Decline, Collapse, or Transformation?

Hadrian's Wall in the 4th – 5th Centuries AD

Two Volumes

Volume I: Text

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ABSTRACT

The collapse and end of Roman Britain remains a topic of interest and debate, related to conceptual issues found in the disciplines of both archaeology and history. The collapse of Hadrian's Wall and the frontier of northern England as a region also have yet to be adequately explained. Excavations on Hadrian's Wall over the past 25 years have revealed excellent evidence for late Roman military occupation as well as sub-Roman occupation at a number of sites (e.g. South Shields, Newcastle, Vindolanda, Birdoswald, and Carlisle). While each site has been considered individually, there has been limited comprehensive treatment. When all of these sites have been examined together, scholars have presented models of limited use, due to their reliance on historical frameworks.

A review of the organization of the late Roman military and the concept of frontiers suggests that a theoretically based perspective would generate more useful models for understanding the decline and collapse of Roman frontiers. Community studies, with particular emphasis on military communities, are applied to the *limitanei* and late Roman frontier archaeology.

A synthetic evaluation of occupation and activity along Hadrian's Wall from the 4th to 5th centuries AD was undertaken to consider the problem of late Roman frontier collapse and transformation. Detailed case studies of three sectors of Hadrian's Wall indicated that there were more than 10 traits typical of late Roman military sites. Extending detailed examination to all the forts on the Wall and a number of forts throughout northern England revealed that these traits are found at all forts occupied in the later 4th century.

Considered individually or *en masse*, these traits indicate the changing nature of military occupation of northern England through the 4th century. The changing role of Hadrian's Wall through the 4th century is summarized, and a number of interpretations are provided by which to understand the archaeological evidence, followed by recommendations for future research.

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ACKNOWLEDGEMENTS

Research on this thesis began in autumn of 2001, but my interest in Hadrian's Wall was due to research during my time as an MA student in the Department of Archaeology at York (2000–2001). While this research is focused on Hadrian's Wall and the Roman frontier, I have come late in my educational life to Roman studies. My undergraduate studies in anthropology at SUNY Geneseo and my masters in Medieval Archaeology at York have provided a strong background in the social sciences and use of theory. These programmes have been particularly formative and influential in my academic development, and I hope this is evident in the dissertation. That said, I owe thanks to many people who have contributed time, effort, and good cheer in varying quantities to my studies.

First and foremost I would like to thank my supervisor Steve Roskams. Over the course of years, he has provided support and insightfulness of the highest standard that has improved my research immeasurably. I am also grateful to Dom Perring, who served as a second supervisor for a brief period before moving on to greener pastures. His infectious enthusiasm for the "big ideas" was always encouraging. I am also indebted to the remainder of my Thesis Advisory Panel, Tania Dickinson and Nicky Milner, for their help and advice.

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AUTHOR'S DECLARATION

This thesis is based on original research undertaken at the University of York between 2001 and 2006. Some aspects of this research were first encountered in 2000–2001 and presented as an MA dissertation (Collins 2001). Elements of Chapter 3 were published in the *TRAC 2005: Proceedings of the Fifteenth Annual Theoretical Roman Archaeology Conference* (Collins 2006), and results from the Birdoswald case study were presented in *Debating Late Antiquity in Britain* (Collins 2004). General conclusions from Chapter 7 will be published in the proceedings of the 20th International Congress of Roman Frontier Studies.

A NOTE ON SPELLING and FORMAT

British spelling has been used throughout this thesis (despite the author's American education), following guidelines established by the Oxford English Dictionary on-line. In most cases, the spelling should be familiar to the British reader, with one notable exception. Words ending in –ize or –izing have retained a "z" rather than the more commonly favoured "s" in British spelling. This is because the OED does not favour –ise above –ize, and –ise is not as consistently used as –ize (for example, compare entries on "organize" to "colour"). Thus –ize has been retained for the sake of consistency. Furthermore, double-quotation marks ("") have been preferred to single-quotation marks (''), following the standard established by the Harvard referencing system.

Chapter 1:
Hadrian's Wall and the End of Roman Britain

1.1: INTRODUCTION

Decades of archaeological and historical investigation have failed to satisfactorily explain the decline or collapse of Roman frontiers, a concept intimately linked to the fall of the Western Roman Empire. The most comprehensive consideration of the collapse of Roman frontiers concluded that this was a result of the disintegration of a coherent Western political administration (Whittaker 1993b:137). This may be broadly true, but the study fails to provide the detail by which such an argument can be properly assessed. Advances in research agendas, methodologies, and data recovery have been made, and these developments along with new data sets have highlighted the complexities of the Roman to Early Medieval transition. Given the scale of the Roman Empire and the diverse regional circumstances, this transition cannot be expected to be the same across the entire Roman Empire. Excavations along Hadrian's Wall and at other Roman sites in northern Britain have admirably demonstrated the variability of the evidence in respect to this transition in just one region of one imperial diocese (e.g. Wilmott and Wilson 2000). Given the abundant archaeological record of north Britain, the region has great potential for advancing our understanding of the Roman to Early Medieval transition, testing notions of decline and/or collapse of the Roman military. North Britain is also uniquely suited to such an analysis, as its insular formation isolated the northern frontier to some extent, such that the British frontier was never successfully or permanently overrun by invading barbarian peoples during the Roman period, further highlighting the relationship between the imperial state and its frontiers separate from its relationship to barbarian peoples.

The primary aim of this thesis is to critically examine the archaeological evidence to explain the decline, collapse, or transformation of the garrisons of Hadrian's Wall and by extension, the northern frontier of Britain in the late Roman and early sub-Roman period. The achievement of such a broad aim is difficult, at best, but progress can be made by answering a number of questions relevant to the period under scrutiny.

Many of these questions relate to the military/civilian dichotomy that is often found in Roman studies. Can archaeological evidence distinguish between military and civilian elements of the population within and between sites? What relationships exist between the military and civilian populations (e.g. hierarchical, social, economic, etc.) in

the frontier? Is there evidence for a decline, collapse, or cessation of military occupation of the region?

Another set of questions pertains to changes within the Roman period and in the following centuries. How did occupation of military sites change over time? How did occupation of civilian sites change through the centuries? Is there evidence for changing relationships between military and civilian sites?

Ideally, addressing the above questions can identify patterns/trends in the archaeological record from the area of Hadrian's Wall, leading to a final and important query. How do the site specific and regional changes upon which these patterns/trends are built, contribute to an explanation of the transition from late Roman frontier to Early Medieval kingdoms? Some of the above questions may seem redundant or unnecessary at first glance. For example, it is often accepted that there was a difference between military and civilian elements of the population. While this was certainly true, it is important that such differences are archaeologically detectable, as a number of assumptions and suppositions are included or discarded depending on whether or not one is dealing with a military population. Thus, the questions are all phrased in reference to archaeological evidence, rather than proceeding from accepted notions of social or economic differences that may or may not be reflected in the archaeological record.

The rest of this chapter provides an introduction to the topic, namely the later Western Empire and its frontiers in the 4th–5th centuries and the "end" of Roman Britain. A review of past and current notions of how the Roman period came to a close in the early 5th century raises a number of issues that, once identified, highlight pitfalls and difficulties encountered by the researcher of the Roman and Early Medieval periods. Following a review of terminological, chronological, and conceptual issues, established views of the "end" of Hadrian's Wall are considered to identify issues specific to a study of the Wall. The chapter concludes by establishing an agenda and framework for an archaeological investigation of the late Roman frontier along Hadrian's Wall.

1.2: THE LATER EMPIRE AND ITS FRONTIERS

While this study focuses on one region of the late imperial diocese of *Britannia*, it is important to put Britain and the northern frontier in the greater context of the later Western Empire. Despite the problems of the 3rd century state, Diocletian and subsequent emperors had restabilized and reconsolidated the political and fiscal power of the Roman state such that the Roman Empire was still an immensely powerful state throughout the 4th century (Heather 2005:100–142; *contra* MacMullen 1988). This is not

to claim that the 4th century was entirely peaceful or without problems. Indeed, there was regular internal conflict between rival heirs to the throne as well as a series of usurpers of varying success. However, the emperors of the Tetrarchy, the House of Constantine, the House of Valentinian, and Theodosius were all strong, authoritative rulers that actively and personally campaigned against barbarians and political opponents to maintain territorial unity and hegemony. Despite the victory of the Goths at the Battle of Adrianople in AD 378 and the death of Valens, the Roman state did not begin to consistently and irrevocably weaken until the 5th century, and even then only in the West. While AD 476 is taken as the convenient calendrical collapse of the Western Roman Empire, a series of events through the 5th century indicate a process of geographic fragmentation and political dissolution, the first of which is the loss of Britain *c.* AD 410 (Mitchell 2007; Heather 2005; Knight 1999; Cameron 1993).

Throughout the 4th century, the frontiers, the *limites*, were crucial to the security of the empire. Regular campaigning by the emperors, supplemented by diplomatic activities, was undertaken either in reaction to attacks along the frontiers or to counter such activity. Difficulties typically arose (in the form of military crises and/or usurpers) when an emperor was too focused on matters in one frontier to deal with the problems of another, exacerbated by vast distances and technological limits of long-distance communication (e.g. Heather 2005:158–181 on the circumstances leading up to the Battle of Adrianople). The state of affairs in frontiers were not only significant for emperors and the military. Graham (2006) has demonstrated an increased awareness of issues of frontier security on the part of the Roman public in the 4th century compared to previous centuries. Thus, it can be claimed that the study of frontiers is fundamental to an understanding of the later Empire, and examining the decline or collapse of late frontiers is essential for a grasp of the collapse of the Western Roman Empire.

