cropmarks alone is difficult, the cursus monuments are likely to be earlier in date than the barrows (Woodward 2000; Thomas 2006b). Although it could be merely coincidence that these later barrows came to be positioned over the former locations of the cursus monuments, the barrows seem to be positioned exactly over the sides of the cursus monuments and at Fourmerkland in particular the line of the cursus monument passes through the centre of the barrow. Several other cursus monuments (Mill of Fintray, Woodhill, Purlieknowe, Milton, Lochbrow, Balneaves Cottage) are less closely related to barrows, ring-ditches and cremation cemeteries. Some of these apparent relations could be coincidental though other barrows do seem to have been located with reference to the earlier cursus monuments. At Lochbrow at least one barrow lies on the axis of the cursus. Such a positioning seems unlikely to be mere coincidence and suggests that the later monuments were deliberately positioned in order to reference the earlier cursus monument, sufficient of which must have remained in order to position the barrow in such a manner.

In a similar way, a number of timber circles seem to have been located with reference to earlier cursus monuments, such as Kinalty (figure 4.5). At Upper Largie, a timber circle was shown to overlie one end of a post-defined cursus monument while at Broich a timber circle has been recorded within a gap in the ditch of an earthwork cursus. As earthwork cursus monuments are generally constructed at a slightly earlier date than timber circles (Barclay 1999; Loveday 2006a), the timber circle here may be secondary. Timber circles have also been recorded in less direct association with cursus monuments, lying in close spatial proximity. Examples include Bennybeg, Lochbrow, close to the southern end of the cursus monument at Holm (Thomas 2007) and adjacent to the possible cursus monument excavated at Eweford (MacGregor and Shearer 2003). Timber circles have also been recorded within the excavated henge monuments at Balfarg, North Mains and Cairnpapple, a relationship recorded as cropmarks at Easter Cadder and Berryley. Where such timber circles have been excavated, they have often been proven to pre-date the later henge (Barclay 2005; Gibson 2005, 46). At the excavated timber circles at Callanish II, Machrie...
Moor, North Mains, Temple Wood and Croft Moraig the timber circles were replaced by stone circles. Only one other timber monument is so far known to have been directly replaced by a later monumental form in a similar way: the post-defined cursus monument at Holywood North was surrounded and ultimately replaced by a much larger bank and ditch cursus (Thomas 2007, 239).

Some of these timber monuments became parts of larger monumental complexes, where monuments of varying dates come to be grouped together (Barnatt 1989, chapter 3; Bradley 1993, chapter 5). Such complexes are known to have been a feature of the Later Neolithic, though their origins are often found earlier in the Neolithic (Noble 2006a, 180-1). Timber monuments are elements of a number of these complexes. This is particularly evident at each of the palisaded enclosures of Forteviot, Leadketty, Meldon Bridge and Dunragit where sites of varying dates cluster around and within these large wooden enclosures, but is also obvious at the Holywood complex of sites (Thomas 2007) where the earliest site seems to have been a post-defined cursus monument, which was later enclosed within an earthwork cursus and augmented by a nearby cursus and stone circle. Other notable examples include Balfarg, Cairnpapple, North Mains, Upper Largie, Temple Wood, Lochbrow and Holm where timber circles formed components of these larger monumental complexes. Some of these timber circles were the primary monumental component of these complexes, while others were added to earlier sites (where chronology is known).

A small number of timber monuments, other than timber circles, are recorded in close spatial proximity with earlier monuments and seem to be secondary to other earlier monumental forms. The presence of these earlier monuments seems likely to have influenced the location chosen for later sites and may even have affected the form chosen for the later monument. The post-defined cursus monument at Bannockburn, which was erected only around 11m from an earlier pit-defined enclosure (Rideout 1997, 40), and the palisaded enclosure at Dunragit, which overlay and referenced the location of an earlier cursus monument (Thomas 2004b), were both constructed in locations of earlier activity. The palisaded enclosure at Leadketty has been recorded only around 100m to the south of the cropmarks of what may be a causewayed enclosure. If the interpretation of this cropmark enclosure is correct, then two massive enclosures of very different nature are found within close proximity to one another. This is highly unlikely to be merely coincidence, and as the dating of causewayed (Oswald et al. 2001) and palisaded enclosures (Gibson 2002b) in general indicates that the causewayed enclosure is likely to
be the earlier of the two, then the palisaded enclosure may have been constructed with reference to a much earlier earthwork enclosure.

Several excavated timber monuments have attested to earlier activity in the locations that would later see the erection of a timber monument (Noble 2006a, 180-181). For example, pits were dug before the palisaded enclosure at Meldon Bridge (Speak and Burgess 1999), the timber circle at Cairnpapple (Piggott 1949; 1950) or timber structures at Balfarg Riding School (Barclay and Russell-White 1993) were erected, and stake-built structures and a hearth were found during excavation at the enclosure at Blackshouse Burn (Lelong and Pollard 1998). It is possible that certain cropmarks of pits, so ubiquitous on aerial photographs, may reflect earlier pit-digging activity in the vicinity of timber monuments. Therefore it may be that other timber monuments recorded only as cropmarks were similarly erected in locations within which earlier small scale activity had taken place.

Some timber monuments are associated with other monuments which may be of closely similar date, although this can be rather difficult to demonstrate from cropmarks alone and the resolution of radiocarbon dates of sites that have been excavated is not always sufficient to prove that two sites were exactly or very closely contemporary. Nevertheless, the dates produced by the timber circle and hall at Carsie Mains were so similar that both appear to have been constructed around the same time (Brophy and Barclay 2004), while the two Balfarg Riding School structures were also broadly contemporary, though one may have been constructed a short while after the other (Barclay and Russell-White 1993, 178). The two cursus monuments at Inchbare may also be of broadly similar date to one another as they are so similar in form, though these monuments have only been recorded as cropmarks. Where timber circles are located close to one another, such as at Kincladie, Machrie Moor and Inchtuthil, they are also likely to be of broadly similar date, although the span of time within which timber circles are known to have been constructed means that it is possible that as much as several centuries could separate the construction of each.

Most of the remaining timber monuments not discussed above are also recorded in close proximity to additional sites of varying dates, though in some cases definite relationships can be difficult to prove. The fact that so many timber monuments are located in conjunction with or at least in close proximity to additional sites suggests that this is not just the random location of sites in similar locations, but that there may have been a deliberate attempt to associate sites with one another. Indeed in some cases later structures seem to have been very carefully placed over the locations of earlier monuments. In most
cases where timber monuments can be shown to be associated with other sites, the additional sites seem to have been added at a later date, although a smaller number of timber monuments seem to be the secondary sites in a location. However the evidence for earlier smaller-scale activity at a number of excavated sites suggests that, even where the timber site is the first monument in a location, it may have been situated in a place that was already important.

The repeated construction of monumental forms in these same locations attests to the continuing significance of place, even after earlier monumental forms may have decayed, or been removed or destroyed. Timber monuments will only stand for a finite length of time, and this decay process seems to have been speeded up by the catastrophic destruction by burning of some sites during the Earlier Neolithic (Noble 2006a, chapter 3). Even where such burning is likely to have taken place, it seems that the former location of these sites continued to be remembered. This is seen for example at Dunragit, where the palisaded enclosure has been clearly shown to reference an earlier cursus monument which was burnt (Thomas 2004b), and may also have taken place at Kinalty, where a Later Neolithic timber circle was placed exactly over the side of the cursus monument. Such re-use and re-iteration of places and monuments is one that is increasingly being attested to where timber monuments have been excavated (e.g. Rideout 1997; Thomas 2007), hinting at the complex histories of place of many timber monuments. This is something which has the potential to challenge some of the unitary typologies based only upon the morphology of sites. Further, those sites which were constructed in locations which would have associated them with earlier monuments, areas of activity or places of importance cannot be disengaged from these locations and so cannot be understood without a consideration and understanding of this context.

A small number of timber monuments, around 30 sites, appear to exist in isolation. These isolated sites include the timber halls recorded at Claish, Noranbank, Nine Wells, Turfachie and Balbridie, though the broadly contemporary timber hall at Warren Field lies only around one kilometre from Balbridie. If the close proximity of sites to one another reflects the deliberate siting of later monuments in relation to timber monuments or timber monuments in relation to earlier sites, then the isolation of some sites may not have been merely a random occurrence, though it potentially could just be a reflection of the differential visibility of sites as cropmarks. It is interesting that several of the earlier timber halls do not appear to have had later sites constructed nearby. It is possible to speculate why this might be, such as the deliberate slighting of these locations or the fact that the
importance of such places was forgotten while others were remembered. Perhaps these locations were superseded by others, or whatever had taken place here in the past resulted in the abandonment and avoidance of this location.

### 4.13. Landscape

![Figure 4.31 Distribution of timber monuments showing rivers. The timber monuments can be seen to follow some of the major river valleys (Map data © Crown Copyright Ordnance Survey. An Edina Digimap/JISC supplied service).](image)

As most timber monuments have been recorded as cropmarks, the general landscape locations of these sites reflects to a large extent the locations in which cropmarks are recorded. Therefore, as a result, timber monuments have predominantly been recorded in lowland situations. Most lie below around 200m OD and they can quite clearly be seen to follow many of the major river valleys of Scotland (figure 4.31). They are largely found in river valleys, on gravel terraces or fertile coastal fringes, though a few upland sites such as that at Blackhouse Burn have been recorded. Those sites which have been excavated in non-cropmark producing areas have the potential to alter this picture slightly, though they in fact do little to change it other than increasing the height at which sites have been
recorded to around 300m OD. Therefore, although the general locations of timber monuments must be considered to be biased towards the locations in which cropmarks are generally recorded, some limited information can be provided by an examination of these general locations. However, additional detail and greater insight into the role that landscape played in relation to timber monuments can only be provided by detailed examination of the location of individual sites and the assessment of these locations on the ground as well as localised environmental information, although this is largely unavailable.

4.13.1. General location within the landscape

Turning first to the general locations of timber monuments as a whole, the majority have been recorded on the fertile floors and sides of river valleys. This is not surprising as cropmarks are generally recorded in these locations. However, some of those recorded on the valley floor, such as the cursus and enclosure at Tibbers or the curvilinear site at Redden, appear to lie on the floodplains of these valleys; others are situated on raised terraces overlooking floodplains. The fact that some sites seem to have been constructed on floodplains is interesting as this suggests that they may have been erected in wet locations, or at the very least locations that were flooded at times. However, there is evidence to suggest that little flooding was occurring across the floodplains of northwest Europe between around 9000 and 5000 BP (Brown 1997a, 211). Therefore sites erected during the earlier part of the Neolithic on ‘floodplains’ may not have been subject to the periodic flooding that might otherwise be expected. Despite this, many of the sites constructed on the valley floor, such as at Lauder Barns, Turfachie and Kirkland Station, are situated on terraces or rises within or overlooking the floodplain, which would have raised them above the very bottom of the river valleys and what would be considered today as the floodplain. This may indicate a concern to place these monuments above the potential higher water mark, even if little flooding was occurring, or they may have been situated on farmed land, just above the floodplain.

A little over one third of timber monuments have been recorded on level terraces on the sides of valleys and on hillsides above the flatter coastal fringes. These are locations which would have raised them above what may have been wetter ground below, and may also have afforded them good views across the valleys or coast. A smaller number (38 sites) lie on the level coastal fringes. A few sites have simple hillside locations and only two, the
timber circle at Cairnpapple and palisaded enclosure at Blackhouse Burn, are located on the summit of a hill.

Figure 4.32 General locations of probable (a) Earlier (b) Later Neolithic timber monuments.

It would be dangerous to draw too much from such a general assessment of the location of such a diverse range of sites, both morphologically and chronologically. Therefore it is pertinent to look at the location of sites in terms of their chronology and form. If the general locations of timber monuments dating to the Earlier and Later Neolithic are compared (figure 4.32) then the most obvious difference is the greater proportion of sites constructed on valley floors in the earlier part of the Neolithic. This may reflect the use of rivers as routeways, but may also indicate the clearance of the valley floors, providing both materials for these monuments and cleared areas in which they could be constructed.

Why such locations do not appear to have been favoured to the same extent later in the Neolithic period is not obvious, though factors may have been the possible increase of
flooding across the floodplains after around 5000BP (Brown 1997a) or perhaps greater use of these locations for farming later in the Neolithic. A slightly larger proportion of probable Later Neolithic sites seem to have been erected in coastal locations, either on hillsides overlooking coastal fringes or on the level coastal plain itself.

Turning to the individual site types, most follow the general patterns outlined above. However no roofable timber halls have yet been recorded in a predominantly coastal location and instead all have been recorded in inland river valleys. This connection with river valleys is further emphasised by the fact that all align along the valley in which they are situated (Brophy 2007b). The later timber halls generally follow a similar inland pattern though four sites, the halls recorded at Nether Kelly, Gilchrist and Muircambus, have been recorded on the coast. In contrast a substantial proportion of timber circles, around one quarter, have been recorded in coastal locations, though the majority of the rest have been recorded on the floors or sides of river valleys.

### 4.13.2. Field visits

Such general considerations, however, cannot take into account the specifics of the location of individual sites and tend to suggest that the landscape can be considered separately from the monuments themselves. This is clearly not the case and detailed examination of the location of individual sites through field visits can provide insight into the specific locations of these sites, albeit in the modern landscape. My field visits were primarily focussed upon three case study areas, which shall be dealt with in detail later. Nevertheless, some initial observations can be made here. Visits to the locations of the sites of timber monuments generally indicated that their locations were very carefully chosen and that many timber monuments seem to have been intimately linked to their landscape setting. Indeed, it can be suggested that the topography of some locations may have influenced the final form of the monument constructed.

In some cases, the topography in which monuments were placed could be envisaged as an extension of the monument itself, and must have played a part in the way in which these sites were understood and used. An example of this can be seen at the cursus monument at Kinalty (figure 4.33) which seems to have exploited topography to create particular effects. This monument lies at the very base of a south facing slope and has been constructed over a slight hillock; the ground rises in the centre section of the cursus. This rise in topography, although slight, may have served to partly obscure one end of the cursus from the other. Its
position at the very base of rising ground means that it would have been possible to stand on this higher ground and look into and over the cursus itself, while the rising ground to the north may have served as a natural terminal. Finally, such a position may also have served to prevent movement (perhaps only symbolically) across the lower ground upon which this cursus has been built.

Figure 4.33 The location of Kinalty cursus and timber circles, constructed over a small hillock and at the base of rising ground (Map data © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Another example of a site at which the topography has clearly been employed to create particular effects is the site of the timber setting and possible timber circle at Court Hill, Perth and Kinross. The timber setting and timber circle sit on flat ground to the northeast of a large round barrow in a roughly semi-circular natural amphitheatre formed by the barrow, built on a slight rise, and several small hillocks lying either side of the barrow (figure 4.34). The north edge of this ‘amphitheatre’ is defined by a slight step up, creating a natural platform within the area defined by the barrow and hillocks. The setting itself seems to be oriented towards the slight tail on the east side of the barrow. This location
then clearly seems carefully chosen and topography employed to create a particular experiential effect. The barrow has been constructed on a slight hillock, much like those forming the sides of the ‘amphitheatre’, enhancing the height of the constructed barrow and the similarity of these hillocks to the form of a barrow may suggest that the barrow ‘mimicked’ them. It can be suggested that the platform below the barrow may have formed a performative area in which activities connected with the barrow, which included the construction of the timber setting and timber circle, may have taken place.

A very similar timber structure has been recorded at Ardmuir. However, the location of this site contrasts considerably with the setting at Court Hill. The site at Ardmuir has been recorded as the cropmarks of a setting of six pits, around 15m apart, and narrowing slightly to the east-northeast. It lies on relatively level ground, although the site itself seems to have lain just to the north of, and roughly parallel to, a very slight east-west ridge. The east end of the structure faces the higher ground of a ridge, located only a short distance away, which runs roughly north to south (figure 4.35), while to the west the topography is generally level and featureless. The narrower end of this structure, then, is orientated towards the only distinct rising ground for a considerable distance and its long axis generally follows a slight ridge in an otherwise topographically featureless location. While the Ardmuir structure does not employ the natural landscape in the same way as the monuments at Court Hill, it does seem to have been built relative to the subtle topographical features in this location, though does not seem to have functioned in association with any other monument. It may then have been a rather different monument to the timber setting at Court Hill, despite the superficial morphological similarities between the two sites. This highlights real difficulties with traditional classifications based upon morphology alone.

Clearly the location of monuments is an important issue, and has the potential to influence and alter the way in which we understand the timber monuments. However, any consideration of landscape must also take into account past vegetation patterns (especially tree cover) which may have had a fundamental effect upon patterns of visibility and the experience of landscape. This is particularly pertinent when considering sites constructed during the Early Neolithic period when tree cover may have still been quite dense (Tipping 1994; 2003) with only localised clearance (perhaps associated with monuments). Such dense tree cover could negate many of the approaches to Neolithic monuments which have often emphasised the visual in the understanding of landscape setting (cf. Tilley 1994).
Figure 4.34 – Court Hill. Looking north towards timber setting, timber circle and barrow showing natural amphitheatre formed by barrow and hillocks.

Figure 4.35 - Looking east along the Ardmuir setting towards ridge to the east.
Within deciduous woodland, visibility varies depending upon the time of year (Cummings and Whittle 2004), though in dense forest the presence of branches and trunks would still have prevented any distant views even without the leaf canopy during the winter months. Only if the woodland cover was thin is it possible to suggest that the surrounding landscape would have been visible when the trees shed their leaves. The forest, though, would not have been one of universally closely packed trees (Peterken 1996), and the presence of forest gaps and clearances may have had an impact upon visibility. Gaps are a natural part of the make-up of the forest architecture, even within dense woodland, and can be formed through factors such as fire, wind, disease, beavers or paludification, as well as human actions (Peterken 1996; Brown 1997a; 2000; Pollard 2006). While not necessarily affording distant views, such gaps would have increased the visibility of the skyscape and immediate surrounding topography (Brown 2000, 50). If gaps and clearances were large enough and located on slopes, summits or surrounded by higher ground, then they are likely to have afforded the observation of the horizon and more distant views (Brown 2000, 50), though this may still have been relatively limited. Therefore, it is possible to surmise that the presence of forest would indeed have had an impact upon patterns of visibility, though the location of any clearances (and monuments built within them) is likely to have affected patterns of visibility. Pollen analysis, though, cannot give us enough resolution to pick up such localised or small scale clearances.

Woodland, therefore, would have played a part in the location and meaning of these monuments and trees are likely to have been integral to the experience and use of Neolithic monuments, especially monuments made of trees. Woodland would have had an impact upon the visual experience of the sites and may have been employed to create particular effects (Cummings and Whittle 2004, 263), while the associated sounds and smells are likely to have affected the way in which such sites were understood and experienced. The fact that timber monuments were constructed from the same material as the surrounding trees may have meant that the monuments would have looked, felt and smelt like the surrounding woodland. Assessing and reconstructing the experience of other senses, though, is very difficult, if not impossible, and so visibility remains the main method of studying landscape, even in phenomenological approaches.

Clearly a consideration of the possible extent and effects of vegetation is important in any study of landscape. However, palaeoenvironmental data does not have the precision to establish the exact spatial and temporal extent of vegetation in any particular location, and in many cases is not available at all. Therefore only a very broad understanding of
vegetation is often possible, though one way of approaching issues concerning the extent and importance of woodland in relation to timber monuments is the consideration of tree throws revealed on aerial photographs and also uncovered during excavation.

4.13.3. Tree throws

Cropmarks of tree throws or possible tree throws have been recorded on aerial photographs of 33 timber monuments. Tree throws are crescent-shaped pits (sometimes D-shaped because of the effect of the full root circle of the tree) created through the kicking of the roots of a tree into the sub-soil when a tree falls or is blown over (Evans et al. 1999, 242) which have been identified with varying degrees of confidence as cropmarks (D. Cowley pers. comm.), though positive identification from cropmarks can, at times, be difficult. These are most often ignored as natural features of little importance in understanding the cropmark archaeology (Noble pers. comm.). However, as woodland would have been a ubiquitous feature of the Neolithic, they have the potential to provide important information about the context of these timber monuments, though should be interpreted with caution as such cropmarks could relate to tree throws of any date. The beginning of the Neolithic period was the first time that woodland was cleared and managed on a large scale (Noble 2006a, 94). Therefore these timber monuments would have been constructed within a context of increasing woodland clearance and it was from this cleared woodland, sometimes in substantial quantities, that the timber monuments in turn were constructed. The discovery of quantities of Early Neolithic artefacts found in tree throws at a number of sites in southern England (Evans et al. 1999) demonstrates the use of trees and their clearance within ceremonial contexts and Noble (2006a) has highlighted the likely importance of trees and woodland in the beliefs and world views of Neolithic people. Therefore tree throws and their relationship to timber monuments are of very real relevance.

At two sites, excavations have demonstrated a relationship between tree throws and the timber monuments. The excavation of the cropmark timber circle and timber hall at Carsie Mains (Brophy and Barclay 2004) uncovered a substantial number of tree throw pits around and in the same location as the structures. A scattering of the cropmarks of possible tree throws can be seen on the aerial photographs of these sites (Figure 4.36), though these were not recognised as such prior to excavation (K. Brophy pers. comm.). Excavation of one of the tree throws recovered three pieces of struck flint, probably dating to the Early Neolithic. One of the upright timbers of the timber hall and up to five of the timbers
making up the timber circle cut through tree throws, while three of the postholes of the timber hall were partly overlain by tree throws. These two monuments then seem to have been constructed in woodland which had existed before they were constructed and regenerated after they had rotted. An additional tree throw pit was uncovered at the eastern end of the timber hall where an axial pit might have been expected, perhaps indicating an even more direct association with the timber hall; the position of this tree throw may suggest that a living tree was used instead of an axial post at this monument.

![Image](image_url)

**Figure 4.36 Carsie Mains. Many of the 'splodges' around this site probably represent tree throw features. (© Crown Copyright: RCAHMS).**

Tree throws have also been uncovered at the palisaded enclosure at Forteviot. Here again, the cropmarks of possible tree throws can be seen on the aerial photographs. Excavation of the avenue entrance at this site uncovered several possible tree throws, one of which lay in line with one side of the avenue and was found where a posthole of the avenue might have been expected (Brophy and Noble 2007). It is possible that a living tree was used here in the place of an upright timber.

The cropmark timber halls recorded at Westerton, Balrae and Nether Kelly also seem to be directly associated with the cropmarks of tree throws. At each of these sites, the distinct cropmark of what appears to be a tree throw pit merges with one of the postholes defining the timber hall. Without excavation it is difficult to determine the exact relationship of these timber halls and their associated tree throws. However in each case the cropmark of
the posthole can be seen fairly distinctly on the aerial photographs, despite the fact that the
posthole and tree throw occupy the same area. This may suggest that one of the upright
timbers of each of these timber halls has been cut through the former position of a tree,
rather than these tree throws representing the later regeneration of woodland. The very
distinct nature of these tree throws is curious; where other tree throws have been recorded
nearby, their cropmarks are often much fainter than those recorded in association with the
timber halls. What this represents is difficult to ascertain, but may suggest the re-working
or maintenance of the tree hollows either prior to the construction of the timber hall or
during its use. The fact that the tree throws appear to merge with the position of the
postholes suggest that prior working is more likely. It may be then that these timber halls
were erected in locations that were already significant and that activity was centred on a
particular tree or the hollow left by a tree after it had fallen or was cleared.

Scatterings of tree throws are also obvious as cropmarks around several timber
monuments, indicating the former presence of woodland. While such features could relate
to woodland of almost any date, it is pertinent to highlight their presence on aerial
photographs considering the relationships suggested by excavation, the wooded nature of
the Neolithic environment and the fact that such features are usually ignored as
background to the archaeological sites. At some sites the cropmarks of tree throws can
produce quite a dense pattern, as around the cursus monument, timber circle and timber
setting at Bennybeg (figure 4.37). In other cases, no more than a small scattering of tree
throw features can be seen. The direct association of these tree throws and the timber
monuments is much more difficult to demonstrate, and indeed these cropmarks could relate
to woodland of almost any date. Nevertheless, the evidence from Carsie Mains in
particular demonstrates that such cropmarks can give an insight into the context in which
these sites were constructed, and it is possible that at least some of these cropmarks relate
to woodland in existence when the timber monuments were constructed. The fact that such
features can be recognised on aerial photographs and during excavation is a reminder of
the predominantly wooded environment that prevailed at the beginning of the Neolithic
and that this woodland was gradually cleared, some of it cut down to construct the timber
monuments recorded across Scotland. This woodland would not have just been a backdrop
to these monuments, but an integral part of them, their function and purpose; it was from
this woodland that timber monuments were created.
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Figure 4.37 - Bennybeg. Many of the 'splodges' surrounding the cropmarks of the cursus and timber circle represent possible tree throws (© Crown Copyright: RCAHMS).

4.14. Conclusion: the classifications begin to break down

The beginning of this chapter stated that timber monuments encompass a wide range of forms and span the whole of the Neolithic period. Timber monuments have also been shown to have a wide geographical range, are found in a variety of contexts and the locations of many of these sites seem to have been very carefully chosen. Although these sites have been placed into broad classificatory groupings, strict classification is difficult to maintain, particularly as there is much variety and difference within each group and some sites can be made to fit into more than one category. Similar sites can be found in very different contexts, substantially altering the way in which such sites can be understood and the sites themselves cannot be separated from the locations in which they have been positioned. Indeed, these sites are interwoven with their locations and would have been understood only in conjunction with their physical, topographic and social landscape. Finally, excavations have demonstrated that many of these sites had complex biographies.

Ultimately, each of these sites was an architectural form which drew upon a repertoire of architectural features in order to organise space in a particular location. They are very
unlikely to be copying a particular ‘template’ but were local responses to specific circumstances constructed in order to create particular effects (see section 8.6). All enclosed an area of space, marking a distinction between the area inside and that outside and re-ordered the space within their particular locations. They also served to re-order a set of materials, timber and perhaps other materials, into a specific relationship with hills, streams, rivers and woodland (Brophy 2000b; Thomas 2004c) and the particular relationships may have differed from location to location, although it may be possible to draw out some of those relationships in an analysis of the location of these monuments. The use of timber, predominantly oak, to build monuments must surely reflect the importance of wood to Neolithic communities and its significance in belief systems (Noble 2006a) as well as more practical reasons, particularly as woodland would have featured so consistently within the everyday experience of Neolithic communities (see section 8.3.1).

Many of these sites seem to have been constructed in important locations, or in locations which subsequently became of value. Some were reconstructed and re-used on a number of occasions and many excavated sites display complex histories of place. Therefore timber monuments must be understood as significant places rather than just monumental forms. There are also distinct differences between the ways in which monuments of the earlier and Later Neolithic were treated at the end of their lives. Those of the Earlier Neolithic (other than the post structures below barrows) were burnt down, while all of the timber monuments constructed during the later part of the Neolithic seem to have been left to decay, suggesting distinct differences in the way in which communities during the earlier and Later Neolithic remembered (Thomas 2000; 2004c and see section 8.3.2) and perhaps differences in the way in which the monuments themselves were regarded and understood.

An assessment of Scotland’s timber monuments, therefore, is not straightforward and must take into account a wide range of issues. As such they cannot be fully understood at the wide scale of timber monuments in general, or even as groups of particular monuments, and cropmark evidence cannot be treated as separate or distinct from that uncovered by excavation. Only by detailed examination of sites within their wider context and associations can we really begin to get a much fuller understanding of these sites and begin to move beyond cropmarks. Accordingly, three case study areas have been selected in order to give more in-depth attention to the timber monuments contained within these areas and to consider these sites as real spaces and places.
5. Case Study One: The Nith Valley

5.1. Background

The first study area is focused upon the Nith valley in the south of Scotland (figures 5.1 and 5.2), and also includes some of the Annan valley to the east. The rivers Nith and Annan run roughly parallel to one another, draining the hills ringing the northern shore of the Solway Firth. In the north of the study area, both the Nith and Annan rivers flow through narrow constrained valleys draining the Galloway and Lowther Hills and the Southern Uplands, but open out to the south into wide estuaries flowing into the Solway Firth. Only the Nith estuary is included in the study area. The uplands of this region are formed by intensely folded marine mudstones, shales and sands with the major granite intrusion of Criffel close to the mouth of the Nith estuary, dominating the estuary and forming a distinctive landmark (Tipping 1999). The geology of the valley floors and estuaries are defined by breccias, sandstone and mudstones with deposits of glacial sand and gravel forming the terraces and valley sides, and alluvium on the valley floor. Deposits of till predominate elsewhere, though there are raised beach deposits of an old shoreline in the south. The cropmarks of this region have been predominantly recorded on the valley floor and sides.

A small, quite discrete concentration of timber monuments has been recorded in this area, all but two as cropmarks. They are mainly disposed along the river valleys (figure 5.2) and the greater proportion relate to one form of monument, the post-defined cursus. Why this is the case is difficult to determine, but is one question that an in-depth study of the monuments and their wider context may be able to tackle. Unsurprisingly the distribution of timber monuments follows the general distribution of cropmarks in this area (figure 5.3), the only exceptions to this being the two split-post structures at Lochhill and Slewcairn, which were not recorded as cropmarks. Therefore, our view of the distribution of these monuments is likely to be biased by the locations in which cropmarks form. However, the constrained and hilly nature of the river valleys in the northern part of the study area is likely to have put limits upon the locations in which it would be possible to construct the larger forms of timber monument in particular. Further, a certain proportion of land in the south of this region seems to have been drained only in relatively recent times, and indeed higher relative sea levels (discussed below) would have meant a higher water table in this area, probably rendering these locations too wet to allow the
construction of any monument. Therefore, the distribution may be a fair reflection of reality.

Figure 5.1 Case study area locations (Map data © Crown Copyright Ordnance Survey. An EDINA/JISC supplied service).

Figure 5.2 Extent of the study area showing the distribution of timber monuments (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
5.1.1. Previous work

Prior to 1994, research into the Neolithic sites and monuments of the Nith and Annan valleys was rather limited. Two split-post structures uncovered below the long cairns at Lochhill and Slewcairn were excavated in 1969 and 1973 respectively and Brophy highlighted the presence of the cursus monuments in this area (Brophy 1999b; 1999a; 2007a). However, little concerted attention seems to have been paid to the Neolithic monuments of the Nith valley until Thomas’s (2007) excavation of prehistoric monuments at Pict’s Knowe, Holywood and Holm between 1994 and 1998. These excavations have begun to shed light upon the Neolithic monumentality and provide a good background upon which to base an assessment of the Neolithic of this region.

The excavations undertaken by Thomas uncovered a range of activity spanning the whole of the Neolithic period and beyond; the sites excavated at Holywood North and Holm proved to have timber phases (outlined below). The first site investigated by Thomas was that of the possible henge at Pict’s Knowe (figure 5.4), to the south of Dumfries. The excavation here provided excellent environmental data shedding light upon the local
environment during the Mesolithic and Neolithic periods (discussed below), and also demonstrated the presence of earlier activity prior to the construction of the enclosure itself. The earliest activity comprised a scatter of pottery sherds, worked stone, postholes and pits, indicating the periodic presence of mobile communities during the Earlier Neolithic. In addition, a small mound sealing a large oval pit and flanked by two postholes, dating from anywhere between 4000 BC and c.2400 BC, was found below the levelling layer within the enclosure entrance (Thomas 2007, 145). The dating of the enclosure itself proved to be rather ambiguous, placing it either within the Later Neolithic or the Early Iron Age.

Figure 5.4 Pict's Knowe excavation plan (from Thomas 2007, 46).

Pre-monument activity was also found during the excavation of the earthwork cursus at Holywood South, in the form of pits, postholes and carinated pottery within the northern terminal area (Thomas 2007, 194-197), dating to sometime before 3500 BC (Peterson and Roberts 2007, 211). The cursus itself enclosed this earlier activity and appears to be of Later Neolithic date. It was formed by a U-shaped ditch with squared terminals and an internal dump bank, which seems to have returned to the ditch only a short period after the cursus was constructed. Finally, the presence of a piece of burnt birch incorporated into the
filling of the Holywood North cursus ditch and dated to 7530 to 7190 cal BC (SUERC-2114) (Ashmore 2007, 248), may suggest much earlier Mesolithic activity in this location, long before the construction of any monument, and so represents the earliest activity at any of these sites.

These excavations are invaluable for building a picture of the Neolithic of this area and the identification of probable earlier settlement evidence at Pict’s Knowe and Holywood South is informative as it demonstrates the presence of early farming communities in the Nith valley. There are also hints of earlier activity, some of which may be Mesolithic in date, in locations in which monuments were later constructed, suggesting that some of these locations may have been important before any monumental forms were constructed. If such longevity of exploitation took place at the small selection of sites so far investigated in the Nith valley, the same may be true of some of the other unexcavated sites in this region.

5.2. The environment

The environment within the Nith valley is likely to have been very different from that of today, so gaining an understanding of this is important if the contexts of the timber monuments are to be understood. Detailed palaeoenvironmental data was gathered around the location of the monument at Pict’s Knowe (Tipping et al. 2007) in the south of the study area during the excavation of the henge. Although pertaining primarily to the local environment in the immediate vicinity of Pict’s Knowe this data, in conjunction with information from pollen cores taken from locations surrounding the study area and studies concerning relative sea levels in this area, can shed some light upon the environment of the wider Nith valley during the Neolithic.

Recent research (Dawson et al. 1999; Wells and Smith 1999; Smith et al. 2003) indicates that relative sea levels in the Solway Firth were higher than the present day until later prehistory. Evidence from the lower Nith valley and estuary (Smith et al. 2003) indicates that relative sea levels appear to have reached their maximum extent around 6720 cal BP. This may have been as much as 8 or 9m OD. Subsequent sea levels appear to have fluctuated before falling to a lower shoreline, then falling further, reaching present levels at around 1800 cal BP. Therefore, when the timber monuments were constructed in this area, sea levels would have been several metres above current levels, though are likely to have been falling throughout this period. Taking the 8m contour line as an estimate of sea levels
during the Neolithic, figure 5.5 is a representation of the probable shoreline when the timber monuments were constructed and it clearly demonstrates that the lower levels of the Nith would have been inundated. This would also have meant that both the Nith and Annan rivers would have been tidal further inland, the water table would have been higher than the present day and some locations are likely to have been wetter than they are today, something which has been clearly shown by the investigations at and around the location of Pict’s Knowe in the south of the case study area (Thomas 2007). In particular, some of the heavily drained locations in the very south of the Nith valley are likely to have been very wet and marshy in the past, perhaps even with areas of standing water.

![Figure 5.5 The Nith valley showing the probable sea level during the Neolithic](Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

The vegetation in this area would also have been substantially different from that today. At the beginning of the Neolithic, the environment would have been predominantly wooded, with a closed canopy cover (Tipping 1994, 18) of predominantly oak, hazel and elm woodland (Tipping 1994, 11, 12). Alder would also have been a feature in the wetter valley bottoms (Brown 1997a, 210). Mesolithic impacts upon this woodland have been recorded in the region around Pict’s Knowe in the form of limited clearance of woodland by fire (Tipping et al. 2007, 30), though the first major impact upon this woodland is seen in a single gradual decline of elm at around 6000 cal BP. Elsewhere in the Solway Firth area
two elm declines have been identified and, although Tipping et al. (2007) do not assign the
decline at Pict’s Knowe an anthropogenic origin, elsewhere on the Solway Firth some
appear to be associated with contemporary woodland clearance (Tipping 1994, 31). After
around 6000 cal BP, the oak and elm woodland around Pict’s Knowe seems to have been
severely modified, with an abrupt removal of oak, indicative of human impact, and there is
an indication that the grazing of animals was suppressing woodland regeneration. The
woodland on the damper ground in this immediate area seems to have remained much the
same and was dominated by alder with birch and rare willow (Tipping et al. 2007, 32).

Cereal pollen is not identified in the region of Pict’s Knowe until after c.5000 cal BP. The
date of introduction of cereals into this region though cannot yet be confidently defined
and though rare cereal pollen is known from the Solway plain from the earliest Neolithic, it
is generally assumed that cereal cultivation did not occur in this area earlier than the end of
the Neolithic period (Tipping et al. 2007, 35, 36).

As much of this data relates to one particular location in the south of the Nith valley, it is
difficult to determine just how widely this evidence can be applied. In general, though, it
would appear that the picture throughout much of the Neolithic period is one of a
predominantly wooded environment, probably dominated by oak and hazel with alder and
birch on the damper valley floors (Tipping 1994). Limited clearance may have taken place
during the Mesolithic, but sometime after around 6000 cal BP this clearance intensified in
the south of the Nith valley, probably for the grazing of animals. Similar clearance may
have taken place elsewhere. How much of an impact this would have upon the woodland
as a whole is difficult to determine, and, though we should perhaps not envisage wide scale
clearance, what did take place is likely to have opened up the environment to a certain
extent.

5.3. The timber monuments

In total, ten individual timber monuments have been recorded within the Nith valley and its
tributaries, and a further five are known within the Annan valley to the east. The majority
take the form of cursus monuments, though two split-post structures, an avenue,
curvilinear enclosure and timber circles have also been recorded. They are quite evenly
scattered throughout the study area with the only real concentration of sites within the
central area of the Nith valley (figure 5.6).
5.3.1. Split-post structures

Split-post structures have been excavated below the long cairns at Slewcairn and Lochhill (figure 5.7). The structure at Slewcairn was excavated in the 1970s (Masters 1980; 1983; Noble 2006a, 80-82) and comprised two massive postholes, each of which held a D-shaped post, and a central posthole which seems to have held two smaller posts. It was later replaced by a rectangular stone and timber structure and covered by a stone-built cairn. This site lies on the lower slopes of Boreland Hill which is one of the foothills of the distinctive and visually dominant granite plug of Criffel. It lies within a much wider circle of hills on the slopes above a wide stream valley (figures 5.8 and 5.9) and is effectively surrounded by these hills. The monument is positioned upon the lower slopes of the hill, probably some distance from any potential pathways, all of which suggests that this monument has been positioned in a location which was difficult to reach or out of the way, some distance from predominant settlements and routeways. A small number of sites of later date, including cairns, hut circles and a house platform have been recorded in the general area (figure 5.8), indicating small scale later activity and settlement in this area.
Figure 5.7 Location of Lochhill and Slewcairn (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 5.8 Contour map showing the general location of Slewcairn and other nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
Figure 5.9 Location of the split-post structure at Slewcairn from the stream valley to the west.