The strength of the Roman state should be reflected in the archaeology of each of its provinces and frontiers, though the amount of research conducted in each frontier varies considerably. Britain and the Rhine and Danube frontiers (composed of many modern European nations) have benefited from the most archaeological excavation, while the Eastern and North African frontiers of the Roman Empire have far fewer excavations in terms of the number of sites and published reports (particularly conducted in accordance with modern methods), despite the often more extant and upstanding remains of the archaeological resource. Research in every frontier tends to focus on the establishment of that frontier in the literature, and there has not been any detailed synthesis or examination of a late Roman frontier zone to date in terms of the decline,

collapse, or even the robustness of the late Roman state. Any such decline or collapse of the northern frontier of Britain is bound up in the relationship between Britain and the Roman state. Significantly, political and fiscal ties between Britain and imperial authorities were severed by AD 410, and the impact that this had on Britain has been much debated. After this point, the Western Empire never had sufficient stability to recover Britain.

1.3: THE END OF ROMAN BRITAIN – PERSPECTIVES AND CRITICAL ISSUES

The "end" of Roman Britain is a fundamental component of the transition from the Roman to Early Medieval periods, as is immediately apparent from a review of the literature. Perspectives have changed over the past 40 years, but they generally fall into three basic groups: those that support general continuity between the Roman and post-Roman centuries; those that favor a collapse and decline of Roman culture; and those that emphasize transformation rather than continuity or discontinuity (Dark 2000:13–15). In truth, such a categorization is too simplified. This is clearly demonstrated in light of the development of current perspectives of the late Roman to Early Medieval transition, which identifies a number of important issues that will be considered in turn.

A History of Research

The dominant view until the mid to late 1970s was that the Roman culture of Britain slowly deteriorated until there was no trace of Roman institutions by *c.* AD 450. With the soldiers withdrawn from the island for use on the Continent, the 5th century was dominated by Anglo-Saxon immigrants in eastern Britain (often due to an implicit assumption of demographic collapse of the Britons), while the Britons gradually returned to the Iron Age "Celtic" life style in the west and north of the island (e.g. Alcock 1971; Collingwood and Myres 1937).

By the late 1970s, there was a notion of greater continuity (mostly in relation to settlement) between the former Romano-British and the immigrant Anglo-Saxons. The "continuity" argument may have started in reference to maintained population levels between late and post-Roman Britain (Todd 1977) in contrast to the assumed demographic collapse of the previous argument (e.g. Wacher 1995:414–415). This overlap was also applied to other periods of history, creating a direct link between the people of modern Britain and those of its prehistoric past.

Between 1979 and the early 1990s, another dominant position emerged that saw Britain as a flourishing imperial diocese until *c.* AD 400, after which there was a rapid and drastic collapse that saw Romano-British culture gone by *c.* AD 430 (e.g. Bassett 1989; Casey 1979; Esmonde Cleary 1989; Evans 1990; and Millett 1990). The only aspect surviving from the Roman period was Christianity. Higham (1992) forwarded a modified version of this perspective, arguing that the post-Roman Britons retained some aspects of Romano-British culture until the late 5th century.

An alternative interpretation was proposed by Reece (1980) and has recently been rearticulated by Faulkner (2004a; 2004b). It was argued that Romano-British culture transformed in the 3rd and 4th centuries so that by the end of the Roman period, towns were little more than administrative villages. The social and economic power of towns was transferred to the villa culture of the countryside in the late Roman period. More importantly, however, was the belief that Romano-British culture was a veneer that did not apply to most of the British population (see also Hingley 1989) and had disappeared by the early 5th century, if not before. The 5th century saw the adoption of Anglo-Saxon fashions from a handful of immigrants.

The final and most recent perspective has been championed primarily by Dark (1994; 2000) and supported by Esmonde Cleary (2001). This view sees Britain as part of the Late Antique world, like the other former provinces of the Western Empire. The "end" of Roman Britain was a political event, though admittedly with important social and economic repercussions. While many aspects of Romano-British culture changed between AD 300 and 600, the underlying trends are similar to those that were found across Western Europe, notably the significance of barbarian settlement and subsequent political dominance. The emphasis in this view, contrary to the others, is not so much on continuity or discontinuity of aspects of Roman culture, but on transformation (see also Loveluck 2002; Snyder 1998; Woolf 2003).

A number of thematic problems relevant to examining the end of Roman Britain can be drawn out from the above perspectives and the common points shared between them. These issues can be separated into terminological, chronological, and conceptual themes. Each will be handled in turn.

Terminological Issues

The terminology of this period is primarily a problem of labeling. Some labels are tied to ethnicity, like "British" and "Germanic", and others attached to cultural aspects, like "Roman" and "barbarian". The use of these labels has been coloured by

modern imperialism and nationalism, with implicit values and assumptions associated with them (Hingley 2000). Through these assumptions, a biased understanding of the past is put in place of the evidence. Unfortunately, such labels cannot be rejected outright, as it is necessary to distinguish between archaeologically different groups. When employed throughout this thesis, "Briton"/"British" and "Roman" are not used in association with any implicit values or to indicate biological descent. Rather, they are used to reflect a cultural package associated with archaeological and historical evidence. "Barbarian" is used simply to mean non-Roman, generally in a collective sense without any negative reference to ethnicity or material culture. "Roman" is used to indicate a citizen or representative of the Roman Empire as well as its material products. Characterising material culture without incorporating values and perceptions of the past is difficult, but the following descriptions are offered (cf. Esmonde Cleary 2001:91; Faulkner 2004a).

Broadly speaking, Roman material culture reflects complex social hierarchies, specialized labour and production, and intricate use/consumption patterns of various goods, often across large areas. In contrast, traditionally, northern British material culture is associated with specific types of rural sites with little associated material culture with less evidence for specialisation or complex social hierarchies. However, Roman culture influenced British culture, as is manifest in the appropriation and renegotiation of popular Roman iconography and artistic themes, and *vice versa* (Henig 2004).

These labels have been brought up because it is not enough to explain the fall of Roman Britain (or the Roman Empire) through homogenous labels based on simplistic notions of homogeneous corporate identity or political organization. These labels must be used, but they must be understood as distinct from implicit values and allow for heterogeneity within larger groupings.

Problems of Chronology

More troublesome than the issue of terminology is that of chronology. The perspectives outlined above differ mostly in their interpretation of the rapidity and scale of the collapse/decline of Roman culture. There is a contrast between ***short chronologies*** that see the decline and fall of Roman culture in Britain as a rapid process, and ***long chronologies*** that extend the duration of such a process. The broad range of chronological interpretations in reference to late Roman and Early Medieval Britain is due to the difficulty of archaeologically dating the 5th and 6th centuries. Radiocarbon

dating, one of the principal absolute techniques, cannot precisely date materials from the 5th century to the late 6th century, due to changes in ratios of atmospheric carbon (Scull and Bayliss 1997:39). Furthermore, absolute dating techniques are reliant upon ecofactual evidence, and when such evidence is found, it does not always provide the chronological resolution that numismatic and ceramic evidence can establish.

This is further complicated by a quantitative and qualitative lack of definable 5th and 6th century artefacts. Numismatic and ceramic artefacts are generally the most helpful materials in archaeological dating, but there is tension between the production dates and use-life that is particularly relevant to the 5th century. No coins were shipped to Britain after the first decade of the 5th century (Casey 1994:48). In places where coins continued to be used, they tended to be late 4th century Roman issues or copies found in post-Roman contexts, so their usefulness in dating is limited to providing a *terminus post quem* (TPQ). Furthermore, the latest Theodosian coinage occurs in lower numbers in the frontier zone, where a single coin of AD 388–402 is "normal" (Brickstock 2000:35). Ceramics are another excellent chronological indicator, but ceramic production in Britain is generally believed to have ceased by *c.* AD 430 (Fulford 1979). The conservativism inherent in late Roman vessel forms further complicates the issue. Recent research challenges the notion that Roman ceramic production did not continue into the sub-Roman period (Gerrard 2006; Whyman 2001). The demonstration of continued production into the 5th century, however, does not facilitate the problem of dating entirely, as the studies only extend the production range of the vessels. As such, the ceramics are still dependent upon stratigraphic relationships to other definable material culture.

The lack of identifiable 5th and 6th century artefacts hinders the recognition of sub-Roman archaeological layers, impacting on site identification and interpretation. Therefore, the problem with dating and recognition lies in the artefact assemblages available for study, which have justified short chronology perspectives and encouraged notions of collapse and decline. These short chronologies, anchored as they are by coins and pottery, have prompted Cool (2000) to suggest that some 5th century material culture is perhaps incorrectly dated to 4th century Roman Britain. It has also resulted in a reliance on "dark earth" to recognize the end of Roman occupation in complex stratigraphy.

Dark earth is generally considered a homogeneous soil of very dark to black colour that indicated Roman abandonment, typically in towns. However, micromorphological examination of a number of dark earth deposits has demonstrated

that there is considerable variability in these deposits dependant on the depositional environment and activity including maddening, cultivation/gardening, disposal of animal waste, and building debris (Macphail *et al.* 2002). Furthermore, studies of specific sites in a number of Roman and Medieval towns across Europe have indicated that dark earth deposits cannot always be dated to the late Roman–Early Medieval boundary (Macphail and Linderholm 2004). Therefore, dark earth cannot be assumed to form a terminal Roman boundary horizon or to indicate abandonment, though it does typically indicate a significantly changed use of space.

Conceptual Issues

The tension between short chronologies and long chronologies influences the conceptual understanding of these chronologies, which can be related to the notion of decline and collapse seen in many of the basic views. In an attempt to soften the collapse of Roman Britain, the term continuity is frequently used. "Continuity" is problematic as it is employed inconsistently (Brooks 1986:78–79), for example at differing levels of scale (regional vs. site occupation) or to simply mean "the same, unchanging." Nor can continuity be assumed to be inherently more likely (Roskams 1996:264), as has been claimed by some (Biddle 1976). "Continuity" only extends the evidence for occupation or use beyond the period break. A variety of components are incorporated into "continuity" for any given time or place (Rippon 2000:51). For instance, there may be tenurial discontinuity on an estate (a change of owners), but if field boundaries and cultivated crops remain the same then there is agricultural continuity. Thus, when "continuity" is used, it must be specified (see Table 1.1 for a list of physical and conceptual forms of landscape continuity).

Continuity, by definition, is a lack of transformation, where transformation indicates the mutation of a pre-existing form. Thus, we can understand continuity as one extreme of the spectrum of transformation. It entails zero change, as visually indicated in Chart A of Figure 1.1, while collapse represents total, rapid change seen in Chart D. Alternatively, Chart C can be said to represent a long chronology of steady change that can be associated with decline. These charts in Figure 1.1 provide a visual representation of the relationship between time and cultural transformation in terms of declining/decreasing levels of cultural complexity (Tainter 1988). Obviously, only empirical inquiry can allow us to distinguish between these different models of development. The importance of emphasising transformation and its relationship to

decline, collapse, or continuity is that it removes the implicit values associated with concepts such as decline and collapse.

However, transformation on the scale of an entire culture is complex, particularly when abstract cultural concepts like kinship, political power, and religion are considered. Dark (1994; 2000) has argued that the Roman diocese of *Britannia* was succeeded by a number of smaller political units that retained numerous aspects of Roman culture, placing Britain in the mainstream of the post-Roman, Late Antique West. While Dark has embraced the notion of cultural transformation, it is offered as a dilution of Roman culture with little consideration of the social complexities of cultural transmission (cf. Dunnell 1996:52). Thus, transformation must be consciously considered in the context of an explicit theoretical framework.

While each perspective on the "end" of Roman Britain has provided a feasible interpretation of the archaeological and historical evidence, each perspective has also been limited by the critical issues of studying this period. The advantage of explicitly identifying these issues is to avoid some of the implicit limitations of previous studies. As general issues have been identified, it is necessary now to turn to the particular circumstances of the "end" of Hadrian's Wall.

1.4: THE END OF HADRIAN'S WALL

Given the importance of the presumed failure of the military in the collapse of the Roman Empire (e.g. Ferrill 1986) and for Roman Britain (e.g. Alcock 1971), the "end" of Hadrian's Wall is potentially significant to the end of the Roman period for all of Britain. Like conceptions of the end of Roman Britain, the end of Hadrian's Wall is also related to varying interpretations of archaeological and historical evidence, resulting in similar short and long chronology scenarios. Until the 1970s, the dominant position was that Hadrian's Wall was abandoned in the late AD 370s, after Magnus Maximus launched his campaign for the imperial throne on the continent (e.g. Collingwood and Myres 1937). This view, articulated by Craster (1914) and later by Gillam (1949), was based upon artefactual evidence, generally a lack of late coins, and the dismissal of the *Notitia Dignitatum* and the interpretation of it by Bury (1920; cf. Ward 1973). However, modern excavation techniques, particularly more careful attention to stratigraphic relationships, have demonstrated this view to be wrong.

From the 1970s until the 1990s, it was argued that Hadrian's Wall was occupied into the early 5th century, as coins from AD 395–408 had been found at numerous forts

and the *Notitia Dignitatum* was not to be entirely dismissed in reference to Britain (e.g. Breeze and Dobson 1978). However, withdrawals made by Stilicho in AD 401 and the usurper Constantine III in AD 407 denuded the Wall of its troops. The general lack of troops to garrison the Wall, even if not abandoned entirely, meant that the frontier could no longer operate effectively and over the course of the early 5th century, the troops "faded away", particularly when the pay coffers dried up (Mann 1979). Separate from but related to the latest phases of Wall occupation was a general agreement concerning the lower numbers of the 4th century garrison of Britain, compared to the garrison of the 2nd and 3rd centuries (James 1984).

The early 1990s saw an alteration of the above perspective, due principally to excavations at Vindolanda (Bidwell 1985), South Shields (Bidwell and Speak 1994), and Birdoswald (Wilmott 1997). These sites arguably demonstrated occupation at forts into the 5th century beyond AD 410, and the new orthodoxy was that troops on the Wall were not withdrawn before AD 410, if at all (Breeze and Dobson 2000:246). However, official imperial pay ceased by that date, and the impact this had on fort garrisons cannot be stated with any confidence, with the exceptions of the above-mentioned forts. Evidence from other forts suggests activity after AD 410, and two opposing stances have developed. One perspective argues that there was a continuous (though not unchanging) occupation of forts along the Wall in the 5th century, with populations reliant on local provisions (Casey 1993a; 1993b; Jones 1996; Wilmott 1997; 2000). Contrary to this, Dark (1992; cf. Dark and Dark 1996) argued that the Wall was abandoned at the end of the Roman period and was reoccupied in the later 5th or 6th century, perhaps in conjunction with a sub-Roman reformation of the command of the *dux Britanniarum*. These hypotheses will be reviewed in more detail in Chapter 4.4, but a number of points specific to the end of Hadrian's Wall can be identified.

First, late and sub-Roman activity along the Wall is perceived and understood in reference to the collapse of Roman imperial authority in Britain rather than considered in the context of the decline or collapse of a late Roman frontier. Second, any continuity in the form of military occupation required the logistical needs of the garrison to be met. Such needs are identified, but not explored in any depth. There is also a tendency to allow hypotheses to be constructed on a framework of historical events, promoting an agenda that archaeological evidence cannot advance. Thus, there are many aspects of late Roman military and frontier dynamics that have not been considered in detail. Given the limitations of evidence for the 5th and 6th centuries, it is difficult to compare the late Roman and post-Roman periods. So transformation through the late Roman

period becomes that much more important, perhaps even establishing a "trajectory" for transformation in the 5th and 6th centuries.

Significantly, no historical sources indicate that the frontier collapsed because of barbarian invasions, a reason often given in reference to the frontiers centred on the Rhine and Danube as well as North Africa (though from within the Empire in this latter case rather than from outside). Rather, the collapse or dissolution of the frontier is related to the politics of usurpation in the early 5th century. This early separation from Continental imperial authorities and distance from roving barbarian hordes allows for an analysis of the frontier through the 4th century, providing an opportunity to identify changes in the frontier free from the imposition of 5th century historical events on the Continent that are frequently invoked to explain frontier collapse.

1.5: THESIS AGENDA AND FRAMEWORK

This thesis attempts to synthesize information from previous excavations and studies in order to describe and explain the transformation of Hadrian's Wall from the late Roman to the early sub-Roman periods. Such a study has the benefit of considering in detail notions of decline or collapse of a late Roman frontier and how this relates to other frontiers and the fall of the Western Empire. Previous attempts at accomplishing this goal have been limited to articles (e.g. Casey 1993a; Dark 1992; Wilmott 2000) and do not engage with the topic in detail. Furthermore, Roman frontier and military studies have long suffered from conservative aims and agendas (James 2002). This dissertation seeks to correct this problem. A holistic approach has been adopted that considers the military sites of Hadrian's Wall in the greater context of a frontier. Non-military sites are included in addition to military sites, though they are not the primary focus. Social theory has been used to examine the evidence in a framework that places emphasis on the military population of the frontier rather than on understanding military institutions.

A narrow range of time is considered in this thesis, *c.* AD 300–500. There are many advantages to adopting this range of dates. Such a range of time spans the traditional end date of AD 410 for the Roman period in Britain while excluding the majority of the Roman period. Roman military archaeology in northern Britain is well studied, particularly the establishment and consolidation of the frontier (discussed in Chapter 4). Yet, there has been no detailed study of the 4th century along the Wall. The focus on the 4th century allows for the possibility of observing gradual or rapid transformations in the frontier, testing notions that the frontier declined or collapsed. The terminal date of *c.* AD 500 recognizes the limitations of dating final phases of

"Roman" occupation and initial Early Medieval occupation in north Britain. Rather than adhering to a strict date of AD 500, analysis of sites will continue until there is unambiguous dating evidence providing a TAQ (e.g. Northumbrian 8th century styca) or the stratigraphic sequence ends.

While the thesis seeks to explain any decline, collapse, or transformation across the whole frontier, Hadrian's Wall has been chosen as the geographical focus of the research in order to take advantage of the rich data available from centuries of archaeological investigation. The research has synthesized information already available in published or archived material. As such, no "new" primary data was generated in the course of the research. Furthermore, finds assemblages were not reexamined. The study relies entirely on archived and published records of previous archaeological investigations. Despite this, copious amounts of information are available for any study of Hadrian's Wall, and it was deemed necessary to focus the research to better consider the relationship between certain focal points and their localities.