Figure 5.10 Sketch plan of the location of the split-post structure at Slewcairn showing the terrace edge curving around the west and south and the rising ground to the north (not to scale).

The site itself lies on the western end of a slightly sloping terrace within the hillside (figures 5.9 and 5.10). The split-post structure was oriented north-south, roughly parallel to
the terrace edge located only a short distance to the west and the stream valley further to the west, effectively mirroring the dominant topographical orientation of this general area. The edge of this terrace curves around two sides of the monument, and the ground falls off quite sharply only a short distance to the west and south. The ground also rises to the north and northeast and this higher ground overlooks that location of the split-post structure. The terrace extends for some distance to the southeast, following the contours of the hill. To the west, the ground falls to a wide stream valley, beyond which the hills on the other side of this valley can be seen, while to the south the monument looks down the stream valley to the Solway Firth and Cumbria beyond (figure 5.11).

Figure 5.11 Slewcairn. View to south looking across the location of the split-post structure and the remnants of the later long cairn. The Solway Firth is visible in the distance, and on a clear day the hills of Cumbria can be seen beyond.

The location of this monument means that it is positioned in such a way as to overlook the valley below. Such views may not have been possible if there was vegetation cover surrounding this site, though the fact that the ground drops off to the south and west would surely have been discernible. Whether or not the wider views would have been visible, the surrounding topography also serves to define the wider area of the monument, with the falling ground of the terrace edge marking the southern and western extents and rising ground defining the north and northeast. The distinctive nature of this topography means that it may have defined the wider area of this monument and is also likely to have
effectively defined the extents of the area in which activity could take place. However, the fact that this site was constructed close to higher ground means that it would have been possible to stand above this site and look over and onto anything taking place in this location. Such higher ground could have served effectively as some form of raised viewing location, but could also have served as a backdrop to any activities taking place at the site when viewed from below. Therefore, as this monument could have been constructed anywhere along this terrace or indeed upon any of the other terraces within this hillside, it appears that the location of this site was carefully chosen, exploiting the surrounding topography.

The site of the split-post structure at Lochhill was fully excavated between 1969 and 1971 (Masters 1973), and all remains of the stone long cairn have since been removed. The pre-cairn timber structure again comprised two large D-shaped timbers and a pair of central posts within a single pit. This site lies on a level terrace on the north side of a small hill above the Nith estuary (figure 5.12). Given sea level changes, this monument would have been distinctly closer to the shore and the gap between the foothills of Criffel and the New Abbey Pow would have been narrower, forcing any routeways around the estuary itself and potentially closer to the monument at Lochhill. Therefore, this site may be located on or close to a routeway between these two topographical features.

5.12 General location of the split-post structure at Lochhill showing its location on the north side of a small hill and the probable Neolithic shoreline (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
The northeast-southwest orientation of the split-post structure means that it would have been oriented roughly at right angles to the slope of the hill. The ground slopes gently
down to the north-northwest and continues to rise to the south and southeast to the hill’s summit, only a short distance away. This higher ground dominates the location of the split-post structure, overlooking its location, while the distinctive form of Criffel is very obvious to the southwest (figure 5.13). Longer views, such as across the Nith estuary, seem unlikely to have been possible if there were any form of vegetation cover as is likely to have been the case when this monument was built. Positioned on one side of a hill, the monument does not appear to have been built in a prominent location (figures 5.12 and 5.14). In order to approach this site it would have been necessary to climb part of the hill but it would be possible to look over and onto it from above. As at Slewcairn, such higher ground could have acted as a raised viewing location, but may also have served as a form of backdrop to whatever ceremony or activity took place at the location of this monument. Although positioned upon higher ground, the location of this site almost suggests a desire to keep it hidden away and increase the difficulty of reaching it, as also seems to have been the case at Slewcairn. Its location may have placed it away from any predominant routeway, which is likely to have avoided passing over the hill. Clearly, these sites are connected by more than their shared form.

5.3.2. The central Nith valley

The sites at Holywood North and Holm lie within the centre of the case study area (figures 5.15 and 5.16), and form part of a wider monumental complex encompassing a number of differing types of Neolithic site. The town of Dumfries is only a short distance to the south and was an important later river crossing (Loveday 2004, 9). It is not inconceivable that the importance of this location as a crossing point had very early origins, and the complex of monuments here may bear some relation to the nearby crossing point. A small number of other sites, probably of later date and recorded mainly as cropmarks, are known in this general area (figure 5.16).

Both Holywood North and Holm have been excavated recently (Thomas 2007). The excavation of the northern terminal of the cursus at Holywood North demonstrated that the earliest feature was a large timber upright erected in a prominent position on a slight hillock. As many as five uprights may have stood in this location, some of which were burnt, and, as it was incorporated into the larger post-defined cursus monument, it seems to have been the focal point from which the rest of the structure was laid out (Thomas 2007, 237). The posts of this cursus showed evidence of more than one phase: some seem to have been burnt, while others were pulled out and some replaced (Thomas 2007, 234).
However, at only the large post and one other posthole of the cursus was there shown to be more than one episode of burning. Therefore Thomas (2007, 234) has suggested that the first build of the post-defined cursus may have been dismantled, with a number of posts removed and others selectively burnt. Later the whole monument may have been burnt, affecting most of the posts. This may have taken place over several centuries, something which appears to be backed up by the radiocarbon dates which indicate that the cursus was built between around 3800 and 3650 cal BC (SUERC-2115), with the final phase of construction at this timber site taking place between around 3640-3490 cal BC (SUERC-2113) (Thomas 2007, 239).

Figure 5.15 Locations of Holywood North, Holm and Dalswinton Roads (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

This timber monument was then replaced by a ditch and bank cursus, which may have been much longer than the earlier timber monument. The available aerial photographs indicate the postholes seem to tail away towards the southern end of the cursus. Certainly, the excavation of a small area immediately south of the two causeways in the cursus ditch (Trench 2 in figure 5.17) did not recover any indication that the postholes of the earlier cursus continued this far to the south. However, it did uncover a row of postholes forming a ‘screen’ or facade across the causeway through the cursus ditch, possibly related to a later restriction of access into the cursus (Thomas 2007, 188, 242). They also demonstrate
that the use of timber did not end with the final burning of the post-defined cursus, though timber seems to have been used only as a minor element of the larger structure rather than a monument in its own right.

5.16 Contour map showing the general location of Holywood North and Holm and other nearby archaeological features (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 5.17 Holywood North transcribed from aerial photographs showing the location of the excavation trenches and suggested internal divisions (from Thomas 2007, 238).

The charcoals recovered from the site of the post-defined cursus indicate the use of oak posts for the uprights of the post-defined cursus, though a wide range of charcoals were
also recovered and it has been suggested that this may indicate the use of twiggy wood species as hurdling between the uprights or as a revetment or internal support for the later gravel bank (Thomas 2007, 242). Alternatively it may indicate the use of brushwood to help set the oak posts alight.

This excavation therefore has revealed a complex sequence of events at this site with the timber elements forming only the first few phases of activity. In form, the post-defined cursus appears to have had a rounded terminal and may have measured as much as 130m in length, though no corresponding southern terminal has been recorded. Although only a small section of this monument was excavated, Thomas (2007, 238-239) has suggested the presence of several transverse lines of posts (figure 5.17), dividing the cursus into a series of distinct enclosed areas, all of which may not have existed in all phases of the monument’s existence. The presence of transverse lines of posts is certainly something that is seen at other post-defined cursus monuments, especially in eastern Scotland, and may well have existed at this site also. Some of these internal divisions may have formed the southern extent of this site at certain points in its history.

This cursus monument is located in an area of generally flat, though slightly undulating, ground between the River Nith and the Cairn Water (figure 5.16). It is a largely featureless location with distant views to hills, which are unlikely to have been visible in a heavily wooded environment. The slight hillock upon which the large timber upright was erected can be seen on the ground. The subtle nature of this feature suggests an intimate knowledge of the local topography, indicating that the initial large timber and subsequent post-defined cursus were constructed in close relationship with the environment, though it must be borne in mind that this feature may have been larger prior to modern ploughing.

The post-defined cursus monument at Holm lies only around 850m to the east of the Holywood North cursus (figures 5.15 and 5.16) and may have been broadly contemporary with the timber phases of this monument. A complex of features was obvious on the aerial photographs (figure 5.18), including three roughly parallel lines of pits extending northwest to southeast, an avenue of pits on a slightly different alignment, two ring-ditches and a scatter of further pits. Excavation here (Thomas 2007, 200ff) revealed a complex sequence of events. The first monument was a post-defined cursus, defined by three lines of posts. The majority of postholes had been recut on at least one occasion and most contained traces of burning, though a small number contained the in situ remains of a burnt post, generally of oak. It is unclear whether this monument consisted of three lines of posts
throughout its history or whether they represent differing phases of this monument. The evidence of recutting and burning indicates that the cursus was reconstructed on several occasions, and it is possible that the configuration of the structure changed over time. Indeed, the kinks and changes in alignment obvious from the aerial photographs suggest that the structure may have been laid out in different ways at different times. Perhaps one side of the structure was ‘lost’ at some point, the whole monument then moving when it was next reconstructed (Thomas 2007, 245). Despite the evidence for multiple phases of construction, the radiocarbon dates are virtually indistinguishable from one another, indicating that the reconstructions may not have taken place over a particularly long period of time, perhaps only one year or as many as ten years between each re-use (Thomas 2007, 245). The dates for this monument are quite early, falling between 3990 and 3660 cal BC (SUERC-2124, 2126, 2129, 2130, 2131), though an old wood effect may be in operation as the dates were on charcoal (Thomas 2007, 244). This cursus monument was later superseded by a pit-defined avenue of Early Bronze Age date.

Figure 5.18 Holm as revealed on aerial photographs (© Crown Copyright: RCAHMS).

Excavation also revealed what may be a timber circle, at the southern edge of the southern line of posts of the cursus, coinciding with the location of two later ring-ditches (Thomas 2007, 219-220). The features are rather unclear here, though an arc of postholes which had been cut by a later ring-ditch were uncovered which may represent the remains of a timber circle. No dates were obtained for this timber monument, though its location may suggest that it functioned in conjunction with the post-defined cursus monument, or was located
with reference to it. Two ring-ditches of much later date were constructed in the same location as this timber circle and, although the exact relationship between these two features and the earlier timber circle is unclear, it is also possible that this timber circle represents an earlier phase of these ring-ditches rather than being of Neolithic date. Therefore the relationship and exact dating of this timber circle remains uncertain.

Figure 5.19 Looking northeast across the location of the cropmarks at Holm.

Situated on a level gravel terrace on the western side of the floodplain of the River Nith (figure 5.16), the timber monuments at Holm were constructed in a very distinctive location. The gravel terrace raises this site above the level of the floodplain of the Nith, and it overlooks the meandering course of the river, looking across to the east side of the Nith valley (figure 5.19). To the south and southeast, the distinctive profile of Criffel can be seen. The cropmarks at Holm appear to cover much of this terrace and both the cursus and later pit-defined avenue lie roughly parallel both to the terrace edge and the line of the River Nith. This site is positioned at the southern extent of the terrace (figure 5.20), which falls sharply to the northeast, and more gently to the southeast and southwest, curving around the south side of the site. The south edge of the cursus and later avenue lie close to the break of slope at the southeast, and the terrace edge appears effectively to define the limits of the monumental complex. The northeast limit of the monument has been clearly defined by the known cropmarks, though again the sharply defined terrace edge lies only a
short distance away and perhaps could also be envisaged as defining the limits of the monumental complex. However the known southwest and northwest limits of this site are today defined by the modern field boundaries as, on the two occasions when the site at Holm was recorded from the air, the fields to the south and west were under grass or crops not sensitive to cropmarks. Therefore it is possible that the site itself could be larger than that currently known. Certainly, some pits may have been recorded on the 1994 aerial photographs in the field to the south, though whether this relates to the Neolithic activity associated with the cursus or the later activity is difficult to discern.

Whether this site was larger than that recorded as cropmarks or not, its specific location indicates that the local topography was known and made use of. The positioning of this monument at the southern end of the terrace, the defined nature of the terrace edges and the manner in which the cursus follows the orientation of the terrace all suggest that the location of this site may have had a part to play in the form of the monument and the functioning of the site. Firstly, as the cursus follows the orientation of this essentially linear terrace, it may mimic its form, suggesting that the form of the monument may have been influenced by the topography of the location chosen, with the same alignment continually reinforced with respect to the topography. Further, the fact that this site has been positioned at the southern extent of the terrace means that the topography defines three edges around the site (figure 5.20), effectively defining the extent of the wider location of the monuments. It is therefore possible to suggest that the terrace itself may have been used to define the extent of the monumental area and the activities that took place here. Certainly the edges of the terrace would have limited the number of people who could come close to the monument and so may have been used to define the area in which activity took place. Therefore the timber monument here should perhaps be understood as extending beyond the limits of the ground plan. Even in a predominantly wooded environment, the distinctive form of this terrace is likely to have still been discernible and in particular, the steep drop on the east to the lower floodplain with the river beyond would surely have been very obvious. This terrace may also have formed a natural routeway, raised above the level of the damp floodplain and running parallel to the river, itself a probable routeway, and so this may perhaps have been an influence in the choice of location of the monuments recorded at Holm.
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Figure 5.20 Holm showing the extent of the terrace (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Around 4.3km NNW of Holm the cropmarks of an avenue, 85m in length, have been recorded at Dalswinton Roads (figure 5.15). It appears to ‘curve’ around the location of a possible henge recorded only a very short distance to the south, while the cropmarks of a presumably later barrow have been recorded only around 5m to the north. Making any conclusions about the relative chronology of these sites is difficult, yet the fact that the avenue appears to curve around the henge does suggest that the henge was earlier in date. Therefore, it is possible that the location of this timber monument was influenced by the existence of an earlier henge, though this is difficult to determine from cropmarks alone.

Much of this site has been built over by the extension of the farm buildings of Dalswinton Mains since the initial aerial photographs were taken and some of the locality landscaped, making any assessment of the location a little more difficult. Nevertheless, this monument appears to be in a rather different setting to the monuments at Holm. Dalswinton Roads lies above the floodplain of the River Nith, although is much further away from the river than Holm, at around 1.2km (figure 5.21), and the river itself does not appear to have been visible from the location of the site. The site is in a slight bowl of hills, which rise nearby to the north, east and southeast, but the landscape opens out to the southwest, west and northwest. It lies close to the entrance to a relatively narrow passageway through low hills immediately to the east and at the location where the topography opens out to the valley
bottom to the west. It seems to be positioned at the very edge of the valley floor, where the sides of the valley begin to rise. A complex of Roman temporary camps and forts, recorded on the valley floor a short distance to the southwest (figure 5.21), attest to the presence of an important river crossing (Maxwell 2004, 86). The relative proximity of the avenue at Dalswinton Roads to this crossing point may not be coincidence and it is possible that the avenue was built in relation to this river crossing.

The avenue itself runs northwest-southeast across a north-northwest to south-southeast oriented ridge, running across the top of this ridge (figures 5.22 and 5.23). Most of the avenue lies on the top and east side of this ridge, though some of the west end may lie on the falling slope of the west side of the ridge. The possible henge, which the cropmarks of the avenue appear to curve around, was probably located on the summit of this ridge. Therefore the western end and central section of the avenue are likely to have been at a slightly higher level than the eastern end, and so the timbers of one end of the avenue may have been emphasised by the presence of this ridge. The slight curve of the avenue combined with the slope of this ridge means that it would probably not be possible to see from one end of the avenue to the other, while the narrowness of the avenue would have restricted the number of individuals who could access this site. Taken together, this suggests a desire to restrict both visual and physical access. As there is no indication of any other monument or site to which access is being restricted, it may be that restriction of access into the avenue itself was desired or that the avenue directed access across what may have been an important location.

However, as the avenue lies across a ridge, which may have acted as a routeway, it is possible that this monument may have acted as a barrier or boundary rather than directing movement along the monument itself. The placement of the avenue across the ridge would effectively bar further movement along that route. A similar function may be suggested for the avenue at Kirklands in East Lothian (see section 7.4.3). By acting as a check to movement, the avenue would have directed movement to the east and west, around the location of the avenue itself, and also around the adjacent henge monument and ring-ditch. As such, it may have served to control movement around an important location and may also have directed and controlled access both to this location and the adjacent monuments.
5.21 Contour map showing the general location of the avenue at Dalwsinton Roads and other nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 5.22 Dalwsinton Roads showing the ridge over which the avenue was constructed. Current landline mapping shows the developments since this site was initially recorded from the air (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
5.3.3. Tibbers

The final site within the Nith valley itself is Tibbers, which lies at the very northern extent of the case study area (figure 5.24). Here sections of what may be a post-defined cursus and possible curvilinear enclosure have been recorded on level ground on the valley bottom. Only sections of these sites have yet been recorded as cropmarks, meaning that the morphological interpretations made can only be considered provisional. Although close to the Nith, the sites appear to lie on a slight terrace, raising them above the level of the actual floodplain (figure 5.25) and, despite its low lying location, it appears well drained. Whether this would have been the case when the monuments were constructed cannot, at present, be determined, though its position does suggest that they would be susceptible to flooding. Certainly, palaeochannels recorded as cropmarks indicate the river has changed its course on more than one occasion (figure 5.25), though today they do not form topographical features. Although it is very difficult to date these river channels, some certainly pre-date the cropmarks recorded here as features can be seen in the same location as the palaeochannels. At this location the river valley runs roughly north-south and becomes more enclosed to the north while opening up to the south. A Roman temporary camp and two ring-ditches have been recorded on the opposite bank of the River Nith, while two barrows are known to the south of Tibbers.
Figure 5.24 Location of Tibbers (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 5.25 General location of Tibbers showing the palaeochannels recorded as cropmarks and nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
The cursus has been recorded as an L-shaped arrangement of pits, forming the western side and squared northern terminal, with a short section of pits on the east, which may define part of the eastern side of the cursus. The complete circuit of the site has never been recorded. It is oriented north-northwest to south-southeast, roughly parallel to the orientation of the River Nith around 310m to the east. It runs roughly parallel to the sides of the valley, which begin to rise only a short distance to the west, and the cursus has been located close to the base of this slope at the edge of an extensive flat plain. The specific location of the cursus is interesting as it lies to the north of a slight hillock in this otherwise flat location (figure 5.26). If the cursus does extend further south, then the west side of the cursus would have run over this hillock. This is possible, though it may also be possible that the hillock served to define the southern extent of the cursus. Whatever the explanation, this hillock may have been the determining factor in location as it is one of the few rises in an otherwise flat plain.

Figure 5.26 Tibbers looking south along cursus showing location of the hillock.

The possible enclosure lies around 170m to the east. It may be curvilinear in form, though it is poorly defined as a cropmark and could represent a rectilinear enclosure of similar form to some of the timber halls. It lies adjacent to a small hill and is much closer to the river than the cursus, though the hill prevents the river from being seen from the site. It shares the same orientation as the nearby cursus, River Nith and the adjacent hill. Such an
orientation suggests that both of these monuments reflect the predominant orientation of
the river valley. In addition, both lie upon, or are at least close to, what is likely to have
been a north-south routeway and so their orientation may also be a reflection of this.
Unfortunately, due to the nature of the record, we can only very provisionally suggest these
sites are Neolithic.

5.3.4. Fourmerkland and Kirkland Station

Two further post-defined cursus monuments, at Fourmerkland and Kirkland Station, have
been recorded along one of the tributaries of the Nith, the Cairn Water, which becomes the
Cluden Water further to the south (figure 5.27). The cursus at Fourmerkland has been
recorded within the cropmarks of a later Roman temporary camp on a flat terrace above the
Cluden Water. Additional sites of varying dates have been recorded in the immediate
vicinity (figure 5.28). Only the squared western terminal and around 50m of its length have
been recorded, while a ring-ditch, probably a barrow, lies across the south side of the
cursus boundary. This cursus is likely to be larger; its eastern extent is defined by a modern
field boundary. However, as the ground slopes away quite sharply only around 120m to the
east at the edge of the terrace on which the monument lies, the cursus may not have
extended much further than this terrace edge (Brophy 1999b). The monument itself lies
roughly parallel to the general flow of the Cluden Water, around 135m to the south, and
the wider valley. The only recorded closed terminal is oriented towards a narrowing of the
valley to the west, where the hills have an interesting arrangement, reminiscent of squared
cursus terminal (figure 5.29). Therefore the form of the cursus, with its similarly squared
terminal, seems to mimic the surrounding topography, suggesting a close relationship with
the local topography. It is possible to suggest then that the specific location chosen for the
construction of this cursus may have influenced the final form of the monument.

The cursus monument recorded at Kirklands Station also seems to have had a close
relationship with local topography, although only the rounded northwest terminal has been
recorded and sections of the east and west sides. It is oriented roughly north-northwest to
south-southeast, curves slightly along its length, is around 245m long and it measures
around 38m wide. This cursus lies close to the Cairn Water, adjacent to a slight curve in
the river (figure 5.30). Therefore, although the river runs roughly parallel to the east side of
the monument, it changes direction to the north and flows almost at a right angle to the
cursus. The modern Kirkland Bridge is only around 300m to the northeast and may relate
to a much older crossing or fording point across the Cairn Water, suggesting that proximity to such a location may have been a factor in the positioning of this site.

Figure 5.27 Location of Fourmerkland and Kirklands Station (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 5.28 Contour map showing the general location of Fourmerkland and nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
Figure 5.29 Fourmerkland. Looking west along cursus showing rough extent of cursus and large 'terminal' formed by the hills.

This cursus lies on a level terrace raised slightly above the floodplain level and the northern terminal of the cursus seems to have been placed so that it terminates very close to the terrace edge, possibly almost at the break of slope (figure 5.31). The edge of the terrace curves around this terminal and then runs roughly parallel to the east side of the cursus where it is defined by an old stream bed forming a very distinctive profile (figure 2.32), while the west side of the cursus follows the rising slope of the valley side located a short distance to the west. The form of this cursus then appears to follow and mimic the topography of the terrace on which it lies (figure 5.33), even down to the rounded terminal and terrace edge. This terrace and the surrounding topography define a very distinct area around the monument, something which is likely to have served to further define and emphasise the form of the monument, but may also have defined the extent of this as a special place. Only the southeast edge is not well-defined and it is at this end that no closed terminal has been recorded; it is possible that there was only ever one closed terminal.
Figure 5.30 Contour map showing the general location of the cursus at Kirkland Station (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 5.31 Kirklands Station showing rough location of the northern terminal in relation to topography.
Figure 5.32 Kirklands Station. Looking east from centre of cursus showing estimated line of cursus with old stream bed beyond. This would have been more prominent before modern ploughing.

Figure 5.33 Kirklands Station showing extent of terrace (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
5.3.5. Trailflat

Figure 5.34 Location of Trailflat and Lochbrow (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

The post-defined cursus and timber circle at Trailflat lie to the east of the Nith, within the valley of the Water of Ae, a tributary of the River Annan (figures 5.34 and 5.35). The cursus monument has been recorded within the cropmarks of a later Roman temporary camp and only the squared northwestern terminal and around 75m of its length has been recorded. The timber circle is around 185m to the southeast of the cursus and defined by small evenly spaced pits, with two internal pits. It lies around 25m from a cluster of round barrows and so could be part of this group rather than contemporary with the cursus. Both the timber circle and cursus monument lie within an area of level ground and the locations of both are intervisible from one another (figure 5.35). They lie within a loop in the Water of Ae, though the river cannot be seen from either site as it lies more than 400m from Trailflat. Nevertheless, the cursus is oriented roughly parallel to the river to the east, but not to the north, and is also roughly parallel to a range of hills to the southwest (figure 5.34). Palaeochannels recorded as cropmarks around the location of these two sites are likely to indicate the movement of the river over a very long period of time. Whether any of the channels were contemporary with the monuments recorded here is impossible to determine, though most certainly seem to pre-date the construction of the Roman
temporary camp, which appears to overlie the palaeochannels, and may in fact be associated with outwash after the end of the last ice age (Wilson 2000, 177). Nevertheless, whatever the date of these features, the possibility that the river’s course may have been very different when these monuments were constructed must be borne in mind.

Figure 5.35 General location of Trailflat showing palaeochannels and nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 5.36 Location of cursus and timber circle at Trailflat.
5.3.6. Lochbrow ‘complex’

The final group of sites to be considered as part of this case study area is the cursus monument and timber circles recorded at Lochbrow (figure 5.34), situated on a gravel terrace on the western side of the River Annan (figure 5.37). Cropmarks include a long post-defined cursus monument, at least 175m in length by around 20m, and two timber circles. Only the northern, v-shaped, terminal of the cursus has been recorded and the cropmarks suggest that the cursus may widen slightly to the south. One internal division has been recorded within the northern section of the cursus, around 57m from the northern terminal. Of the two timber circles, one lies only around 10m to the east of the cursus terminal, while the other has been recorded around 75m southwest of the south end of the cursus. A round barrow and a small section of curving ditch, which may be part of a second barrow, appear to lie on the line of the cursus to the south. A Roman temporary camp, palisaded homestead and enclosure have been recorded a short distance to the northeast on the opposite side of the River Annan.

Figure 5.37 General location of Lochbrow (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
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Figure 5.38 Lochbrow from the south showing the distinctive nature of the terrace.

The terrace on which this group of sites lies is defined by fairly sharp and steep edges and has a series of old stream beds cutting across it, giving these sites a very distinctive location (figure 5.38). The cursus terminates close to the northern terrace edge, which is directly above a meander in the River Annan. Today, the river itself can be glimpsed through the trees on the northern edge of the terrace. An old stream bed, which can be seen on the aerial photographs as a darker area of crop, cuts northeast-southwest through the corner of the terrace, narrowing and constraining the northern section of the terrace, which then forms a curved, slightly pointed end. The terminal of the cursus and adjacent pit-enclosure have been placed just at this most narrow point and the form of the cursus terminal seems to mirror the form of the terrace edge (figure 5.39). The timber circle to the southwest of the cursus also seems to have been located on the very edge of the terrace, close to the break of slope and on a slight promontory overlooking the old stream bed and a very wet patch of ground (which may have formed a small pond in the past).

Therefore, it could be argued that the forms of these monuments seem to reflect their location and that they drew upon the local topography in which they have been constructed. Moreover, the topography of the terrace serves to constrain and direct access to these sites as access is easiest by far from the south, on the same axis as the cursus monument. The sharp nature of the terrace edges defines a very distinct area around the monuments recorded here (see figures 5.38 and 5.39), and it is possible to suggest that the terrace itself may have served to define the boundaries of this place and the limits of the
activity that took place here. The terrace edges may also have limited the number of people who could approach the monuments at one time, particularly at the northern extent of the site where the terrace edge becomes much more constrained. They may also have served to distance certain people from the monuments and whatever took place at this location, with some individuals only able to view the sites from a distance from the other side of the relict stream beds. In other words, it is possible to suggest that the monuments did not finish at the boundaries of the ground plan as we see it today, but incorporated the surrounding topography in their use and meaning.

Figure 5.39 Lochbrow showing extent of the terrace and relict stream beds (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

5.3.7. Summary

Drawing my observations together, a common theme seems to be the influence of the local environment upon the forms and locations of the monuments. Each seems to have been positioned in close relationship with the surrounding landscape and, in many cases, it
seems the topography and local environment were drawn upon and incorporated into the monumental forms constructed, even subtle features such as the hillock incorporated into Holywood North cursus. Some sites lie close to later important river crossings. If such crossing or fording points can also be considered to have been important at a much earlier date, then they may have influenced the location of some of the monuments. All this suggests that those who constructed these monuments had an intimate familiarity with the local topography, probably obtained through activities such as farming or hunting. Vegetation cover could alter some of the observations made, particularly as the Nith and Annan valleys are likely to have been heavily wooded when the monuments were constructed. However, a certain amount of clearance must have taken place in order to build these monuments in the first place (G. Noble pers. comm.), which would have opened up the local landscape to a certain extent and may have allowed the observation of some of the topographical features which seem to have been important. It may be that these sites were constructed within existing clearances. In addition, even without this clearance, this would have been an environment that was intimately known by the people living within this area. They would have passed through it, lived within it, exploited it and known and used it. If these were locations which were already known or exploited, then they may already have been important prior to the construction of any monumental forms, and certainly, the suggestions of earlier activity at the excavated sites in the Nith valley suggest that this may have been the case. Landscape is understood by movement and habitation, not just visual perception.

The surrounding environment then seems to have been significant. In most cases, observations from field visits indicate that the monuments reflected, to some extent, the topography in which they have been constructed. This suggests that the final form the monuments took may have been influenced by the topography of the location in which they were constructed. Further, in many cases it can be suggested that the monuments did not finish at the timber boundaries, but drew in and incorporated the land within which they were constructed. As architectural forms, they re-ordered an already existing ‘natural’ space, perhaps formalising an already important location. These monuments then, rather than reflecting Scotland-wide, or indeed Britain-wide templates, can be argued instead to reflect the local environment and local concerns of those who built them. Looking wider, such a perspective begins to break down the perception that individual monument types based upon form necessarily share the same meanings (see sections 8.5.2 and 8.6 for fuller discussion).
5.4. Other Neolithic sites and stray finds

Alongside these timber monuments, a small number of megalithic monuments which span the Neolithic have also been recorded in this area (figure 5.40). There are three long cairns in the north of the study area, at Capenoch within the Keir Hills, Crossford Hill around 3km to the south and at Stiddrig, close to one of the tributaries into the Annan River. What may have been a chambered cairn containing human remains was removed from the vicinity of Boatford, close to Thornhill, in 1795 (Davies 1981, 41-42), while a second chambered cairn has been recorded at Fleuchlarg, around 5km southeast of the cursus at Kirklands Station. A stone circle, now removed, was recorded at Burnstgarth Green Farm, now beneath modern Locharbriggs, another stone circle may have stood at Newlands, around 2km east-northeast of the Dalswinton Roads avenue while a third may have stood close to Kirkgunzeon in the southwest of the study area. Ditch-defined cursus monuments have been recorded at Gallaberry, around 2.5km northeast of Holm, and at Curriestanes, immediately southwest of Dumfries. A further ditch-defined cursus monument has been partially excavated at Holywood South (Thomas 2007), only around 200m southwest of the cursus at Holywood North, and the complex of sites in this general location is completed by the Twelve Apostles stone circle which lies around 200m southwest of the Holywood South cursus. Therefore, monuments of materials other than timber were also constructed in this study area and the timber monuments must fit into this wider expression of monumentality. Interestingly, the Nith valley represents a rare area in which there is a tradition of building both timber and megalithic monuments.

A scattering of stray finds, such as flints, polished stone axes and carved stone balls, hint at additional activities in the Nith and Annan valleys. As they have not been studied in any depth, little can usefully be said about them or their distribution. Nevertheless, the sources determined for some of the polished stone axes found in this region are of interest and may tell us a little about wider contacts with this area. Of those stone axes for which a source has been determined, most are made of stone either from the Southern Uplands or the Great Langdale and Scafell areas of Cumbria, though one originated in Ayrshire, two came from undefined sources in northern England or southern Scotland and another two may have had their source in Northern Ireland (Livens 1958-9; Williams 1970; Clough and Cummins 1988). It is perhaps not surprising that around half of the stone axes for which a source has been determined originated from local sources in the Southern Uplands. However, the remainder seem to have travelled a much greater distance, suggesting contact...
with communities across the Solway Firth, within southern Scotland and even across the Irish Sea.

Figure 5.40 Distribution of other broadly Neolithic sites (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

5.5. Pathways and cost-path analysis

Most of the timber monuments recorded in this case study area have been recorded within river valleys, which form natural routeways through the landscape. While this may suggest timber monuments were deliberately located upon routeways, it may also reflect the locations in which cropmarks show best. As a GIS can be used to model pathways through a landscape, the relationship of the timber monuments with routeways through the landscape was investigated in more detail using a basic cost-path analysis. This models the easiest pathway through the landscape between two points, based upon slope. The slightly higher sea level and a very marshy area in the southeast were also taken into account and defined as areas which are likely to have been difficult to traverse. The limitations of this form of analysis have been outlined previously (chapter 3), and these caveats should be borne in mind. Nevertheless, it is possible to make some interesting suggestions from the cost-path analysis undertaken within this case study area (figure 5.41).
Figure 5.41 Results of cost-path analysis (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

The modelled pathways resulting from this analysis confirm the suggestion that those monuments recorded on or close to the valley floors may have been located on or close to routeways running along the river valleys. The sites at Tibbers, Holm and Lochbrow appear to lie on routeways running north-south following the direction of the Nith and Annan river valleys, while the cursus monument at Kirklands Station lies along a modelled pathway running roughly northwest-southeast following the Cairn Water and that at Fourmerkland is adjacent to an east-west pathway following the Cluden Water. The rivers themselves may also have been used as a method of travel. The modelled pathways also place the split-post structure at Lochhill on or close to a north-south routeway, something that was not obvious from the field visit, though its position on a small hill may mean that any pathways would have passed around the hill rather than through the location of the monument.
Also of note is the fact the avenue at Dalswinton Roads may lie close to an east-west routeway, something which was not obvious from a field visit, though it is difficult to determine if a routeway would have passed between the relatively narrow passageway through the hills at which the avenue is located. The cost-path analysis places the cursus monument and timber circle at Trailflat at the meeting of routeways, one of which extends to the northwest and southeast following the Water of Ae, the other curving around the range of low hills to the west of this site. This suggests the deliberate placement of these monuments at this junction of routeways, and the importance of this location for movement through this landscape, something attested to by the later construction of a Roman temporary camp in the same location. Something similar may be suggested by the conjunction of another Roman temporary camp with the location of a cursus at Fourmerkland, which also lies at or close to the junction of modelled pathways and a probable natural routeway along the river valley. Such meetings of routes may also reflect the meetings of territories as natural features such as rivers and pathways may be used as territorial boundaries. As most of the timber monuments appear to bear some relation to rivers and pathways, then it may be that they were built in liminal locations at the edge of territories.

The modelled routeways highlight the central area of the Nith valley as the location where many of the pathways cross and interconnect (figure 5.42); here routeways following the Nith to the north and south meet pathways running to the east and west and the Cluden Water meets the River Nith. The valley floor widens in this location and the greatest concentration of Neolithic monuments, both timber and earthwork, have been recorded here. The two-phase cursus at Holywood North and timber monuments at Holm are located at this crossroads of pathways, as well as the Holywood South cursus and the Twelve Apostles stone circle (as yet undated). The avenue at Dalswinton Roads and post-defined cursus at Fourmerkland, as well as the earthwork cursus monument at Gallaberry, seem to lie to the edge of this area of interconnecting pathways. It may be that this crossroads of pathways, where several routeways and watercourses met and interconnected, was one reason for the concentration of monuments constructed in this location. The meeting of so many pathways could suggest the interconnection of several territorial boundaries. Such pathways may have served to draw in scattered communities from the wider location and would also have aided ‘pilgrimage’ to these places, so may have facilitated periodic gatherings of larger groups of individuals than elsewhere. As some of these routeways may have extended for some distance, these connections may have been much more wide ranging than just the Nith and Annan valleys, and certainly this is something which may be
reflected in the widespread sources of some of the stone axes found in this region (Livens 1958-9; Williams 1970; Clough and Cummins 1988). Perhaps this area was a meeting place for widespread communities; a place where people as well as territorial boundaries met. If this was the case, then one might expect intermittent gatherings to have taken place, reflected in episodic activity at the sites here as groups from the wider location met at intervals, and this is exactly what was uncovered at the post-defined cursus monuments excavated at Holywood North and Holm. It is also illustrated through the phases of precursus activity at Holywood South.

Figure 5.42 Central Nith Valley showing the concentration of monuments, modelled routeways and rough orientations of the Holywood North, South and Holm cursus monuments (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

It is notable that almost all linear monuments lie roughly parallel to nearby modelled routeways. This is something already suggested for Tibbers and Lochbrow, which are oriented in the same direction as the river valleys in which they sit, but was less obvious for the Holywood North cursus or Dalswinton Roads. The Holywood cluster of sites (figure 5.42) is particularly interesting as the two cursus monuments recorded here have differing orientations despite being located within a few hundred metres from one another (Brophy 1999b). The modelled pathways suggest that they may reflect different pathways, with the Holywood North cursus reflecting pathways running to the northeast and
southwest, while the earthwork cursus located less than 200m away reflects pathways passing to the north and south. Therefore, the orientation of these monuments, and perhaps even their form, can be suggested to reflect movement through the landscape. This is further indication of a relationship between the timber (and earthwork) monuments and pathways and movement through the landscape.

This does, however, contrast with Chapman’s GIS work at Rudston A cursus, East Yorkshire, (Chapman 2003) which concluded that this cursus did not follow a path of least effort. Instead, the least-cost path was shown to deviate significantly from the route of the cursus. This, though, was a much finer-grained analysis than the one undertaken in the Nith valley, focused solely upon the cursus itself and not movement through the wider location. More detailed analysis, similar to that undertaken at Rudston, is likely to refine some of the observations made above, though the general patterns remain.

Returning to the results of the cost-path analysis, only the split-post structure at Slewcairn stands out as not bearing any relation to the pathways through the landscape. This location may reflect a very different purpose, placing it in a much less accessible location and one which is unlikely to have been visited while on the move or by large groups of people. Perhaps this reflects a much less public monument and one which individuals would have to go out of their way to visit. Despite its position upon a modelled routeway, Lochhill may also have been built in a similar location. Located over the brow of a hill, it may have been tucked away, perhaps in a much more ‘private’ location than many of the other timber monuments. The fact that both of these monuments have later mortuary roles distinct from any of the other timber monuments may explain this difference.