Three sites were selected as foci for case studies: Newcastle, Birdoswald, and Carlisle (the selection process is described in Chapter 5.6). These case studies provided detailed information for analysis that was used to answer the questions asked at the beginning of the chapter. The rest of this dissertation is organized and presented to the reader in a manner that systematically addresses the aims of this research.

An Outline of the Dissertation

Chapter 2 focuses on general structural and economic aspects of the late Roman military. The purpose of this brief chapter is to provide an established basis of military organization, particularly in reference to the *limitanei*, to provide context for a more focused consideration of the north British frontier in the Chapters 4 and 5. Late sequences at sites in other Western frontiers are also considered, so as to provide a basis for comparison with Hadrian's Wall.

The failure of past studies to critically define and effectively analyze the frontiers of the Roman Empire is taken up in ***Chapter 3***. A review of these conceptions and their problems is followed by a reconstitution of frontier "theory". The anthropological and sociological concept of community is forwarded as beneficial for the analysis of frontier populations. Military communities are identified as the key social group that links the imperial state to the reality of the frontier.

Chapter 4 begins with a historical summary of the development and conflict in the frontier through the Roman and Early Medieval periods. The structural history of

Hadrian's Wall is reviewed briefly, and is followed by a critical reconsideration of the purpose and role of the Wall. The garrison of the northern frontier, its distribution, and size are then evaluated. Further discussion focuses on detailed examination of models for the "end" of the Roman north. Having considered the military aspects of the frontier, ***Chapter 5*** summarizes non-military aspects of the landscape. "Native" settlement and agriculture forms a basis of this discussion, and palynological evidence is used to present a broad scale history of agricultural activity (and thus occupation) of the frontier through the 4th–7th centuries. The chapter closes with the methodology for the completion of the case studies (presented separately in Appendices 2, 3, and 4).

Chapter 6 begins with a broad overview of the results of the case studies. The significance of changes at 4th century forts is identified, and these changes are discussed thematically in terms of changes in fortification, layout, building plan and use, and economy and supply.

Chapter 7 draws the thesis chapters together, addressing a number of questions in reference to Hadrian's Wall in its final century of occupation, and offering a range of interpretations based on the evidence from forts. The implications of this thesis are then considered in reference to the end of Roman Britain and other late Roman frontiers, and the thesis concludes with suggestions for future research along Hadrian's Wall.

Chapter 2:
The Context for Hadrian's Wall, Part 1: Structure and Economy of the Late Roman Military

The Roman military, composed of armies distributed throughout the Empire, was an essential instrument for the success of the Roman state. By the 3rd century, armies were active political bodies that had the power to raise or dethrone an emperor. The reasons for the rise in power of the military are complex and numerous and are too lengthy to repeat here (cf. Jones 1964 for a detailed treatment of the later Empire). Instead, it is sufficient to note that late Roman garrisons were the primary agents of the imperial state on frontiers, and probably the most numerically substantial group after peasant farmers and pastoralists.

Given the size of the late Roman military, estimated at approximately 600,000 men in the 4th century at most (Jones 1964:683), and the impact it had on state finances (Elton 1997:118–127), it is essential to consider the social and economic organization of the military, as these structural aspects impacted on armies in the frontier. This chapter examines the Roman military based on five salient factors: military organization and hierarchy from the 4th century; the *limitanei*; late Roman military economy; late sequences in other Roman frontiers; and the end of the Roman imperial military. In most cases, these factors are considered in light of their relevance to the *limitanei*.

2.1: MILITARY ORGANIZATION AND HIERARCHY FROM THE 4TH CENTURY

The armies of the later Empire had changed and developed from that of the Republic and early Empire (see Keppie 1998 for more detail). The most significant changes were the separation of civil and military offices in the imperial government and the permanent division finalized by Constantine the Great in the early 4th century that separated the field armies, *comitatenses*, from the static frontier forces, the *limitanei*, variously known as *riparienses*, *ripenses*, *castellani*, or *burgarii* (Elton 1997:99; Jones 1964:608; Southern and Dixon 1996:35). The *comitatenses* were more privileged in terms of pay, length of service, recruits, and retirement benefits, but field army units only ventured into the frontiers for the purpose of campaigning or defensive support of the *limitanei*.

It has been claimed that the *limitanei* of the late Empire were little more than a peasant militia tied to the land, based on a passage from the *Life of Alexander Severus* in the *Historia Augusta* (Grosse 1920; Crump 1969). Despite the supposedly inferior military ability of the *limitanei*, evidence suggests that they were important and effective soldiers. They were stationed along every frontier; they were recruited in the same manner as the *comitatenses* (described below) and received supplies at the cost of the state; and land allotments were given to soldiers upon retirement (Jones 1964:649–651; Isaac 1988:146). The *limitanei*, therefore, were full-time military forces, not peasant-farmers with basic military duties, and they were fully incorporated into the command structure of the Roman military. "Apart from their organization, deployment, and use, [the *limitanei*] differed from the field army only in minor ways…" (Elton 1997:99).

The Size of the Late Roman Military

Estimations of the size of the late Roman military vary considerably, with such calculations based on a small number of documentary sources dating to the 3rd and 6th centuries and fragments or anecdotes from other late Roman authors, including Ammianus. The primary method used to establish the size of the late imperial military is to establish unit-strength from documents such as the Panopolis papyri and then multiply these notional figures by the number of units listed in the *Notitia Dignitatum* (e.g. Jones 1964). Lacking detailed strength reports or lists of ration allotment from the 4th and 5th centuries, such informed approximations must suffice. The greatest difficulty in the method is due to the complexity of the *Notitia Dignitatum*. Listing all the offices in the Eastern and Western Empires, the *Notitia* provides a complete list of regiments, in principle. However, in practice, there are repititions of unit names, which could represent numerous detachments and vexilations from the original regiment, or uncorrected errors in which original or earlier dispositions are retained without amendment, or both. Jones (1964:683) provides the largest estimation of the size of the armies of the Eastern and Western Empires, at approximately 600,000 men. Subsequent scholars have been skeptical of this calculation, arguing that his figures of *c.* 500 men per non-legionary regiment are inflated and may not even accurately represent paper strenghts. MacMullen (1980), for example, favoured a figure of about 300,000, and Elton (1997) suggested 450,000.

These more conservative figures are due to the recognition of smaller military units in the 4th and 5th centuries. Typical forts of the later Empire were smaller, and must have accommodated smaller garrisons (Duncan-Jones 1990). Further support for smaller

units has been argued from changes in barracks, particularly from Britain (Coello 1996; discussed in more detail in Chapter 4). Smaller unit size enabled more extensive geographic coverage by limited numbers of soldiers, and this may have been preferable to late imperial authorities.

High Command Structure of the Roman Military

There were effectively three primary levels in the high command of the Roman military that ranked higher and were relevant to the commanders of *limitanei* regiments (Jones 1964:609–610; Southern and Dixon 1996:57–58). At the very top was the emperor(s), then the *magistri*, followed by the *duces* and *comites*. There were a number of different offices of *magistri*, and the number of offices varied depending on the emperor in power, as did the hierarchy. The *magistri* commanded units of *palatini* and *comitatenses*. The most important officers, in terms of the frontiers, were the *duces* (sing. *dux*) and the *comites* (sing. *comes*) (Grosse 1920; Elton 1997:201; Southern and Dixon 1996:59–60). These two offices, in theory, had access to the emperor, but this is likely to have varied depending on an officer's social status and personal history. For example, a *dux* appointed after a career of climbing through the ranks would probably not have a strong personal relationship with the emperor, compared to the *dux* who was raised in or close to the imperial court. It is probable that in most cases, *duces* and *comites* reported to the appropriate *magister militum*. The *comites* were generally on par with the *duces* but associated with diverse commands, either *limitaneian* or *comitatensien*. The *dux*, literally meaning "leader", was in command of all provincial troops with the exception of the *comitatenses*, and he was responsible for the protection of the frontier he was assigned to (*Cod. Th.* 7.1.9; *Nov. Th.* 24.1). This included maintenance of fortifications (*Cod. Th.* 15.1.13), troop recruitment (*Cod. Th.* 7.22.5), and the collection and distribution of provisions (*Cod. Th.* 11.25). He also fulfilled a judicial function (*Cod. Th.* 2.1.2). The implication of this was that the *dux* in any frontier was the highest resident authority and could act with general autonomy.

Between the level of *duces* and *comites* and regimental/unit commands were temporary offices granted as needed. Unfortunately, this topic is complicated by gaps in our knowledge, particularly due to a lack of dates that indicate which commands were regional idiosyncrasies and when changes were made. However, there is some understanding of the "obscure organization" known as the *protectores* and *domestici* (Jones 1964:636–639; Elton 1997:101). Men were granted membership into the organization by the emperor, either through military merit, skill, accomplishment or

through influence. The men of the *protectores* and *domestici* were appointed various tasks and the organization seems to have served as a staff college for practical training and testing for command positions. As regimental commands were granted to a member after an average of five years in the *protectores* or *domestici*, it would mean there was a regular and rapid changing membership. In AD 364, Valentinian made membership in the *domestici* inheritable. Thus, the heirs of officers could begin their military careers at a higher rank through their father's achievements, the class Ammianus refers to as *commendabiles* (Frank 1967). By the early 5th century, it seems no longer to have functioned as an officer training college. The expectation was to spend your life within the college and retire upon attaining seniority. It is unknown if another organization replaced the function of training officers in the early 5th century.