Arguably the most important result of this analysis is the fact that it has shown that all of the timber monuments in this region, apart from the split-post structure at Slewcairn, lie on or close to possible routeways through the landscape. That some, such as the Holywood North cursus, do not lie exactly on the lines plotted by this analysis should not worry us overmuch as this form of analysis can only indicate possible routeways; the actual pathways followed may have varied in some degree from the lines plotted by the GIS. In addition, the single pathway across the landscape is a relatively modern phenomenon. Instead prehistoric pathways are likely to have spread across the landscape, providing a corridor of movement rather than a single inscribed route (Taylor 1994, 3). Therefore each line plotted by this analysis can be taken to represent a wider corridor of movement and all but Slewcairn appear to relate, to some degree, to movement through this landscape.
Therefore, pathways and the general direction of movement may have had a part to play in the linear form and alignment of these monuments.

Such pathways are likely to have existed long before the construction of the timber monuments; communities and individuals certainly existed prior to the Neolithic and they would also have followed pathways across the landscape. These pathways are likely to relate to routes of animal movement and hunting patterns (Taylor 1994, 2; Tilley 1994, 113). Therefore the modelled pathways are just as likely to reflect Mesolithic pathways and it is possible to suggest that many monuments were built upon pre-existing pathways. It may be that these monuments were built in existing clearances within the woodland (Brown 1997b, G. Noble pers. comm.), formed either through natural processes or human intervention. As such forest gaps can form nodes or ‘central places’ for path networks (Tilley 1994; Brown 2000), some of the timber monuments may have been built at these nodal points. Therefore, many of the locations in which these monuments were constructed may have been important prior to the construction of the monuments and were ones which were already known, exploited and passed through by groups and individuals.

5.6. Discussion

Drawing all of this together, it is possible to suggest that many of the timber monuments in this region were built on or close to pre-existing pathways, within locations which may already have been important, perhaps as clearances forming nodal points along the network of pathways within what would have been a largely wooded environment. All the timber monuments appear to relate predominantly to their local environment. Long sight lines and views to distant locations, as has been suggested for megalithic Neolithic monuments in southwest Scotland (Cummings 2002), do not seem to have been important, though views to Criffel do seem to predominate in the south of the study area, something which may merely reflect the fact that it is the highest place in this location but could also suggest that it acted as a visual draw. Each monument appears to reflect something of the environment within which it is positioned, and the topographical location seems to have influenced the forms that were constructed. Indeed, in some cases, it is possible to suggest that the timber monuments mimic or copy the topography in which they have been placed and it may be that the monuments were intended to add to the existing natural architecture or perhaps formalise an existing relationship with that environment. In many cases it is possible to suggest that the surrounding topography formed part of the monumental forms as a whole, and that the spaces around them should also be understood as an integral part of these
monuments. Each monument then was built in close relationship with its environment, such relationships and the forms subsequently built arising out of a community or group’s engagement with their surroundings (Ingold 2000, 186). If this was the case, then this engagement with the landscape may go some way towards explaining the predominantly linear forms of the monuments built in this region as this area is largely an area of river valleys and linear terraces.

However, these monuments may also reflect some of the pathways and routeways through this region. Only the split-post structure at Slewcairn does not seem to have been positioned upon a routeway, setting it out as slightly different to the remaining monuments, though something similar could be suggested for the split-post structure at Lochhill. All of the linear monuments, aside from Slewcairn and Lochhill, are oriented parallel to nearby modelled pathways, suggesting that these pathways may have had an influence upon the form and location of the monuments. Therefore, it seems that, while reflecting an intimate knowledge of the local environment, these timber monuments also reflect movement and journeys through this landscape, some perhaps over long distances. Finds of polished stone axes from sources as far apart as the Lake District, Ayrshire and Northern Ireland suggest contact, exchange and movement between these regions and the Nith and Annan valleys. The position of this region upon the Solway Firth, with the Cumbrian coast visible to the south, and the wide estuary of the River Nith is likely to have facilitated movement to and from the south of this area, as suggested by axes originating in the Lake District, and the complex of interconnecting pathways within the centre of the Nith valley may indicate a meeting point of these wider networks. As such, the crossing and interconnecting of pathways may suggest the meeting of different groups at liminal locations at or close to territorial boundaries. The complex of monuments located in the centre of the Nith valley may then have been built and maintained by dispersed communities who gathered in this location periodically, rather than just the local communities and certainly the periodic activity uncovered during the excavations of Holm and Holywood North may reflect such intermittent gatherings of people, even before any monuments were built.

Of course, the pathways in this case study area do not just reflect long distance journeys but local ones also, and many of the monuments within this area probably reflect much smaller scale movement as groups and individuals moved around their landscape. Some of the monuments are likely to be the reflection of much smaller, local, group interaction with the landscape. Slewcairn and perhaps Lochhill may be a reflection of this, but perhaps also sites such as Tibbers and Lochbrow. The close relationship of these sites with their
landscape suggests local, intimate knowledge of these locations, but it may be less likely that they were associated with more widely dispersed groups.

While the majority of timber monuments in this case study area are rectilinear and their forms can be suggested to have been influenced by topography, pathways and movement, a small number of curvilinear monuments have also been recorded which cannot be explained in the same way. Four timber circles and one curvilinear site are known, all of which are associated with or in close proximity to a post-defined cursus monument. As timber circles and curvilinear sites are likely to be later in date than cursus monuments (see chapter 4), these curvilinear monuments may reflect a desire to associate these sites with an earlier important monument or location. The coincidence of curvilinear monuments (timber circles, henges, barrows) of probably later date with rectilinear monuments, predominantly cursus monuments, is relatively common, both in the Nith Valley and more widely. It is possible that this reflects a widespread tradition of associating later monuments with those of earlier date and the continuing importance of place. In the Nith Valley at least, it may also suggest that the factors influencing the forms of the monuments altered later in the Neolithic period.

These timber monuments must also be understood in the context of wider activity in this region. Firstly, monument building was not just confined to that of timber as monuments of other materials, such as earth and stone, were constructed alongside those of timber. The relationship of these monuments to those of timber is difficult to determine and it may be that the differing material reflects differing concerns of those who constructed them. However, it would be unwise to create a distinct division between monuments of timber and those of other materials, particularly as they may have been built by the same groups of people. All the monuments in the central area of the Nith valley do seem to bear some relationship to one another and all appear to reflect or are associated with the pathways passing through here in a similar way to the timber monuments. Therefore it is possible that they relate to the same or similar activity and the timber monuments form only one part of this wider monumental activity. We must be careful not to disengage timber monuments from this wider context. Secondly, aside from the temporary settlement uncovered beneath the Pict’s Knowe henge, contemporary settlement has not been uncovered in this region, but is hinted at by flints and other stray finds. Certainly, the activities of groups of people are hinted at by the environmental evidence from Pict’s Knowe where there is the suggestion of pastoral activity from the beginning of the Neolithic. It is these groups who would have passed along the pathways, built and used the
monuments in this area. This settlement does not have to have been substantial or permanent and may have consisted of light, temporary structures, though the recent excavation of a Balbridie-type timber hall (Kirkby 2006) close to Lockerbie immediately east of the case study area may indicate a slightly different picture. Nevertheless, until further evidence is forthcoming, we should perhaps envisage contemporary settlement scattered throughout this region, around the location of the monuments recorded. It is likely that groups from these settlements constructed and used the timber monuments known in this case study area.

All this indicates that the timber monuments built in this region do not conform to a single template as suggested by the typological groupings that they are traditionally placed within. Instead, the location and form of the monuments constructed in this study area were influenced by a complex number of factors, such as the surrounding topography or position upon a routeway. Therefore, the forms built were influenced by and grew from people’s activities and their practical engagement with their surroundings (Ingold 2000, 186). Further, these forms were not merely placed into a landscape, but incorporated into, constructed out of and in relationship with their surroundings. In many cases the surrounding topography can be considered to be as much a part of the monument as their boundaries. It may be that the forms built were viewed as an extension of the natural environment and represent an architectural formalisation of an already existing relationship with the landscape. The fact that the monumental forms constructed in the Nith and Annan valleys grew out of this engagement with people’s surroundings and activities may go some way towards explaining why there is such a concentration of linear monuments in this location; this is essentially a landscape of linear rivers and terraces and the monuments seem to reflect movement along linear pathways.
6. Case Study Two: Strathearn

6.1. Background

The second case study area is focused upon Strathearn, Perth and Kinross, in eastern Scotland, where a rich concentration of cropmarks of timber monuments has been recorded, providing an opportunity to examine a wide range of timber monuments within what is a well established wider regional context. The study area encompasses the majority of Strathearn (figure 6.1), following the River Earn which eventually flows into the Firth of Tay to the east of Perth. It is framed by the Ochil Hills to the south and the foothills of the Grampian Mountains to the north. The wide valley floor and fertile soils of much of this study area makes it ideal for farming, and today most of Strathearn is intensively farmed, creating good conditions for cropmark formation. However, the topography changes towards the west end of the study area, the valley narrowing west of Crieff and the geology changes from predominantly sandstone to harder metamorphic and igneous rocks. Here the opportunities for agriculture become much more limited, with a generally hillier topography.

![Figure 6.1](image.jpg)

**Figure 6.1** The study area showing the distribution of cropmarks of timber monuments (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

The superficial geology is dominated by deposits of alluvium, glacial sand and gravel and occasional deposits of raised marine deposits on the valley floor and sides, with till on the higher ground. The cropmarks in the study area as a whole predominantly follow the distribution of the sand and gravel deposits, though a small number have been recorded on the alluvium and till. As all of the timber monuments in Strathearn have been recorded as
cropmarks their distribution largely echoes that of cropmarks in general (figure 6.2), though the fact that timber monuments have not been recorded within every cluster of cropmarks in this area suggests that factors other than just the locations in which cropmarks form are affecting the distribution of timber monuments in this region.

![Cropmarks recorded in Strathearn](image)

Figure 6.2 Cropmarks recorded in Strathearn (Cropmark data © Crown Copyright: RCAHMS. Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

### 6.2. Previous work

A limited amount of research into the Neolithic of Strathearn has taken place, giving a partial picture of the wider Neolithic context. Two chambered cairns were excavated at Kindrochat, near Comrie (Childe 1929-30; 1930-31) and Cultoquey, near Gilmerton (Stewart 1958-9) in the upland zone at the western edge of the study area. Reports of the removal of human remains from one of the chambers within the cairn at Kindrochat before 1914 indicate that this cairn contained at least one inhumation. One leaf-shaped arrowhead was recovered during excavation, but no further human remains or artefacts. Excavation of the cairn at Cultoquey recovered the remains of a crouched inhumation, a leaf-shaped arrowhead and sherds of pottery.

The excavation in 1978-9 of a complex of sites at North Mains (Barclay 1983), in the centre of the case study area, prior to their destruction uncovered several sites and features of Neolithic date, including two timber circles; these had previously been recorded as cropmarks within a cropmark henge. The earliest activity here was pit-digging, probably taking place within the Earlier Neolithic, which was succeeded by the construction of the timber circles and later henge monument (see section 6.4.4). Around 280m east-northeast
6.3. **The environment**

During the Neolithic period, the environment of this case study area would have been different from that today. Vegetation patterns would have been different and higher sea levels are also likely to have had an impact upon the eastern end of Strathearn. Current research (Smith et al. 2000, 496-497) indicates that the Main Postglacial Shoreline in this area was reached around 5000BC, and attained a height of around 9-11m OD. Following this, relative sea levels began to fall, although there were fluctuations, and relative sea levels may have been at an altitude of around 8-9m OD until 2000-4200 BP (Smith et al. 2000, 497-498). Therefore, during the Neolithic period, sea levels were slightly higher than today, meaning that the Earn estuary would have been broader and would have penetrated further inland (Smith et al. 2000, 43), reaching to the eastern extreme of the study area (figure 6.3). In turn, the Earn would have been tidal further inland, the water table would have been higher and the valley floor at the eastern end of Strathearn is likely to have been much wetter than today. It is perhaps unsurprising then that the major Neolithic monuments at the eastern end of Strathearn are on the first terrace overlooking the floodplain.
At this time, Strathearn would have been covered by a dense woodland of predominantly oak, hazel and elm (Tipping 1994), probably with alder on the damp valley floors (Hulme and Shirriffs 1985, 110). Very limited palynological work has been undertaken within this area, so going beyond this general understanding is difficult. Nevertheless, pollen analysis of a core from a kettle hole close to the monuments at North Mains (Hulme and Shirriffs 1985) has provided some information about the vegetation patterns in the vicinity, which is in the centre of my study area. Here, the Mesolithic woodland consisted of a variety of deciduous trees and shrubs. The first evidence of human activity seems to be indicated by the presence of charcoal after which cereal-type pollen and weed taxa can be identified in the pollen record. Hulme and Shirriffs (1985, 111) identify this as taking place prior to the elm decline, though this has been challenged by Tipping (1994, 20) who identified an initial, gradual fall of elm pollen before the occurrence of cereal-type pollen. This certainly fits with the general pattern within eastern Scotland where the first agricultural clearances appear to have coincided with the elm decline (Tipping 1994, 30). Whatever the exact coincidence, the first evidence of human impact around the location of the North Mains pollen core seems to have taken place during the Early Neolithic, probably at least several centuries before the construction of the monuments at North Mains. This is given further support by the cultivation ridges uncovered below the North Mains barrow and suggestion of grazing by animals on the buried soil below both the barrow and henge monument (Romans and Robertson 1983, 261-242), both of which indicate the clearance and exploitation of the land surface prior to their construction. Following this initial clearance, the absence of wood from the peat formed around the kettle hole during the period of Neolithic activity at North Mains and decline in tree pollen (Hulme and Shirriffs 1985, 112) indicates that the clearance of trees and shrubs continued around this area throughout the Neolithic period.

As most of this information relates specifically to the location of the kettle hole and the monuments at North Mains, it is difficult to determine if similar activity was occurring within the wider area. Nevertheless, it does indicate that clearance and cultivation was taking place within Strathearn from the Early Neolithic onwards and it seems unlikely that the activity at North Mains was entirely isolated. Certainly, similar patterns have been identified elsewhere in eastern lowland Scotland (Tipping 1994, 30), and some of the earliest evidence for agricultural activity in Scotland has been identified in this wider region (Telford 2002, 297). Therefore, it seems likely that Strathearn fits into this wider pattern of activity and at least limited clearance probably took place throughout Strathearn from early in the Neolithic.
Therefore at the beginning of the Neolithic, the environment of Strathearn would have been dominated by dense woodland of predominantly oak, hazel and elm with alder in the valley bottoms. There is evidence of clearance of this woodland and both cereal cultivation and pastoral activity from early in the Neolithic, although this is poorly dated. Nevertheless, such clearance and agricultural activity is likely to have had an impact upon the woodland resource. As sea levels were slightly higher than today, the eastern end of Strathearn would have been inundated, meaning that the water table would have been higher and the valley bottom at the eastern end of the study area is likely to have been much wetter than it is today. It is within this environmental context that the timber monuments recorded in this study area were constructed.

Figure 6.3 The east end of Strathearn showing the estimated height of sea level inundating the River Earn (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

6.4. The timber monuments

In total, 37 timber monuments have been recorded as cropmarks in Strathearn, encompassing almost all forms of timber monument (figure 6.4) and so probably spanning the Neolithic period. This concentration of timber monuments is at least partly a reflection of the good cropmark producing nature of much of Strathearn due to its fertile soils and intensive cereal production. However, this cannot entirely explain this concentration and it forms part of a wider regional concentration of timber monuments in eastern Scotland, something which may reflect a particular tradition of timber monument building within this ‘region’ (Barclay et al. 2002). Interestingly, the timber monuments in Strathearn have been
largely recorded in clusters, rather than spread evenly throughout the study area. It may be that this reflects the fact that many of the monuments recorded were located with reference to earlier or broadly contemporary monuments. All but the site of the timber circles and henge at North Mains, which now lies beneath Strathallan airfield, were visited.

Figure 6.4 The forms of timber monuments in the case study area (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

6.4.1. Tullichettle and Craggish

Figure 6.5 Location of Craggish and Tullichettle (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Beginning at the western end of the study area, two cursus monuments have been recorded around 1km from the junction between the Water of Ruchill and the River Earn close to
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Comrie (figures 6.5 and 6.6). The cursus at Craggish measures more than 170m in length and around 18m in width, though as neither terminal has been recorded it may be much larger than this, and there is the suggestion of an internal division close to its currently recorded eastern extent. The sides of the cursus change in width close to the western end and a large pit has been recorded within the cursus around this location. As this site lies in an area of level ground with only slight undulations, there is nothing in the topography which would help to explain this change in width. Therefore some other explanation for this must be sought.

In general, the cursus has been positioned within an area of level ground, surrounded by hills on three sides (figure 6.6). Palaeochannels, recorded as cropmarks, indicate that the Water of Ruchill has changed course in the past. These channels, though, appear to predate the cursus as the postholes of this monument can be seen overlying the palaeochannels, which probably therefore relate to outwash after the end of the last ice age (Wilson 2000, 177).

Figure 6.6 Contour map showing the locations and orientations of the cursus monuments at Craggish and Tullichettle, palaeochannels recorded as cropmarks and nearby archaeological sites (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

The cursus lies at an apparent terminus of a valley with hills a short distance to the north, south and west, while the topography opens out to the east. The currently known eastern extent of the cursus ends on or around a slight dip in the ground, which may have defined
one end or section of the cursus, and is oriented towards the Water of Ruchill, some 500m distant (though this river cannot be seen from the location of the cursus itself). The western extent of the cursus is only a short distance from the hills at the end of this valley (figure 6.7), so it may terminate even closer to them. Whether or not this monument had a closed terminal, the hills to its western end may have acted as some form of focus or backdrop, perhaps associated with the fact that the cursus changes width close to that end, and could themselves have acted as a terminal, incorporating topography into the monumental form. Indeed, the fact that the hills appear to form an ‘enlarged terminal’ and surround this monument on three sides means that this cursus appears to mimic its topography to a certain extent, suggesting that the location chosen may have influenced the form of monument constructed.

This monument lies only around 1km south-southwest of an 18th century bridge and around 1.2km southwest of the modern bridge across the River Earn. If these more recent bridges point to a consistently favoured location for the crossing of the Earn, then the proximity of the cursus at Craggish may be no coincidence.

Figure 6.7 Craggish. Looking west-southwest along the length of the cursus towards the hills forming the terminal of the valley.
A second cursus has been recorded nearby at Tullichettle on the eastern side of the Water of Ruchill, around 1km southeast of Craggish (figures 6.5 and 6.6). Palaeochannels, again probably underlying and so pre-dating the cursus monument, have also been recorded as cropmarks at this site. This cursus is only around 100m from the site of Dalginross Roman Temporary Camp, the cropmarks of a presumably much later trackway pass through the centre of the cursus and there is a scattering of archaeological sites of varying dates in the immediate vicinity. The modern bridge across the River Earn is around 1.4km to the north of this monument, while the older, 18th century bridge lies around 1.6km north-northwest. As at Craggish, no terminals have been recorded, and it is possible that the cursus was much larger than currently known; both ends are currently defined by modern field boundaries. The cursus measures around 135m in length by around 30m and is defined in cropmarks by two roughly parallel lines of pits, oriented west-northwest to east-southeast. The sides converge slightly meaning that the cursus becomes narrower to the west-northwest end. The pits defining the cursus sides seem to form discrete sections and the cursus sides are very irregular, suggesting that this monument may have been constructed in segments.

This cursus lies on flat ground surrounded by hills on all sides, appearing to lie within a wide bowl. The eastern end of the cursus runs towards a range of low hills located only a short distance away (figure 6.8). As the cursus may extend further in this direction, it is possible that here too the hills may have acted as a terminal. Again, even if a closed terminal did exist, the proximity of these hills would have further emphasised this end of the monument, particularly as there are no corresponding hills close to the western end. The western end is oriented towards the Water of Ruchill; it is around 580m away and cannot be seen from the location of the cursus.

Both these cursus monuments therefore appear to have been positioned in very similar locations. Both are only a relatively short distance from river crossings with which they may be associated. One end of each is close to a range of hills roughly at right angles to the orientation of the monument itself. These are likely to have served to define or enhance one end of each monument perhaps even acting as terminals. Even if both of these monuments had a closed terminal, the proximity of these hills is likely to have further emphasised one end of each site, suggesting that this may have been the focus or backdrop of each monument. The other end of both monuments is oriented towards the Water of Ruchill. Therefore, each is defined by hills at one end and the river at the other. Such positioning is unlikely to have happened by chance as both cursus monuments lie within
wide areas of level ground where there are numerous locations and configurations in which these monuments could have been built. Such orientations may be significant and it could be that they served to emphasise links between the hills and the river, though as both lie within a river valley they may also lie on routeways associated with this river, perhaps even acting as barriers or boundaries. Regardless, they seem to tie the landscape together.

Figure 6.8 Tullichettle. Looking east-southeast along cursus towards the low hills beyond.

6.4.2. The Crieff cluster

A cluster of timber monuments (figure 6.9) has been recorded to the south and southwest of Crieff, around 8km downstream from Craggish and Tullichettle, and includes another cursus monument, several timber circles, pits-settings and a rectilinear enclosure. The first group of sites within this cluster are those at Dargill, on the west bank of the River Earn to the south of Crieff. Here a timber setting and two timber circles have been recorded close to a single standing stone (figure 6.10). The timber setting is defined by two roughly parallel lines of pits, oriented east-northeast to west-southwest, widening slightly to the west-southwest, and measures around 7m in length by around 3m. The two timber circles lie around 190m to the south and south-southeast of this setting. The circle to the south is the smaller of the two, measuring around 8m in diameter with a central pit and lies only around 10m southwest of a standing stone, which may have formed part of a larger stone
circle (Coles and Simpson 1965, 73-75). It is possible that amorphous cropmarks surrounding this standing stone relate to the removed stones of the circle. The second timber circle is much larger, 40m in diameter and defined by larger, more widely spaced pits, though the full circuit has not been recorded and its interpretation as a timber circle is a little more uncertain.

![Figure 6.9 Location of the cluster of monuments around Crieff](image)

A scattering of other cropmarks, of varying dates, has been recorded around the location of these timber monuments (figure 6.10). These include possible field boundaries, but also the probable cropmarks of tree throws and an old river channel. This river channel is a very distinct feature on the ground and runs roughly from east to west between the locations of the two timber circles and the timber setting. It forms a steep bank on the south, rising to a raised terrace upon which the timber circles are located. The northern bank of this old river bed is much less distinct, though may have been more obvious before modern ploughing. This has the effect of creating a raised platform, which dominates the lower ground to the north. Both of the timber circles have been placed close to the edge of this terrace, as if to dominate the lower ground and indeed would have towered above anyone approaching from this direction. They also overlook the location of the timber setting, which is only a short distance to the north. From the location of the timber setting, this raised terrace is very obvious (figure 6.11) and, as the timber setting is oriented roughly east-northeast to
west-southwest, it runs roughly parallel to the old river bank and terrace; it is possible that the orientation of the timber setting was influenced by this obvious topographical feature.

All three of these sites lie on a relatively narrow strip of land between the River Earn to the east and a steep slope to the west and are spread across much of this strip. The topography becomes much less enclosed immediately to the north and south (figure 6.12). As the modern road runs immediately to the west of these sites, it is hard to avoid the conclusion that they lie upon a routeway following a line between the Earn and hills to the west. If this is the case, then these monuments would have served to dominate this routeway and anyone moving along it may have encountered them on their journey. Such a position upon a routeway may have been one reason for the construction of the monuments in this location. The Crieff Bridge, a 19th century river crossing, lies around 700m to the north-northwest and could indicate that these monuments were also constructed close to a crossing point across the River Earn.

Figure 6.10 Dargill showing the scattering of other cropmarks around the location of the timber monuments (Photo: © Crown Copyright: RCAHMS).
Figure 6.11 Dargill. Looking south from the location of the timber setting towards the old river bank and timber circles.

Figure 6.12 General location of Dargill showing the cropmarks of the relict river bed and nearby archaeological sites (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
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A post-defined cursus monument, probable timber circle and timber setting have been recorded at Bennybeg, about 1km to the south-southeast of Dargill (figure 6.9). The cursus is rectilinear in form, measuring around 109m by 34m, though it changes width along its length and is distinctly narrower at the southern end with slightly bowed sides. It is oriented roughly north-northeast to south-southwest and, unlike the Craggish and Tullichettle cursus monuments, both terminals have been recorded. The boundary of this cursus is rather uneven and appears segmented in places, suggesting that it may have been constructed in sections. Two lines of pits extend to the north-northeast from each corner of the north terminal, forming distinctive ‘horns’ and a single large pit, placed centrally on the main axis of the cursus, lies immediately to the south of the southern terminal.

A possible timber circle, around 10m in diameter and defined by a series of elongated pits, has been recorded around 40m east of the north end of the cursus. Although these pits may have held timbers, their elongated nature may suggest that instead they formed some kind of segmented ring-ditch or small henge monument; determining the exact nature of this monument is difficult from cropmarks alone. Immediately east of this timber circle, two roughly parallel lines of pits around 15m apart may form an unusual timber setting.

All three of these sites sit amidst cropmarks of tree throws, palaeochannels and geological features (figure 6.13) on a level gravel terrace on the south side of the Earn valley overlooking the floodplain (figure 6.14). The palaeochannels pre-date the monuments recorded here as the postholes of the cursus, timber circle and timber setting overlie the cropmarks of the palaeochannels. The cursus is oriented across the terrace, and its north end, the timber circle and timber setting are all positioned near the edge of the terrace. A small hill, which rises to the west to become a distinctive igneous outcrop called the Bennybeg Craig, defines the south side of the terrace while the northern and eastern edges are defined by falling ground. Only the western edge is less well-defined, though the northern edge of the terrace curves to the south here, narrowing the terrace substantially in this direction and a distinctive hill rises only around 600m to the west of the cursus monument. Therefore the terrace and surrounding topography create a well-defined location around these monuments (figure 6.15) and it may be that the limits defined by the topography also defined the limits of this place and the activities associated with the monuments located here. The fact that the sites have been positioned relatively close to the break of slope suggests that they were intended to overlook the Earn valley; dominant views are across the valley to the hills beyond (figure 6.16). This is given further support by the fact that the cursus at Bennybeg is aligned on the location of a ditch defined cursus.
and timber circle on the other side of the Earn valley at Broich and shares a similar orientation. It is debatable however whether the location of this cursus could be seen from Bennybeg even if there was no vegetation. Nevertheless, the fact that both cursus monuments share a similar orientation does suggest that they may have been built with reference to one another or at least with reference to another important place or monument complex.

The cursus monument appears to extend across much of the width of the terrace and is roughly at right angles to the prominent orientation of the terrace. The southern end terminates close to a slight hill and is only a short distance from Bennybeg Craig, while the northern end faces across the Earn valley and is perhaps aligned upon a prominent hill (Meall Reamhar) on the opposite side of the valley (figure 6.16). Such a position and orientation would surely have impeded any movement along this terrace, and perhaps influenced experiences of this monument.

Figure 6.13 Rectified aerial photograph of Bennybeg showing the cropmarks of palaeochannels, possible tree throws and geological features surrounding the sites (© Crown Copyright: RCAHMS).
Figure 6.14 General location of Bennybeg showing the palaeochannels recorded as cropmarks and nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 6.15 Bennybeg showing extent of the terrace (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
Figure 6.16 Bennybeg. Looking north-northeast from location of the cursus along its alignment towards the north side of Strathearn and Meall Reamhar.

Around 1.1km north of the sites at Bennybeg a ditch defined cursus and two associated timber circles have been recorded as cropmarks at Broich and Crieff High School (figure 6.9). The first timber circle has been recorded as cropmarks lying within what is probably an entrance gap in the ditch of the cursus. It is around 10m in diameter and defined by variously shaped pits, many of them quite large. It is difficult to determine the chronology of this site; was the timber circle built within the entrance gap of the cursus or did the cursus incorporate an earlier timber circle within its architecture? The relative dating of these forms of monuments (see chapter 4) suggests that the cursus may be the earlier, though this cannot be determined from cropmark evidence alone. Nevertheless, one must have been positioned with reference to the other. The second timber circle lies around 430m north-northeast of the first and was uncovered during the excavation of part of the cursus, within its interior (Haines in prep). It is around 6.5m in diameter with an entrance formed by two postholes on the southeast. A radiocarbon date of 1189–922 cal BC (SUERC-16917) from charcoal within one of the postholes was obtained. While both the presence of such a 'porch' structure and late radiocarbon date suggests that this site may represent a roundhouse rather than a timber circle, it seems rather small to have functioned as a roundhouse. Only a single radiocarbon date was obtained and its inclusion within the
cursus suggests that a Neolithic origin cannot be ruled out; further radiocarbon dates are expected (K. Brophy pers. comm.).

The cursus and timber circles lie on a wide level terrace above the River Earn to the south, and the cursus runs from the very edge of this terrace to the north-northeast (figure 6.17). The cropmark timber circle lies over 100m from the terrace edge on the western side of the cursus. The location is surrounded by low hills on all sides, which may not have been visible if surrounded by vegetation. The cluster of monuments at Dargill are only around 700m to the southwest, on the other side of the River Earn, though would not have been visible from the location of the timber circle even if the modern trees along the river’s edge were removed. Similarly, the rectilinear enclosure at Broich Road Farm is only around 470m to the northwest, though it is difficult to be certain if it would have been visible from the timber circle. The 19th century bridge across the River Earn is only around 1km northwest of the timber circle at Broich and could suggest an association with a crossing point.

Figure 6.17 Contour map showing the general location of Broich, Crieff High School and Broich Road Farm and nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
At Broich Road Farm (figures 6.9 and 6.17), three sides of a post-defined rectilinear enclosure have been recorded as well-defined pits in crops to the north of a modern road, while the eastern side of this enclosure may extend to the south as a line of less well-defined pits in the field to the south of the road. Similarities can be drawn between the form of this monument and the terminals of some cursus monuments and, as the cropmarks are poorly defined to the south of the modern road, it is possible the enclosure is much larger than that currently known and may extend further south than has yet been recorded. It is possible then that this site represents part of a much larger monument, perhaps the terminal of a post-defined cursus. If this is the case, then this monument would be roughly parallel to the Broich ditch-defined cursus (figure 6.18), which is only around 300m to the west, though quite how far south the Broich Road Farm enclosure may extend cannot be determined and it is possible that it was not much larger than that currently recorded. Nevertheless, whatever the dimensions of the monument at Broich Road Farm, it is likely to have been intervisible with the nearby Broich cursus and the shared orientation, with both the Broich and Bennybeg cursus monuments, seems unlikely to be coincidence. As post-defined cursus monuments are likely to be earlier in date than those that are ditch-defined (section 4.4.1), it may be that the Broich ditch-defined cursus replaced a post-defined one at Broich Road Farm.

This enclosure or cursus lies on the same level terrace as the Broich cursus, the visible element 400m north of the River Earn (figure 6.17). This monument is positioned on level ground only a short distance from the base of the hills forming the sides of the Earn valley to the north (figure 6.19), northwest and northeast. The north end of the enclosure is roughly parallel to the range of hills which begin to rise only around 300m to the north, while higher mountains are obvious to the northwest. Whether these mountains would have been so dominant if there were dense vegetation cover is difficult to determine though it is possible that they would have still been visible through and above any vegetation cover (Cummings and Whittle 2004). Nevertheless, the hills parallel to the north end of this enclosure or cursus may have served to emphasise the terminal area, with the hills acting as an additional terminal or end. Further, the orientation of both this monument, if it is indeed much larger than that currently recorded, and the nearby Broich cursus would surely have served to impede movement from east to west parallel to the river, and it may be that the monuments here were intended to do just this.
Figure 6.18 Transcriptions of Broich cursus and Broich Road Farm enclosure showing the speculative orientation of the Broich Road Farm monument (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 6.19 Broich Road Farm. Looking north from the east end of enclosure towards the range of hills to the north.
Around 1.5km southeast of Broich Road Farm is another cluster of sites at Millhills (figure 6.9), comprising one timber circle and two timber settings. They lie within a larger cluster of timber monuments, most recorded as cropmarks (figure 6.20). Measuring around 5m in diameter, the timber circle is defined by large pits, has one central pit and a wider gap on the south which may represent an entrance. Two timber settings have been recorded around 110m to the north-northwest and 180m to the north-northeast. The setting to the north-northwest of the timber circle, defined on aerial photographs by five, possibly six pits, is oriented roughly north-northeast to south-southwest and measures around 13m by 4m, though the two sides may diverge slightly on the south-southwest. It lies immediately southwest of the cropmarks of a barrow and so may represent an avenue or setting leading up to this barrow. There is little to suggest that the second timber setting performed a similar function, though it is possible that similar barrows or other sites may have been lost beneath the modern road, which is only a short distance to the north. This timber setting is defined by three pits on the west and four on the east. It widens towards the southeast and measures around 9m in length, varying in width from 5m to 9m. A scatter of other pits, barrows and enclosures has been recorded as cropmarks in the same location as these three sites.

Figure 6.20 Contour map showing the general location of Millhills and nearby archaeological features. Timber monuments are in bold (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
The three sites at Millhills lie on a relatively level terrace on the northern side of the Earn valley (figures 6.20 and 6.21). The valley side continues to rise only a short distance to the north of the timber settings, while the sharp slope defining the southern extent of the terrace lies immediately to the south of the timber circle. Indeed, this timber circle seems to have been positioned close to the edge of this terrace, possibly very close to the break of slope. Such a position would have ensured that it was not possible to overlook the monument and may also have served to emphasise the height of the timbers from the lower ground below. Today it is possible to look across the valley to the south and southwest to the hills beyond. Whether vegetation cover would have permitted similar views is difficult to determine, though seems unlikely. The terrace on which these sites are situated extends for some distance to the east and west and is likely to have aided movement along the side of the valley, and indeed the modern road lies immediately to the north of these sites.

Therefore, it is possible that the timber monuments at Millhills may have been positioned upon an east-west routeway. There is a modern ford around 1.2km to the south of this cluster of sites, though it cannot be seen from the location of the sites which are raised above the level of the river.
6.4.3. Westerton I

Figure 6.22 Location of Westerton I and North Mains (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Another possible timber circle, albeit apparently isolated, has been recorded at Westerton I (figure 6.22) around 5km south of the group of monuments recorded around Crieff. It measures around 6m in diameter and is defined by large irregularly shaped pits. Few cropmarks or other sites have been recorded nearby, so its interpretation as a timber circle of Neolithic date remains uncertain. It has been recorded in the hills above Strathearn and lies on a relatively level platform on a gentle south facing slope (figures 6.23 and 6.24). The hills on the northern side of Strathearn are visible in the distance to the north and northeast, though these are quite distant and may not have been visible if there was any form of vegetation cover. Although lying within upland Strathearn, this site lies next to both the modern road and the line of a Roman road (figure 6.24), and so seems to be positioned close to a natural routeway through Strathearn to the north and through the hills to the south.
Figure 6.23 Westerton I. Location of the timber circle from the west-southwest.

Figure 6.24 General location of Westerton I showing the Roman and modern roads and nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
6.4.4. North Mains

Two additional timber circles have been excavated within a henge monument at North Mains (Barclay 1983, see gazetteer for excavation plan, figure 6.22). It was not possible to visit this site as it now lies beneath one of the runways of Strathallan Airfield. However, it lies on a level terrace close to the junction between the River Earn and the Machany Water and bridges across both rivers (figure 6.25). The two timber circles uncovered by this excavation formed one part of a group of sites of varying dates. Ring B, comprising 17 or 18 post-pits forming an ellipse (Barclay 1983, 150), is undated but it has been suggested (Gibson 2005, 46) to be the earlier of the two timber circles as its elliptical shape does not appear to relate to any of the other phases at North Mains. This was succeeded by ring A, which comprised 24 large posts set within ramped pits, forming an uneven circle of between 25m and 27m in diameter and dating to around 2900-2200 cal BC (GU-1354,1353) (Barclay 2005, 86). This circle appears to have been built in a series of segments as the pits were set in short, straight sections of three or four pits. The posts set within these pits were left to decay in situ. The recovery of a carbonised oak plank in one
of the post-pits and quantities of oak charcoal within other pits may suggest the presence of some kind of fencing between the uprights, which was subsequently burnt.

The ditch and bank of the henge monument were constructed up to several centuries after the erection of Ring A (Barclay 2005, 86, 88) and, as the ditch follows the shape of timber circle A quite closely, it is possible that the decayed remains of the circle may have remained when the henge was constructed, or at the very least, the location and shape of the timber circle was remembered or marked in some way.

6.4.5. Westerton II and Hall of Aberuthven

Figure 6.26 Location of Westerton II and Hall of Aberuthven (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Three main clusters of sites have been recorded at the eastern end of the study area. The first comprises two sites relatively close to one another, a timber hall at Westerton II and curvilinear site at Hall of Aberuthven (figures 6.26 and 6.27). Both lie on the southern side of Strathearn, close to the rising valley sides. The timber hall at Westerton is defined by five pits on either side with one centrally placed pit at each end and measures around 29m by 9m. A large circular mark, which probably represents a tree throw, partly obscures one of the pits on the south side, while pits lying immediately outside the hall may represent additional posts or associated structures. Amorphous cropmarks, some of which may represent tree throws, have been recorded around the location of the timber hall, but largely to the south of it, while a darker area in the crops highlights a damper area of ground.
immediately to the south. On the ground, this wetter area is now drained, but can be seen as a slight dip. The dense pattern of field drains recorded as cropmarks in this area suggests that this was a wet, perhaps marshy, patch of ground needing intense drainage and so may have been a damp location even when the timber hall was constructed. This timber hall can be closely compared to excavated sites such as that at Littleour (Barclay and Maxwell 1998) or Laigh Newton (James et al. 2007), which is also associated with a tree throw (see gazetteer).