It is important to emphasize that the command structure and hierarchy outlined above was not strictly absolute or static. A study of the text of Ammianus Marcellinus reveals that the distinction between officers of frontier and mobile troops was not as sharp as is sometimes indicated by modern scholars. Expediency was a primary motivation for the disposition of military commanders rather than following a static, unvarying military hierarchy (Crump 1969:116, 134). This noted, regimental commanders and frontier *duces* had considerable independence and power associated with their offices, due in no small part to the distances between themselves and the next rung in the chain of command.

Unit Types, Organization, and Command Structure

There were a number of types of units in the late Roman military (Elton 1997:99). There were *cohortes* (cohorts) and *legiones* (legions), which were "old style" infantry units, and *alae* and *equites* that were cavalry units; additionally, there were units called *limites*, *milites*, *auxilia*, *gentes*, *vexillationes*, and *numeri*, which were probably all infantry units. Unfortunately, unit terminology was not always consistently or precisely used. Organization within a unit in the late Roman military is largely unknown, but it has been suggested that the old divisions of a unit into centuries for infantry and *turmae* for cavalry may have been retained in the later Empire, though these terms do not necessarily reflect the same numeric values as in the early Empire (Hodgson 1999).

Cohorts were commanded by *tribuni* (tribunes), while most other unit types were under the direct command of *praefecti* (prefects). A more generic term, *praepositus*, was employed for use simply meaning "commanding officer" (Elton 1997:101; Jones 1964:640; Southern and Dixon 1996:60). Within units, the commanding officer had a

staff at his disposal for clerical and logistical purposes, and there were a number of non-commissioned officer positions. In "old style" units, the positions of decurion and centurion were retained, while in new types of units there were a number of non-commissioned officer (NCO) grades: (in ascending order) *circitor*, *biarchus*, *centenarius*, *ducenarius*, *senator*, and *primicerius* (Jones 1964:634). Generally speaking, promotion was made within a unit, and upon attaining the position of *primicerius*, the next stage of promotion was to the *protectores*, at which point the officer broke all official connection with his original unit.

Recruitment

The recruitment of individuals into the military was founded upon a number of legal codes and traditions in order to maintain adequate numbers of soldiers trained for imperial service, and this included "citizens" and "barbarians" from inside and outside the Empire (Jones 1964:614–623; MacMullen 1963:12–17; Southern and Dixon 1996:67–75). Since projections of the overall size of the Roman military range from 300,000 to 600,000 men, at least 15,000 men would be required each year to replace retirees. This figure does not include additional losses due to warfare, disease, or desertion.

There were two main types of recruits: volunteers and conscripts (Elton 1997:128–129). Volunteers were welcomed from both inside and outside the Empire, but it is impossible to estimate their percentage. Most evidence for volunteers is anecdotal in nature and difficult to compare to the number of laws referring to conscription.

Conscription took three forms: sons of soldiers and veterans, annual levies, and levies from barbarian prisoners. By AD 313, as with most other trades and professions, the sons of soldiers were legally obliged to join the military unless unfit or too old for service (*Cod. Th.* 7.23.1). This applied not only to the typical soldier, but also to officers.

Annual conscription of provincial citizenry, instituted by Diocletian, is generally assumed to have been the primary source of recruits, though the degree to which provincial conscription was necessary to supplement the conscription of soldiers' sons is unknown. While conscription was completed every year, it was not applied to every province each successive year. There seems to have been a rotation of conscription for actual persons and for recruit money, an established monetary value levied in place of persons. Greater landowners were responsible for the provision of numerous recruits,

while smaller landowners were grouped into *temones* or *capitula* that acted as consortia by which joint assessment could provision a recruit. Villages and small freeholders were also jointly responsible for at least one recruit. In AD 375, Valens reassessed the value of a recruit at 30 *solidi* with an additional six *solidi* added for outfitting and other expenses. Thus, landholders and consortia provided the necessary bodies or the equivalent value in money.

Levies from barbarian prisoners settled within the Empire, under names such as *laeti*, *gentiles*, *dediticii*, and *tributarii*, seemed to have been treated in the same manner as other recruits from inside the Empire and were probably assimilated into the Roman military, if not Roman society in general (Elton 1997:129–134). The degree to which this assimilation was cultural in addition to political is difficult to establish, and probably varied depending on the barbarian group being dealt with. Barbarians that lived in or near the *limites* were more familiar with some aspects of Roman culture and were probably easier to integrate/assimilate than those barbarians from far outside the *limites*. In the 4th century, barbarian levies were separated and incorporated into existing units. In the 5th century, barbarian levies often formed their own units and were not purposefully mixed with Roman soldiers, though this may have been a practical measure for the purpose of a military emergency or expediency on campaign.

Certain groups were exempt from military service. Slaves were only enlisted under emergency circumstances and freemen of "degraded professions" (e.g. cooks, bakers, and innkeepers) were exempt. Provincial officials and *curiales* were barred from joining the military, though this was to prevent civil officials from dodging the financial burdens that often came with their station. From AD 412, a number of laws (*Cod. Th.* 6.23.2; 6.30.20; 11.18.1) lists offices exempt from the provision of recruits (from their estates), including praetorian prefects, and officers from the *magistri militum* down to *tribuni* and *praepositi* of units.

Prior to enrollment, recruits were examined to see if the recruit was within the age limits, of a minimum height, and physically fit (*Cod. Th.* 7.13.3). Vegetius (1.6) suggested the following qualities be looked for: alert eyes, straight neck, broad chest, muscular shoulders, strong arms, long fingers, small stomach, slender in the buttocks, and muscular calves and feet. However, these must be considered as a description of the ideal recruit. Therefore, the degree to which all levies matched Vegetius' description cannot be ascertained. Upon passing inspection, the recruit was branded/tattooed to denote his position and to facilitate recognition in case of desertion.

There is a general acceptance that the "best" recruits went to the units of the *comitatenses* (with "best" often left undefined but implicitly meaning the most physically fit recruits), leaving the *limitanei* with the inferior recruits. While some disdain of frontier soldiers is apparent in textual sources, only one law suggests this was the case (*Cod. Th.* 7.22.8). Specifically, the law can be read in such a way that the *limitanei* served as a training ground and fitness camp for those sons of veterans that have avoided military service in order to later join the *comitatenses* on achieving a certain level of stature. By extension, this law suggests that the most physically fit recruits were sent to the units of the field armies, but this may not have been the case in reality. It has also been argued that the higher pay and conditions of the *comitatenses* may have been to entice recruits to serve in mobile field armies rather than static frontier regiments closer to their homes (Whitby 2007:522; note also the possibility that higher pay may have been a conceit to potentially higher prices for supplies in cities where the *comitatenses* were billeted or due to less reguarlized supply-lines). The law sending the fittest recruits to the field armies may have been a further counter to a preference for soldiers to remain close to home.

A number of circumstances may have impacted on the distribution of recruits, such as retirement of soldiers, desertion, and attrition through warfare/combat, perhaps even geography, all of which would have varied how many of how often a unit would need an influx of new soldiers. In the latter instance of attrition through combat, the *limitanei* may have required more regular influx of new soldiers, on an assumption that frontier units saw more regular and frequent low-intensity combat. In such circumstances, it seems most likely that recruits would have been sent where they were most needed and/or requested. The regiments of the *comitatenses* would probably be favoured under normal circumstances, but a large scale diversion of the best recruits to the *comitatenses* (such that the *limitanei* might suffer from poor quality recruits) would only likely occur in the preparations for, during, or after a large campaign. Under normal circumstances, and given the population of the later empire, sufficient recruits should have been available to provide the *limitanei* as well as the *comitatenses* with recruits of a high standard.

Another factor that is often unresolved, if even explicitly considered in the provision of new recruits to units is the geography of recruitment and training. No doubt, recruits were accepted or conscripted from across the Eastern and Western Empires, but it is unknown how far each recruit traveled to be trained as a soldier, and how much further the new soldier had to travel to join his new unit. By the 4th century, if

not earlier, there may have been a diocesan training centre, which would facilitate distribution of new soldiers much like supplies for the *magistri* and prefects. This practise may be indicated by le Bohec's (2000:85–87) brief study. By the 3rd century, the majority of recruits of legionaries (over 75%) in Egypt and Spain were from the Egypt and Spain (respectively), though this still indicates a significant percentage of "foreigners". Presumably, this was also true for auxiliary units, as long as they were not newly raised from a recent conquest or treaty from a barbarian people. In the 6th century Eastern Empire, legislation makes it clear that the majority of static units of *limitanei* and *comitatenses* were recruited locally to the region in which a unit was posted (Jones 1964:669–670). While there is a notable absence of evidence, this suggests that in all probability recruits for the 4th and 5th century *limitanei* were from the province or diocese that each unit was posted in, though this does not preclude a minority of new soldiers from a more distant province.