Figure 6.27 Contour map showing the general location of Westerton II and Hall of Aberuthven and nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

This site lies in a distinctive location (figures 6.27, 6.28 and 6.29), on the very edge of a flat terrace close to the break of slope. The ground slopes sharply away to the north and northwest to a small stream valley, beyond which the ground begins to rise again. The wetter, intensely drained, area of ground lies immediately to the south and southeast, while the northeast terrace edge slopes away more gently only a short distance to the east. The ground also drops off quite gently less than 100m to the southwest. This timber hall, then, seems to be located on a slight promontory with the ground falling away in most directions and is positioned on a very narrow and constrained section of land between the sharply falling terrace edge to the northwest and north and wet ground to the south. The
topography therefore effectively defines the location of the hall quite closely on three sides, and may have restricted or controlled access. Such a location may have made it rather awkward to construct and use this timber hall, and surely reflects a deliberate decision to position it in such a location, particularly as there were many other locations in the immediate vicinity which would have been eminently more suited to the construction of such a structure. This suggests a desire to restrict and constrain access to the hall and clearly define this place and perhaps the area in which associated activity took place. The surrounding topography could be considered an extension of the monument and the proximity of what may have been rather wet locations, the damp dip to the south and stream valley to the north, may have been of importance.

Figure 6.28 Location of Westerton showing the extent of the terrace and the heavily drained hollow.
Figure 6.29 Location of the timber hall from the south-southwest.

Figure 6.30 Location of possible curvilinear enclosure at Hall of Aberuthven viewed from the northeast.

Around 450m north-northwest of the timber hall at Westerton, the cropmarks of what may be a curvilinear enclosure have been recorded at Hall of Aberuthven (figures 6.26 and
Measuring around 37m by 17m, the enclosure is oval in form and defined by pits of varying sizes. It lies on the opposite side of a low hill from Westerton II (figure 6.27), so although relatively close to this monument, they would not have been intervisible. Nevertheless, the hills of the valley sides to the south and southeast can be clearly seen from the location of this site, while the site itself lies on relatively level ground, sloping slightly to the northwest (figure 6.30).

6.4.6. The Dunning cluster

A large cluster of sites have been recorded around the village of Dunning (figure 6.31). A palisaded enclosure, several timber circles and rectilinear enclosure have been recorded surrounding the junction of the Dunning and Duncrub Burns near Leadketty Farm (figure 6.32), while a timber circle and rectilinear enclosure lie to the west of Dunning at Millhaugh. The cluster of sites around Leadketty also includes non-timber monumental forms of probable Neolithic date, such as a possible causewayed enclosure and several sites of probable later date.

The palisaded enclosure at Leadketty is one of the largest Neolithic timber monuments recorded in Scotland, measuring around 400m northeast-southwest by around 230m. It is defined on aerial photographs by spaced pits, forming a large oval enclosure and has an out-turned avenue entrance on the northeast, which is oriented to the northeast. The south
side of the enclosure is defined by the sharp edge of a terrace falling to the valley of the Duncrub Burn. The full boundary of this enclosure has yet to be recorded as the soil conditions change across the fields meaning that only certain patches have ever produced cropmarks. This monument encloses additional sites within its boundary, including several probable small henge monuments, pit-alignments and a square setting of pits, often interpreted as a four-poster stone circle. Additional sites are likely to lie within the enclosure on soil less responsive to cropmarking.

This site lies on the south side of Strathearn, on a terrace above the Duncrub and Dunning Burns. An old stream bed runs roughly northeast-southwest through the centre of this enclosure, creating a distinct dip, while higher ground to the north, northwest and west overlooks its location (figures 6.33 and 6.34). While most of this enclosure has been constructed on roughly the same level, the western side rises up the higher ground, meaning that the western side of the enclosure is at a higher level, and overlooks, the rest of the enclosure.

Figure 6.32 The cluster of sites around the junction of the Dunning and Duncrub Burns showing the main archaeological sites recorded nearby (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
The surrounding low hills to the north and west mean that it may have been possible to look into this enclosure from certain locations, depending on the size of its boundary posts (figure 6.34). The way in which the low hills surround the site on at least two sides means that the main part of the enclosure appears to be situated in a slight hollow and indeed these low hills help to define the extent of the enclosure. Its southern extent is defined by a steep scarp above the Duncrub Burn, and the eastern boundary lies only a short distance from the steep scarp above the Dunning Burn. Therefore, the topography also serves to define and emphasise the extent of this enclosure. The effect of ‘enclosure’ must have been further emphasised by the very distinct dip of the old stream bed running through the centre. In other words, the boundary of the enclosure lay on higher ground than that within the interior and would have appeared taller to anyone within the enclosure. This would have given the impression of being situated within a hollow, much in the way that the hills surrounding the enclosure give this impression. Therefore, the enclosure as a whole may reflect the topography within which it has been constructed.

Figure 6.33 Leadketty. Looking northwest from southeast corner of enclosure showing the dip created by the old stream bed, higher ground overlooking enclosure to the north and location of the possible causewayed enclosure and timber circle.
The lack of an obvious constructed boundary on the south means that it may have been possible to look into the interior of this enclosure from the other side of the valley formed by the Duncrub and Dunning Burns, although it is possible that there was a boundary here, perhaps following the terrace edge, which has not been recorded as cropmarks. However, it may be no coincidence that the cropmarks of a rectilinear enclosure and timber circles have been recorded on the other side of the stream valley, in locations where it would have been possible to see straight into the palisaded enclosure. As such, the interior of the enclosure may have been set out like a stage.

What may be a timber hall has been recorded at the southern extent of the palisaded enclosure, close to the edge of the terrace defining the southern side of this site. The exact form is difficult to determine. It appears to measure around 18m in length by around 5-6m and is defined by pits of varying sizes. Some internal pits have been recorded within the western end. It lies very close to the terrace edge, almost at the break of slope, overlooking the Duncrub Burn and may be located within the boundary of the palisaded enclosure. The relative dating of these sites suggests that the timber hall (if that is what it is) is likely to pre-date the palisaded enclosure.
On the hillside overlooking the palisaded enclosure the cropmarks of a possible causewayed enclosure and timber circle have been recorded (figures 6.32 and 6.33). The timber circle is poorly defined as cropmarks and may represent the degraded remains of a ring-ditch rather a timber circle. It appears to be roughly oval in shape and, although the full circuit has not been recorded, measures around 8m in diameter. It lies only around 150m northeast of the palisaded enclosure and less than 10m from one of the entrances of the causewayed enclosure. It is marginally downslope from the causewayed enclosure, but is on the higher ground above the palisaded enclosure and only a short distance from the steep scarp above the Dunning Burn. The age of both of these sites is impossible to determine from cropmarks alone.

Figure 6.35 Kincladie. Looking northwest towards the location of the palisaded enclosure from the location of the two southern timber circles.

The cropmarks of three timber circles and a possible rectilinear enclosure have been recorded at Kincladie, on the opposite side of the stream valley formed by the Duncrub and Dunning Burns (figures 6.31 and 6.32). All of the timber circles are roughly oval in shape and are defined by large, irregularly shaped pits, though the full circuit of only one has been recorded. The two southern timber circles lie immediately adjacent to one another and both measure around 4.5m by around 3m; the third timber circle lies around 75m to the north, is slightly larger and less well-defined. The possible rectilinear enclosure has been
recorded around 115m north of the third circle. It measures around 19m by 5m and is defined by six pits on the south with a parallel line of two pits on the north. All four of these sites have been positioned on level terraces within the same gently sloping hillside. The ground slopes gently down to the northwest, falling to the steep scarp above the Dunning Burn, and potentially affords views across the valley formed by the Dunning and Duncrub Burns to the location of the palisaded enclosure and associated sites (figure 6.35), though any vegetation would modify this view, as is the case today. The rectilinear enclosure is in a different location to those of the timber circles. It lies at a slightly higher level than the timber circles, on the summit of a slight rise with the ground falling gently to all but the east and southeast, meaning that it is in a more prominent position than the timber circles and overlooks their position. Like the timber circles, it also looks across to the location of the palisaded enclosure though, at just over 200m, is the closest of all of the sites recorded at Kincladie to this enclosure.

All four of these sites are intervisible with one another and though dense vegetation cover may have modified this, their proximity to one another means that they are likely to have remained intervisible even if there was tree cover. All four sites are positioned close to the scarp above the Dunning Burn and, although this may reflect a desire to overlook this stream valley, it is likely also to be a reflection of the sensitivity of the soil here to cropmarking; only a relatively narrow band across the bottom of the slope here has ever produced cropmarks. It is therefore possible that additional sites are located further up the slope, which have not been recorded as cropmarks. Despite this, the proximity of these sites to the complex of sites at Leadketty is unlikely to be merely coincidence, and they may form part of this larger ceremonial complex.

The complex of timber monuments around Leadketty is completed by what may be two timber circles recorded at Inverdunning House (figures 6.31 and 6.32), though they may alternatively be interpreted as later prehistoric roundhouses. The fact that they are only around 400m from the Leadketty complex and the cropmarks of what is probably a henge monument has been recorded around 150m to the southeast does suggest that a Neolithic timber circle interpretation is appropriate, though the proximity of the cropmarks of a souterrain and possible promontory fort suggests later prehistoric use of this location as well (figure 6.36). However, their proximity to the Leadketty complex of monuments is curious. The possible timber circles, along with the nearby henge, lie on a terrace of similar altitude to the sites at both Leadketty and Kincladie and effectively complete the cluster of sites constructed on the terraces surrounding the junction of the Dunning and Duncrub
Burns. It is interesting that this junction is surrounded by so many sites and, although this may be partly a reflection of the suitability of the gravel terraces here for the production of cropmarks, it may also reflect a deliberate clustering of sites in this location, perhaps around a location that was already important. Certainly, the location of modern fords around the junction of the two burns may suggest one possible reason for the importance of this place, though as today they are both relatively modest streams which seem unlikely to have caused any real impediment to movement, it seems likely that the reasons were more complex than just proximity to fording points. Whether the cropmarks at Inverdunning House can be interpreted as timber circles or not, the presence of the possible henge nearby indicates that activity, potentially contemporary with the activity at Leadketty, was taking place on or around the Inverdunning House terrace.

![Figure 6.36 Location of the timber circles at Inverdunning House.](image)

The cluster of sites around Dunning is completed by a possible rectilinear enclosure and timber circle around 500m west of the village at Millhaugh (figure 6.31). The possible enclosure measures around 29m in length by around 10m and only two sides and possibly part of the third have been recorded. What may be a timber circle has been recorded around 45m south of the enclosure. It is oval in form, measures around 10m in diameter and has one central pit. Both of these sites lie on a level terrace within the hills on the south
side of the Earn valley, looking across Strathearn to the south and overlooking the small stream valley of the Latch Burn (figure 6.37). Both have been positioned close to the eastern edge of the terrace and so effectively overlook this stream. They sit close to an extant earthen barrow, which may be Neolithic (K. Brophy pers. comm.) as well as a small scatter of sites, probably of varying dates.

Figure 6.37 Contour map of Millhaugh showing the general location and nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

6.4.7. Forteviot

The final cluster of sites recorded in Strathearn are those around Forteviot at the eastern end of the study area (figure 6.38). Here a second palisaded enclosure and associated sites have been recorded, while what may be an additional timber circle has been recorded around 750m to the south-southwest at Green of Invermay (figure 6.39). The palisaded enclosure at Forteviot comprises an oval enclosure measuring around 265m by 220m, though the recorded boundary is not complete and part of the western side is defined by the edge of the terrace, with a double line of posts, measuring around 29m in length by 4m, forming an out-turned avenue entrance on the northern side. Additional sites and features have been recorded within the enclosure, including two henge monuments with unusual
exterior timber circles, timber settings, barrows and pits, some of which are quite large. The scattering of pits across the interior hints at the possible presence of additional timber monuments which have not been adequately recorded as cropmarks. Further sites are known immediately outside the enclosure, including what may be a timber circle lying within a henge monument, while an Early Medieval cemetery has been recorded and partially excavated a short distance to the northeast (Driscoll 1998; Noble and Poller 2007). The nearby presence of such a cemetery could date some of the barrows recorded in and around the palisaded enclosure. Recent excavation of one of the henge monuments within the enclosure uncovered a range of activity from Neolithic to Late Medieval (K. Brophy pers. comm.). This complex of monuments, then, includes monuments of differing dates, forms and materialities.

Figure 6.38 Location of the cluster of monuments around Forteviot (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Palaeochannels have been recorded in the same location as this complex of sites (figure 6.39). These, though, can be seen to underlie the archaeological features and were shown by excavation to pre-date the posts of the avenue (K. Brophy pers. comm.). They may relate to outwash at the end of the last ice age. An 18th century bridge across the River Earn lies around 1.5km to the north of this site and could indicate a crossing point of relevance to the sites at Forteviot. However, the higher sea level during the Neolithic period is likely to have affected the possible crossing and fording points at the eastern end of the Earn Valley, so that it is difficult to determine if this bridge bears any relation to river crossing points at that time.
Figure 6.39 General location of Forteviot and Green of Invermay (in bold) showing palaeochannels recorded as cropmarks and nearby archaeological features (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 6.40 Forteviot showing the surrounding topography.
The palisaded enclosure at Forteviot and associated sites lie on a generally level terrace above the Water of May, on the south side of the Earn valley (figure 6.39). A steep scarp marks the western edge of the terrace, and this also appears to define the west side of the enclosure where there is a ‘gap’ in the cropmarks. The area enclosed by the palisaded enclosure is level with only slight undulations, though the location of the large henge within the enclosure is marked by a distinct mound. Whether this reflects the construction of the henge upon a pre-existing hillock or a mound formed by the remains of the henge material or internal barrow is difficult to determine at present. The southeastern edge of the palisaded enclosure is defined by a very distinct rise in the ground as the terrace slopes up to the next level, and the perimeter of the palisaded enclosure appears to rise up over some of this slope (figures 6.40 and 6.41). This would have had the effect of making any posts erected here seem much larger from inside the enclosure and may also have prevented anyone standing on this rise from seeing into the enclosure if the perimeter was a continuous fence. However, on the aerial photographs the boundary of the palisaded enclosure is much less visible here with only a few postholes recorded where the enclosure mounts the slope. Although this may be a reflection of the differential visibility of cropmarks, it is possible that it is a real pattern and that fewer boundary timbers were erected in this location. Perhaps the rising ground here served to define the edge of the enclosure associated with ‘token’ timber posts. Therefore, the boundary on the south and
west sides may not have comprised a continuous barrier. Beyond this, only a short distance to the southeast, a small hill begins to rise, levelling out at another generally level terrace more than 20m above the level of the enclosure. This hill overlooks the location of the palisaded enclosure, and it would have been possible to stand on this hill and look into the interior of the enclosure below (figure 6.41). From the level of the enclosure, this hill dominates the location.

Therefore, this palisaded enclosure has been positioned encompassing the western edge of this terrace, and close to the base of rising ground on the southeast (figure 6.40). It incorporates some of the terrace edge and topographical features. Such positioning seems unlikely to be merely coincidence as the terrace continues for some distance to the northeast and it would have surely been possible to construct this enclosure elsewhere in this general location. The manner in which the hill to the southeast dominates the enclosure then suggests that looking into the interior was encouraged and it is possible to envisage this hill as some kind of viewing area, where groups and individuals could gather. The fact that the perimeter of the enclosure rises up the smaller slope on the southeast may suggest that similar visual access was not permitted from this location, though this would only have been the case if the enclosure presented a continuous barrier.

The additional monuments within the palisaded enclosure create smaller enclosed spaces. Two timber circles of very differing dimensions enclose henges within their circuits. This is an unusual configuration as most timber circles associated with henges are found within the henges, though similar configurations are known at Ogden Down, Dorset (Gibson 2005, 169), and Standlake 20, Oxfordshire (Gibson 2005, 171), where timber circles surrounded ring ditches and appear to be later in date, and at Milfield North, where a later henge was constructed within a timber circle (Harding 1981; Gibson 2005). If the Forteviot timber circles and henges follow a similar sequence to that at Milfield North, then the henge monuments may have been constructed within and enclosed by earlier timber circles. This may suggest an emphasis upon smaller enclosed spaces, but may also be a reflection of the larger palisaded enclosure surrounding these monuments. However, the relative dating of these monumental forms is not refined enough to suggest which is likely to have been the earliest form of monument constructed here and whether the timber circles were reflecting the palisaded enclosure or vice versa. More definite statements concerning the chronology of the henges, timber circles and palisaded enclosure must wait until better dating evidence is available.
Both timber circles lie in the western edge of the enclosure close to the entrance, only a short distance from the terrace edge. The larger circle extends to the very edge of the terrace and measures around 40m in diameter, while the smaller circle lies only 2m to the southeast of the first timber circle, measures around 11m in diameter and encloses the cropmarks of a much smaller hengiform. This timber circle is open to the northeast and, though it is possible that the full circuit has not been recorded, the fact that the henge is also open to the northeast does suggest that the henge may be reflecting the form of the exterior circle. A timber setting, formed by two diverging lines of pits, open to the south with what may be a narrow ditch defining the north end, has been recorded around 30m northeast of the larger timber circle. Additionally, there may be another similar setting a short distance to the southeast, though this is much less clear in the cropmarks. All of these timber monuments cluster within the northwestern and northern sectors of the palisaded enclosure, along with additional pits and cropmarks hinting at the presence of further sites. This may be a reflection of the differential production of cropmarks across the enclosure, though it may also suggest that activity was focused within this area of the enclosure.

The remaining timber monument associated with the palisaded enclosure at Forteviot is the possible timber circle recorded within a henge located around 20m north of the palisaded enclosure. The pits recorded within this henge monument may represent the remains of an oval timber circle, measuring around 9m by 4m, though the cropmarks are rather indistinct making a definite interpretation difficult. The position of this henge monument can be seen on the ground as a slight mound, and the palisaded enclosure would have been clearly visible from the location of this henge and timber circle. Whether this mound represents the degraded remains of the henge or a natural mound upon which the timber circle and henge have been constructed is, at present, impossible to determine.

The final timber monument known within Strathearn is a possible timber circle recorded at Green of Invermay, around 750m south-southwest of the palisaded enclosure (figures 6.38 and 6.39). This oval circle is defined by large, variously sized pits and measures around 8m in diameter, though the full circuit has not been recorded. As it lies adjacent to a circular palisade it may represent a later prehistoric roundhouse, though this interpretation is not entirely secure as the large pits defining this site and slightly oval form suggest that it could also be considered to be Neolithic. However the location of this site (figures 6.42 and 6.43), on a level terrace with the terrace edge curving around the location of both this site and adjacent palisaded enclosure is likely to have been an ideal location for a
settlement. Therefore, the balance of evidence does suggest that a later prehistoric interpretation is more likely.

Figure 6.42 Green of Invermay showing extent of the terrace (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 6.43 Green of Invermay. Looking southwest from location of the timber circle showing edge of the terrace.
6.4.8. Summary

Drawing this together, the locations in which the timber monuments in Strathearn were built are clearly quite diverse. Considering the variation in form and probable date (these monuments probably span the whole of the Neolithic), this is not particularly surprising as they are likely to have been built for very different reasons across many centuries. Nevertheless, many can be shown to have been built in potentially meaningful relationships with their surroundings, though that relationship differs. The cursus monuments at Craggish and Tullichettle may have employed nearby higher ground to emphasise, or even to act as, a terminal, while the terrace at Bennybeg may have defined the wider location of the monuments and may even have played a role in the function of these sites. Similarly, the timber hall at Westerton II was built in a very distinct location on a narrow promontory of land, which clearly defined the wider location, and the timber circles at Dargill were positioned close to the edge of a terrace, at the narrowing of what was probably a natural routeway. Both palisaded enclosures at Leadketty and Forteviot use the edge of a terrace above a stream valley to define one side, were built close to higher ground and parts of their boundaries may have been emphasised by their construction upon ground higher than the main part of the enclosures. All of these monuments then make use of and, in some cases, incorporate the topography in which they have been built.

However, the obvious clustering of most of the timber monuments indicates that, for some monuments at least, this relationship with their surroundings entailed an association with other monuments, or at least with an important location. For some monuments, such as those around Leadketty, Forteviot or Millhaugh or the cluster of monuments at Dargill and Bennybeg, these monuments were constructed in close proximity to one another. In other cases, such as the general concentration of timber monuments around Crieff or the two cursus monuments at Tullichettle and Craggish, this relationship does not appear to have been so close and it becomes more difficult to determine if this relationship was real. It may be that the more distant relationships reflect nothing more than the locations in which cropmarks have been recorded. However, a close look at the relationship of timber monuments to the general distribution of cropmarks in this region (figure 6.2) demonstrates that timber monuments have not been recorded in all the locations in which cropmarks are known and are not evenly distributed throughout Strathearn. Therefore the locations in which cropmarks have been recorded cannot entirely explain this clustering and these concentrations do appear to be real. The fact that the post-defined cursus monument at Bennybeg shares a similar orientation with the earthwork cursus at Broich
and perhaps even the monument at Broich Road Farm suggests that each of these monuments had some relationship to the others, despite the fact that those at Broich and Bennybeg are more than 1km apart. Therefore many of the timber monuments in Strathearn seem to have been constructed in relation to the location of other monuments or important locales.

The small number of timber monuments which were built in isolation stand out as slightly different. The timber circle at Westerton I is the most obviously isolated monument and Green of Invermay, although only around 800m from the cluster of sites at Forteviot, also seems to stand on its own. In the case of the timber circles at Westerton and Green of Invermay, this is a factor in my interpretation of them as putative roundhouses.

Many of the timber monuments in Strathearn have been recorded relatively close to modern river crossing or fording points, which may have influence their locations. However, it is difficult to determine if modern river crossings have any real antiquity, and certainly the fact that rivers and streams may have changed their course must be borne in mind, along with the effect of higher sea level upon the water table and the flow of the River Earn in the east of the study area. Nevertheless, as this is such a consistent pattern, it cannot be ignored and certainly does suggest that at least some timber monuments may be associated with river crossings. This, therefore, may be another influence upon the location of some of the timber monuments.

6.5. Other sites and stray finds

Alongside these timber monuments, a small number of other monuments of broadly Neolithic date have also been recorded (figure 6.44). The chambered cairns at Kindrochat and Cultoquy have been mentioned already. The cropmarks of a long barrow have been recorded at Thorn, the remains of a long cairn at Rottenreoch (Stewart 1958-9, 74) and there may have been another long cairn at Letham (Coles and Simpson 1965, 181). A possible causewayed enclosure has been recorded at Leadketty (Oswald et al. 2001, 39, 41, 158; Gibson 2002b), adjacent to the palisaded enclosure. A number of henges have been recorded in this study area including the aforementioned North Mains, built around a timber circle. An enclosure at Belhie, within which there is a standing stone, may represent another henge, while a further possible henge has been recorded as cropmarks at Bennybeg Craig, close to the post-defined cursus there. A scattering of stone circles and standing stones, some of which may represent remnants of stone circles, are known throughout the
study area and some of these standing stones are found close to the timber monuments. Finally, a cluster of cup and ring marked rocks has been recorded in the hills to the southeast of Crieff, at the western end of the study area and Early Neolithic pit-digging activity was uncovered beneath the henge, ring ditches and barrow excavated at North Mains (Barclay 1983). Therefore, it is clear that a wide range of activity was taking place in Strathearn throughout the Neolithic and we should not view the timber monuments in isolation.

Figure 6.44 Distribution of other Neolithic monuments (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Alongside these monuments, there is a scattering of stray finds throughout Strathearn (figure 6.45) with a particular concentration at the east end of the study area, likely a reflection of the concentration of arable ploughing and field walking in this area. The stray
finds comprise scatters of flints, arrowheads, polished stone axes and two carved stone balls. Such finds may reflect settlement or other activity contemporary with the timber monuments in this area. The only timber monuments with which stray finds are directly associated are the palisaded enclosures of Leadketty and Forteviot where finds of pottery and flint of probable Neolithic date have been recorded in the fields where these cropmarks have been recorded (King 1993b;1993a; Hallyburton and Brown 2000).

### 6.6. Pathways and cost-path analysis

The location of many of the timber monuments recorded in Strathearn suggests that they may have been built on or close to routeways through the landscape and indeed the River Earn itself is an east-west routeway. Therefore, in order to test this, a basic least-cost analysis was undertaken, based primarily upon slope but also taking into account the wetter areas and higher sea level to the east of the study area.

![Figure 6.46 Results of the cost-path analysis (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).](image)

The results of this analysis are shown in figure 6.46. As in chapter 5, these represent only possible pathways. However, the details of some of these pathways should be treated with caution as those within the central and western sections of Strathearn do not take into account the effect of the rivers and in particular are plotted crossing the meandering course of the river Earn several times close to Crieff and the monuments here. Instead the presence of the river would have undoubtedly modified the routes of these pathways, displacing them to either side of the river. This is not so much of a problem within the eastern section of the study area (roughly east of North Mains) as most of the wide valley...
bottom, which is likely to have been marshy and poorly drained, was defined as difficult to traverse. Though of course, the river itself may have been a routeway.

The modelled pathways seem to confirm that some of the timber monuments within Strathearn may have been located on or close to pathways. However, this is not universally the case, and the analysis does not suggest that the monuments here are so closely linked to pathways through the landscape as was suggested for the Nith case study area. Nevertheless, this analysis does suggest some important relationships. Firstly, the modelled pathways indicate that the cursus monument at Tullichettle lies on a northeast-southwest oriented pathway. Indeed, the modelled pathway passes through the centre of the cursus monument, which is oriented at right angles to it. The modern road lies immediately to the east of this monument, and indeed some of the cursus may lie below this road, and the cropmarks of an old trackway have been recorded crossing through the location of this cursus. The nearby cursus at Craggish does not have the same relationship, though it does lie centrally between two pathways, to the north and south, and is oriented roughly parallel to both pathways.

Further east, the position of pathways in relation to some of the monuments around Crieff is likely to have been modified slightly by the River Earn as the analysis did not take into account the effect of the river here. Nevertheless, the modelled pathways do indeed suggest that the complex of monuments at Dargill lie upon a roughly northwest-southeast routeway as was suggested earlier. Whether these pathways also had any relationship to the timber circle at Broich and enclosure at Broich Road Farm on the other side of the River Earn is however difficult to determine, though it seems likely that the modelled pathways would remain on the south of the river rather than crossing the river several times as suggested by this analysis. Therefore the modelled pathways may bear little relationship to these timber monuments, though as both are close to the River Earn this is also likely to have acted as a routeway.

Similarly, cost-path analysis does not suggest that the timber circle and timber settings at Millhills bear any relation to the modelled pathways despite the fact that the field visit here did suggest that these timber monuments may have been built upon a routeway. Instead, the nearest pathway is some distance to the north. A modern road lies immediately to the north but this road is not on Roy’s 18th century map (http://geo.nls.uk/roy), suggesting that it may be a relatively modern routeway and so may bear little relation to any prehistoric pathways.
The timber circle at Westerton I and timber circles and henge at North Mains lie on pathways. In the case of Westerton I, this pathway is oriented northeast-southwest and has already been suggested from my field visit to this site. The relationship of the timber circles and henge at North Mains to the modelled pathways is, however, very interesting. The monuments at North Mains lie close to the centre of the case study area, where the topography of Strathearn narrows slightly and close to the junction of the Machany Water with the River Earn. Here several pathways from the west meet and converge, becoming a single pathway to the east. This monumental complex therefore seems to have been positioned in an important location in the landscape: potentially anyone moving along Strathearn would have had to pass through or close to the location of North Mains, something which is further encouraged by the slight narrowing of the topography here. Therefore the complex of monuments at North Mains seems to be positioned at a meeting point of routeways, perhaps reflecting the meeting of differing territories.

Towards the east end of Strathearn, the relationship between the modelled pathways and timber monuments is rather different and more difficult to assess. The only monument which appears to be directly associated with a pathway is the possible timber circle at Green of Invermay. The monuments at Westerton II and Millhaugh lie to one side of a modelled pathway, while the complex of monuments at Forteviot is positioned to the south of an east-west pathway. If we envisage a corridor of movement rather than a single inscribed pathway, then it is possible that these monuments did lie somewhere along such a corridor. However, the relationship with the modelled pathways is not particularly close, perhaps suggesting that these monuments were built to one side of a pathway, rather than being directly associated with them. The relationship of the complex of monuments around Leadketty farm appears more distant as it lies between two roughly parallel east-west pathways. Instead, the locations of the monuments at the east end of Strathearn seem to bear more relation to the locations of tributaries flowing into the River Earn; each complex lies close to a stream running into the River Earn and that at Leadketty has been recorded around the confluence of two of the tributaries (figure 6.47). Natural features, such as streams and rivers, may have been used to define boundaries, so it is possible that the location of these monuments reflects their construction upon or close to territorial boundaries rather than upon routes.

Taken together, this analysis does not suggest such a direct relationship between the timber monuments and movement through the landscape as was indicated by cost-path analysis for the Nith and Annan valleys (section 5.5). Nevertheless, the analysis does add weight to
some relationships already suggested by observations during field visits, though may suggest that other observations are re-thought. Although some monuments appear to have a direct relationship with modelled pathways, most have not and indeed may have been positioned to the side of these pathways. The most obvious exception to this is at North Mains, where several pathways converge into one, suggesting the deliberate positioning of the monuments at an important location. Anyone moving along Strathearn would have to pass the monument here, and it also is the meeting point of pathways from the wider Strathearn region. Perhaps the monuments constructed in this location reflect such meetings. Only the monuments at Dargill, Tullichettle and the timber circle at Westerton I can be suggested to have a similar relationship to the pathways. The remainder do not and instead may have been positioned to one side or away from pathways and movement through the landscape, perhaps reflecting other factors such as territorial boundaries. The simplistic nature of the cost-path analysis undertaken, however, means that these observations must remain provisional.

Figure 6.47 The east end of Strathearn showing the timber monuments and nearby streams (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

6.7. Discussion

Drawing this together, the varied forms of timber monument recorded in Strathearn indicate monuments of timber were being built in Strathearn throughout much of the Neolithic. As they form a significant proportion of the monuments known in this case
study area as a whole, timber was clearly an important material for the construction of monuments, though monuments of other materials were also being built. That some, such as the long barrows and chambered cairns, have mortuary associations while none of the monuments of timber do may suggest that the difference in materiality reflects a difference in purpose, at least during the earlier part of the Neolithic when chambered tombs and long barrows were constructed. Whatever the associations, timber formed only one element, albeit an important one, of monumentality during the Neolithic in Strathearn.

There are few general patterns in terms of the specific locations of these monuments, something which is not particularly surprising considering they are likely to have been built over a long period of time and encompass such a variety of forms. Nevertheless, some do seem to have made use of their surrounding topography, and sites such as the timber hall at Westerton II and palisaded enclosure at Leadketty seem to have been built in very specific locations. Several may have incorporated or made use of the topography in which they were constructed and in many cases, such as at both palisaded enclosures, the timber hall at Westerton II or the cursus at Craggish, the surrounding topography must be considered a part of the monument itself, thereby weakening the unitary typologies that these monuments are often placed within. Many seem to have been built close to river crossings and the monuments in the east end of the study area appear to be associated with streams and confluences.

Most of the timber monuments recorded in Strathearn are located within larger clusters of monuments, often comprising other timber monuments, though other forms of monument, such as the earthwork cursus monument at Broich or the henge monuments at Forteviot, also feature within some of these concentrations. This suggests that some places or monuments may have remained important over a long period of time and that locating a monument in association with or with reference to an earlier monument or important place may have been one of the most important factors determining the location of the monuments built. One reason for the importance of these locations may have been their proximity to river crossings and, considering the clustering of monuments close to rivers and streams, particularly in the east end of Strathearn, their positioning close to territorial boundaries. While the clusters have been defined by groups of monuments, the first activity in a location may not have been monumental, as at North Mains where pit-digging took place before any monumental forms were constructed (Barclay 1983). It is possible that some of the pits recorded as cropmarks may represent similar pit-digging activity. Further, the fact that the timber hall at Westerton II is associated with a tree throw may
suggest that some sites could have been located with reference to an important natural feature, with such features perhaps forming the initial focus at some sites. Therefore, it may be that these locations were considered important even before any monuments were constructed and certainly the fact that topographical features were incorporated into or made use of in many cases, suggests that these locations were well known before any monuments were built.

The pathways modelled by the cost-path analysis suggest that few timber monuments had any direct associations with pathways and movement. However, the relatively open landscape of much of Strathearn makes travel along the length of the valley relatively easy, meaning that the modelled pathways may not represent all directions of movement through this study area. In addition, as well as movement along essentially linear pathways, those living within this landscape were undoubtedly moving around it on a daily basis, encountering these monuments as they went. Nevertheless, there is little suggestion that the timber monuments recorded in Strathearn were positioned upon the main routeways or bear any strong relationship to them and so such movement seems unlikely to have influenced the location of many of the timber monuments. The small numbers of monuments that do seem to have been positioned on pathways are predominantly those that have been recorded in isolation (that is, they do not appear to form parts of larger complexes of monuments). This may lend further weight to the suggestion that the sites at Westerton I and Green of Invermay represent roundhouses rather than timber circles as such locations on routeways would be ideal for settlement.

The complex of monuments at North Mains also appears to have been built upon a routeway. Its position is very interesting as the modelled pathways suggest that it was positioned at a transitional point within this river valley, where a number of pathways converge and become a single routeway. North Mains is also positioned close to a similar transitional location in relation to the nearby rivers, where the River Earn and one of its tributaries, the Water of Machany, meet and flow as one river to the east and modern bridges cross both rivers in this location. The construction of the monuments in this location may then be a reflection of this important location and of the meeting of the routeways. The fact that long standing activity has been uncovered here indicates that this location continued in importance for a very long period of time, something which may have a large part to do with its position in relation to the wider locality.
Turning to the timber monuments within Strathearn as a whole, they vary greatly in terms
of scale. Two of the largest Neolithic timber monuments known in Scotland, and indeed
monuments of any kind of this date, have been recorded at Leadketty and Forteviot within
a little over 3km of one another at the eastern end of Strathearn. Both form large
monumental complexes with further sites of both timber and earth. The sheer size of these
sites indicates that large amounts of timber must have been used to build them. Even one
palisaded enclosure, then, must have had an impact upon the woodland resource and
required a large commitment of time and resources. Two so close together must have had a
doubly serious impact.

Estimating the size of this impact is difficult as only the avenue entrance at Forteviot has
been excavated and the composition and density of the forest in this area is not known.
Nevertheless, the excavations at Forteviot suggest that whole trees may have been placed
in each posthole (Brophy and Noble 2007). If we assume that the remainder of the
postholes each represent one tree (and without excavation this is by no means certain), then
it may be possible to estimate the number of trees required to construct both of these
palisaded enclosures. At Forteviot, a little over 100 postholes have been recorded defining
the perimeter of the palisaded enclosure. The cropmarks, though, do not record the full
circuit of this site, so if we assume that the remainder of the enclosure was defined by posts
of similar spacing to those already known, then somewhere in the region of around 150 to
200 posts may have been used to construct this monument. Leadketty is even larger,
though estimating the number of posts used is more difficult as a smaller proportion of the
perimeter has been recorded. Nevertheless, based upon the postholes already recorded, it
may be that 300 or more posts were used to build this palisaded enclosure. Taken together,
this suggests that around 500 or more trees may have been felled in order to build both
these monuments. Without information concerning the nature of woodland around these
sites and the type of wood, size and dimensions of the timbers used, it is difficult to make
any definite statements concerning the impact the construction of these monuments may
have had upon the woodland resource. Nevertheless, if the estimated exploitation of around
2 hectares of woodland for the construction of the broadly similar enclosure at Meldon
Bridge (Gibson 2002b, 15) can be taken as a very general benchmark, then it is obvious
that the construction of large monuments such as these would have required the clearance
of areas of woodland.

At present, though, it cannot be determined if the two are exactly contemporary; one may
even have replaced the other. Indeed, it is not yet certain if each were built as a single
coherent project or over a longer period of time. Nevertheless, even if separated by several generations, the woodland resource may not have entirely recovered before the next monument was built. If the clusters of timber monuments associated with these monuments are added to this, then the impact upon the woodland may have been substantial. The size of these palisaded enclosures, along with the suggestion that the hill overlooking Forteviot and perhaps Leadketty was used as a viewing area, suggests that large groups of people are likely to have been involved in their construction and use. If this was the case, then they are likely to have been drawing in widespread groups and individuals, perhaps from beyond the limits of Strathearn. Certainly the estuary formed by the inundated River Earn is likely to have aided access along the river from the Firth of Tay and beyond. Perhaps this ease of access, allowing widespread communities to meet in these two locations could go some way towards explaining why these two monumental complexes, and perhaps also the complex of monuments at North Mains, were built at the eastern end of Strathearn and not elsewhere.

None of the other timber monuments are as large as the palisaded enclosures at Leadketty and Forteviot and so would not have required such large investments of time and resources, though they do vary greatly in terms of their dimensions. It may be that these were built and used by smaller groups of people, though most still represent considerable investments and would have been substantial constructions. The smaller clusters of monuments in the western end of the study area do not appear to have developed into the large monumental complexes obvious at the eastern end, perhaps because they were further from any longer distance routeways and so served only the needs of individual groups and communities. Certainly the very similar clusters of monuments (for example Dargill, Bennybeg and Millhills) within close proximity to one another may suggest that each was built by a separate group or community.

In summary, then, the timber monuments in Strathearn appear to have been built in relationship with their surroundings. However, that relationship seems to have varied considerably across the many differing monuments constructed, reflecting many differing engagements with the surroundings. This should not be particularly surprising as so many different forms of timber monument are represented here, varying not just in form but also in dimension, location, probable date and function. Some, such as the palisaded enclosures at Forteviot and Leadketty may have been built and used by large groups of people, while others may have only been intended for small groups of individuals. It can be suggested that one of the most important factors affecting the location of these monuments was
proximity to earlier monumental forms or important places and that locating or referencing earlier monuments or places may have been considered very important. In some cases, this initial importance may have been attached to a natural feature or form, such as an important tree or topographical feature, while in others that importance may have been associated with features such as important river crossings. If this is the case, then this suggests that the builders of the monuments had an intimate knowledge of these monuments and places, a knowledge that is further indicated by the manner in which some topographical features are incorporated into and used by some of the timber monuments. In many cases, it is possible to suggest that this importance of place was of very long standing, and may even have had its origins within Mesolithic communities. In some locations this importance continued for a very long time, something which is certainly attested to at North Mains and Forteviot, but may also be the case elsewhere.
7. Case Study Three: East Lothian

7.1. Background

The final case study area is focused upon East Lothian (figure 7.1) where, despite intensive aerial coverage, extensive arable cultivation and a rich cropmark record, few timber monuments have been recorded. This seems to suggest East Lothian was an area where there was little tradition of timber monumentality, though this picture is complicated somewhat by the fact that several timber monuments in this region have been discovered recently during excavation. One of the main aims of this case study is to investigate this apparent absence of timber monumentality in more detail.

Figure 7.1 The extent of the case study area showing the distribution of timber monuments (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

This case study area is the council area of East Lothian (figure 7.1). Topographically and geologically (figure 7.2), the area can be divided in two by the Dunbar Gifford and Lammermuir Faults which trend northeast-southwest through the study area and together form the Southern Upland Fault. To the north is an extensive coastal plain, formed predominantly by sedimentary carboniferous limestone, millstone grit and igneous rocks, within which there are occasional hills of volcanic rock, many of which form distinctive hills. This coastal plain undulates and slopes upwards to the south (Lelong and MacGregor 2008, 3). To the south and southeast of the Southern Upland Fault, bedrock of predominantly greywakes and shales gives rise to the Lammermuir hills (Brown and Shipley 1982). Drainage largely follows the orientation of the Southern Upland Fault with
the main rivers and streams flowing from southwest to northeast (McAdam and Clarkson 1986, 1).

![Geological map of the case study area](image)

**Figure 7.2** Geological map of the case study area (after McAdam and Clarkson 1986, 21).

The predominant superficial geology of till, combined with the solid geology of this region, relatively low rainfall and level ground of the coastal plain tends to produce soils and a landscape that are highly suitable for agriculture (Brown and Shipley 1982, 19), which in turn is very good at producing cropmarks when set to arable. Therefore the intensive aerial survey of this region, flown every summer since 1976 (Cowley 2007, 2), has meant that cropmarks have been recorded across much of this region (figure 7.3), making the fact that so few timber monuments are known especially interesting. Large gaps are, however, obvious in the distribution of cropmarks, many corresponding with imperfectly drained soils which have not tended to produce cropmarks. However, this distribution is also partly a product of survey strategies, the distribution of arable ground in East Lothian and a real absence of archaeological sites (Cowley and Dickson 2007). Combined with the fact that all of the timber monuments have been recorded in the east of the study area, even those discovered during excavation, then this distribution requires explanation.
Chapter 7. Case Study Three: East Lothian

7.2. Previous work

Prior to the excavations in advance of the upgrading of the A1 (Lelong and MacGregor 2008), few timber monuments of Neolithic date had been recognised in East Lothian and only a handful of Neolithic sites were known in this area in general. However, excavations along the route of the A1 have uncovered a number of sites of Neolithic date, several of which were built of timber, and these include mortuary structures, timber circles and a possible cursus. These monuments shall be examined in detail below.

Other sites of Neolithic date uncovered during these investigations include a pit-alignment at Knowe Farm and the remains of a possible building and yard at Overhailes. The line of pits at Knowes Farm (figure 7.4) was dug during the mid to late fourth millennium BC (McLellan 2003a; Lelong and MacGregor 2008, 47-53). At either end of this alignment several pits were grouped together to form two clusters and within those at the western end sherds from three Impressed Ware vessels were placed into the fill of the pits and a charcoal rich deposit placed on top. All the pits of this alignment contained varying quantities of oak charcoal.

The other site of Neolithic date was a possible building and yard, excavated at Overhailes (figure 7.5) and dating to between 3340 and 2900 BC (SUERC-7504, 7505, 7509, 7510) (Stuart 2003; Lelong and MacGregor 2008, 69-83). Here, stakeholes may represent a light subcircular structure (A on the excavation plan), around 6m in diameter, with a yard or
enclosure to the south. Two pits had been dug within the possible yard and stone tools, pottery, animal bones and burnt plant remains were deposited within both pits. One of the pits was re-dug and filled again. Around the same time as these pits were dug and backfilled, a line of three smaller pits were dug to the southwest. Another pit-alignment uncovered around 15m to the west may be slightly later in date, while a second structure (B on the plan), measuring around 5m in diameter, was found to the southwest of the first structure and dated to 2340-1740 BC (SUERC-7520, 7521). While this structure may represent a timber circle, it is not considered alongside the timber monuments of Neolithic date because of its later date and the fact that its interpretation remains uncertain with the excavators suggesting that it could also be interpreted as a small timber building (Lelong and MacGregor 2008, 83). It may, however, suggest an alternative date and explanation for some of the very small timber circles recorded as cropmarks elsewhere in eastern Scotland.

Figure 7.4 Excavation plan of the pit-alignment at Knowes Farm (after Lelong and MacGregor 2008, 48. Copyright Society of Antiquaries of Scotland).

Figure 7.5 Excavation plan of the structures and pit-alignment excavated at Overhalles (from Lelong and MacGregor 2008, 71. Copyright Society of Antiquaries of Scotland).

Other Neolithic sites recognised in the study area include activity of uncertain character at Traprain Law, attested to by two panels of rock art and several polished stone axes (Armit et al. 2005), a midden of probable third millennium BC date observed at Archerfield, near Gullane, containing marine shells, animal bones, flint tools and sherds of Beaker or
Grooved Ware pottery (Curle 1908, 223; Lelong and MacGregor 2008) and a Neolithic occupation site uncovered at East Barns in Dunbar, alongside a settlement of Mesolithic date (Gooder 2001; Gooder and Hatherley 2003). Two earthwork cursus monuments, at Drylawhill and Westfield, have been recognised within the area encompassed by the study area (Brophy 1999b; Brophy 1999a) while a general scattering of stray finds of Neolithic date is known throughout the area, attesting to some form of seemingly low-level activity during the Neolithic.

7.3. The environment

The vegetation cover during the Neolithic period would have been very different from that today. However, no analyses of peat or mire deposits have been carried out in East Lothian (Lelong and MacGregor 2008, 3), so any assessment of the vegetation during the Neolithic must be based upon evidence from elsewhere in Scotland and only very general statements are possible. The primary vegetation is likely to have comprised closed canopy cover woodland dominated by oak, elm and hazel with birch as a subsidiary component (Tipping 1994, 30). Alder would also have featured on the damper soils, particularly along river valleys (Brown 1997a, 210). Evidence from the wider locality suggests some anthropogenic clearance of woodland before the fourth millennium BC (Tipping 1994, 18) and localised clearance associated with agriculture from the Early Neolithic (Tipping 1994, 30). This localised clearance and regeneration seems to have continued into the third millennium BC (Lelong and MacGregor 2008, 5) with larger scale clearance only beginning to take place during the second millennium BC (Tipping 1994, 31). The picture during the Neolithic, therefore, appears to be one of localised clearance of the woodland, associated with agriculture. As a result, East Lothian is likely to have remained predominantly wooded when the timber monuments in this region were constructed.

Alongside this wooded environment, sea levels would have been higher than they are today, altering the shoreline of this study area. Following the melting of the ice sheets, the culmination of the Main postglacial transgression formed a shoreline at an altitude of around 11-14m OD in the Forth valley (Smith et al. 2000, 496), dated to around 6500 BP (Robinson 1982, 220). Following this, sea levels fluctuated though a later shoreline, termed the Blairdrummond shoreline, can be recognised at an altitude of around 11-13m OD in the Forth valley. Radiocarbon dates from around Scotland give this shoreline an age of c 4200-2000 BP (Smith et al. 2000, 497). Evidence from Grangemouth on the south side of the Forth, where this shoreline has been recognised at an altitude of 10.8m OD and dated to
around 4200 BP (Smith et al. 2000, 497), suggests that the Blairdrummond shoreline was reached within this earlier range of dates along the Forth. Relative sea levels then are likely to have been substantially higher along the coast of East Lothian than they are today, though as these levels did fluctuate, the exact shoreline during the Neolithic period is difficult to determine. Nevertheless, taking 8m OD as a conservative estimate of the relative sea level at this time, figure 7.6 is an estimation of what this shoreline may have looked like. This would have the effect of inundating large parts of the coast of East Lothian, enlarging the estuaries of streams and rivers, in particular that of the River Tyne on the northeast coast, and raising the water table, potentially making some of the lower lying parts of this case study area wetter than they are today.

![Figure 7.6 East Lothian showing the probable sea level during the Neolithic (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).](image)

### 7.4. The timber monuments

In total 11 timber monuments have been recorded in East Lothian, five as cropmarks with the remainder uncovered during excavation. A small selection of forms has been recorded: four timber circles, four mortuary structures, a timber setting, avenue and possible cursus (figure 7.7). Six of these sites are recorded in a cluster at Eweford, close to Dunbar on the east coast of East Lothian, two at Pencraig Hill while the remainder have been recorded as isolated sites within the east of the case study area.
7.4.1. The Eweford cluster

Sixty percent of the timber monuments known in East Lothian have been recorded at Eweford. Here two mortuary structures, three timber circles and a possible cursus monument have been recorded within around 400m of one another (figure 7.8). Two of the timber circles are known only as cropmarks, while the remainder were excavated as part of archaeological work ahead of the upgrading of the A1 (MacGregor and Shearer 2003; Lelong and MacGregor 2008).

Not all of these sites were contemporary and the earliest timber monuments built were two mortuary structures at Eweford West, dating to the first half of the fourth millennium BC (Lelong and MacGregor 2008, 19-28). These timber structures, though, formed only parts of a much longer sequence of activity in this location, the earliest of which took the form of tools of struck stone of Mesolithic date (Lelong and MacGregor 2008, 17). Monument building began in the first quarter of the fourth millennium BC, with a sequence of events involving the building of a low mound, the digging and backfilling of a pit with gravel and large stones to create a cairn and the creation of another mound measuring up to 20m across. The timber structures were then built on top of this mound.

The first timber mortuary structure at Eweford (Eweford West 1 in gazetteer) was sub-rectangular in plan, formed by three shallow trenches holding upright timbers of oak with a revetment of large stones, creating a small palisade structure open to the southeast. The
structure measured only around 2m northwest-southeast by around 1.3m and was burnt down at the end of its life. Small quantities of human bone from at least one adult and one immature adult were found in the foundation slots, something which may represent the fragmentary remains left behind when larger remains have been removed from a pyre. This monument, then, appears to represent a small timber structure within which human remains were placed. This was later burnt down, most of the burnt bone removed and stone placed over the burnt remains.

Figure 7.8 Location of the cluster of timber monuments at Eweford (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

A larger and more complex timber structure was built only around 5m southeast of the first (Eweford West 2 in gazetteer), comprising three large sub-rectangular postholes, within which large oak timbers were placed. The three posts were defined on the east and west by parallel rows of timber planks, revetted by a single row of stones. To the north this revetment was three rows deep and the stones of this part of the structure extended further north, forming an arc which met the southeast end of the other timber structure. Sherds of carinated bowl pottery and burnt human bone were recovered from the upper fill of this structure, suggesting that artefacts and bone were placed within the monument (Lelong and MacGregor 2008, 23).
There is clear evidence that the two rows of timber outlining the east and west of the structure were burnt as traces of the burnt timbers were recovered, scorched sediments ran parallel to the outsides of the timbers and the revetment stones were reddened by fire and charcoal stained. In addition, quantities of oak charcoal were recovered from inside the structure. While this oak charcoal may relate to the burning of the three large postholes, there appears to be little direct evidence to indicate that these posts did indeed burn down with the rest of the structure. Parallels can be drawn with the split-post structures uncovered at sites such as Dalladies and Lochhill where recent interpretation (Noble 2006a) suggests that the large posts formed the earliest structures on the site and were left to decay before a timber and stone structure, which was later burnt, was built around the previous location of the post structure. A similar sequence could be suggested for the structure at Eweford.

A short distance to the east a two-phase timber screen seems to have defined the eastern extent of this monumental complex. It was built of substantial timbers of oak and alder in its first phase and predominantly oak in its second phase, set at an angle of around 45 degrees in a trench around 10m in length. A line of three postholes immediately to the west of this screen may have served to support some of the pitched timbers, which could have extended to meet the eastern side of the second mortuary structure thereby effectively forming a timber room. As well as defining space, this screen also appears to have defined the extent of activity in this location; the deposition and breaking of pottery vessels took place across the whole of this site around the location of the mortuary structures, but these pottery sherds were only found on the west of the façade and not to the east.

Both phases of this timber screen were burnt and the fires were so intense that the surrounding sediment was scorched, suggesting that the fire was tended and additional wood was piled up against the timbers. A radiocarbon date of 3800-3650 BC (SUERC-5286) was obtained from charcoal from one of the postholes of the first phase, while hazel charcoal from the fill of one of the smaller postholes to the west produced a radiocarbon date of 3890-3650 BC (SUERC-5289) (Lelong and MacGregor 2008, 25), comparable with the first phase of the structure. Although clearly a timber structure, this timber façade has not been considered as a separate timber monument, as it appears to have functioned as part of the two timber monuments it helped to define.

After all the structures constructed upon this mound were burnt, the height of the mound was increased and the remains of the structures eventually mounded over. The timber
facade was rebuilt and extended, acting as a revetment for a sub-trapezoidal mound, while a drystone wall defined the edge of the mound. This though was not the end of human activity in this location, and it continued to act as a focus into the Bronze Age when burials were placed here.

Figure 7.9 View from below the location of the timber monuments at Eweford West looking north across coastal plain to the sea beyond.

The monuments at Eweford West were built upon the northeast end of a low glacial bank (Lelong and MacGregor 2008, 19), a location which today provides extensive views across the coastal plain to the north with the sea only a short distance beyond (figure 7.9). This glacial bank lies at a location where the coastal plain begins to give way to more undulating ground to the south, which ultimately slopes up to the Lammermuir Hills (figure 7.10). The construction of these monuments in such a transitional location where the topography, and potentially landuse, changes is informative and it may reflect the importance of marking such transitional points in the landscape. Such locations may have been considered appropriate places to locate monuments, particularly those involved in processing human remains.
The construction of these monuments upon a glacial bank effectively raises them above the level of the very flat coastal plain and it may be that such a location was chosen in order to dominate and overlook the lower ground to the north, both in terms of what could be seen of these sites from this lower ground and the view from the location of the monuments themselves. However, such views would only really be possible if there had been quite extensive clearance in this location, something which cannot be determined at present, and the presence of the screen to the east of the timber monuments seems likely to have controlled visual access to and from this part of the site. Lelong and MacGregor (2008, 21) do, however, suggest that extensive clearance could have taken place in the vicinity of this site from very early on in the sequence, largely because large quantities of turf must have been removed from around the location of the first mounds built here in order to construct the earlier mounds and also contemporary activity, in the form of a pit dating to 3960-3710 cal BC (SUERC-5298), was uncovered only around 30m southwest. This would suggest that the landscape had been opened up to a certain extent by the time that the timber monuments were built in this location. The facade would have permitted views to the north but not to the east and it would also have provided a backdrop for the activities that took place at the two timber monuments.

Around 250m east of the monuments at Eweford West, a timber circle and two post alignments, together perhaps forming a cursus monument, were excavated at Eweford East (Lelong and MacGregor 2008, 52-64 and figure 7.11). The northern post-alignment had previously been recorded as the cropmarks of a pit-alignment, and assumed to be a land division of later prehistoric date (Cowley 2007, 16), though none of the other features had been recorded as cropmarks. The southern post-alignment appears to have been excavated to its full extent and comprised 62 pits forming an alignment around 96m in length (MacGregor and Shearer 2003, 12). Only 38m and 13 pits of the northern alignment were uncovered, though cropmarks indicate that it is much larger than this, extending at least 60m further to the east and 40m to the west (Lelong and MacGregor 2008, 61). The monuments constructed here date to the third millennium BC, though a scatter of struck stone of Mesolithic date found around 10m to the north of the timber circle, diagnostically Mesolithic artefacts recovered as residual material from several later features and a radiocarbon date of 6000-5800 BC (SUERC-5339) from residual charcoal from one of the features at this site (Lelong and MacGregor 2008, 18) indicates that much earlier activity was taking place in this location long before any monuments were built.
Figure 7.10 General location of the timber monuments at Eweford, showing the position of the monuments at the very edge of the coastal plain (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

The eastern end of the southern post-alignment appears to be the earliest structure built on this site, and radiocarbon dates indicate that the whole of this southern alignment was built in sequence from east to west over several generations with each section burnt at the end of its life. Willow charcoal from the fill of one pit from the eastern end produced a radiocarbon date of 2880-2580 BC (SUERC-5340), while the western end appears to have been erected around 2400 BC (SUERC-5344, 5345), at the same time as the excavated section of the northern alignment was constructed. The first postholes of this cursus monument were dug in short segments and oak timbers erected soon after the pits were dug, though charcoal of hazel, willow and members of the rose family (blackthorn, cherry, rose and apple) were also recovered, suggesting that the oak posts were linked by hazel and willow hurdles, perhaps with wood from the rose family woven into the hurdling to create a visual and tactile effect. Alternatively, as the oak posts were burnt down at the end of
their lives, they may have been used as kindling to help the main posts burn. The use of the rose species continued when the western end of the alignment was constructed at a later date, but was not found to be associated with the northern alignment or timber circle. This may suggest that this wood was of special importance or had a particular purpose in the construction of the southern alignment. Objects of stone, flint, chert and pottery were placed into the fill of some of the postholes.

Figure 7.11 Excavation plan of Eweford East cursus and timber circle along with the radiocarbon dates obtained (From Lelong and MacGregor 2008, 52, 56. Copyright Society of Antiquaries of Scotland).

Further west, the southern alignment becomes more segmented with greater gaps between the segments while the northern alignment, which was built at the same time, does not appear to be segmented at all. It was composed of large, widely spaced pits within at least six of which timbers of oak were placed. Hazel and alder were also used, but no wood from the rose family. A scraper and broken whetstone were placed into the fill of two of the pits.

Together these two roughly parallel alignments, set around 44m apart, may have formed a coherent structure. The difference in date, however, between the northern alignment and the eastern end of the southern alignment as well as the very different character of the northern alignment may mean that these two alignments could be considered as two (or
more) separate structures. However, as only a very small proportion of the northern alignment was excavated, it is difficult to make any general statements about its character as a whole. The fact that the two facing western sections of the alignments have been shown to be roughly contemporary with one another suggests that they could have formed a coherent monument and the unexcavated portions of the northern alignment may have been constructed at the same time as the other sections of the southern alignment. It may be that the northern alignment was also gradually built over a long period of time, with the monument as a whole gradually ‘moving’ west over time. As each section was burnt, it seems unlikely that the eastern end was still standing when the western end was built, though it is possible that the burnt stumps of the earlier phase remained visible. Other post-defined cursus monuments may have similarly been built over a period of time, suggested by the segmented appearance of many sites (Brophy 2000a), while repeated construction, burning and reconstruction has been shown to have taken place at other cursus monuments (Thomas 2007). This monument is much later in date than that generally accepted for post-defined cursus monuments (Thomas 2006b, 233), though dating evidence for these sites does remain limited.

To the north of this cursus a timber circle was built (figure 7.11), comprising 70 close-set pits forming a circle around 20m in diameter. Radiocarbon dates from charcoal from the fill of one of the postholes produced dates of 2570-2300 BC (SUERC-5337) and 2620-2460 BC (SUERC-5336), placing it up to several centuries after the construction of the eastern end of the southern alignment, though probably pre-dating the erection of the western end of the cursus. As with the southern post-alignment, the timber circle appears to have been constructed in segments with at least 10 distinct linear or curvilinear groups of posts (Lelong and MacGregor 2008, 59). Again, oak was used for the main uprights and hazel and willow probably as hurdling between the posts. Aside from four pits of uncertain function dug inside the timber circle, nothing remains to indicate what kind of activities took place within this monument. The relationship of the timber circle to the two post-alignments remains a little ambiguous, though it may have been contemporary with some of the central sections of the cursus. Certainly, the southern section of the timber circle is slightly flattened as though respecting the post-alignment to the south.

The monuments excavated at Eweford East lie on a natural terrace sloping gently to the east and south, while to the west the ground dropped sharply to a now canalised burn (Lelong and MacGregor 2008, 53). This complex of monuments appears to have been constructed in a similar location to those at Eweford West. While at a slightly lower
altitude than the mortuary structures, the cursus and timber circle are positioned at a location where the level coastal plain begins to give way to the more undulating ground to the south (figure 7.10). Small hills are obvious a short distance to the east and west and the ground continues to rise gently to the south. These slopes join the foothills of the Lammermuir hills, rising more steeply only a short distance to the south. Therefore, the monuments at both Eweford East and West appear to have been constructed in transitional locations, where the character of the landscape changes. It is possible that the post-alignments at Eweford East were intended to define this location or to distinguish between different parts of the landscape (Lelong and MacGregor 2008, 227), though equally, the positioning of all of these monuments here may reflect the importance of such a location.

The final two monuments within the cluster comprise the cropmarks of two timber circles recorded only around 130m to the north of the sites excavated at Eweford East (figure 7.8). The southern circle is the smaller of the two, measuring only around 5m in diameter, and as it is poorly defined in cropmarks it is possible that it may represent only a cluster of pits rather than a timber circle. The second timber circle is much more clearly defined and lies around 45m to the north of the first circle. It is oval in form, measuring around 9m in diameter with a single large pit close to the centre.

Figure 7.12 Eweford. General view of the location of the timber circles from the east-southeast.
Both of these timber circles lie in a generally flat area close to the southern edge of the coastal plain (figures 7.10 and 7.12). Very slight undulations in the ground are obvious and both timber circles lie on one side of a slight west facing slope forming a very small ridge to the east. The ground rises again slightly a short distance to the west and so both appear to have been built within a hollow surrounded by slightly higher ground. The subtle nature of these undulations means that it would not have been possible to overlook the locations of these monuments. As both timber circles are only 45m apart, their locations are intervisible from one another. Similarly, the location of the possible cursus and timber circle to the south can also be seen from the location of the cropmark timber circles, and indeed these sites lie roughly in line from north to south.

7.4.2. Pencraig Hill

Figure 7.13 Location of the timber monuments at Pencraig Hill (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

The remaining two timber monuments of Neolithic date excavated in East Lothian are a pair of palisade structures excavated at Pencraig Hill (McLellan 2003b; Lelong and MacGregor 2008, 33-45 and figure 7.13). These structures date to the early fourth millennium BC and are broadly contemporary with the timber mortuary structures excavated at Eweford West, around 9km to the east. Again, the timber monuments were not the earliest activity at this site and soil micromorphology suggests that the area was
cleared of vegetation before a series of small fires were lit and a small mound or raised area constructed over these fire-spots (Lelong and MacGregor 2008, 33). A small timber structure (Pencraig Hill 1 in gazetteer), which was badly disturbed by subsequent activity and ploughing, was then constructed on this mound. This comprised three sub-rectangular trenches within which upright oak timbers appear to have been placed, forming a small rectilinear structure which was open to the west. Inside this structure, clay was laid and a series of small fires lit. Charcoal from the later rake-out of these fires produced a date of 3950-3710 BC (SUERC-7663). The whole structure then appears to have burnt down, creating a low mound.

Following the burning of this small timber structure, a larger timber enclosure (Pencraig Hill 2 in gazetteer) was built around its former location (figure 7.14). This was much larger and comprised a sub-trapezoidal timber structure, defined by palisades on three sides and open to the southwest. The northern and southern trenches were dug first, possibly in segments, and oak planks, possibly held together with pine, alder or hazel pegs, were set within these trenches after they had been left open for some time. Alder and hazel charcoal from the fill of the northern trench produced a radiocarbon date of 3910-3650 BC (SUERC-7654) (Lelong and MacGregor 2008, 35). A third trench was then dug along the east side, completing the enclosure. Large circular pits were dug to create the northern section, within which large oak posts were placed, while the southern part was much narrower with no evidence for individual postholes, and a wattle-and-daub screen may have been placed in this section. Directly to the west of this screen two linear slots, which appear to have held oak screens, were uncovered. As it is possible that the wattle-and-daub screen was removed to allow access into the enclosure from the east (Lelong and MacGregor 2008, 37), these additional screens may have served to channel movement into the centre of the enclosure. The construction of this enclosure was completed by the digging of two large post-pits at the east end of the northern and southern timber screens. Large oak posts were placed in these postholes, and charcoal from the fill of one of them produced a radiocarbon date of 3780-3520 BC (SUERC-8001) (Lelong and MacGregor 2008, 37).

A further structure was then built, centrally placed behind the front palisade (figure 7.14). Two large pits seem to have formed the foundations of a structure, which was built of timber uprights, oak planking and stone revetting and measured c. 44m long by 4.5m wide. Concentrations of human bone of at least two individuals were found in a charcoal rich deposit between the two pits along with lengths of carbonised wood. The whole structure
had been burnt and appears to have been a mortuary platform which was used to cremate at least two individuals. Radiocarbon dates from samples of bark from the collapsed structure centred on 3940-3660 BC (SUERC-9033, 9034, 9035, 9039), while the burnt bone produced radiocarbon dates of 3920-3630 BC (SUERC-7910) and 3700-3380 BC (SUERC-7911) (Lelong and MacGregor 2008, 41).

The whole enclosure at Pencraig Hill was subsequently burnt to the ground and several thousand years later, a cist was placed centrally at the western end of the enclosure. Human remains from this cist produced a radiocarbon date of 170 BC – 30 AD (SUERC-7665) (Lelong and MacGregor 2008, 124), suggesting this place retained its significance throughout prehistory and may have been marked in some way, for example by a mound.

Figure 7.14 Excavation plan of Pencraig Hill (From Lelong and MacGregor, 34. Copyright Society of Antiquaries of Scotland).

The monuments at this site were constructed on a flat ridge within the gentle southeast facing slope of Pencraig Hill (McLellan 2003b, 5) and were built just below the relatively level summit of this hill, which forms a ridge oriented roughly northeast-southwest (figure 7.15), allowing open views to the south, southeast and southwest; Traprain Law can be seen to the southeast (figure 7.16). In this direction, the ground becomes slightly more
undulating than that to the north, and the hills of the Lammermuirs begin to rise beyond. The fact that this site looks towards the very distinctive profile of Traprain Law, which may have been discernable even if there was vegetation cover, may be significant as evidence of Neolithic activity has been recovered here (Armit et al.

2005). However, this position also means that views to the north and northeast are obscured by the mass of Pencraig Hill, and so the very flat coastal plain cannot be seen. As the coastal plain lies to the north and more undulating ground to the south, the hill upon which the timber monuments were built appears to lie at a distinct change point in the landscape, much as at Eweford, again suggesting that such a location was considered important in some way in the Early Neolithic.

![Figure 7.15 Location of the mortuary structures at Pencraig Hill showing the coastal plain to the north and Traprain Law to the south (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).](image)

The ground slopes up gently from the location of the site to the north, northeast and northwest, while sloping down to the southwest, south and southeast. Therefore, the
monuments constructed at Pencraig Hill would have been overlooked from the hill itself and it would have been possible to stand above the site and look into it. This higher ground may also have served as a backdrop to the monument for anyone within or below it and such a position means that anyone approaching this site would have to climb part of this hill. Both the earlier timber structure and later palisade enclosure were constructed so that they followed the orientation of the terrace, with their long sides running parallel to the slope and their open, west ends facing down-hill. These monuments, then, appear to have been built in relationship to the local topography which may itself have been used to create certain effects.

![Figure 7.16 View of Traprain Law from above the location of the sites at Pencraig Hill.](image)

### 7.4.3. Cropmarks

The remainder of the timber monuments have been recorded only as cropmarks. The first is a possible timber setting at Halls, within the foothills of the Lammermuir Hills in the east of the study area (figure 7.17), consisting of two roughly parallel lines of pits oriented roughly northeast-southwest, around 7m apart and 10m in length (figure 7.18). This may represent a setting of timbers of Neolithic date, though as it is within and aligned with the cropmarks of a later field system, this site could instead be associated with these fields. Therefore, its interpretation remains uncertain and the little currently known about timber settings in general means that it is difficult to say anything meaningful about this site. Its landscape location, in a secluded position on a flat plateau on a hillside and surrounded by
hills on three sides, does little to clarify the interpretation of this site and neither does the limited number of archaeological sites recorded around its location (figure 7.18).

Figure 7.17 Location of Halls (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 7.18 Halls showing the surrounding topography and archaeological features recorded nearby (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
Closer to the coast of East Lothian, what may be a timber circle has been recorded as cropmarks at Skateraw (figures 7.19 and 7.20). Measuring around 7m in diameter, this possible timber circle is defined by small, regularly spaced pits. It lies within an area in which there is considerable evidence of prehistoric activity of various dates, something which may influence the interpretation of this site. Cropmarks of barrows and linear pit-like cropmarks, which probably represent cist burials (figure 7.21), have been recorded around the location of this site, while short and long cists have been discovered within the general area (Cruden 1958, 39; Close-Brooks et al. 1972; Close-Brooks et al. 1979a; 1979b; Dunwell 2007), indicating activity possibly ranging in date from the Neolithic to the Early Historic period. This site may be associated with this wide ranging mortuary activity. In addition, post-ring houses of comparable dimensions to the possible timber circle at Skateraw have been excavated at the nearby Iron Age settlement at Dryburn Bridge (Dunwell 2007). While all of these houses had porch features, something that is not recorded in association with the timber circle at Skateraw, it may be that this site could be better interpreted as a roundhouse. Therefore, there remains real ambiguity in terms of the interpretation of this site and, as the wider archaeological context suggests a range of possible interpretations, it cannot be definitely assigned a Neolithic date.

Figure 7.19 Locations of Skateraw and Kirklands (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).
Figure 7.20 General location of the timber circle at Skateraw showing the surrounding archaeological sites, probable Neolithic shoreline, roads and railway (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 7.21 Skateraw showing the scattering of cropmarks recorded around the possible timber circle.
This site lies on level ground, not far from the modern shoreline. It is currently around 1km from the sea, though is likely to have been closer in the Neolithic. The site has been built upon the relatively narrow coastal strip and the concentration of activity here (figure 7.20) testifies to the fact that this must have been an important location for settlement and other activity throughout prehistory and later, though at least part of this must be a reflection of the limited land available in this location, making this concentration of activity over time almost inevitable.

![Image](image_url)

Figure 7.22 Looking west-northwest from the location of the timber circle at Skateraw showing the level and featureless nature of the landscape.

Although this site lies close to the shore, the sea itself is not visible from the location of the timber circle. Instead, a small rise lies between the location of the site and the shore. The site is located within an area of generally level and featureless ground (figure 7.22). The hills marking the edge of the coastal plain can be seen a short distance to the south, southwest and west, while the level ground of the coastal plain continues for some distance to the southeast and northwest, rising to a slightly higher ridge some distance to the northwest. These features, though, seem unlikely to have been visible if there was any kind of woodland. The ground upon which the timber circle has been built is gently undulating, and a very slight ridge rises to the north and northeast. As the timber circle seems to have
been positioned at or close to the base of this ridge, its location is overlooked by this slightly higher ground.

A modern road, railway and the modern A1 all pass close to the location of this timber circle, suggesting that it has been located on or close to a routeway through the landscape (see section 7.5).

The final timber monument recorded as a cropmark in East Lothian is an avenue at Kirklands, within the southeast of the study area (figure 7.19). This monument, oriented roughly north-south, measures around 62m in length and comprises two slightly curving lines of pits around 6m apart. The pits of the avenue appear to be paired at the north end, but are slightly offset to the south and a single pit may 'close off' the north end of the avenue. Alternatively this pit may represent a post that the avenue leads towards. As the south end of the avenue extends into ground less responsive to cropmarking, the avenue may extend further south than has currently been recorded. Indeed, two detached pits around 40m southeast of its southern end may represent the continuation of this monument. If this is the case, then the southern end of the avenue would curve quite sharply to the southeast. The cropmarks of a probable barrow have been recorded around 22m to the east of the avenue.

This site has been recorded within the foothills of the Lammermuirs and lies within an area of level ground with hills rising in the distance in most directions. Although this area is generally very level, the ground upon which the avenue has been positioned slopes very slightly to the south and southeast. The avenue itself appears to have been positioned on the south side of a slight ridge, oriented northeast-southwest, along the summit of which the modern road runs (figure 7.23). As a result, the ground rises very slightly towards the north end of the avenue and the summit of the ridge is located beyond its north end (figure 7.24). This ridge rises slightly above the location of the avenue, meaning that the avenue is overlooked by this higher ground, which effectively prevents any views to the north. This ridge and the fact that the modern road runs along the top of it, suggests that the avenue may have been located next to a routeway. Indeed, the ridge appears to act as a natural routeway from the coast, inland into the hills of the Lammermuirs.
Figure 7.23 Location of Kirklands showing the surrounding topography (Map © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

Figure 7.24 Looking north along the avenue showing the slight ridge beyond the north end.
Figure 7.25 Looking south along the avenue towards the small hill.

The south end of the avenue is oriented towards a small hill located only a short distance away (figures 7.23 and 7.25). If the avenue continues on this orientation, then it is possible to suggest that this hill may have served to define the southern end of the monument. If this is the case, then both ends of this avenue would appear to be defined by higher ground, which could have acted as natural terminals. More than this though, as the avenue would run between two hills, it would effectively act as a barrier to any movement through this particular location. Any movement to the east or west would have had to go around this monument, possibly along the ridge where the modern road runs. However, the uncertainty concerning the full length and orientation of this monument means that it is difficult to ascertain if this would have been the case. Nevertheless, this avenue does appear to make use of, or exploit, local topography.

7.4.4. Summary

Despite the relatively small number of timber monuments recorded in East Lothian, those known span the whole of the Neolithic period and several different forms of monuments were built, although this is much more restricted than the other case study areas. The mortuary structures at Eweford and Pencraig Hill were constructed during the early fourth millennium BC, while the possible cursus and timber circle at Eweford, probably the
Eweford and Skateraw cropmark timber circles, the avenue at Kirklands and possible timber setting at Halls all date to the later part of the Neolithic. All that have been excavated testify to long sequences of activity, beginning during the Mesolithic and often continuing long after the timber monuments had been constructed and burnt. The locations in which all of these sites have been built appear to have been carefully chosen, suggesting that the landscape was intimately known before the monuments were constructed and it may be that these locations were important long before the construction of the timber monuments and long after. Although this may only have been periodic use, the locations and their importance were clearly remembered or marked in some way.

7.5. Pathways and cost-path analysis

As the sites at Eweford, Pencraig Hill, Skateraw and Kirklands all lie on or close to a modern road, it is possible that these monuments may have been associated with movement through this study area in the past if these modern routeways reflect older patterns of movement. Cost-path analysis is one method of examining this in more detail. The cost-path analysis undertaken for this case study area (figure 7.26) clearly suggests that the complex of sites at Eweford and timber circle at Skateraw lie upon the main route of movement through the area. Indeed, this is something which was already suggested from field visits and map analysis as the coastal plain narrows considerably around the location of Eweford, continuing to narrow to the east, while the steeply rising slopes of the Lammermuirs make movement much more difficult to the south. As a result, the narrowing coastal plain in the east of the case study area appears to facilitate movement along it, following the coast. However, it also limits the locations in which movement and the construction of monuments is likely to have been relatively easy. Therefore, it is perhaps not surprising that the monuments in these locations are shown to lie along routeways and we should perhaps not take too much from such a result.

Nevertheless, the analysis also plots the routeways passing directly through the location of the cluster of sites at Eweford and timber circle at Skateraw, suggesting that these sites may have had a very close relationship with movement. This may be one reason why these sites were built in these locations with groups and individuals encountering these sites as they moved along routes and pathways through the East Lothian landscape. More than this, though, the sea itself would have been a medium for travel and as the sites at both Eweford and Skateraw lie close to the shore, it is possible that they were also related to movement using the sea. Only Eweford, though, is likely to have been visible from the sea.
Figure 7.26 Results of cost-path analysis (Map base © Crown Copyright/database right 2008. An Ordnance Survey/EDINA supplied service).

The remainder of the timber monuments recorded within the case study area all lie further inland. Despite the fact that the mortuary structures at Pencraig Hill lie on the line of the modern A1, cost-path analysis does not suggest that they also lie upon a natural routeway. Instead, the analysis shows the nearest routeway passing to the south of Pencraig Hill between it and the mass of Traprain Law, following the valley of the River Tyne (which itself could have been used as a routeway). Other routeways pass some distance to the north. Certainly, ascending the slopes of Pencraig Hill may not have been the easiest route through this area, suggesting that this site may have been positioned in a location that was a little more difficult to reach. It has been suggested that the burning that took place at Pencraig Hill may have been visible from Traprain Law, especially if it took place at night (Lelong and MacGregor 2008, 44); the same may be true for the pathways passing below.

The analysis also suggests that the timber setting at Halls does not bear any relationship to a routeway, confirming what was suggested by the field visit. However, the avenue at Kirkland also does not appear to be close to any routeways, despite the fact that a field visit suggested otherwise. This could be explained by the fact that the routeway identified during the field visit relates to a pathway passing into the Lammermuir Hills, probably reflecting short distance movement, while the pathways plotted by the cost-path analysis predominantly reflect longer scale routeways. Kirklands, then, may be associated with smaller scale movement, though the main routeway along the coast does lie only 2km to east, suggesting that access from these larger scale routeways may still have been relatively easy.
Therefore, the cost-path analysis undertaken for this case study area appears to confirm some of the observations suggested by field visits. All but the site at Halls may be associated with movement through the landscape of East Lothian, though the nature of that relationship appears to differ. Of course the earlier caveats (section 3.3.3) and provisional nature of such GIS analysis should not be forgotten.