Any system of conscription suffers from deserters, but the degree to which this affected the Romans is unknown. A number of laws were enacted or reissued through the 4th century to punish those who evaded military service. Jones (1964:618) minimized the scale of desertion, noting that military authorities took precautions on the assumption that every conscript was a potential deserter. He also notes that there were regional variations in the popular attitude toward military service (e.g. Ammianus, 15.12.3, on the martial spirit of the Gauls v. the thumb-cutting Italians). Southern and Dixon (1996:69), on the other hand, emphasize that desertion was commonplace and that this led to increased barbarian recruitment.

This prompts the question of why military service was to be avoided. Liebeschuetz (1991:20) suggested that the population of the 4th century Empire would not be aware of the gravity of the military situation and the importance of new recruits. Some may have wanted to stay close to their homes and familial responsibilities, and the fear of posting to foreign lands was highly discouraging (Jones 1964:618). This would only be a justifiable concern if the recruit was not from a frontier zone, as local recruiting practises of the later Empire and the long-term stationing of garrisons would provide *limitanei* units with some sense of connection to their posting (Breeze and Dobson 2000:181). A policy of local recruitment was an obvious and logical practise, but potentially created problems of its own. The soldier could still be in close enough proximity to his family and home community that ties would not be severed completely. Thus, the socialization process of recruitment and training of the late Roman soldier was potentially not as thorough as that of a soldier from the early Empire. However, this

does not necessarily impact on the military effectiveness of such soldiers. Indeed, it could be argued that a soldier defending his home would fight with more determination than the soldier defending a foreign land or would offer a better knowledge of local geography of use for frontier duties.

Despite these problems, military service offered some attractions to the average Roman citizen. Privileges were frequently awarded. Soldiers, and between two to four additional members of family, were exempt from poll tax, and upon retirement veterans were awarded with a plot of land. Pay and rations were generally consistent, and there was a prospect of steady if slow promotion. Furthermore, a number of examples from the 4th century indicate that the military was socially mobile for those with skill and ambition, and a man of "common birth" could rise to the position of a tribune, *dux*, or even a *magister militum*. Enlistment in the Roman military was also an attractive prospect for many barbarian groups, for the same reasons provided above.

Upon completing a training regime and taking an oath, the recruit was ready to be legally identified as a soldier. The final step in becoming a soldier was to be officially entered into the records of the unit he was assigned to. This was important, as being entered into the books confirmed the soldier's status and rights to rations and pay.

2.2: THE *LIMITANEI*

The *limitanei*, as specifically posted frontier soldiers, played an important role in the late Roman military. While most practises between the *limitanei* and *comitatenses* would have been the same, it is necessary to identify specific aspects of the frontier military, given the fact that these soldiers (in principle) forwarded the interests of the state on the ground. Therefore, it is important to consider the role of the *limitanei*, their officers, and their garrisons.

The Role of the Limitanei

The *limitanei* are rarely mentioned by Roman historians. This is due to the bias of Roman historians writing about events of importance rather than the typical, normal, and day-to-day activity that would have occupied much of the time of the *limitanei*. It is probably this absence in Roman texts that has led some to dismiss the success of frontier soldiers (e.g. Grosse 1920; Crump 1969). If they were ineffective soldiers, however, it seems unlikely that the *limitanei* division of the military would have continued to operate through the 4th and 5th centuries in the Western Empire and beyond in the East. It is essential to consider the role of the *limitanei*, which can be separated into three discreet

functions: policing the frontier, intelligence gathering, and stopping/countering raiding in the frontier (Elton 1997:204–205; Isaac 1988:146–147).

The policing duty took the form of regulating the movement of people and goods through the frontier. As will be noted in Chapter 3, frontiers were not closed or exclusive. Individuals and small groups were allowed to move into and out of the Roman Empire at the discretion of the *limitanei* and frontier commanders. Intelligence could be gathered by the very presence of the *limitanei* in the frontier. The posting of units, patrolling, knowledge of local geography (enhanced through local recruitment), and contact with barbarians created an awareness of local circumstances and changes. The ability of the *limitanei* to stop or counter barbarian raiding is largely unknown. There is no evidence that supports the claim that "fighting quality" was low among the frontier soldiers, but when incorporated into field armies on campaign, the *limitanei* are known to have fought well. As no raids smaller than 400 individuals are recorded in the 4th or 5th centuries, does this mean that there was no raiding on a smaller scale or that the *limitanei* stopped and limited the effectiveness of smaller scale raiding (Elton 1997:206)? Regular patrolling, made possible by positioning soldiers along the *limes*, was a simple and effective manner by which the *limitanei* could fulfill their threefold role.

According to Crump (1969:104), Ammianus saw the *limitanei* as fundamentally local, occasionally unreliable, and supplemental to the field armies. While this perspective is biased by Ammianus' social status and military background and his tone is often (though not always) negative or dismissive of *limitanei*, this conclusion need not be entirely negative. Perhaps the most damning opinion is that the *limitanei* were ***occasionally*** unreliable. If only occasionally, then this suggests that the majority of the time, the *limitanei* performed their required duties. This is supported by the supplemental role to the field armies. It was the job of the field armies to pursue active campaigning, not that of the *limitanei*. Rather, they were fixed within a frontier, and probably only campaigned when field army units were in their frontier. The description of *limitanei* as fundamentally local further supports the notion that the majority of frontier soldiers were recruited from the region of the frontier, and had not traveled the length or breadth of the Roman Empire during their careers.

Significantly, Ammianus does not indicate that the *limitanei* were ineffective or useless, and this should probably be taken as an indication of their overall success throughout the *limites* of the Roman Empire. This should not be surprising. The *limitanei* may have been more regularly exposed to warfare and combat than the *comitatenses*, at least at a smaller scale of operations. So to some extent, a typical

soldier of the *limitanei* may have seen more regular action than a typical soldier of the *comitatenses*. Perhaps a better distinction between the abilities and skills of the *limitanei* compared to the *comitatenses* should not be based on Roman ideas of status, perceived by modern scholars via rates of pay and other privileges, but on scale of operation. The *limitanei* being fixed to a garrison or area and in more regular contact with friendly and hostile barbarians may have been far more successful at small scale operations, while the true advantage of the *comitatenses* was not any great physical superiority but the training and ability to contribute to large-scale military operations and complete the more complicated maneuvers involved in large set-piece battles.

Officers

Whether addressed as *tribunus*, *praefectus*, or *praepositus*, the commanding officer of a *limitanei* garrison occupied the highest position available in the frontier after the *dux*. Regimental officers in the *limitanei* achieved their rank through placement from the *protectores*, either by service or though influence. Vegetius (2.7) indicates that lesser tribunes achieved their rank through service. The lesser tribune may refer to the *vicarius* or deputy/acting tribune who was the senior NCO of a unit (as Vegetius claims). Alternatively, Vegetius' statement may imply that "the inferior commands in the *limitanei* were … normally filled by rankers …" (Jones 1964:643), meaning that unit commanders of the *limitanei* would have been older career men rather than young officers fresh from officer training. Whatever the path to regimental command, the *praepositi* of the frontiers were important men, if not as visible in Roman texts as their counterparts in the *comitatenses* or the *magistri*. The majority of evidence for this officer class comes from the Eastern Empire, but can be applied to Western *limitanei* officers in most cases (Bell *et al.* 1962; MacMullen 1963).

The Abinnaeus archive reveals important information about one *limitanei* commanding officer and can be used as a case study to reveal the nature of such command responsibilities. Abinnaeus himself is likely to have been of Syrian origin, and textual reconstruction suggests that he was approximately 51 or 52 years old when he was appointed as commander of the garrison at Dionysias (Bell *et al.* 1962:7–9). The Prefect Abinnaeus was responsible for a number of duties as garrison commander. There are official requests from soldiers for leave, disciplinary issues, collection and allocation of rations and other provisions, assigning aid or protection to civil officials in the region, providing escorts for dignitaries and important officials, recruiting for the military, and anti-smuggling and policing duties (Bell *et al.* 1962:16).

Abinnaeus was the commander of the garrison at Dionysias in the southern Fayyûm, which was probably established to support the civil administration in collection of tax and other fiscal measures rather than the protection of the province from external threat. Further duties probably included maintenance of unit strength and training, the maintenance of installations under his command, security of his sector of the frontier, and the reporting of intelligence and regimental information to the staff of the *dux*. From a military perspective, these are important and essential duties, but the garrison commander's official military powers were supplemented with unofficial authority.

A number of petitions from non-soldiers requested the prefect to intervene on their behalf. In some cases, the petitions involved soldiers or veterans, but the majority of petitions involved only "civilians". This suggests that Abinnaeus was not only the supreme military authority in his sector, but also an important patron or official authority for everyone in his sector of the Fayyûm, not only soldiers.

The archive also provides some information on Abinnaeus' household (Bell *et al.* 1962:28–30). His wife, Aurelia Nonna, owned property in Alexandria and Philadelphia, and together they had at least three children. His household was composed of at least eight other individuals. Moreover, a number of writers from documents in the archive suggest Abinnaeus' close circle of correspondents consisted of military men and civilians. Some of the military men seem to be officers of lower rank, but they "express themselves in a way that reveals a certain intimacy between them and Abinnaeus' family" such that they think of him as a husband and father, not merely as an employer or superior officer (Bell *et al.* 1962:29). This reinforces the social aspect of a unit beyond mere military matters. Other friends of Abinnaeus include two ecclesiastical figures.

The entire archive provides an important body of information that is relevant to all commanding officers of the *limitanei*, though admittedly some aspects are restricted to the Eastern Empire.