7.6. Other Neolithic sites and monuments

As noted in section 7.2, these timber monuments are not found in an area entirely devoid of other sites and monuments (figures 7.27 and 7.28) and would have functioned within a wider network of human activity. Knowledge of this, though, is relatively limited as only a small number of sites and monuments are known in this region. Nevertheless, a small number of possible occupation sites dating to the Neolithic have been uncovered. None, though, can be suggested to be of Early Neolithic date (contra Lelong and MacGregor 2008, 209-11), though it is possible that two sub-rectangular structures uncovered at Ratho, near Edinburgh (outside the study area to the west), may be of fourth millennium BC date (Smith 1995, 209; Lelong and MacGregor 2008). None of the Balbridie-type timber halls have been identified in this region; Doon Hall A seems much more likely to be of Early Historic date, despite the controversy surrounding its date (Hope-Taylor 1966; 1980; Lelong and MacGregor 2008) and the timber halls recorded as cropmarks at Whitekirk (Brown 1983; Cowley 2007) and highlighted by Lelong and MacGregor (2008, 209) as being of possible Neolithic date are of a form only constructed during the Early Historic period. Similarly, a timber hall recorded at Sled Hill which also appears to be of similar form and lies close to a polygonal enclosure is also likely to be Early Historic in date.

The occupation sites which do appear to date to the Neolithic period largely seem to comprise of small, light, perhaps quite ephemeral structures, which is perhaps more typical of Scotland as a whole anyway. One such occupation site, the aforementioned Overhailes (Lelong and MacGregor 2008, 69-83), dated to the late fourth millennium BC. Another occupation site was excavated at East Barns (Gooder 2001; Gooder and Hatherley 2003) and appeared to comprise light structures and pits associated with both Carinated Bowl pottery and Grooved Ware, thereby potentially spanning much of the Neolithic period, while the midden recorded eroding at Archerfield may also relate to similar settlement and is probably of third millennium BC date (Curle 1908; Lelong and MacGregor 2008, 233).
Alongside these occupation sites and the timber monuments, only a small number of other monuments have been recorded. Two earthwork cursus monuments are known, both of which have been recorded as cropmarks, at Drylawhill and Westfield. A possible long barrow, close to the shore at Port Seton and containing a single inhumation, was destroyed in 1883 (Wilson 1863, 72; Henshall 1972, 429), while the mortuary structures at Eweford were later covered by a long barrow. A henge monument has been recorded as cropmarks at Newlands and a second may have been discovered through geophysical survey at Aberlady (A. Blackwell pers. comm.). Several pit-alignments have proven to be of
Neolithic date, including the lines of pits at Knowes and Overhailes, both on the route of the A1 (Lelong and MacGregor 2008) while the possible cursus at Eweford was previously recorded as a pit-alignment of later prehistoric date, suggesting that some of the many pit-alignments recorded as cropmarks in East Lothian may similarly prove to be of Neolithic date. Only six stone circles are known in this area, though some of the scattering of standing stones may represent the remains of now vanished stone circles. Stray finds of Neolithic date, predominantly comprising polished stone axes, have also been found scattered fairly evenly across this study area, probably representing contemporary activity.

Although only a small number of Neolithic sites and monuments are known in this region, the majority of those that are known are found in the eastern side of the study area, adding to the eastern distribution shown by the timber monuments (figure 7.27). Of those in the west, all lie along or close to the coast, meaning that most of the low-lying western side of the case study area appears to be largely devoid of sites and monuments. There is though a general scattering of stray finds in this area (figure 7.28) suggesting that activities were taking place here during the Neolithic. Interestingly, these finds almost exclusively comprise polished stone axes, while those in the east include other types of finds such as flints. This east-west divide is also reflected by the topography of the study area, and a similar pattern was uncovered by the archaeological monitoring and evaluation in advance of the A1 (Lelong and MacGregor 2008, 6) where the area to the west along the line of the road corridor was largely devoid of archaeology of any period, while to the east several previously unknown sites were uncovered. The differences between the east and the west of this case study area, then, may suggest that different parts of the landscape were put to different uses. Certainly, the fact that much of the low-lying west is today drained for agriculture and the excavations along the A1 largely encountered poorly drained clays in the west but lighter, sandier soils in the east (Lelong and MacGregor 2008, 6), suggests that much of this part of the landscape may have been quite wet in the past thereby limiting the locations in which activities could have taken place. These differences could also reflect the differential survival of the archaeology, with the low lying ground, intensive settlement and agriculture perhaps removing many of the traces of earlier activity in the west.

7.7. Discussion - A region of absence?

While only a small number of timber monuments have been recorded in East Lothian, those that are known were built throughout the Neolithic period and some appear to have
been built and used over a long period of time, with the timber phases forming only one part of a longer sequence. These timber monuments fit into a picture in which few Neolithic sites, cropmark or otherwise, have been recorded. So does this absence reflect a low level of Neolithic occupation in the area? Were timber monuments and monuments in general not built here to the same extent as elsewhere during the Neolithic or is the pattern that we see today merely a reflection of archaeological visibility? The destruction of monuments by the intensive agriculture of this region could explain some of this absence, though we would still expect to see more of these plough-levelled monuments as cropmarks. As very few Neolithic monuments have been recorded by aerial photography and the cropmark record of other areas of intensive agriculture, such as Strathearn, have revealed many more such monuments, the effects of agriculture cannot be used to explain all of the absence of timber monuments in East Lothian, though it undoubtedly has had an effect upon the archaeology of this region and its visibility.

It is possible that some of this absence could be explained by a lack of detail in the cropmark record, unable to pick up very small features such as the post-pits of a timber monument. However, the fact that pit-alignments of probable later prehistoric date have been recorded extensively throughout this case study area (Cowley 2007; Cowley and Dickson 2007) indicates that this absence is not merely one of a lack of detail, though undoubtedly the level of detail does vary across the region. Another explanation may be the uneven distribution of cropmarks across this region, perhaps with many of the timber monuments built falling in the gaps in the cropmark record. Certainly the fact that few of the monuments excavated along the route of the A1 were recorded as cropmarks does suggest that similar sites may remain to be discovered within the gaps in the cropmark record and demonstrates that the cropmark record cannot provide the full picture. However, similar uneven distributions have not prevented concentrations of timber monuments being recorded in other regions, such as in Perth and Kinross, which have not been as intensively surveyed as East Lothian. Therefore, surely if monuments were built to any great extent in this region, we should expect to see many more in the cropmark record, even if that record does give only a partial picture. Further, this uneven distribution cannot explain why all the timber monuments known are found in the east of the study area while none have been recorded in the west, particularly as just as many cropmarks have been recorded within the west as are in the east. It seems then that the nature of the cropmark record cannot entirely explain why so few timber monuments are known in this region.
The fact that the archaeological work along the road corridor of the A1 revealed several previously unrecorded sites of Neolithic date requires explanation. Turning first to the mortuary structures at Eweford West, these were covered by a long barrow at the end of their lives. The presence of an overlying mound is something which is likely to prevent any underlying archaeology from being recorded as cropmarks, and if similar barrows were built over the location of other timber monuments, it may be that some of East Lothian’s timber monuments lie obscured beneath ploughed out barrows. Few long barrows though are known in this region; other than the barrow covering the timber structures at Eweford, the only other known is a possible barrow at Port Seton (Wilson 1863, 72; Henshall 1972, 429). As so few barrows appear to have been constructed in this region, it seems unlikely that their masking effect could be a factor in the absence of these monuments, though the fact that the Eweford barrow was unrecognised until the A1 excavations and earthen barrows are especially vulnerable to intensive ploughing does suggest that other barrows may also remain to be recognised.

Almost all of the timber monuments excavated demonstrated the continuation of later activity in the same locations, sometimes over a very long period of time, and cropmark examples such as Skateraw suggest a similar trend. Many of these sites then demonstrate a continuing importance of place long after the construction and destruction of the timber phases. If this was the case elsewhere, it may be that later activity has removed or covered over many of the traces of the Earlier Neolithic activity meaning that little remains to be recorded as cropmarks. Certainly this is something which seems to have happened at Traprain Law, where Earlier Neolithic activity appears to have been destroyed by later activity at this site (Armit et al. 2005). Therefore, the examination of other locations which have seen activity of later date may prove fruitful.

Another factor in the apparent absence of Neolithic monuments may be the form that this activity took. Excavation along the A1 has clearly demonstrated that some Neolithic activity took the form of the digging of alignments of pits. Some, such as those at Knowes Farm took the form of pits which were then infilled with distinctive deposits, while at Eweford East timbers were erected within the pits. Pit-alignments, though, are generally interpreted as being of much later date (Cowley 2007, 16). Many of those known in East Lothian certainly are and these are often of quite distinctive form, recorded around the location of hillforts (Cowley and Dickson 2007, 50). However, it is possible that others may prove, like Eweford, to be of Neolithic date.
Some of the forms of the timber monuments excavated in this region are such that, if recorded as cropmarks, they may not be recognised as being of Neolithic date, while the small size of others means that it is unlikely that they could be recognised in the cropmark record as monuments in their own right. For example, both of the timber structures at Eweford West would be unlikely to produce cropmarks large or distinctive enough to allow them to be interpreted as Neolithic timber monuments, while the timber pyre structure within the Pencraig Hill enclosure would only produce cropmarks of two pits. Even the trapezoidal palisade structure at Pencraig Hill may not necessarily be recognised as being of Neolithic date if recorded as cropmarks. Therefore it is possible that additional Neolithic timber monuments have been recorded as cropmarks in East Lothian, but have not been recognised and interpreted as such, though the scale of many of the elements of these monuments means that it may be very difficult to recognise similar sites in the aerial record. This clearly has implications for the recognition of timber monuments beyond East Lothian.

However, all of this cannot entirely explain why timber monuments of other forms more easily recognised from cropmarks, such as timber circles and avenues, have not been recognised more widely in this study area, nor why none have been recorded within the western side of East Lothian. This imbalance is very difficult to explain, yet the fact that the general distribution of sites of Neolithic date broadly follows the same pattern and the western end of the A1 corridor did not uncover any Neolithic sites does suggest that this may reflect something of a real distribution, perhaps reflecting differing patterns of landuse across East Lothian. It is possible that some of this low-lying area may have been quite wet in the past, rendering it unsuitable for the construction of monuments, though it is also possible that the intensive agriculture across this part of the region has removed much evidence of past activity.

Clearly the reasons for the apparent absence of Neolithic monuments in East Lothian are complex, and many factors can be suggested to be affecting the visibility or otherwise of these monuments. Similar issues though affect other regions of Scotland, yet many more timber and other monuments of Neolithic date are known outwith East Lothian. Therefore, it can be suggested that the current record reflects, at least partially, something of the real picture. Perhaps for some reason East Lothian in the Neolithic may have had relatively low levels of population despite its agricultural potential or communities in East Lothian did not fully develop monumental traditions.
7.8. East Lothian and Neolithic timber monuments

If the Neolithic monuments known in East Lothian partially reflect the real picture, then it is possible to suggest that East Lothian’s Neolithic was slightly different to that recognised elsewhere, at least in terms of the monuments constructed here. For instance, all of the monuments excavated were burnt at the end of their lives including the timber circle of Later Neolithic date at Eweford. Evidence from excavations elsewhere (e.g. Barclay 1983; Rideout 1997; Barclay et al. 2002; e.g. Brophy and Barclay 2004) indicates that while monuments built during the earlier part of the Neolithic were burnt, those constructed later, after around 3300 BC, were not and instead were left to decay in situ. No other timber circle excavated in Scotland has been shown to have been burnt. Further, although built over a long period of time, the possible cursus monument at Eweford East is of much later date than that suggested for any other post-defined cursus in Scotland, and it too was burnt. The conjunction of timber and stone monumentality seen at Eweford West and, to a lesser extent, at Pencraig Hill, is unusual and seen only at a small number of sites elsewhere (for example at Blackshouse Burn and Slewairn), while the complex forms of the monuments at Eweford West and Pencraig Hill, have few direct parallels elsewhere, though this may just be a factor of recognition. In addition, many of the timber monuments in East Lothian appear to be associated with mortuary activity, more so than seems to be the case elsewhere. Therefore, some of the timber monuments constructed in this region may reflect differing beliefs, expressions of monumentality or manners of treating monuments than is recognised elsewhere and it is possible to suggest that there may also be a continuation of beliefs or practices from earlier in the Neolithic.

The longevity of use at all of the sites excavated and suggested for some of the cropmark sites indicates that the locations in which these monuments were built remained important over very long periods of time. The fact that evidence for Mesolithic activity has been recovered at all the sites excavated suggests that the locations in which the timber monuments were built were already known, used and important before any monuments were constructed. Most can be suggested to have been built in carefully chosen locations and, in the case of the monuments at Pencraig Hill, the topography may have been employed to create particular effects and add to the structures built. Similarly these locations seem to have remained important long after the timber monuments were built, and both Eweford West and Pencraig Hill saw later activity in the same location up to several millennia after the construction and destruction of the timber monuments. The same may be true for the timber circle at Skateraw.
This longevity may be associated with the proximity of these sites to movement through the landscape, with groups and individuals encountering these monuments as they travelled along the network of pathways. Cost-path analysis and field observations suggest that the sites at Eweford and the timber circle at Skateraw have all been positioned on or close to movement along the coast, while Pencair Hill may have overlooked routeways through the landscape. However, it is possible that this pattern may just reflect the fact that several of these sites were excavated along the route of the A1, a modern routeway through East Lothian. Nevertheless, the fact that this road follows the path of older routeways with potentially older origins (Taylor 1994, 8), may suggest that some of the monuments were indeed located with reference to an axis of movement and could explain the number of sites and monuments excavated along its length. It remains to be seen if future discoveries present a similar pattern.

The general distribution of Neolithic monuments, which leaves much of the western section of the study area aside from the coast devoid of monuments, can be suggested to reflect something of the pattern of past activity. Certainly none of the explanations suggested for the general absence of monuments can fully explain why none are recorded in this area. It is possible that the low-lying and possibly wet nature of this area may have made it less attractive for both settlement and monument building, although the scattering of stray finds of polished stone axes throughout this area does indicate that activities were taking place here during the Neolithic.

7.9. Conclusions

Why so few monuments were constructed is a question which cannot yet be fully answered. The intensive agriculture of this region must be considered a factor in the removal of past activity. However, even if this is the case, then this case study area still stands out as having fewer monuments than many other areas in which similar agricultural practices take place and cropmarks have been recorded. It is also very likely that a certain amount of past Neolithic activity is missing from the record, particularly if it was temporary, took place in isolation or has yet to be recognised. Certainly the digging of alignments of pits during the Neolithic is an activity that is poorly recognised in the cropmark record. Nevertheless, the evidence does suggest that the expression of monumentality in this area may have been different from that understood elsewhere in Scotland, with fewer large monuments constructed. It may be that the activities that took place at monuments elsewhere happened at sites in East Lothian that are much less
archaeologically visible or of a character that would not be recognised in cropmarks. Also, natural features could have formed the focus for such activities in this area. There is also the suggestion that activities, such as the burning of monuments, which died out elsewhere during the Later Neolithic may have continued to be practiced in this study area. A further contrast is obvious between the eastern and western sides of the case study area, perhaps reflecting differing patterns of land-use. Therefore, although current evidence does suggest that the expression of monumentality in East Lothian during the Neolithic may have been rather different from that recognised elsewhere, this area as a whole would surely benefit from a much more in-depth look at the archaeological record, particularly in light of the sites excavated along the road corridor of the A1.
8. Interpreting the timber monuments of Scotland

8.1. Introduction

There can be little doubt that timber monuments of many differing forms formed an important part of the built environment of lowland Neolithic Scotland. Therefore these timber monuments also have a part to play in our wider understanding of the Neolithic. Accordingly, this chapter shall revisit some of the themes already touched upon and take a broader look at the timber monuments of Scotland in light of the evidence already outlined.

8.2. Breaking down the classifications

Looking first at the broad classificatory groupings outlined earlier (chapter 4), although working at a very broad scale and permitting the discussion of these monuments as a whole, they clearly do not stand up to scrutiny when individual sites are examined. Excavations of timber monuments have demonstrated complex site biographies, while the differences in dimension and form within a single typology, such as timber circles, strongly suggest that all cannot have been used for the same purpose. There are also some broad themes which transcend many of the different monument types. Irregular boundaries can be identified at many sites, suggesting segmented construction, and few are exactly regular. Most sites visited on the ground appear to have been built in relationship with their surroundings and many excavated timber monuments have provided evidence of earlier activity in the same locations. All of those excavated and of Early Neolithic date appear to have been burnt down, while the majority of timber monuments of Later Neolithic date seem to have been left to decay in situ. Finally, the most obvious connecting theme is the fact that all were built of timber, and in most cases oak seems to have been the wood used. Broad themes such as these, though, do not add to or create new typologies, but instead reflect aspects of Neolithic life, of relationships between built forms and the environment, special places, social concerns and human actions and engagements in particular locations. They demonstrate that a monument, of any materiality, must be visualised as much more than just a ground plan or abstract object. These were projects created by differing groups and communities in specific places, taking a basic form (the rectangle, circle or oval) and a particular material, wood, and using and transforming both to reflect particular social concerns (Brophy 2007a, 165).
Despite this perspective, the following discussion remains littered with classifications and monument types. It is not possible to discuss monuments beyond the individual site without recourse to some form of terminology, particularly when dealing with cropmarks. This should not diminish the criticisms levelled at such types. They remain a useful shorthand and indeed are important as a first stage of interpretation and understanding, but cannot take account of the variability among sites encompassed by each individual classification and should not necessarily be viewed as indicative of function or anything more. Instead there is a balance to be struck between the use of such typologies as a means of beginning to understand and interpret sites and an understanding that monuments represent much more than such terminologies may suggest.

8.3. **Materiality, monumentality and timber monuments**

8.3.1. **Materiality: trees and timber**

All of the monuments considered in this thesis are connected by their materiality: each was built of wood. Where there is surviving evidence from excavations oak seems to have been predominantly selected, though other wood types were also used, often for minor elements of the structures (for example birch and hazel for the ‘aisle’ posts at Carsie Mains (Brophy and Barclay 2004, 14) and hazel, willow and members of the rose family as possible hurdles between the mains posts of the Eweford East Cursus (Lelong and MacGregor 2008, 58)). The use of timber and selection of decay resistant oak could reflect nothing more than the practical consideration of using the material easiest to hand in a heavily wooded environment. Yet the consistent selection of oak trees where oak did not necessarily predominate in the mixed woodland (Tipping 1994) and the fact that the ubiquitous nature of the forest is likely to have meant that trees would feature strongly within the belief systems and values of communities (Noble 2006a) means that the use of wood to build monuments is likely to reflect more than just practical considerations. Some timber monuments appear to demonstrate close associations with tree throws and the former location of trees (for example, both structures at Carsie Mains and the timber hall at Westerton II) and the probable inclusion of living trees into the structures at Carsie Mains (Brophy and Barclay 2004) and Laigh Newton (James *et al.* 2007) all indicate that wood and trees may have been considered as more than just a raw material.
Woodland and trees would have had particular meanings and associations attached to them (Noble 2006b, 61); creating structures from timber would have drawn in and incorporated any meanings. As such, timber monuments were built, not just from the material of timber itself, but from its meanings as well (Thomas 1996, 110). Therefore, timber monuments are likely to have reflected their environments in more than just material terms and indeed may have appeared little different from the woodland from which they were built. However, these monuments did not incorporate woodland and timber into themselves entirely unchanged. Instead they re-ordered the material into new relationships with their surroundings and created new engagements with the material. The Neolithic was the time when woodland was first cleared and managed on a large scale (Noble 2006a, 94) and so such clearance required new relationships between the forest and its human inhabitants (Noble 2006b, 60). Building in timber may have been one way in which these new relationships were expressed and negotiated and it is possible that some monuments were closely associated with the practice and location of clearance.

Monuments built of timber were essentially temporal structures unlike their stone or earthen counterparts; over an individual lifetime they would observably decay or could be burnt. The texture, feel and visual impact of monuments of this material would have been very different to those built of other materials, and the fact that they were built of felled woodland may have meant that they seemed little different from the forest from which they were built, effectively blending into their surrounding woodland environment. Monuments of timber were built of a living material and, when first erected, it is possible that there were signs of the former life of the tree, such as the remains of leaves on branches, fungi, insects or other animals. The wood would have continued to emit sounds after being transformed into monuments of timber, for example creaking in the wind as it moved, and so may have been considered alive (G. Noble pers. comm.). The nature of this material would have been understood by those who constructed these monuments and would have been drawn upon and incorporated into the structures themselves. The very materiality of these monuments, then, may have formed a large part of the way in which such monuments were understood and used and so must form an important part of our understanding of them.

8.3.2. Monumentality, temporality and memory

An important characteristic of monuments constructed of timber as opposed to stone is their essentially transient nature. While studies of stone monuments tend to emphasise their
durability and permanence (Bradley 1991; Thomas 2000, 79; 2004c, 176), timber monuments have a very different temporal character. Monuments built of timber observably change over time, even if left to decay. Although the decay process could take several generations (Gibson 2002b), the alteration in appearance and form of timber structures as they decayed would have been observable on a human timescale (Thomas 2004c, 183). As few excavated timber monuments appear to show any sign of repair, those not burnt largely appear to have been built then simply left to decay and fall apart. Wooden structures can also be burnt, resulting in their destruction over a much shorter period of time and changing them into another material, charcoal. This characteristic of timber structures must surely have been understood and indeed seems to have been employed in different ways during the Earlier and Later Neolithic.

As observed previously (chapter 4), evidence from excavations indicates that the majority of monuments built during the earlier part of the Neolithic were burnt, some rebuilt and burnt on a number of occasions, while those of Later Neolithic date seem to have been largely left to decay in situ. Both of these ways of treating timber monuments seem to emphasise the temporal nature of such structures, particularly as some of those burnt may have been fired only a short time after they were built (e.g. Holm), while those left to decay generally appear to have received no maintenance or repair (the exception to this being Balfarg Riding School) and instead seem to have been left to decay and fall down. Therefore, few timber monuments constructed during the Neolithic period seem to have been conceptualised as anything other than, at most, semi-permanent structures and it may be that the process of construction (and destruction in the case of those that were burnt) was as important, or even more so, than the finished form.

It is possible, though, that the burning of timber monuments was not due to ritual destruction but was the result of a violent attack and inter-group aggression. Certainly, the apparently aggressive destruction of the Neolithic house at Ballyharry by fire, attested to by the presence of projectile points, some of which were burnt (Moore 2004), indicates that such violent attacks did take place and there is certainly evidence for violence during the Neolithic period (e.g. Schulting and Wysocki 2005). Important structures, such as timber monuments, may well have formed the focus of any attacks. While we should not entirely reject violent attack as a possible reason for the burning of some timber monuments during the Neolithic, there are a number of problems with accepting it as an explanation for all the timber monuments that were burnt. Firstly, the aggressive burning of monuments cannot explain why Early Neolithic and not Later Neolithic monuments were burnt. If all such
burning were the result of attack, then this implies a very high level of inter-group aggression during the Earlier Neolithic which saw the burning of virtually all the timber monuments that were built, with this aggression and attack ceasing almost entirely during the later part of the Neolithic. This seems very unlikely. Secondly, it would have taken a lot of effort to completely burn standing timbers (Stevanović 1997; Noble 2006a, 56-7; Thomas 2007, 264). The firing of the large timbers of these monuments would have required fuel, the continued attendance of people to tend the fires until the timbers were completely burnt (Noble 2006a, 57) and, in the case of thick oak posts, perhaps more than one episode of burning in order to burn them completely (Thomas 2007, 264). Most of the timber monuments that were set on fire were burnt to the bases of the timbers, indicating both the complete burning of these structures and that the fires must have been carefully tended for a considerable period of time. This does not appear to be the actions of a raiding or attacking group, who are unlikely to stay long enough to oversee such comprehensive burning or alert nearby groups to their presence. Instead, this speaks of deliberate, planned and tended episodes of burning as part of use, functions, ceremonies and rituals associated with these monuments. Therefore, although violent attack cannot be entirely rejected as one possible reason for the burning of timber monuments during the Early Neolithic, it seems unlikely to be the cause of the majority of burning episodes seen at these monuments. Other explanations must therefore be sought.

Thomas (2000; 2004c) has suggested for those monuments that were burnt that construction, destruction and rebuilding all formed part of a continuous performance. Rather than the built form enclosing activity, the monuments themselves appear to have been part of this activity. In contrast the fact that most monuments built after around 3300 BC seem to have been left to decay suggests that these monuments were used in very different ways. These monuments do not appear to have been party to the kinds of performances suggested for the burnt monuments, and instead may have enclosed or defined activities. However, the fact that few show any sign of repair or post replacement means that they effectively appear to have been built and then left to decay (though as this is based upon excavated elements it reflects only the main elements of the structures; it cannot speak for any repair of above ground, minor, elements), something which could suggest that it was the process of construction that was important as well as the final form. Of course such structures may still have remained the focus of activities and events without any repair and, as the rate of decay of an oak post has been estimated as around 15 years for each inch (25mm) radius of heartwood (Wainwright and Longworth 1971, 225), may
have lasted for a considerable length of time. Decay and aging may have been part of the meaning of these sites.

Figure 8.1 Examples of timber monuments with apparently segmented boundaries.

The apparently segmented nature of some timber monuments (figure 8.1), both those that were probably burnt and those left to decay, suggests that some monuments may have been built over a period of time or by separate groups of people, something which places further emphasis upon the act of construction and suggests that many of these monuments may be better viewed as projects rather than final forms. If we consider architecture as a project rather than a structure that was built then used (Thomas 2006a, 354), then it becomes easier to accept that actions associated with the construction of a built form may have been the main social focus (Richards 2004b, 73). This perspective allows us to reconceptualise many of the timber monuments. While we can never assume that there are universal patterns, many of these monuments may have been part of, or built to facilitate, a performance or event, rather than representing ends in themselves. Rather than being built and then used, the process of construction is likely to have been an important process in itself, serving to bring together groups of people, creating and consolidating social relationships and drawing out relationships with people, place and the wider environment. While there may well have been an intended outcome, such as the finished timber hall or
timber circle, attention must also be paid to the process of construction and the part it may have played in the life of the timber monument and the communities that constructed them.

Thomas (2000; 2004c) also suggests that the differing treatments of monuments in the Earlier and Later Neolithic may relate to different ways of remembering. Monuments which were burnt were consigned to memory through spectacular events rather than the enduring presence of a built structure. Such events form one part of the process of ‘remembering by forgetting’ (Bradley 2002, 42) and would require to be actively brought back to memory. This would fix these events and memories of these structures in the past and would mean that the past could be measured by the distance between these events (Jones 2007, 120). Periodic rebuilding, either in the same location or elsewhere, may have been one way in which these events were recalled. Such reiteration is often one way in which societies ensure the continuity or endurance of tradition (Jones 2007, 44, 45). As commemorations are essentially performative in nature (Jones 2007, 45), such structures, rather than enclosing an area in which events had taken place in the past, are likely to have formed part of a performance themselves.

The gradual decay of timber monuments of later date, on the other hand, would have involved a different conception of the past, demonstrating that the past was receding from the present, the dilapidated condition of a monument serving as a reminder of its age and encouraging recollections of past events as individuals encountered these monuments at intervals. Such decay would link present with the past (Thomas 2004c, 180). Rather than forming part of a performative episode, such monuments would instead have enclosed, contained or defined associated events and performances. Such differences suggest a substantial shift in the way in which timber monuments were employed by Neolithic communities. Although there are a few exceptions, such as the split-post structures of Early Neolithic date which were all apparently left to decay and the burning of some of the Later Neolithic structures in East Lothian, the general pattern suggests a distinct change sometime around 3300 BC.

The picture, though, is surely more complex than this. Firstly, those timber monuments that were left to decay may not have played such passive roles in the events and activities in a location. As outlined above, the very act of construction is likely to have been an important social process and may have formed an important part of the activities undertaken at a site. Rather than merely enclosing or defining activities, the construction or additions to a monument may have formed a part of the performance at a site and the way
in which it was conceptualised, and would have brought communities together in the very performance of construction.

Part of the argument that the burning of timber monuments forms a part of the process of ‘remembering by forgetting’ rests upon the assumption that this burning removed all trace of the monument from the landscape so that it no longer remained for re-use or reappropriation (Thomas 2000, 81). However, even monuments that had been burnt are likely to have left behind observable traces of themselves for varying lengths of time in the form of the burnt stumps of timber uprights, charred ground and different vegetation or cleared areas (Thomas 2004d, 174). Such clearings could have been maintained for a considerable period of time by the grazing of animals.

Further, the argument presumes that the built elements are the only and most important parts of the focus of activity in a location, yet it was suggested earlier (chapter 5) that the surrounding topography of some monuments may have played a part in the monuments themselves and the way in which they were understood. Therefore, in some cases, the burning of the timber elements would have destroyed only one part of a monument. The location, with or without the destroyed remains of a monument, may have remained observable or significant for a considerable period of time. Brophy (2007b) has suggested that the burnt shells of Earlier Neolithic roofed timber halls remaining in the landscape may have been the inspiration for the unroofed timber halls later in the Neolithic.

Does this then mean that such burnt monuments cannot be considered to have formed part of the process of remembering postulated by Thomas? Clearly the above concerns do not change the fact that the spectacular burning events evident at many timber monuments would have been highly memorable and involved the monuments themselves in a performance. What these events may not have done, though, is to remove all trace of the structures, while any associations with natural features would still remain. Any burnt remains, their dilapidated condition and the subsequent decay and reclamation by vegetation may have created an impression of age, while the traces left may also have facilitated the continuation or reconstruction of ritual activity and perhaps even the appropriation of the remains of the structures, as may be the case with the timber halls of the Later Neolithic, and their locations. Such traces though would gradually decay and disappear, in much the same way as the decay of monuments built later in the Neolithic. Therefore we should perhaps see a modification of the process of remembering engendered
by the burning of timber monuments, remembering with physical reminders rather than remembering by forgetting.

Another perspective may be added if we consider that fire may have been used to aid the clearance and management of the forest, suggesting that the burning of monuments of timber during the Earlier Neolithic could reflect this method of clearance. However, palynological evidence indicates a distinct fall in the instance of microscopic charcoal around the time of the elm decline at the very beginning of the Neolithic (Brown 1997b, 135; Tipping et al. 2007, 31). If this indicates the decreasing use of fire to clear woodland, then the burning of timber monuments would coincide with a time when the use of fire to clear woodland was not commonplace, making it difficult to sustain the suggestion that the firing of monuments reflects contemporary burning of woodland. However, the reasons for this fall in charcoal remain poorly understood and may not be human induced. Other possible explanations include climatic deterioration and changes in woodland composition (Brown 1997b, 135). It seems unlikely that the use of fire to clear and manage woodland would cease to be used altogether, though the firing of timber elements of monuments may reflect reference to an earlier process of clearance or a social memory of fires from generations before.

The fact that the majority of Later Neolithic timber monuments were not burnt, but were left to decay may suggest that by the Later Neolithic, relationships with the forest and its management had altered. Indeed, a change may be suggested at some Neolithic sites in Scotland, where pollen analysis suggests woodland regeneration during the middle of the Neolithic, with an apparent reduction in the intensity of landuse (Tipping 1994, 31; 1999, 21; Edwards and Whittington 2003, 73). Although this appears to be by no means a universal pattern, it is possible that the treatment of monuments built from the forest reflects something of the way in which the wider woodland environment was conceptualised and treated at this time. This can particularly be suggested by the evidence from the excavation of the timber hall and circle at Carsie Mains (Brophy and Barclay 2004) where some tree throws were found to overlie the position of these monuments, indicating that the woodland was allowed to regenerate around the location of the timber monuments. Therefore, any clearance around these monuments does not appear to have been maintained and the monuments themselves appear to have been incorporated back into the forest. If the wider pollen record is revealing a real pattern, then similar processes may have been happening elsewhere as woodland was allowed to overrun previously
cleared areas, the decay and assimilation of the monuments perhaps reflecting these wider processes.

The different ways in which timber monuments were treated suggests two very different ways of conceptualising monuments, the surrounding forest environment and the way in which the past was remembered. In the first instance, the destruction of monuments may have been one way of fixing memories of these structures and associated events in the past (Bradley 2002, 43) and would have ensured such structures were active participants in performative events. The transformed monuments and their locations would have emphasised the fact that these events took place in the past and time may have been measured by the distance between these events. Such burning could reflect the initial, perhaps mythical, clearance of the forest and the repetition of performance in some locations may have been one way of emphasising and encouraging the continuity of traditions and social relations (Jones 2007). As evidence of Neolithic settlement within mainland Scotland remains largely ephemeral in nature (aside from timber halls, which may not have functioned as wholly domestic structures; see section 4.6.1) and society may have maintained an element of mobility (Barclay 1996; Brophy 2006), the burning of monuments could also have been a means of creating a sense of rootedness and of retaining memories of the past and previous generations (Noble 2006a, 70). The decay of monuments, on the other hand, would have graphically demonstrated a past gradually receding from the present and may reflect changing relationships with place and memory. The gradual rotting of such monuments would have demonstrated a continuing relationship between people and place and made obvious the passing of time. Finally, the construction of such structures may have been as important as the final form, drawing together and resulting in the negotiation and creation of relationships between communities, individuals and their surroundings.

8.4. The importance of place

8.4.1. Earlier activity

While monuments themselves may be implicated in the creation of memory and the importance of place, many timber monuments appear to have been constructed in locations that were already important and which may already have been inserted into tradition through earlier activities. Barclay (1999, 28) has noted the consistent occurrence of Early Neolithic activity in locations of large Later Neolithic monuments. Such ‘coincidences’,
however, are not unique to monuments dating to the Later Neolithic. Examples of earlier activity include the clusters of pits dug prior to the erection of the palisaded enclosure at Meldon Bridge, within which sherds of pottery, charcoal and burnt hazelnut husks were placed (Speak and Burgess 1999), the pits dug before the timber halls at Balfarg Riding School and timber circles at Balfarg were built (Barclay and Russell-White 1993) and the breaking of pottery and burning of wood and bone in the location of the later Balfarg timber circles (Mercer 1981). Three pits appear to have been dug before either of the timber circles at North Mains were constructed and the location cultivated (Barclay 1983), while the post-defined cursus at Bannockburn was erected adjacent to an earlier pit-defined enclosure (Rideout 1997). A pit-alignment dated to the first half of the eighth millennium BC and reworked around 400 years later was excavated close to the timber hall at Warren Field (Murray et al. 2006), while early radiocarbon dates and stone tools recovered from the locations of the monuments at Eweford East and West, Pencraig Hill (Lelong and MacGregor 2008) and Holywood North (Thomas 2007) all indicate the presence of much earlier activity in the later location of this range of structures. Similar activity has been recovered at other sites and is not unique to timber monuments.

The majority of this earlier activity is small-scale, generally leaving little or no trace above ground, pit-digging in particular possibly forming part of the phenomenon of ‘remembering by forgetting’ (Thomas 2000; Bradley 2002). While such small-scale activity may have left little trace above ground, it is likely to have established the significance of particular places (Thomas 2000, 80) and may be one of the reasons why monuments were built in these locations at a later date. Rather than imposing new meanings upon a place, the construction of monuments in these locations would have drawn upon and transformed the existing meanings of such places, established through the earlier activity. While it is impossible to determine if similar activities took place in the locations of timber monuments recorded only as cropmarks, the consistent association of excavated sites with earlier activity indicates that it very likely that similar earlier significance can be envisaged elsewhere and indeed is possible that many of the pits recorded so widely as cropmarks may represent similar pit-digging activities (chapter 4).

Many timber monuments, then, may have been erected in important locations, which were already embedded with significance and tradition. It is possible that such significance was also attached to specific natural places. The apparently close association of some sites with topographical features (for example, some of the cursus monuments in the Nith valley (chapter 5)) may suggest this. The suggestion that Mesolithic ceremonial activity is likely
to have focused upon natural features (Bradley 1998b) combined with indications of Mesolithic activity at some sites (for example Eweford East and Holywood North) suggests that the importance of some places and natural features may have been long-standing. Certainly, many locations appear to have been intimately known before any monuments were constructed (see chapter 5), and while this could be associated with earlier ritual or ceremonial activity, this familiarity is also likely to have arisen through the use and exploitation of this landscape for activities such as hunting or farming.

The construction of monuments in such significant places is likely to have added an additional layer of significance and symbolism to such places, but would also have altered the way in which locations could be experienced and used (Bradley 2000, 104-9). After the construction of a monument, the movements of people may have been altered or prescribed, particular areas may have been screened from view and certain portions of society excluded. New meanings associated with the construction and perhaps destruction of the monuments and the activities that took place would become attached to such locations and the monuments and their locations would take on new meanings. In some cases, the construction of these monuments may have served to formalise or make explicit existing relationships with a location.

There are, however, some excavated timber monuments at which no evidence of earlier activity, including pit digging or earlier Mesolithic exploitation, has been recovered. The timber hall at Littleour, for example, appears to represent the earliest activity in this location as do the palisade structure at Inchtuthil, the split-post structure at Lochhill and cursus at Holm. In some cases this may reflect merely the degree of erosion at a site, potentially removing any trace of earlier activity, the difficulties in identifying the slight traces left by any earlier activity or the fact that excavation focused solely upon the structures themselves and did not look at the wider surroundings. While some earlier activity may potentially be archaeologically invisible and very difficult to prove, we must accept the possibility that some timber monuments were erected in locations in which there was no prior importance attached and so do indeed represent the first real activity in a place.

### 8.4.2. Longevity of use

While the locations of many timber monuments may have been important before any structures were built, the locations of many also appear to have remained important long
after the monuments were built with structures of later date also built in the same locations. At some sites, the monuments themselves were repeatedly re-built or re-modelled in the same location (for example at Holywood North and Holm), at others later sites and monuments overlay the timber monuments, while at still others later monuments seem to have been built in the vicinity, often in close proximity to the timber monuments. This longevity of use contrasts with the temporality of the timber monuments themselves and further suggests that the importance of these locations lay not just in the structures built there, though undoubtedly they played an important part, but in the places themselves and the significance and values attached to these locations through the activities that had taken place (Brophy 2004a).

While such continuity may merely be coincidence, the positioning, orientation or similar dating of some of these later monuments suggest that, in some cases at least, they may have been built with reference to the standing remains or remnants of earlier timber monuments. For example, at Carsie Mains the timber circle and timber hall, which appear to have been broadly contemporary with one another, were constructed only around 20m apart (Brophy and Barclay 2004). Considering that they were built on a wide and level terrace, providing ample locations for the construction of such sites, it may be no coincidence that these two sites were built in such close proximity. A similar situation seems evident at Balfarg Riding School where two timber halls were constructed around 50m apart, one of which may have been constructed at a slightly later date than the other (Barclay and Russell-White 1993). There are no restrictions in the topographical location that would require these sites to be built so close to one another, suggesting that one may have been built with reference to the standing remains of the other.