> The whole of this correspondence illuminates the position occupied by the commandant of the camp of Dionysias. His rank makes him an influential personage, at least within the geographical limits of his authority. It also illustrates the preponderance gained by the army in the society of this epoch. Whatever the circumstances, one turns to an officer and counts on his credit to obtain what one wants [Bell *et al.* 1962:30].

MacMullen (1963:113) largely concurs, noting that the military authority enjoyed by garrison commanders in conjunction with broader social power produced military patrons in the 4th century.

Archaeologically speaking, a significant figure like the garrison commander and his household should be highly visible. In forts of the early Empire, a *praepositus* inhabited the *praetorium*, a large structure built expressly for the purpose of the commanding officer and his household. While many later forts do not have the standardisation or specialized buildings that were typical of the early Empire, excavations should be able to further establish the *praetorium* or area of elite occupation of later Roman forts.

Forts and Garrisons

Late Roman forts in frontiers were either new constructions or continued/re-inhabited occupation of earlier built forts (Von Petrikovits 1971). Typical forts of the early Empire tended to be playing card shaped, with a double-passage gate placed on each wall. The walls were backed with an earth rampart, and towers were constructed in every corner and at regular intervals along the walls. These towers were square in shape and were generally flush with the outer wall of the fort or projected from the wall no more than one meter. Internally, fairly standardized buildings were placed in a regularized layout. The *principia* could almost always be found in the centre of the fort with other important buildings also included in the central range, such as *horrea*, the *praetorium*, and the *valetudinarium*. Barracks, workshops, stables, and other essential buildings could be found around the central range (an excellent summary of early forts is Bidwell 1997).

New forts varied in form, but any variance tended to be visual rather than functional. The most important distinction between fortifications of the early and later Empire was that later Roman forts incorporated stronger and more tactically defensive architecture, though it should also be noted that later forts tend to be smaller than their 1st and 2nd century precedents (Elton 1997:156; Southern and Dixon 1996:133–141). The defensive upgrades included projecting towers, fewer gates that were also recessed, thicker outer walls, and positioning and shape that made greater defensive use of local topography. These architectural changes strengthened the defensive capabilities of forts to withstand sieges and keep a population safe from hostilities outside the fort. Notably, forts along Hadrian's Wall and in northern England do not display many, if any defensive upgrades (Johnson 1983b:207; Elton 1997:167; though note the exception of the Yorkshire coastal fortlets of the later 4th century), suggesting that the forts along the Wall were adequately defendable against local hostiles. As Landon (1984) notes,

defensive upgrades to existing fortifications were made only in areas where existing fortifications were inadequate to cope with localized warfare.

Generally speaking, newly constructed forts were smaller in area than the earlier cohort and *ala* forts, and the standardisation that could be found in Hadrianic and Antonine forts was abandoned in the 3rd century and after (Johnson 1983b:52; Lander 1984:299–300). Structures were attached directly to the walls of a fort, allowing for an open central space. Internal structures in later forts were not as specialized in the later Empire. It is difficult to define a building that clearly occupies the position and function of the *principia* (Elton 1997:164; Johnson 1983b:52), suggesting that there was no longer a need for a large building dedicated to the ritual aspects of the military of the early Empire even if office space was necessary. Remains of aisled halls have been found in many forts, though, and these may have replaced the buttressed *horrea* of the early Empire as the primary storage facilities. It is also worth noting that *praetoria* are not regularly recognized, though this is not to claim that the commanding officer did not still retain a significant amount of space for his personal use and household (note the large household of Abinnaeus mentioned above). Barracks also seem to have changed. The classic barrack block of the 2nd century is replaced in Britain by the so-called chalet barracks in the 3rd and 4th centuries (this is discussed in more detail in Chapter 4) while in other frontiers barracks seemed to constitute a range of square or rectangular rooms backed onto the curtain wall. The lack of specialized buildings in terms of architecture (though not necessarily the space within the buildings) means that repair/refurbishment is facilitated, and the reorganization of internal space is also potentially made easier.

2.3: THE LATE ROMAN MILITARY ECONOMY

The economy of late Roman armies is most frequently considered in terms of soldiers' pay and rations (Jones 1964:623–630, 670–679), but the military economy consists of far more than these two components. The economic impact of a frontier army has been commented upon before, noting the vast consumer needs of a standing garrison (Breeze 1989), but the full extent of the Roman military's economic power is rarely explored explicitly (though see Haynes 2002).

Taxation and Pay

Documentary evidence has allowed for the calculation of legionaries', *equitates*', and auxiliaries' salaries (including *stipendium* and *donativum*) up to the late 3rd/early 4th century (Duncan-Jones 1990; Jones 1964:623–624, 644; Speidel 1992). However, the

relevance of such calculations is limited in the later Empire, as most soldiers received their pay in kind, rather than in cash in the 4th century. Nevertheless, the relationship between tax in kind and the continued operation/use of coin in the late imperial economy is not understood. More important than the rate of pay and the relative strength of such a salary, is the relationship between pay and taxation. Whether in cash or in kind, the payment and provisioning of the military was almost certainly the single greatest cost that had to be met by the Roman state, estimated as at least 75% of the total annual tax income of the empire (Erdkamp 2002:7). As such, the vast majority of the burden fell upon the taxpayers who would have provided the surplus necessary to support *limitanei* and *comitatenses* of the Empire.

Tax revenues in kind had important implications for provisioning (Hopkins 1980:124). First, food raised as tax was not as easily transported as money. So the distances between taxpayers and tax-consumers had to be shortened. The development of mobile field armies and smaller frontier units facilitated this, but it meant that the *limitanei* were increasingly reliant upon local provisioning. Second, the collection of tax in kind requires more supervision than money taxes, as it is more difficult to control the quality, quantity, and delivery. Consequently, more personnel were required for the collection of taxes, thereby adding more individuals that the tax had to pay for (though in some cases, civilians complained of being made to transport the tax at their own expense rather than that of the state). Finally, tax in kind does not need to be converted to money, so much of the currency could be eliminated from circulation (Hopkins 1980:124). Thus, local sources were preferable, as they would have simplified the logistical aspects of supply as well as reducing the costs for transportation.

Long Distance Supply

The vast bulk of long distance supplies were staple goods (e.g. grain, wine, oil) essential to the functioning of the army, and these goods would be imported where they could not be provided for locally. One example is supplied by Ammianus (18.2.3), when the emperor Julian shipped grain from Britain to the Rhine, and paleobotanical evidence at two forts in the Netherlands suggest wheat was imported from Belgium for the garrisons (van der Veen 1991:446). Long distance supply is frequently assumed to have been transported through merchants and traders fulfilling military contracts. This activity and the use of imperial supply networks further allowed the merchants and traders to profit from long distance exchange of additional goods. However, Middleton (1978; 1983; see also Whittaker 1983) has demonstrated otherwise. Using Gaul as his

study area, he demonstrated that long distance supply was conducted primarily to meet military needs. Initially, these needs might be for campaigning, but the establishment of a permanent garrison allowed for the establishment of official supply routes. *Collegia* of *negotiatores*, *navicularii*, and *nautae*, based on the distribution of inscriptions, existed only where there was no military fleet (e.g. *classis Britannia, classis Germanica*) to transport goods.

Furthermore, additional goods (e.g. samian ware) "piggy-backed" on official transportation, facilitated by the soldiers, who could be considered cash-in-hand consumers, though the amount of coins soldiers had available for personal use in the later Empire is questionable. The use of samian also demonstrates that when a more local source became available and official supply routes changed, long distance supply of the "piggy-backed" goods declined. Long distance supply, therefore, was organized exclusively for military supply, while additional exchange was incidental (Middleton 1983).

In the 4th century, two essential items were supplied to the *limitanei* and *comitatenses* from long distince producers: coin and arms. The production of high denomination coinage in gold and silver was always jealously guarded by the state, and monetary reforms of Diocletian and Constantine standardized currency across the Empire (Reece 1987). Even if a small percentage of a soldier's pay was in coin, this represented the movement of hundreds of thousands of coins each year (perhaps on a rotational basis) to each frontier or garrison city. The same is also true for weapons and armour. In the 4th century, the production of such essential military *materiel* was limited to state arms factories, the *fabricae* (James 1988). These factories were specialized production centres situated inside the frontiers (mostly behind the Rhine and Danube) and near transport hubs.

Thus, long distance supply should be seen as a feature of a supply economy organized to meet the needs of the Roman military. Ideally, by the 4th century all the frontiers were established enough to have been supplied by local or regional sources and would not have required much long distance supply, with the exception of coins and arms. However, this was not necessarily the case, given the agricultural limitations and bulk food requirements of some of the frontiers. Furthermore, prestige goods may have been imported by the *praepositus*, though this will have varied depending on the social background of the officer and the network available to him.

Local Supply and Military Production

The change from tax in coin to tax in kind favored an increased reliance on local supply (Hopkins 1980), and good accounts have been provided for Syria (Pollard 2000) and Egypt (Alston 1995), where documentary evidence substantially complements archaeological data. Lacking documentary evidence, zooarchaeological and paleobotanical data are helpful with this, but there is still the complication of whether or not the local provisions were procured from outside the military community. The military community (of soldiers and their dependants) was an active productive force, and the productive capacity of the military should not be overlooked. The primary difficulty in understanding military production is that direct evidence is limited.