Where timber monuments have been recorded only as cropmarks, it becomes much more difficult to determine if one may have been built in relation to another. Nevertheless, sites such as the two cursus monuments at Inchbare, which lie only a little over 200m apart and on the same orientation, may have been broadly contemporary. The timber circles at Lochbrow are placed close to the north and south terminals of the cursus, while one of the timber circles at Kinalty is placed exactly over one side of the cursus (see gazetteer). Considering the placement of these timber circles in relation to their associated cursus monuments as well as the relative dating of these two forms of monument (see sections 4.4.1 and 4.7.1), they may also have been constructed when the cursus monuments were still standing or at least when their burnt or decayed remnants were still visible. Indeed, the suggestion that the later timber halls may have been influenced by the burnt shells of
timber halls built during the earlier Neolithic (Brophy 2007b, and see section 4.6.2) implies that the remains of some monuments may have remained visible for several centuries.

In other cases this importance of place appears to have been maintained over a very long period of time. This seems to be the case at the locations of some post-defined cursus monuments which have Roman temporary camps constructed in the same place several millennia after the cursus monuments were built, for example at Trailflat, Fourmerkland and Tullichettle. Such coincidence may reflect the selection of similar locations by the builders of both these sites, usually flat river terraces (Brophy 2007a, 165), and their positioning at important points of movement through the landscape, something which can be particularly suggested for the location of the cursus monument and temporary camp at Trailflat in Dumfries and Galloway (Chapter 5) and has been suggested by Loveday (1998) for class II henges across Britain. However, it is also possible that these locations remained important long after the cursus monuments had been burnt or decayed. A similar connection between the palisaded enclosures of Britain and Roman temporary camps has been identified by Gibson (2002b, 12) who has highlighted the case of the palisaded enclosures in the Walton Basin, Powys, where, although there were other areas available that were just as suitable for the building of camps, the Roman army seems to have chosen to construct their camps on or close to the former location of the palisaded enclosures. Gibson suggests that this may reflect a deliberate policy of the Roman army to construct camps in locally important locations in order to assert their authority in these places. The same may be the case where Neolithic monuments and Roman camps coincide in Scotland, suggesting that some places could remain important over very long periods of time, even if no trace of earlier monuments remained.

Other examples of timber monuments which had later sites and monuments constructed close to or in the same location include Forteviot (figure 8.2) where a later Pictish centre was located close to and probably within the area of the Earlier Neolithic palisaded enclosure and adjacent sites (Driscoll 1998), Cairnpapple where a henge was built surrounding the earlier timber circle, then Bronze Age burials, cairns and early Christian burials placed in the same location (Barclay 1999), and Pencair Hill where a cist of Iron Age date was placed centrally at the western end of the former mortuary structure (Lelong and MacGregor 2008, 124). The henge at North Mains may have been built up to several centuries after the erection of the second timber circle (Barclay 2005, 86), while the timber circles and barrows associated with many cursus monuments could have been built as much as a millennia after the cursus monument itself. In some cases this undoubtedly
reflected the fact that some Neolithic monuments were built in accessible locations and at obvious natural routeways through the landscape (Bradley 2007, 134). However, the positioning of some later monuments apparently with respect to the earlier timber structures indicates that there may have been more factors involved than just the accessibility of a location.

![Figure 8.2 The complex of sites at Forteviot (© Crown copyright: RCAHMS).](image)

Where the place remained important over a long period of time, any timber elements may have been burnt or decayed and disappeared long before later monuments were constructed. This means that in some cases there may have been little or nothing left of any earlier structures to guide the location of the later monuments and it may then have been the significance of place rather than the presence of any earlier structures which led to the construction of later monuments, though a sense of disturbance or differing vegetation patterns may have been evident. Such significance of place could explain the fact that the timber circle at Skateraw is surrounded by the cropmarks of many long and short cists, or even the close proximity of the timber monuments at Eweford East and West (see chapter 7).
However, the consistently exact placement of some of the later monuments in relation to earlier timber monuments suggests that there may have been something of the earlier timber monuments remaining in order to guide the positioning of these structures. For example, the henge bank and ditch at North Mains follows the shape of the earlier timber circle very closely (Barclay 1983, 180), the barrow recorded at the cursus monument of Fourmerkland has been positioned so that the barrow overlies the south side of the cursus and the Iron Age cist at Pencraig Hill was placed centrally to the palisade structure which had stood there almost three millennia before (Lelong and MacGregor 2008). A barrow and short stretch of ditch have been recorded lying centrally on the line of the cursus at Lochbrow, while the timber circles at Machrie Moor (Haggarty 1991) were replaced in stone in the same locations, despite evidence for ploughing and land divisions between the timber and stone phases.

Where the different monuments are not widely separated in time, then it is possible that the decaying or burnt remains of the earlier timber structures may have remained as a guide for the positioning of any later structures. Certainly, any large timber posts which were not burnt may have remained visible for a considerable length of time and the fact that oak, one of the most resistant woods to decay (Noble 2006a, 57), appears to have been frequently used for the main elements of these sites means that large posts would have decayed slowly over a very long period of time. Based upon research undertaken by the Forest Products Research Laboratory (Smith 1959; Wainwright and Longworth 1971, 224-225), it has been estimated that the rate of decay of an oak post may have been around 15 years for each inch (25mm) of radius of heartwood. If we accept this as a rough estimate of the rate of decay of oak posts, then this means that some of the larger posts forming timber monuments may have lasted for as much as several hundred years, though this will obviously have varied depending upon local conditions. Applying this more widely, this suggests that some of the smaller posts at Carsie Mains timber circle may have taken around 90 years to decay, some of those at Littleour may have lasted for as much as 300 years, while the smallest posts at Meldon Bridge palisaded enclosure, which were around 0.9m in diameter, may have taken around 270 years to decay and disappear entirely, though the largest posts could have lasted for as much as 400 years. Of course, decaying timbers are unlikely to have remained upright for such a long period of time, and the timbers may have fallen (or been removed) long before the decay process was complete, while vegetation could have covered over the remains of fallen and decaying timbers while they were still extant. While these can only be accepted as broad suggestions of the time it may have taken timbers to decay, these estimates indicate that the locations of some timber
monuments left to decay, particularly those constructed of large diameter timbers, may have remained obvious for several generations.

While this could explain the proximity of later sites to some of the timber monuments left to decay, it cannot explain the association of later sites with timber monuments that were burnt down or those connections that span the millennia. Nevertheless, where structures were burnt, charred timbers and any other materials used to encourage such structures to burn could potentially remain visible for a considerable period of time, marking out the previous location and configuration of the earlier monument.

Exactly why the former locations of some timber monuments were remembered is unclear. In some cases, a desire to build in accessible locations may be all that links such activity, though in other cases there can be little doubt that the places themselves appear to have maintained significance. The maintenance of stories and traditions attached to a place must have undoubtedly played a part, though studies of oral history suggest that such memories can become unstable between around one hundred and two hundred years (Bradley 2003b, 221). Nevertheless, even without a direct oral tradition, the sense that a place is important can remain for a very considerable period of time. Even if there were traditions and stories attached to a particular place, it seems unlikely that the exact locations and configurations of these sites were remembered over the centuries or millennia where there was no physical reminder. In such circumstances we should perhaps begin to consider the possibility of other features such earthworks or mounds, something which would allow the former locations of these timber monuments to be traced at a later date.

8.4.3. Timber monuments and movement

It was suggested above that one factor in the continuing importance of place may be the location of monuments upon important routes through the landscape and at particularly accessible locations (Bradley 2007, 134), ensuring the continuing usage of a particular location. Such locations may also have influenced the initial construction of monuments in a particular place. This is something which has been suggested for many monumental complexes of Later Neolithic date, most of which include timber elements, which were built at or near the intersection of land or sea routes (Noble 2006a; 2007). For example, the complex of monuments at Balfarg and Balfarg Riding School lies between a number of watercourses, where movement is channelled around the Lomond Hills and is close to modern road and rail routes through this location (Noble 2006a, 187). As many modern
routes are likely to have much older origins (Taylor 1994, 12), these road and rail routes may reflect ancient routeways. The palisaded enclosure, cursus and associated monuments at Dunragit lie at the intersection of a number of natural routeways and a Roman road, modern railway and road all pass through the location of the enclosure (figure 8.3). It also lies on an important trans-peninsular routeway between the Luce Sands and Loch Ryan permitting the dangerous seas around the Rhinns of Galloway to be avoided (Noble 2006a, 185; 2007, 68), while the complex of monuments constructed in the Upper Clyde Valley, which includes the palisaded enclosure at Blackhouse Burn and post-defined cursus monument at West Lindsaylands, lies at the sources of three rivers, a major trans-isthmian route and one of the most accessible in lowland Scotland (Noble 2006a, 188; 2007, 65).

Similarly, the complex of monuments at Holywood in the Nith valley appear to have been built at the intersection of a number of routeways (chapter 5) and the complex of monuments at Forteviot and Leadketty, while apparently not associated with the intersection of routeways, may have been built in locations easily accessible from the Firth of Tay (chapter 6).

Other Neolithic monumental complexes across Britain and Ireland appear to have been built in similar locations, suggesting that such complexes of monuments reflect wider contacts and networks of interaction (Noble 2006a, 189) and so were tied up with movement and journeys through the landscape, some of them over long distances. However, such connections with movement do not appear to be restricted solely to these large Later Neolithic monumental complexes and are likely to have been important too in relation to a range of other monuments of Early Neolithic date. The evidence from cost-path analysis and field visit observations in the Nith and Annan valleys (chapter 5) in this respect is compelling, suggesting clear connections with movement and pathways through and between these two river valleys and beyond. That most of the Neolithic monuments in this landscape are of linear form may be informative, suggesting that these monuments reflect movement through the landscape. The evidence from the other two case study areas is less clear, though some of the monuments in Strathearn and East Lothian, such as the timber circles at North Mains, the complex of monuments at Dargill and complex of sites at Eweford, may have had similar associations with routeways. Considering that rivers are likely to have been a medium for travel, post-defined cursus monuments are consistently orientated with rivers (Brophy 2000b; Loveday 2006a) and probable roofed timber halls with east flowing rivers (Brophy 2007b, 92) then such monuments may also reflect similar connections with pathways and journeys.
Some monuments, though, seem to have been positioned away from well-established and known routeways and their locations, such as the split-post structure at Slewcairn, in what may have been unfamiliar and difficult to reach locations. This may have been as important as building monuments upon well known and used routeways. In such a location, these monuments are unlikely to have been encountered as part of everyday activities in the same way that those built upon routeways may have been, meaning that reaching such monuments may have involved special journeys undertaken at particular times along partly known pathways, thereby potentially adding to the significance of these monuments.

Therefore, although a connection with routeways certainly cannot be taken as a universal pattern, many timber monuments may have been associated with movement through a landscape, though this is likely to have taken place at a variety of different scales and for many different reasons. Certainly, at the most basic level all monuments can be said to be connected with movement in some form as in order to reach a monument or location it is necessary first to travel there, whether that is a short distance of only a few hundred metres or a much longer journey taking, perhaps, several days. As movement is one of the ways in
which landscapes are experienced and given meaning (Cummings and Johnston 2007, 2),
then such movement and journeys are likely to have formed a very important part of the
meaning of these monuments, though may have played a larger part in the experience and
understanding of some monuments or complexes of monuments than others.

Where travel to monuments involved journeys over long distances, then the very process of
travelling is likely to have added to the significance of the monuments themselves and the
activities and performances undertaken at such sites. This may have been particularly
important at some of the larger monumental complexes. Of course, one group’s distant
monument will be another group’s local monument. Yet the possibility of meeting
communities from outwith the local area at intervals would also have added to the
significance and importance of some monumental locations. Therefore, the locations of
some monuments may have been important as gathering places or nodes along networks of
pathways (Loveday 1999). Considering the evidence for earlier activity at so many timber
monuments and the potential antiquity of many routeways, perhaps stretching back to the
Mesolithic, some locations may have been important long before the monuments were
built. Such journeys and gatherings may have been for purely ceremonial purposes, though
may also have been associated with activities such as hunting, farming or the maintenance
of social links (Noble 2007, 72) and particular locations would have gathered their
significance from such events, the monuments built drawing upon this significance.

Of course, not all movement is undertaken upon such a large scale, and other monuments
may have been connected only to the movements of local groups over much shorter
distances. The avenue at Kirklands in East Lothian may be one such monument, while
some of the smaller clusters of similar monuments in Strathearn could reflect the activities
of separate local groups of people (see chapter 6). Even those monuments that were
associated with longer distance routeways are likely to have been encountered as groups
and individuals moved around the landscape as part of their daily round. While this may
suggest that movement was of much less importance to such monuments and their
meanings, pathways and travel may still have had a part to play. Where monuments were
built away from well known routeways, the act of travelling to such a location along what
may have been less well known pathways may have added to the significance of that
monument. Perhaps all members of a community did not know its location.

Most of these monuments are likely to have been built in clearances within a wooded
environment, to and from which pathways would have led. The presence of such pathways
through the forest is likely to have structured the way in which monuments and their locations were encountered and experienced (Tilley 1994, 30) and could have been employed to create particular effects. The point of contact between pathway and monument may have influenced the perception and experience of approaching a monument, while movement along pathways to monuments may have reproduced particular socialities (Pollard 2006, 46). Moving along established pathways to and from locations of established importance would have recalled earlier journeys and fixed and created new memories (Chadwick 2007), while the form and presence of monuments would also have altered and structured the way in which people could move within and around the monuments and their locations. The presence of features such as avenue entrances at palisaded enclosure speak of the control and restriction of movement into the interior of these enclosures (Gibson 2002b; 2004b). Is it possible that they also replicated the experience of entering a clearance along a narrow pathway through the forest? Certainly, the experience of both may have been similar and the posts may have looked like trees, suggesting that the way in which some monuments were approached may have been considered important.

Therefore, most timber monuments are likely to have been influenced by movement at some level. Certainly, the world is perceived, at least partially, through the way in which we move (Ingold 2004), so the way in which these timber monuments were understood is likely to have been influenced by the way in which people travelled to these locations, the journeys they undertook and the way in which they were able to move around and within the monuments themselves.

8.5. The forms of timber monuments

8.5.1. Reconstruction

Much of the above discussion is based largely upon the ground plan of the timber monuments and deals only with their three dimensional form implicitly. Yet timber monuments were constructed and experienced in three dimensions and so cannot be understood just as two dimensional excavation plans or transcriptions. As a result, some consideration of what these monuments may have looked like above ground is necessary. Reconstructing the above-ground features of these perishable monuments, though, is a very difficult task as very little remains upon which to base such reconstructions. Here we must rely upon excavation evidence, where it is available, though even this evidence tends to be
minimal and any representation of what these timber structures may have looked like must include a certain amount of speculation (Gibson 2002b, 8). Barclay (1998, 14) asserts for the reconstruction of Balbridie that “everything above ground level is conjecture”; this is a little pessimistic. Certainly, some speculation and conjecture is necessary, but ground plans and evidence from excavations do provide a starting point and ‘ground’ interpretations. Nevertheless the way in which we choose to reconstruct these timber monuments will potentially affect both the function and experience of these sites and we must be aware that forms that appear similar on their ground plan may have been built very differently above ground.

Most timber monuments appear to have been constructed of large, usually oak, posts though other wood types were used at some sites for smaller architectural elements. Excavations have shown that these oak posts were often of very large dimension, representing massive trees of potentially considerable age and height, though there may have been considerable variety. In essence, the majority of timber monuments defined an area of space, marking a distinction between the area within from that without and suggesting a concern with demarcating an area, perhaps controlling access to the monument’s interior. There are exceptions to this, most notably the split-post structures (for example Pitnacree or Lochhill) which may have defined a linear zone, formed by the erection of split-posts (figure 8.4), though earlier reconstructions envisaged them as enclosed wooden boxes (figure 8.5) supporting excarnation platforms (Scott 1992).

Essentially, much of the uncertainty surrounding the possible reconstructions of timber monuments seems to be centred upon whether or not they may have been roofed and whether we should envisage them as continuous barriers or individual free-standing timbers. In addition, there has been some consideration of the possible height of the timbers at some sites (e.g. Mercer 1981; Barclay 1983). It is, however, difficult to generalise for such a variety of sites.
Figure 8.4 Speculative reconstruction of a split-post structure based upon Lochhill, Dumfries and Galloway. We need not always view these sites as being tidy telegraph-pole like posts.

Figure 8.5 Reconstruction of a split-post structure as an exposure platform (from Scott 1992, figure 8.7).
The debate over roofing is most developed in relation to timber halls. Timber halls built during the earlier part of the Neolithic are usually interpreted as roofed structures, based largely upon the architectural form and intensity of burning at these sites, while those of later date tend to be interpreted as unroofed (Brophy 2007b and see chapter 4). Those built during the Earlier Neolithic seem to have been substantial structures with timber posts either set in postholes or a continuous trench, linked by walling, with internal divisions and screens and some may potentially have supported an upper floor (Barclay et al. 2002, 104). Although the exact form of each of these structures varies in detail, each would have been substantial buildings, forming impressive structures (figure 8.6).

Timber halls of Later Neolithic date, on the other hand, are generally interpreted as unroofed structures, usually of spaced timbers, though the excavator of the Balfarg Riding School structures (Barclay and Russell-White 1993) interpreted these as forming a continuous fence (figure 8.7). Difficulties of roofing such structures are usually cited as the main reason for the unroofed interpretation, based upon ground plan (see section 4.6.2). However, Loveday’s (2006a; 2006b) recent suggestion that turf may have formed a part of these structures is an interesting idea, making a roofed reconstruction possible for some sites. The possible incorporation of living trees within the structures at Carsie Mains and Laigh Newton appears to preclude against this possibility (and would also have meant that they formed distinctive structures) and a number of strange features in the setting out of the structure at Littleour may indicate that it was not intended to be roofed (Barclay and Maxwell 1998, 60). This does not mean that other Later Neolithic timber structures were not built partly of turf and roofed, and this must be considered as an additional possible reconstruction, as must the construction of light temporary roofs or screens (Brophy and Barclay 2004, 19), all of which would have left no trace in the archaeological record.

Some smaller timber circles may potentially have been roofed (Gibson 2005). The timber circles at Durrington Walls and Woodhenge, Wiltshire, were viewed initially as buildings or shrines with roofs (Wainwright and Longworth 1971), though Musson’s structural analysis (Musson in Wainwright and Longworth 1971, 377) did conclude that an unroofed explanation was probably more likely. Though the largest circles would have presented a span too large to roof (Lauder Barns timber circle, for example, measures around 61m in diameter, while the timber circle at Upper Largie has a diameter of 47m.), many of the smaller circles are of similar dimensions to roundhouses of later prehistoric date (measuring less than around 20m in diameter) and so could theoretically have supported a roof, although evidence for this remains elusive and roundhouses generally have more than
a ring of postholes in excavation plan. The remainder of the timber monuments either present spans too large to roof or are otherwise generally considered unroofable. The only possible exception to this may be some of the smaller post-settings, which could conceivably have supported a roof, and perhaps even some of the avenues, which may be narrow enough for a roof to span. Neither, though, has been looked at in detail in this respect.

Whether or not timber monuments were defined by a continuous barrier or spaced posts is another issue that forms an element of debate and uncertainty and would have substantially altered the way in which these sites would be experienced. Where monuments were formed by spaced posts, the boundaries would have been permeable with no obvious obstruction to either physical or visual access, although this does not mean that the boundaries presented no barrier at all, as symbolic barriers can be just as strong as physical ones (Barclay 2005, 92). Nevertheless, spaced timbers would permit those outside to see what was taking place inside, whether or not they were able to physically access the interior. Similarly those inside would have been able to see out, suggesting that the context and setting of these sites may have been of importance to whatever took place within.

Figure 8.6 Reconstruction of Balbridie, an example of a roofed timber hall.
Figure 8.7 Reconstruction of one of the Balfarg Riding School structures (from Barclay and Russell-White 1993, 174).

On the other hand, a continuous barrier (with screens, barriers or horizontal timbers between the uprights, or the uprights themselves very closely set) suggests a real desire to control access to certain monuments and exclude certain portions of society from what took place within, physically and visually (Gibson 2005, 117). This suggests a much greater concern with control, exclusion and secrecy. Certain portions of society may have been entirely excluded from the interior of these monuments and whatever took place at these sites may have been entirely contained within the space defined by the boundary. Therefore, monuments forming continuous barriers may have served very different purposes from those monuments defined by spaced posts.

Evidence from excavations indicates that timber halls of Earlier Neolithic date were defined by continuous ‘walls’, while those of later date may have been defined by spaced timbers. Excavation also indicates that those structures defined as palisade mortuary structures also formed continuous barriers each consisting of a palisade formed, where evidence is available, by planks or close-set individual timbers linked by horizontal timbers, forming a continuous screen.
Most post-defined cursus monuments are usually considered to have been formed by large free-standing timbers and excavations at these sites do not appear to suggest anything else, the only exception to this being the site of the cursus at Eweford East where charcoal from the fill of the postholes suggests the presence of hazel and willow hurdles (Lelong and MacGregor 2008). While the possibility of fencing or posts linking the upright timbers at other sites must remain a possibility, the posts of some post-defined cursus monuments do not appear to be particularly close set (Thomas 2006b, 234) and no similar evidence has been recovered elsewhere. There are, however, some cursus monuments at which the posts appear to have been so close set as to have been almost continuous, for example the cursus monuments excavated at Bannockburn (figure 8.8) and recorded as cropmarks at Bennybeg. These structures, then, may have also formed continuous, or near continuous, enclosures though the irregularity of their boundaries and wider spacing between some posts suggests that there may have been discontinuities. Such closely spaced timbers would have permitted sound to escape but would have left a partial view of whatever took place within. This interpretation, though, assumes that such monuments were single phase structures, something which obviously may not have been the case.

Similarly, those avenues excavated in the north of England also appear to have consisted of spaced posts (Harding 1981; Tavener 1996; Loveday 2006a), though it remains to be seen if this is the case for those sites identified further north. Some timber circles may also have simply comprised substantial wooden uprights with no obvious fencing or barriers between the timbers, such as Carsie Mains timber circle. However, Gibson's (1992; 2005) reconstruction of the timber circle excavated at Sarn-y-Bryn-Caled, Powys, suggests that the existence of lintels should also be considered (figure 8.9) as the circularity of the timber circle at Sarn-y-Bryn-Caled, so obvious from the ground plan, was not obvious above ground until lintels were added. Other circles have provided evidence which suggests the existence of screens or barriers between the uprights. This is suggested by the presence of carbonised planking at North Mains (Barclay 1983) and by the small, closely spaced timbers of the subsidiary timber circles at Balfarg (Mercer 1981, 159). Wattle and daub is another possible screening material. Therefore some timber circles may have consisted of a continuous barrier which would have had the effect of completely enclosing the interior and physically excluding those within from those without, while others may have comprised simply spaced posts.
Figure 8.8 Speculative reconstruction of the cursus and pit-defined enclosure at Bannockburn.

Figure 8.9 Reconstruction of the Sarn-y-Bryn-Caled timber circle with lintels (from Gibson 1992, 90).
Finally, the excavations of the palisaded enclosures at Meldon Bridge, Dunragit, Forteviot and Blackhouse Burn indicate that all of these enclosures were defined by massive oak posts and at least some may have formed a solid barrier (figure 8.10). At Meldon Bridge (Speak and Burgess 1999, 15) and the two outer rings at Dunragit (Thomas 2004b), smaller posts uncovered between the main timbers were interpreted as supports for a cladding of horizontal timbers, while the bank of stone built between the two rows of posts at Blackhouse Burn would also have meant that this enclosure was defined by a continuous barrier. The very nature of the majority of these sites, with their narrow out-turned entrances, suggests a desire to control access to these sites (Gibson 2002b) and a solid barrier would fit neatly with this purpose. However, some variability is suggested by the fact that no interval posts were found between the main posts of the central ring at Dunragit, which Thomas (2001c; 2004b; 2004c) has suggested indicates that it comprised a ring of free-standing timbers. In addition, no evidence was found for wattle or hurdling between the posts of the avenue entrance at Forteviot (K. Brophy pers. comm.).

Some authors (e.g. Mercer 1981; Barclay 1983; Speak and Burgess 1999; Gibson 2002b) have attempted to estimate the height of the timbers used, based largely upon Mercer’s (1981, 149-150) method of using posthole depths and ramp dimensions, where the ratio of socket depth to post height is taken to be 1:3.5 and the distance from the end of a ramp to the opposite side of the pits is likely to be approximately half the length of the timber.
While there is obviously much variety, and height has been estimated at only a handful of sites, it appears that substantial posts were often used. Gibson (2002b) estimates that the heights of timbers used at the Meldon Bridge palisaded enclosure may have varied from 5-7m (the smaller post heights estimated by Speak and Burgess (1999) appear to have been based upon a miscalculation (Gibson 2002b, 14)), while Mercer’s (1981, 150-2) estimates of the heights of the timbers at the Balfarg timber circle suggests that the posts ranged in height from around 2-4m, were higher to the southwest and so graded in height. These estimates suggest that the timbers used to construct some monuments may have been set to differing heights, perhaps to create particular effects. Indeed, the possible use of larger diameter timbers at the terminals of some cursus monuments could suggest that these timbers were also taller, so emphasising one end of these structures. However, such variation in post height cannot be envisaged at every site and the excavator of the timber circle at North Mains (Barclay 1983) suggested that the uneven posthole depths at this site, which according to Mercer’s method would have varied in height from 2-6m and had no pattern, represented instead an attempt to set the tops of the timbers to an even height.

When topography is taken into consideration, it becomes obvious that this was also employed at some sites to create particular effects and, in some cases, to emphasise the heights of timbers. For example, the timber circle at Millhills (section 6.4.2) is positioned close to a terrace edge meaning that the timbers would have appeared much taller when viewed from below, while the timbers defining the palisaded enclosure at Leadketty (section 6.4.6) are set on higher ground surrounding a slight hollow, so emphasising their height when viewed from within the enclosure. Other examples include the palisade structure at Pencraig Hill (section 7.4.2) and split-post structures at Slewcairn and Lochhill (section 5.3.1), all which were built on terraces on hillsides. As well as emphasising the heights of the timbers when viewed from below, such a position would have meant that the higher ground acted as a backdrop to the monuments and whatever activities took place in these locations. There are many other examples where the topography appears to have been employed to create particular effects and indeed seems to have formed an element of the monuments themselves (see chapters 5-7). As a result, the locations of these monuments have implications for the way in which we choose to reconstruct these sites and the way in which topography was employed and incorporated into monuments may have meant the monuments that are similar on ground plan appeared and functioned very differently from one another.
Many reconstructions, though, seem to depict the timbers used as straight, unadorned uprights, yet it is possible that the timbers were carved or painted in some way, thereby considerably altering the way in which these sites can be envisaged. The timbers may have even been left unworked, perhaps with branches and foliage remaining. Certainly, a close relationship between posts and living trees was indicated at Carsie Mains (Brophy and Barclay 2004, 20). The excavation of the waterlogged timber circle at Holm-next-the-sea in Norfolk (Brennand and Taylor 2003) with its inverted oak tree at the centre of the monument serves to demonstrate just how much is missing from the picture when dealing only with postholes and indicates that we must consider a range of possible configurations when attempting to reconstruct any of these sites.

Therefore, as well as varying greatly in terms of their ground plan, timber monuments may also have varied considerably above ground. Indeed, some monuments which appear very similar on plan may potentially have looked and functioned very differently. At the most basic level, some timber monuments comprised structures defined by spaced posts, while others may have presented a continuous barrier. Some, most notably the timber halls built during the earlier part of the Neolithic, appear to have been roofed structures, while the majority of the remainder of timber monuments seem to have been structures which were open to the elements. The timbers of some may have been painted or left unworked, creating very distinctive structures, while uneven post heights and foliage remaining would have closely mirrored the natural woodland.

When the possible reconstructions of these timber monuments are taken into consideration, then the picture is of a very diverse range of structures, perhaps even more diverse than that revealed by cropmarks and excavation plans, and the classifications and typologies may break down even further. Some may have appeared little different from the forest that surrounded them, while others appear to have substantially reconfigured and reordered the timber gained from this forest. While much uncertainty remains concerning how we should reconstruct these monuments, and a certain amount must remain speculative, considering reconstruction allows us to engage with these monuments as three dimensional forms rather than two dimensional cropmarks and excavation plans, adding another dimension to the consideration of these sites.
8.5.2. Architectural vocabularies: making connections

Returning to the forms of timber monuments, similarities are most often drawn between monuments of ostensibly similar ground plan, and it is upon this that typologies are based, yet there may also be connections between monuments of apparently very different form and materiality, both in terms of elements of the forms built, the way in which space may have been used and the practices that seem to have taken place. Such connections could suggest broad ‘vocabularies’ or traditions of practice upon which Neolithic communities drew (Barclay et al. 2002). Here we must bear in mind Thomas’s (2004c, 175-6) cautionary note and not fall into the trap of equating the idea of tradition with ‘culture’ or ‘cultural group’. Instead tradition may be better thought of as the way in which communities engage with the material world, as a set of practices rather than an abstract form. The practices undertaken at timber monuments generally appear to have been social, ceremonial or ritual in nature, or at least separated in some way from the routines of daily life (Lelong and MacGregor 2008, 207). Some of these practices involved the creation and use of architectural features: the timber monuments.

Figure 8.11 Comparison between the Inchtuthil 'long mortuary enclosure' and the enclosure at Douglasmuir (from Barclay et al 2002, 121).
With this in mind, those sites for which reliable dates are available indicate that all monuments of timber built during the earlier part of the Neolithic, in the first half of the fourth millennium BC, were roughly rectangular or trapezoidal in form. Many of the other monuments built at this time, for example long barrows or long mortuary enclosures, also seem to have shared a preference for the broadly rectilinear form. Looking closer, the distinctions between the different forms of rectilinear monuments become blurred. The structure at Inchtuthil, interpreted as a long mortuary enclosure, (Barclay and Maxwell 1991) held a timber fence and can be compared favourably to the post-defined cursus monuments at Douglasmuir (figure 8.11) and Castle Menzies Home Farm, all of which could be suggested to belong to the same tradition (Barclay et al. 2002, 121). Inchtuthil has also been compared to the trapezoidal enclosures pre-dating the long barrows at Kilham and Skendleby (Barclay and Maxwell 1991, 39), while long mortuary enclosures in general are usually assumed to have formed part of the same tradition as long barrows (Barclay et al. 2002, 121). Some long mortuary enclosures are also broadly similar in scale to timber halls (Barclay et al. 2002, 120).

The trapezoidal palisaded enclosure at Penraig Hill also finds parallels with structures excavated below barrows (figure 8.12) and the slightly curved eastern end could be compared to the facades at many long barrows and chambered cairns. In a similar way, the larger pits (and so larger posts) noted at the terminals of some post-defined cursus monuments (for example Dunragit, Kinalty and Castle Menzies Home Farm) and the timber hall at Claish recall the facades of long barrows, while the western terminal of the timber hall at Balbridie is the same size and shape as the timber facade at the Lochhill long cairn (Barclay et al. 2002, 122) (figure 8.13). The ‘horns’ at Bennybeg could also be compared to long barrow facades or even post settings in front of these barrows. Finally, some of the timber settings recorded as cropmarks may find parallels with small rectangular and trapezoidal settings of posts leading up to the facades of long barrows in England (Kinnes 1992, 92 and see chapter 4).

There may therefore be several broad connections between some of the architectural elements of the various rectilinear timber monuments and those associated with long barrows and long mortuary enclosures. Such connections may be further emphasised by the fact that almost all rectilinear timber monuments were burnt as were most timber facades of mortuary structures preceding the construction of earthen long barrows in the north of Britain (Kinnes 1992, 93; Thomas 2006b, 238). Therefore, the various mortuary and ceremonial monuments of the Early Neolithic seem to have employed similar
architectural features. It may be that similar effects were desired or that similar practices took place at each and they may have essentially drawn upon similar traditions and meanings.

One such overarching meaning may have been bound up in the idea of the house, providing a broad metaphor for the rectilinear monuments built during the Early Neolithic. Attention has been drawn to the similarities between the various rectilinear monuments of Earlier Neolithic date and the difficulties involved in distinguishing between the different ‘types’ (Noble 2006a; Bradley 2007), leading to the suggestion that the timber halls, long enclosures and cursus monuments may have formed a continuum (Loveday 1985; Bradley 2007, 62) and so may be connected by an overarching theme or idea. One such idea is that of the big house, ‘massively enlarged versions of domestic prototypes’ (Bradley 2005, 65) of which Balbridie has been identified as one. Such structures would have been central to Early Neolithic life, fulfilling a number of functions and embodying metaphors of significance to entire communities. Therefore, Thomas’s (2006b) recent suggestion that

Figure 8.12 Structures excavated below barrows at East Heslerton and Street House (from Kinnes 1992, 232) offering parallels for the Pencraig Hill structure (from Lelong and MacGregor, 34).
post-defined cursus monuments may represent a transformation of the idea of the timber hall could be expanded to include all monuments of broadly rectilinear form and Early Neolithic date.

Figure 8.13 Comparison between the timber facade at Lochhill (above) and Balbridie showing the close comparison between the facade and the east end of Balbridie (from Barclay et al 2002, 105).

Affinities between houses and rectilinear monuments are suggested by the fact that the experience of entering the large post-defined space of a rectilinear monument such as a cursus may have been similar to that of entering a house, timber halls and most other rectilinear timber monuments were burnt and internal divisions, a feature of timber halls, can also be seen at many cursus monuments (Thomas 2006b, 239). Both timber halls and many rectilinear monuments seem to have been accessed in particular ways with doorways and internal divisions that would require to be encountered in specific ways (Noble 2006a,
and they can be argued to have been communal structures stretching beyond the local group.

One problem with this suggestion is the almost indistinguishable dates for the various forms of rectilinear monument and timber halls found in Scotland (Thomas 2006b, 236), meaning that cursus and other monuments cannot have developed out of the timber halls built in Scotland. Instead, Thomas suggests that the idea of the hall was a Neolithic cultural idea which maintained its currency over a considerable period of time, and it was this idea that was used and transformed by communities in Scotland in the construction of the timber halls, post-defined cursus monuments (Thomas 2006b, 239) and other rectilinear monuments. That such ideas or traditions could remain current and be transmitted over long distances is certainly possible and may be seen in the construction of long barrows, which themselves seem to have referenced an ancestral past based upon longhouse construction and destruction (Bradley 1998b), while the idea of the rectilinear house seems to have been shared across much of the northwestern European Early Neolithic (Darvill and Thomas 1996). Such ideas and traditions were undoubtedly expressed in different ways by different communities, and the generally small-scale nature of settlement in Scotland (Barclay 1997) may have meant that any cultural idea of large rectilinear houses was elaborated and transformed into a new form of public architecture.

In terms of practices at these timber monuments, almost all timber structures of the Early Neolithic appear to have been burnt down, suggesting that similar practices and purposes may have been shared in the construction and destruction of the different timber monuments of the Earlier Neolithic. The burning of these monuments may have formed one part of a wider tradition of practice which conceptualised monuments in similar ways and involved the monuments themselves in performative events (see above).

There may, then, be a series of broad connections between the various timber monuments of rectilinear form built during the Earlier Neolithic, also drawing in influences from the wider Neolithic repertoire. These connections seem to have taken the form of shared practices, the use of different architectural elements across different forms of monuments and perhaps the appropriation and transformation of shared cultural ideas. Architectural features and practices from a ‘vocabulary’ or repertoire, representing shared traditions, knowledge and practices, may have been drawn upon and transformed to create a variety of structures and effects. Individual communities would have expressed and manipulated these traditions in different ways in differing topographical settings to create particular
effects and the variety of structures identified today. If this is the case, then there can be no ‘templates’ or ideal forms, instead a range of architectural features and practices were drawn upon in different ways by different communities, within particular cultural situations, to create a broad range of structures and enclosures.

After around 3300 BC a change is obvious in the timber monuments as curvilinear forms (timber circles, palisaded enclosures) began to be built, suggesting a change in the traditions of practice that were drawn upon, although rectilinear forms (avenues, unroofable timber enclosures) do not appear to have been abandoned altogether. This change coincides with other changes in the Neolithic repertoire such as the appearance of Grooved Ware (Thomas 1999b, chapter 5; Noble 2006a, 19), all perhaps linked to wider social changes occurring at this time. Curvilinear monuments form a part of a larger tradition of circular monuments constructed in the Later Neolithic and Early Bronze Age (Bradley 1998b; Noble 2006a) which Bradley (1998b, 109) suggests reflects a shared cosmology; a general perception of space which extends outwards from the person and upwards into the sky. If this is the case, then the shift from the largely rectilinear structures of the Earlier Neolithic to the predominantly circular ones of the Later Neolithic may suggest a distinct change in the way that communities understood the world and their values and beliefs. It also suggests that there may be a broad connection of shared beliefs behind the varied circular monuments of the Later Neolithic and Early Bronze Age.

Certainly, the similar basic vocabulary of the generally circular form does appear to have connected many of the monuments of timber (timber circles, palisaded enclosures, curvilinear sites) and other materials (henges, stone circles) built in the Later Neolithic and Early Bronze Age (figure 8.14) and also draws in settlement patterns which, where evidence is available, also appear to have changed from roughly rectangular to broadly circular in form (Brophy 2006, 22; Bradley 2007, 94), though definitive and securely dated settlement evidence in Scotland remains relatively limited. Such a universal pattern and broad change requires explanation, and Bradley’s suggestion of a shared cosmology is eminently possible, though many other reasons for the circularity of these monuments could be suggested (Gibson 1994, 192; 2004a, 70). Certainly some form of broad connection seems likely, yet this does not mean that all were used for the same purpose. Clearly the immense variability in terms of dimension and specific morphology means that they cannot have been used for the same purpose.
Whatever the reason for the use of the circle, the fact that houses also appear to have been largely circular or oval at this time has led to the suggestion that the curvilinear monuments provided a metaphor for the house, representing ‘big houses’ in much the same way as that suggested for the rectilinear monuments of earlier date (Bradley 2005).

Certainly, the experience of entering a timber circle would have been very similar to entering a house, while entering some of the larger timber monuments may have reflected the house in larger and even more monumentalised form. However, the circular house is still relatively rare in the archaeological record for Neolithic Scotland and more widely, so this analogy must be treated with a certain amount of caution, though houses of oval form known in Scotland do appear to be of Later Neolithic date (Brophy 2006, 22) and curvilinear houses have been recorded in Britain and Ireland during the Later Neolithic (Bradley 2007).

If this analogy can be maintained, it would indicate a deliberate reference to contemporary domestic architecture but also, considering the widespread occurrence of curvilinear forms, to some form of shared cultural idea, as was suggested for the rectilinear monuments of earlier date. Such connections are eminently possible and suggest that the idea of the house
remained as the appropriate metaphor or idea upon which to draw and monumentalise throughout the Neolithic. That the house during the Neolithic could have been ordered along symbolic, social or cosmological ideas is not a new suggestion (Richards 1993) and if these same values were embodied in the ceremonial and ritual monuments built, then the fact that similarities can be drawn between domestic and ritual architecture should therefore come as little surprise.

While this may be the case at a broad level, looking closer at the use of space and the architectural elements of some of these curvilinear monuments, then additional connections can be drawn out. The possible continuous boundary of palisaded enclosures (Gibson 2002b) and some timber circles (Gibson 2005; Millican 2007) would have served to enclose and exclude in much the same way as the bank and ditch of a henge monument. Indeed, some henges, palisaded enclosures and timber circles could have been used to create similar effects. The later construction of henge monuments around timber circles and the consistent association of henges with palisaded enclosures may serve to emphasise this possible connection. Looking at the wider context, the higher ground overlooking some palisaded enclosures (Forteviot, Leadketty and Meldon Bridge) may have created similar effects to the external bank of henge monuments and can be suggested to have served a similar purpose. Certainly, it has been postulated (Gibson 2004a, 73) that the henge bank could have acted as a viewing platform with the internal ditch separating those outside from whatever took place inside. The higher ground overlooking some palisaded enclosures may well have served a similar purpose, distancing those outside from whatever took place within the enclosures while still allowing them to view the events and performances inside.

Each of these monuments would have served to define enclosed spaces, potentially restricting access, whether or not the exterior boundary was a continuous one or not. The avenue entrances of palisaded enclosures suggest that access to these sites was controlled and ordered through this architectural device (Gibson 2002b), something that the restricted entrances through the bank and ditch of henge monuments would also serve to do. The possible reconstruction of some timber circles as continuous barriers also suggests that points of access may have been similarly controlled, while the later construction of a henge around some timber circles may have further emphasised this process of enclosure and exclusion. The fact that henge monuments and timber circles have been recorded within the boundaries of some palisaded enclosures further suggests that each may have served similar purposes, the smaller monuments providing smaller enclosed spaces within the
larger enclosures. However, the sequence of henge monument enclosing timber circles appears to have been reversed within the palisaded enclosure at Forteviot where two henge monuments seem to have been built within apparently pre-existing timber circles. This configuration is unusual and has not been recorded elsewhere in Scotland, though similar relationships have been recorded at a small number of sites in England (Harding 1981; Gibson 2005). Such inversion may be a reflection of the surrounding palisaded enclosure, with these smaller monuments representing microcosms of the larger enclosure. It could also suggest that ‘normal’ rules or conventions were altered within the boundaries of the palisaded enclosure. Certainly, the fact that there is the suggestion of post-pits within one of the henges immediately outside the enclosure indicates that the ‘normal’ configuration could occur in this location.

However, the inclusion of rectilinear forms of monument, such as the Later Neolithic timber halls, free-standing avenues and in particular the avenues forming entrance structures to palisaded enclosures, within the monumental repertoire suggests that other factors also influenced the forms of monuments built. The timber halls built during the Later Neolithic may have drawn upon older traditions of practice and Brophy (2007b) has suggested that that the similarities between the timber halls of the Earlier Neolithic and the Later Neolithic timber structures, such as those at Balfarg Riding School, Littleour and Carsie Mains, may mean that the later structures copied or mimicked the burnt and decayed forms of the earlier halls. Here the ‘vocabulary’ provided by the earlier timber halls may have been drawn upon and transformed to create new forms of structures, which may have had more specialised purposes (Barclay et al. 2002; Brophy 2007b).

Turning to the avenues, attention can be drawn to the fact that the shorter free-standing avenues and those forming components of palisaded enclosures are broadly comparable to timber halls in terms of dimension and general morphology (figure 8.15). Such similarities and the continuation of the rectilinear form could suggest some form of connection or reference to the older idea of the timber hall. When incorporated into palisaded enclosures, such avenues served to combine rectilinear and curvilinear forms and so perhaps reflect the appropriation of older ideas and traditions into the newer circular monument tradition. On the other hand, the construction of this rectilinear form of monument may reflect only a means of directing and controlling access into palisaded enclosures and perhaps across wider landscapes in terms of the free-standing sites. As such, they may have little connection with the older tradition of rectilinear monument building, though the fact that avenues can also be recognised as monuments in their own right indicates that some
architectural devices forming integral components of larger monuments could also exist on their own and so may have had specific meanings. Avenues, therefore, may have been one part of a repertoire of architectural features that communities drew upon in order to create particular structures in certain locations. Nevertheless, the continuing use of rectilinear forms of monument, in terms of timber halls and avenues, does suggest that older ideas and traditions may have still been important, despite the new practices which appear to have gained currency.

A tradition of practice that seems to be shared across all monuments built after around 3300 BC is the fact that the majority of structures appear to have been left to decay, rather than being burnt as took place before. This broad tradition of practice may suggest that timber monuments built during the Later Neolithic were conceptualised in similar ways and were perhaps connected by shared beliefs and practices, despite the differences in form.

The above discussion serves to emphasise the difference between the Earlier and Later Neolithic, something which has also been emphasised by other authors (e.g. Thomas 1999b; Malone 2001; Barclay et al. 2002; Bradley 2007). However, the timber monuments do not suggest that there was a complete break with what had taken place before. Instead, continuity is suggested by the construction of the unroofable rectilinear enclosures after around 3300 BC, which appear to have drawn upon the earlier tradition of timber hall construction, while the construction of avenue entrances to the palisaded enclosures and free-standing avenues indicates that the rectilinear form was not rejected altogether and may also have drawn upon similar traditions of practice. The construction of some of these sites in locations which appear to have been important for a long period of time further suggests continuity across this apparent change in monumental form.

Despite this, there do still appear to have been some fundamental changes concerning the way in which monuments were conceptualised, used and understood and the traditions and vocabularies that were drawn upon. Such changes may have been tied into the idea of the house and the way in which it was organised and used. While this could suggest that the house provided the metaphor and vocabulary for the construction of monumental structures, it also indicates that both ‘domestic’ and ‘ritual’ or ceremonial architecture drew upon and reflected the similar values and ideals which are likely to have underpinned Neolithic life. Rather than one providing the inspiration of the other, it seems likely that
both would have been inspired by the same ideas, values, organising principles and architectural vocabularies, resulting in the similar architectures seen today.

Figure 8.15 Comparison between a. Westerton timber hall, b. the entrance avenue at Dunragit and c. Sprouston free-standing avenue.

8.6. Natural features and monuments: combining architecture and topography

This picture may change a little, though, if we combine these architectural forms with the topography in which they were built. If we consider the topographical and environmental setting to, in some cases, have been a part of the monuments themselves, then a more diverse range of structures emerges. This certainly makes generalisation even more difficult and, as similar monumental forms could be built in very different topographical locations, this further indicates that purely morphological classifications are problematic. The possible influence of topography is demonstrated clearly through the site visits to monuments within the three case study area, though it can particularly be suggested to have been a factor in the Nith and Annan valleys (chapter 5). While topography may not have been a factor at every site, it can be suggested to have defined wider site boundaries (for example at Bennybeg and Holm), directed access to sites (for example at Lochbrow and Westerton), emphasised and provided a backdrop to others (for example at Penraig Hill) or even influenced the form of some monuments. In some cases the dichotomy between built forms and the ‘natural’ environment, often implicit within archaeological discourse, seems to become rather blurred. Indeed, the very materiality of these monuments may have rendered them almost indistinguishable from the surrounding woodland, effectively creating tree-like structures in some cases surrounded by trees in
clearances, while the possible incorporation of living trees into some monuments may have broken down the barrier altogether. The ‘natural’ architecture of topography and woodland may then have formed a part of the architecture of the monuments themselves and there may have been no sharp distinction between the environment and built form.

Considering the possible blurring of the distinction between forest architecture and timber monuments and the fact that such monuments may have been built in existing or newly created clearances in the forest (G. Noble pers. comm.), is it possible that timber monuments copied or were influenced by the natural forest architecture? In a heavily forested environment, such clearances would have defined an area of space that was different from that around. Clearances can create particular experiences of place, influencing visual and aural experiences, and can direct and control movement (Brown 2000; Pollard 2006) in much the same way as buildings and monuments. As such, the clearances themselves may be considered a form of architecture (Austin 2000; Pollard 2006, 46) and, as they formed spaces clearly defined by trees, may have effectively formed the first ‘enclosures’. While not all clearances are necessarily humanly created (Brown 1997b), they are likely to have formed important locations in an otherwise forested environment. Therefore, the form and materiality of timber monuments may have served to mimic or draw upon such forest architectures, and it may be that the first constructed enclosures (such as cursus monuments) were influenced by the presence of clearances in the forest. Certainly, the experience of entering a monument built of timber would have been similar to that of entering a forest clearance. Such similarities have been noted before, and Ralston (in Barclay et al. 2002, 126) described the interior of Balbridie as ‘like a forest with a roof’ with a ‘clearance’ in the central area, while it was suggested earlier that entering a palisaded enclosure may have been very similar to following a narrow pathway into a clearance in the forest. Standing inside other timber monuments may also have been very similar to being within a forest clearance, suggesting a close connection between the clearance of the forest and the construction of timber monuments. Timber monuments may therefore have drawn upon the existing forest architecture, providing a metaphor for the changing relationships with the forest and trees as Neolithic communities began to clear and manage their forest environment.

The close relationships between built forms and the surrounding topography at some sites could suggest that some of the natural topography may have been regarded as monuments as much as the timber structures themselves. Bradley (1998a) has suggested that early monument builders may not have been able to distinguish between natural rock formations
and megalithic tombs; could something similar be true when it comes to the topography surrounding timber monuments? While perhaps not quite as distinctive as the rock formations described by Bradley, is it possible that some topographical features were associated with the activities of the ancestors and may have been interpreted as ancestral structures? Where topographical features are striking, this is certainly possible, and in some locations the features are very distinctive and would have been even more so before modern ploughing. Examples include the distinctive profile of the relict stream bed parallel to the orientation of the cursus at Kirklands Station (figure 8.16), the terrace upon which the cursus and timber circles were built at Lochbrow, the old stream bed running through the location of the cluster of sites at Dargill in Strathearn (chapter 6) or the natural ‘amphitheatre’ formed by hillocks at the site of the possible timber circle, setting and barrow at Court Hill (see chapter 4).

Figure 8.16 Topographical situation of the cursus monument at Kirklands Station showing the distinct relict stream bed that it is roughly parallel to. This may have been even more distinctive before modern ploughing.

There is no doubt that such striking natural features could have been considered important and been imbued with special powers (Bradley 1998a, 20). Building monuments in association with them may have been one way of harnessing this power and importance. Tilley (1996) argues that Mesolithic ritual and ceremonial activity is likely to have centred around natural features, and it is possible that some of these features remained important into the Neolithic period. However, it is also possible that some of these striking natural
features could have been understood as ancient structures or at least the work of ancestors or people in the past. Without an understanding of the way in which such features are formed they could conceivably have been construed as the remains of older monuments, perhaps of similar form to well known monumental forms or at least the work of earlier generations, and so been attractive locations for the construction of monuments. Building monuments in these locations may have emphasised links with this perceived earlier activity. This, though, is not a universal pattern, and many monuments seem to have been built in locations in which there are no obviously striking natural features, though other more ephemeral natural features such as the forest and the trees themselves may have undoubtedly been viewed as important and similarly imbued with particular powers, meanings or associations.

In particular, naturally created clearances may be suggested to be one influence upon the creation and location of timber monuments. Clearances form one part of the forest architecture and can be created by a number of factors. The most important cause of natural gap creation in Britain is wind-throw (Peterken 1996, 328), though other mechanisms include lightening strike fires, drought, disease and geomorphic activity, such as river erosion or landslides (Brown 2000; Peterken 1996). Beaver activity is also likely to have been an important mechanism in the past (Coles 1992). While such clearances would quickly revert to scrub if there was no intervention, regeneration can be delayed by the increased grazing afforded by forest gaps, both by natural herbivores, such as deer, and by pastoral exploitation, and may be suggested in the pollen record in Britain (Buckland and Edwards 1984). This would extend the life of such forest gaps. Where regeneration did occur, the vegetation within a clearing would have appeared different from the surrounding forest until the canopy re-closed. As Brown (2000, 50) states that complete regeneration with no intervention following a lightening fire could take around 60 years, vegetation patterns within clearings may have appeared recognisably different for a considerable period of time.

Natural gaps such as these would certainly have represented ideal locations for opportunistic exploitation and many of the mechanisms of gap creation are likely to have been clearly understood and recognised. However, if maintained over a period of time, it may not have been possible to distinguish between humanly created forest clearances and some of those formed through natural processes. Some naturally created clearances may also have been seen as the work of the ancestors or earlier generations, or at the very least as important locations. Additionally, Edmonds (1999) has suggested that lightening fires
may have been seen as the work of ancestors, giving clearings so created a ritualistic significance. Considering the similarities noted above between clearances and timber monuments, it may be that such clearances were also understood as ancient structures, indicators of past farming or associated with ancestors or mythical beings, perhaps influencing both the creation and location of some timber monuments.

It was suggested earlier (chapter 5) that in some cases, an engagement with the topography may have influenced the forms of monuments ultimately constructed. This was particularly identified as important for the cursus monuments in the Nith and Annan valleys, though can also be suggested to have influenced the forms of timber monuments elsewhere. However a problem with this suggestion is that, if the forms of these monuments were influenced by the topography in which they were built, then it cannot explain why monuments of similar form were built in areas of very different topography and in fact implies that monuments such as cursus monuments originated in those areas of distinctive topography such as the Nith and Annan valleys. This does not seem likely, particularly considering the early dates for cursus monuments such as Douglasmuir (Kendrick 1995) and Castle Menzies Home Farm (Halliday 2002). However, if we combine the concept of architectural ‘vocabulary’ and Ingold’s (2000, 186) statement that ‘the forms people build … arise in specific relational contexts of their practical engagement with their surroundings’, then it may still be possible to accept the influence of topography upon the forms of some monuments.

If communities drew both upon a limited tradition or ‘vocabulary’ of practices and architectural features, then different engagements with different surroundings could lead to the creation of very similar forms of monument. Those surroundings may relate to the topography of a location, but could also reflect other factors such as the surrounding woodland, previous activity and practices or social pressures. In some locations, such as the Nith valley, an engagement with topography may have been one of the most important factors influencing the form of monument constructed, while in other locations without such distinctive topographical forms other factors, such as the woodland environment or social pressures, may have had more influence. Therefore, the way in which different communities engaged with different factors of their surroundings and drew upon the known repertoire and tradition of architectural features is likely to have influenced the forms of monuments built.
8.7. Timber monuments and the Neolithic

Drawing this together, it was obvious from the very beginning of this research that a diverse range of timber monuments was built in Scotland during the Neolithic period. However, if we add in other factors, such as topography and environment, then a still more diverse range of sites emerges. Despite this variety, these sites may be linked by a small number of overarching themes, reflecting wider concerns underpinning Neolithic communities.

The differing general forms and ways of treating the monuments in the Earlier and Later Neolithic appear to reflect different way of conceptualising and using timber monuments and may also reflect something of the wider Neolithic and the way in which communities understood and drew upon their wider world. The forms that these timber monuments took seem to have been bound up with the wider traditions of practice, ideas and values implicit in Neolithic societies, influenced by the varied surroundings of the monuments and the activities of Neolithic groups and drew upon particular architectural vocabularies. As such, timber monuments intersect with monuments of other materialities such as long barrows and henge monuments, which themselves are likely to have been influenced by similar values. Many timber monuments seem to have been built in locations which were already important, indicating continuity with what had taken place before, and may have drawn upon these earlier activities for their significance. Some remained important long after the timber monuments had been burnt or decayed and disappeared.

Therefore, at the broadest level, these timber monuments seem to reflect a broad theme of change underpinned at the same time with continuity of deeper values. At a more detailed level, the individual monuments are likely to reflect a complex number of factors, not least a community’s or group’s engagements with their surroundings, which may have included factors such as topography, environment or social pressures. Perhaps unsurprisingly, the three case studies demonstrate substantial differences from one another and undoubtedly other regions demonstrate similar difference. Each reflects different communities with different concerns, values and ideals, though at the same time underpinned by wider values and understandings. Such differences may also reflect some of the different ways in which timber monuments were developed and used, perhaps along with differing subsistence strategies and ways of life within each of these regions.
9. Conclusions

9.1. Introduction

This thesis presents the results of my research into the Neolithic timber monuments of Scotland. It has considered both those timber monuments recorded as cropmarks and those uncovered during excavation. This research has demonstrated the value of an in-depth study of the cropmark record and the importance of integrating this with information about those sites which have been excavated. This means that a much more coherent picture of the timber monuments in Scotland, and so Neolithic life as a whole, could be developed, which indicates that timber monuments formed an important part of monumentality in lowland Scotland during the Neolithic. This research highlights the complexity of the archaeological evidence, whereby timber monuments could not be adequately explained or understood solely through morphological form or traditional typologies, but instead drew on and were part of a complex interaction of influences and factors. In turn, such factors give insight into the values and concerns of Neolithic communities, both at a general level and at a more detailed level within the three case study areas. While adding detail to our understanding of Neolithic Scotland, this thesis has also considered several more general issues that are pertinent both to the interpretation of cropmarks and Neolithic monuments more widely.

9.2. The issues

9.2.1. The interpretative process and the role of classification

Throughout this thesis, cropmark sites have been considered as indicative of archaeological sites and not just marks in crops separate or somehow different from the remainder of the archaeological record. Use of generic terms such as ‘pit-circle’ has been avoided and cropmarks have been considered on an equal footing with excavation evidence, with excavations informing the interpretation of the cropmark sites and cropmark evidence helping to contextualise excavation results. This facilitates the integration of cropmark data within wider archaeological discourse. This approach formed an important element of my research and has meant that a much richer understanding of the timber monuments within Neolithic Scotland could be constructed. Therefore, this research has demonstrated the importance of considering cropmarks and excavated sites on an equal footing. Looking
more widely, other aspects of the cropmark record would surely benefit from a similar approach. Instead of considering cropmarks as somehow different or separate from excavated or upstanding sites, something that reflects only the method of discovery and not past understandings of these sites, it would be more valuable to consider the archaeological record as whole, regardless of the method of discovery. This would mean moving away from some of the more generic interpretations and considering cropmark sites in general as indicative of the sites they represent. However, it must be recognised that this is not without its difficulties. Problems remain when dealing with cropmarks for which there has been little or no excavation, and so no material basis upon which to base interpretations, while it remains difficult to interpret some of the very ambiguous cropmarks in the record. Even some of those sites for which interpretation has been thought to be relatively certain have, at times, produced very different results when excavated, notably Balbridie (Reynolds 1978; Fairweather and Ralston 1993). Therefore, some interpretations must remain uncertain and provisional, subject to future investigations. This, though, is surely no different to other aspects of the archaeological record and does not take away from the value of considering cropmarks in this manner. Any interpretation (not just in relation to cropmarks) should be an ongoing, recursive, process with future investigations and perspectives feeding back into the interpretations made. As such, any interpretation is part of a hermeneutic process (Hodder 1992; 1999). The combination of the different elements of the archaeological record (cropmarks and excavation) strengthens and enriches any interpretations.

In all this, classifications and typologies formed a part of the interpretative process employed in this research. Despite the criticisms levelled at classification and the creation and use of typologies (chapter 3), it was not the intention of this thesis to entirely reject the use of traditional typologies and classification schemes. They remain a useful means of summarising and ordering the data, are important for initial general interpretations and aid communication. Indeed, it would not have been possible to deal with or make sense of the large number of sites in my research without some means of breaking up and summarising the sites and it certainly would have been more difficult to communicate some of the interpretations. Nevertheless, the classifications employed in this thesis were viewed as flexible and are only one part of the interpretative process. Closer examination of individual sites breaks apart these classifications and factors such as landscape location, temporality, materiality and biography are also relevant. Monuments of very similar ground plan may have had very different physical appearances, incorporated their surroundings in different ways and served very different purposes. Such monuments were
built within and from their environment and surroundings. Therefore, Neolithic monuments may not have been built to pre-conceived plans but incorporated aspects of wider traditions and values within particular contexts and surroundings, resulting in the diverse range of structures seen today. A balance must be struck, then, between the continued use of such typologies as a form of shorthand and as a means of beginning to understand and interpret sites on a very general level (such as at Site and Monument Record level), and the necessity of moving and thinking beyond the site types and classifications. One of the ways in which this has been achieved in this thesis is through two different scales of analysis, the first at a country-wide level considering timber monuments as a whole and the second at the much more detailed level of the case study areas, permitting the consideration of each site on its own merits as well as consideration of context. Perhaps it does not matter what we call these sites, so long as we do not use our terminologies to define them entirely and instead consider them for what they were: important places and used spaces which people returned to and used for particular purposes, forming part of the wider social context of Neolithic communities.

9.2.2. Moving beyond cropmarks: the importance of context

Another issue that has arisen through this research is the importance of considering the wider context of these sites, whether that is the topography or environment within which timber monuments have been built or their relationship to other archaeological evidence. In particular, site visits demonstrated the importance of the surrounding topography to some sites and the value of a landscape approach to cropmark sites in general, while GIS analysis and consideration of any available palaeoenvironmental data added additional perspectives. As such, this encourages a move away from a focus entirely upon the morphology of cropmarks and the ‘site’ to the consideration of the wider landscape and social setting of such monuments and an engagement with the landscape and environment of such sites. While this is not a new perspective in archaeology as a whole (e.g. Tilley 1994; Richards 1996; Cummings et al. 2005), the consideration of cropmarks, particularly those in Scotland, have often been largely site specific and based almost exclusively upon maps and plans of the sites (e.g. RCAHMS 1994; 1997), though there are some notable exceptions (Brophy 1999b; Poller 2005), and phenomenological approaches and site visits are rarely emphasised or considered valuable. This thesis, though, has demonstrated the value of a landscape approach to cropmark sites with the site visits and engagement with the locations of the cropmark sites adding another, important, perspective to the
consideration of the sites themselves and their place within the wider Neolithic of that region.

By approaching timber monuments in this manner, this thesis has suggested a phenomenological perspective where the forms of some monuments may have arisen through an engagement with their surroundings. Topography is highlighted as an important factor, while the surrounding forest architecture and other aspects of monuments’ surroundings and context, such as social concerns or social structures, pathways, meanings or cosmologies, are also likely to have had a part to play. This is a perspective where the setting of a monument is not more important than its form or the activities that took place there. Instead, they are all one part of a larger whole. In all this, any rigid distinctions between architecture and natural forms cannot be maintained (Bradley 2006, 13) and the blurring of built form and the surrounding environment is obvious. The surroundings of some monuments may have been an integral part of them, their use and meanings while some natural features such as woodland or landforms may have been understood as built forms as much as the monuments that are the focus of archaeological attention. Monuments, therefore, need not be seen as an imposition upon a particular place, but may have been viewed as a part of or extension of that place and its meanings, the continuation of activity or formalisation of existing relationships. Such considerations enable a much richer picture of these monuments and their part within the wider Neolithic to be built, moving the focus beyond the sites themselves.

9.2.3. Considering materiality

While the focus of this thesis upon monuments of timber has largely been for practical reasons (timber monuments have until now been poorly understood and under researched in comparison to those built of other materials), implicit in the choice to focus upon timber monuments is the assumption that the materiality of these structures is important, and that by considering monuments of timber separately from those of other materials it is possible to arrive at meaningful conclusions. However, is this really the case? Would the materiality of monuments have had any real significance in the past? Clearly it would be wrong to suggest that all timber monuments represent the same thing, yet the properties and meanings of the materials from which these monuments were built are likely to have influenced both the meanings associated with such structures and the forms of monuments that could be built. The specific properties and meanings of timber would have been understood by the communities using this material and indeed seem to have been made use
of in terms of the burning or decay of these structures and their physical appearance (chapter 8). The consistent selection of specific wood types (usually oak for the main elements of structures) indicates that certain types of wood may have been selected for their specific properties and probably also for their particular meanings and associations. Looking more widely, there is increasing recognition of the potential significance of the materials from which monuments were built (e.g. Tilley 1996; Parker Pearson and Ramilisonina 1998; Parker Pearson 2004; Tilley 2004).

Therefore, the materiality of timber monuments can be suggested to have been of real significance. The perspective taken in this thesis is that the material used in the construction of monuments was not meaningless and chosen just for practical reasons (though of course practical considerations may still have had a part to play), but that the timber used to build the monuments already had meanings and values associated with it which would have been drawn into and transformed in the construction of the monuments. In other words, materials are not entirely devoid of meaning and only rendered meaningful through their incorporation into structures, but were significant with well-established meanings even before they were brought together into a structure (Thomas 2007, 262). Of course, these meanings may not have remained unchanged when incorporated into structures. Instead they may have been transformed and manipulated by their use in the construction of such monuments. The combination, or juxtaposition, of elements may also have been significant.

This suggests that there is a need to attend to the materiality of monuments as well as their location, form, organisation and so on, not just in relation to timber monuments but to those built of other materials. Even monuments of ostensibly similar form which could be built of differing materials, such as cursus monuments, may have been understood very differently depending upon the material (earth or timber) from which they were built. This also further indicates that the natural world was not a separate entity from the constructed forms. Instead materials that we often consider unaltered and part of nature may have been understood in a similar manner to the structures that Neolithic communities built, or at least were considered meaningful, and the properties of natural materials may have been transferred to monuments.
9.3. Neolithic Scotland and timber monuments

This thesis has identified and attempted to characterise all of the timber monuments currently recorded in Scotland, interpreting those recorded as cropmarks alongside those uncovered during excavation. The resulting list and characterisation of sites (see chapter 4 and gazetteer) demonstrates not just the wide range of sites constructed from timber by Neolithic communities, but also the fact that they form an important part of the Neolithic monumental repertoire, and so provide another perspective upon the communities that built them, and on Neolithic Scotland as a whole. These perspectives include the importance of place and memory, the influence and important role of the environment, and the regional nature and diversity evident throughout Neolithic Scotland. Timber monuments may also reflect wider values and ideals shared by Neolithic communities as well as more local concerns and engagements by individual groups and communities. Some timber monuments may have been the focus of the activities of large groups of people, perhaps drawn from widespread locations, while others may have been built by individual communities to serve the particular needs of those communities. The construction of these monuments would have required the clearance of areas of the forest and the transformation of particular locations, and may reflect some of the ways in which communities thought through and transformed their relationships to the forest and the wider environment. The changes evident in the forms of timber monuments reflect some of the changing concerns, values and ideals of Neolithic communities, reflecting wider patterns of change within the Neolithic as a whole.

At a more detailed level, the three case studies have highlighted some of the complex interactions of factors that led to the construction and use of these monuments. The distinct differences between the three regions indicate that different communities expressed and manipulated ideas, traditions and monumentality and engaged with their environment and surroundings in differing ways. They reflect the differing concerns and values of communities in three distinct regions of Scotland and break apart any perspective that timber monuments, even those of similar form, are the same. As such, they reflect one small part of the real diversity evident across the whole of Scotland. Ultimately, timber monuments were established in important places and spaces, constructed by particular communities within wider networks of values, concerns and ideals.
9.4. Future research directions

9.4.1. Within Scotland

While this thesis has characterised and begun to interpret the timber monuments recorded in Scotland, this is only a starting point and my research is intended as a stepping-stone for future work and interpretations. The amount of information that can be derived from cropmarks alone is relatively limited and so the locations of some of these sites would benefit from further investigation. In the first instance, targeted fieldwalking may potentially help to shed light upon the dating of some sites, particularly those for which dating remains uncertain. Geophysical survey may also help to clarify the extent and form of some cropmark sites, though again there are limits upon the type and amount of information that such survey can provide. Therefore, excavation of a selected number of cropmark timber monuments would be an important step forward. Most valuable would be the excavation of those sites which remain poorly understood, in particular the curvilinear sites, rectilinear enclosures, timber settings and avenues. Excavation of such sites would serve to clarify the character and date of these sites, most fundamentally whether they are indeed of Neolithic date and built of timber, thereby informing the interpretation of other cropmarks of similar ‘types’. In addition, sampling of sites assigned to more established ‘types’ would add to the knowledge base about these sites. While more is known about sites such as cursus monuments or timber halls, only a select number have so far been excavated, meaning that there is still much that is unknown. Such excavations may provide a more refined chronology, clarify some questions concerning reconstruction and are also likely to help future interpretation of the cropmarks. In addition, the interpretation of some of the sites assigned to these ‘types’ remains uncertain and excavation of sites such as the possible timber halls at Berryhill, palisaded enclosure at Kinloch or timber circle at Westerton I would serve to clarify the interpretation and dating of these sites. In particular, targeted excavation of a selection of timber circles would determine whether they were timber circles or roundhouse and may help to clarify the interpretation of similar cropmark sites. Only a small sample of sites would need to be excavated to greatly enhance the cropmark record.

Continued aerial reconnaissance as well as monitoring of the cropmark record is important as there undoubtedly remain many timber monuments which have yet to be recorded. This is exemplified by the recent discovery in August 2008 of the cropmarks of a previously
unknown cursus and avenue at Kirkmabreck in Dumfries and Galloway (see gazetteer). Future discoveries are likely to modify the picture of timber monuments in Scotland and the interpretations presented in this thesis, but only if they are recognised and interpreted as such and integrated within wider understandings of the Neolithic. As such, it is important that any future discoveries are interpreted as timber monuments rather than just lost amidst hundreds of generic cropmarks.

Two collections of aerial photographs remain largely untapped. It was only possible to search a small proportion of the CUCAP archive as part of this research. While a complete search of this whole record would be a considerable undertaking, there remains real potential for additional timber monuments to be recognised within this collection; sites such as Forteviot and Douglasmuir were first recorded on CUCAP sorties. Therefore a coherent search of this record may prove to be very valuable. In addition, while this research focused upon cropmarks recorded on oblique aerial photographs, the vast collection of vertical aerial photographs held by RCAHMS and others may also record the cropmarks of timber monuments. The size of this collection, though, (RCAHMS alone holds over 1 million vertical aerial photographs) means that any systematic search would require a very considerable investment of time, something that was beyond the scope of this research, while the scale of many vertical aerial photographs may mean that many timber monuments are too small to be recognised. Nevertheless, there remains real potential for additional timber monuments to be recorded within this collection and so investigation of this resource may potentially add much to the picture of the timber monuments in Scotland. Perhaps a regional case-study would be a manageable way forward.

The three case studies have demonstrated the value of taking an in-depth look at the timber monuments and their wider contexts within a region. Similar in-depth analyses within other areas of Scotland would provide a much more detailed picture of the timber monuments and their place within the wider Neolithic. In particular, expanding the programme of field visits would help to clarify the contexts of those sites which were not visited and aid the interpretation of some cropmark sites. In particular, it is anticipated that field visits could help to clarify the interpretation of those pit-circles for which interpretation is still unclear. Further, these case studies have demonstrated the potential of using cost-path analysis in order to model potential routeways. Only very basic analyses were undertaken in this research and so further refinement, in particular taking into account the presence of rivers, is likely to improve the pathways modelled thereby possibly
improving and clarifying any relationships between timber monuments and routeways. Other regions of Scotland may also benefit from similar GIS analyses, while the application of other GIS analyses not employed in this research, such as viewshe analysis or predicative modelling, may provide additional information. Additionally, virtual reality reconstructions of timber monuments and their contexts may provide another means of thinking about the monuments and their relationships to their environment and so could perhaps be fruitfully explored.

Finally, questions remain concerning the nature of the Neolithic period in East Lothian, and this region would surely benefit from further archaeological investigation. In particular, it may be fruitful to re-examine the cropmark record in light of the recent publication of the excavations along the route of the A1 (Lelong and MacGregor 2008). An assessment of the cropmarks of pit-alignments would be particularly valuable as it may be possible to distinguish between those of probable Neolithic date and those of later prehistoric date. Such re-assessments could be expanded to include the cropmarks of pit-alignments recorded elsewhere in Scotland and help to clarify other aspects of the cropmark record.

9.4.2. Beyond Scotland

Although this research has been, by necessity, confined to Scotland, timber monuments clearly are not constrained by the modern border. The fact that several are disposed along the border clearly suggests that their distribution continues further to the south. Indeed, timber monuments have been recorded south of the border and many are also known in continental Europe (Gibson 2005; Noble 2006a; Bradley 2007). However, any research into the timber monuments in England, Wales and Ireland has, as was the case in Scotland, been relatively limited and no systematic research into the cropmark record has yet been undertaken. The only coherent research has been Gibson’s (1994; 2002a; 2005) work on timber circles and palisaded enclosures, which has done much to increase our knowledge of these two forms of monument. This makes comparing the timber monuments of Scotland with those further south a little difficult and clearly more systematic research has the potential to identify many more monuments of timber.

A brief outline of some of the timber monuments identified through a cursory search of the literature serves to illustrate the potential of extending the study of Neolithic timber monuments into England and Wales. Timber structures of varying forms have been
excavated below long barrows in eastern England and are usually interpreted as mortuary structures (Kinnes 1992; Gibson 1994; Thomas 1999b, 131). Some of these appear to be similar in form to the split-post structures excavated in Scotland (figure 9.1), while others are of very different form (figure 9.2). Many of these may have formed free-standing structures before being covered by a barrow mound. Rectilinear and trapezoidal settings of posts as well as post-defined avenues (Kinnes 1992, 92) are also known leading up to some of these barrows. Often the arrangements below and adjacent to these barrows appear to be much more complex than those identified beneath Scottish barrows, though this may merely reflect the greater number of these structures excavated south of the border.

Figure 9.1 Split-post structure at Fussell's Lodge, Wiltshire (from Thomas 1999b, 138).

Only two possible post-defined cursus monuments have been identified in England; a pit-defined enclosure recorded at Bainton in Cambridgeshire (Brophy 1999a, 125) and the burnt double row of posts found beneath the Stanwell cursus in west London (Thomas 2006b, 230). No sites have been identified which appear related to any of the timber halls known from Scotland, though the fact that the timber halls at Whitmuirhaugh, Sprouton and Lockerbie lie so close to the modern border is certainly suggestive of a wider distribution of these sites extending, at least, into the north of England. Timber circles, on the other hand, have been recorded across England and Wales and a large corpus of sites is known (Gibson 1994; 2005). Some, such as the timber circles at Durrington Walls and Woodhenge, both in Wiltshire, have long formed important aspects of the narratives of the
Neolithic in this region, though have not had much of an impact more widely. The morphology of these monuments appears to be even more variable than those known in Scotland and some have additional features such as multiple rings and avenues, not identified in Scotland (figure 9.3). The radiocarbon dates for these sites (Gibson 2005, 63) may suggest that those further south began to be built slightly later than those in Scotland and may also have continued in use for longer (see chapter 4). Future dating, though, may change this picture somewhat.

Figure 9.2 Timber structure below the barrow at Nuthane, Hants (from Kinnes 1992, 233).

A number of palisaded enclosures have also been recorded in England and Wales (Gibson 2001; 2002a). While only one site, that at Walton in Powys, has the same spaced post boundary and avenue entrance as those known in Scotland, a number of other sites have been recorded in England and Wales comprising either closely spaced posts or individual posts set in a contiguous palisade. These have proven to be slightly later in date than those known in Scotland, but also belong to a Later Neolithic repertoire of monuments, and are often much larger than those defined by spaced posts (the Hindwell enclosure is the largest and appears to have enclosed over 34ha (Gibson 2002b, 17)). Finally as outlined previously (chapter 4), a small number of post-defined avenues have been excavated in the north of England (Harding 1981; Tavener 1996, 184-6; Loveday 2006a, 111). Such sites have proven to date to the Later Neolithic or Early Bronze Age.
Timber monuments, therefore, clearly extend further south than the modern border and they serve to expand the Scottish distribution already established. The timber monuments identified in Scotland form a part of a wider tradition of building monuments of this material. While very similar forms of monument can be identified further south, many show variations upon these forms, indicating that communities elsewhere, although perhaps drawing upon similar traditions, modified and transformed these traditions when building monuments. Therefore, expanding the consideration of timber monuments beyond Scotland would serve to place those in Scotland within their wider context and would be of benefit to the understanding of Neolithic archaeology in Britain as a whole.

Figure 9.3 Examples of English timber circles (from Gibson 1994, figs 36, 37).
9.5. Conclusion

This thesis has dealt with all known evidence for timber monuments of Neolithic date in Scotland. It has set out the different forms that have been recorded along with the currently known extent of these monuments and suggests that they formed an important part of monumentality during the Neolithic, reflecting something of communities’ relationships to their environment and surroundings. As such, it has moved beyond the cropmarks themselves and the morphological classifications that such sites are often characterised by. I have considered them as real sites and places and demonstrated both the value of such a perspective and the way in which such considerations can inform wider archaeological discourse. Therefore, the group of cropmarks that this research began with represents much more than just marks in crops. Instead, they are real sites which, in conjunction with those that have been excavated, have much to tell us about the Neolithic in Scotland.
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