Occasionally, pottery production can be found at military establishments, and tiles are stamped as products of a legion. Metalworking is also commonly found inside forts (Allason-Jones and Dungworth 1997). Inscriptional evidence also reveals zones of military control, for example woodland resources in Lebanon and quarries in Mesopotamia (Pollard 2000:241–242). Generally though, evidence for military production is indirect and must be inferred from existing evidence. Additional to these more local examples of military production are the state arms factories, the *fabricae*. These factories were a feature of the later Empire and were generally located near the frontiers (James 1988), providing arms, armour, and clothing for the *milites*. Thus, the production of essential material for military activity can be attributed to personnel attached to units or produced by the state and distributed to its soldiers.

Food production probably also occurred in the vicinity of forts, but it is uncertain who would have provided the labour for agricultural activity. People attached to the military and residing close to a fort, such as wives, siblings, children, and other dependants could have been engaged in such activity, as could local natives. Manning (1975:115) has calculated that a typical auxiliary (and later *limitaneian*) garrison would have only required 1 square mile to fulfill the grain requirements for *c.* 480 soldiers (calculated at a low annual yield/acre). More land would be required to grow enough grain for the large non-soldierly population associated with forts, not to mention the pasture for livestock, and winter fodder. Unfortunately, there is very little evidence for food production at forts, but this possibility must be considered, particularly in conjunction with long distance supply.

Summarising the Late Roman Military Economy

Long distance supply, local supply, and military production are important issues that have only been briefly touched upon here. The British evidence will be considered

in more detail below, but the above points have indicated the complication of a military economy in relation to its supply needs, productive capacity, and economic power (given its access to the imperial treasury and ownership of land, or *territorium*, discussed below). This complexity is clarified by considering the three differing scales of the Roman military economy. The largest scale sees the units throughout the Empire holistically. At this level, laws and conditions applicable to the entire Roman military body can be discussed, for example rates of pay and other structural features. Moving down the scale, one can consider the army/armies of a specific frontier and its needs. We can also speak of individual garrisons.

To understand the economy of the military it is necessary to consider the interrelationship of all these scales. Ideally, each fort had a unit garrisoned, and that unit is composed of soldiers and the support staff essential to keep the garrison operating. The fort also has a *territorium* from which the garrison can draw supplies (see le Bohec 2000:219–220 for a brief review of this concept). The *territorium* should be considered a legally distinguished territory, rather than an economically defined zone, as *territorium* establishes the legal obligations and privileges between the fort and this zone. In addition to the *territorium*, the garrison would also control or supervise property that was legally owned by the military or state (e.g. quarries, mines, forests, etc.). Thus, labourers from the garrison would have access to land and resources owned by the military within the *territorium*, or the land could be rented out. Additional resources could be procured from outside the *territorium*, through tax/tribute. Any resources that were unavailable (or not available at a sufficient scale) at the local level would then have to be imported from another area through the state supply system. The staff of the garrison commanding officer would forward supply needs/requests to the office of the *dux*. It would then be up to the staff of the *dux* to provide the necessary imported goods to the garrisons throughout the frontier, including coin and arms. Personal items or prestige goods would be procured through personal request to appropriate individuals (e.g. family, friend, merchant, patron, etc.).

2.4: LATE ROMAN OCCUPATION OF FRONTIERS

Military occupation and development of the *limites* is a consistent feature of imperial history, but the physical form of military installations between each frontier varied considerably. On the Continent, the Rhine and Danube rivers provided convenient boundaries for the establishment of frontiers, and North Africa was bound to its south by the Saharan desert. In North Africa, there were further advances west and

south in some sectors under Trajan and Septimius Severus, but these were often the result of agrarian expansion rather than outright conquest (Daniels 1987). Trajan also undertook the conquest of Dacia, which was held until the mid 3rd century, as was the outer German *limes* that were incorporated by Antoninus Pius. Both Dacia and the outer German *limes* were lost due to barbarian incursions coupled with other difficulties facing the Empire at the same time in the 3rd century.

By the 4th century, the Rhine and Danube were the foci of frontier defense on the Continent (Maxfield 1987), and the liminal zone between the Sahara and the rich lowlands provided the same focus in North Africa (Daniels 1987). These frontiers varied in form. Hadrian's Wall (to be described in more detail in Chapter 4) did not have a focus of a natural feature, like a desert or large river system, so the Wall itself was the focus of the northern British frontier. Significantly, Hadrian's Wall was not the only curtain-based frontier work. In North Africa, lengths of mudbrick walling, known as *clausurae* and *fossatum* depending on which region one is referring to, were constructed across valleys to channel movement and control entry into favoured agricultural areas. But these walls were not consistent in form or structure; nor were they strong in terms of defensive architecture, though they still seem to have been in use in the 4th century (Daniels 1987). Hadrian had wooden palisades built in the upper German and Raetian *limes*, and in Raetia this palisade seems to have been rebuilt in stone in the late 2nd century. However, these curtain structures were lost in the mid 3rd century with the retreat to the lines of the Rhine and Danube (Maxfield 1987).

Diocletian and the Tetrarchs began reorganizing all the Western frontiers in the late 3rd and early 4th centuries, systematically incorporating defensive architecture into forts, though some of these changes are evident in the mid–late 3rd century (Von Petrikovits 1971). The latest extensive, systematic reconsolidations and refurbishments of frontiers in the West are generally credited to Valentinian. Most, if not all of these defensive upgrades were instigated by successful barbarian attacks, or the looming threat of such attack, and can be explained by historical circumstances. For example, refurbishment of Danubian forts is seen in the aftermath of the Battle of Adrianople, *c.* AD 380 and again after the Huns campaigned through the regions in the 440s. A number of barbarian tribes like the Franks and Alamanni instigated defensive refurbishment and upgrades along the Rhine, for example under Julian.

Furthermore, Continental frontiers tended to be fortified linearly, with very few military installations behind them. As noted above, these new 4th century fortifications made more extensive use of defensive architecture in the form of projecting towers and

more defensive gates, with new constructions placed in topographically more defendable positions. In addition, many of these installations were smaller, indicating either smaller units or a broader geographic coverage by numerous vexillations of one unit.

The northern British frontier contrasts considerably with the other frontiers. It was never provided with the extensive and systematic defensive upgrades seen elsewhere. The Saxon Shore forts display traits like projecting bastions, and the Yorkshire coastal forlets are similar to (though not exactly paralleled by) Continental constructions also of late 4th century date. Another contrast is that northern England had a number of forts (approximately 30) behind Hadrian's Wall, creating a depth of military occupation rather than the spread out band seen in other *limites*.

Given the different geographic and historical circumstances of each frontier, it would be difficult in the scope of this dissertation to explain in detail why such contrasts can be drawn between northern England and the other frontiers. Rather than focus on the plan/shape of military installations, the nature of occupation from later Roman centuries is considered here to determine if there is any consistency in late occupation of military installations regardless of the historical date of such occupation. However, as there has been no synthetic treatment of any late Roman frontier, details from other *limites* are offered only in brief. Geographically, this survey begins with the Yorkshire coastal forlets (often called signal stations), then moves to the Saxon Shore forts, then to the Rhine and Danube, and ends with North Africa so that all the frontiers of the Western Empire are considered.

The Yorkshire "signal stations" of the late 4th century are a series of fortlets constructed on the Yorkshire coast of England. These sites are significant in that there was no previous military occupation at their locations; so the fortlets represent new occupation and construction clearly dating to the last decades of the 4th century. In form, the fortlets are similar to sites on the Continent, consisting of a square stone-built central tower surrounded by a free-standing stone wall with projecting bastions (Wilson 1991). In boh form and size, the fortlets contrast with every other military installation in northern England, which typically adhered to the traditional playing card shape. The function of these installations is debated, but Wilson (1991) argues that the sites were fortlets hosting official military units/detachments rather than monumental signal towers. This suggestion is born out by the location of the fortlets, generally overlooking the mouth of a river or harbout, suggesting that the fortlets guarded potential beachheads against barbarian raiding. In such circumstances, the fortlets probably housed troops that

policed the local countryside to counter seaborne raiding, though it is also possible that the fortlets also offered strongpoints of refuge for the local rural population.

Only the site at Filey has been excavated under modern conditions, but a number of other features testified to interesting activity (Ottaway 1997 for Filey; Hornsby and Laverick 1932 for Goldsborough; Hornsby and Stanton 1912 for Huntcliff; Collingwood 1931 for Scarborough). For example, at Filey the only paving was a cobbled path leading from the gate in the wall to the tower door, while Huntcliff had a courtyard consisistently paved with sandstone chips and beaten earth and no paving was evidenced at Goldsborough. Refuse seems to have been disposed of in pits in the courtyard, as at Goldsborough and Filey, and a linear series of hearths was found in the courtyard at Goldsborough. The regular spacing of pits and hearths, particularly at Goldsborough, but perhaps at the other coastal fortlets may suggest lean-to structures outside the central tower or backing against the curtain wall. Unfortunately no postholes or other structural remains were identified, although postholes were found outside of the gate at Filey.

The end sequences of the Yorkshire fortlets are unclear. At Goldsborough and Huntcliff it has been argued by the excavators that there was a violent end to the occupation of the site, based on recovered skeletal remains from the ground floor of the tower and well at Goldsborough and an extensive burning layer and skeletal material from 14 individuals from the well at Huntcliff. While the disposal of human remains in a well suggests a termination of its function, the human remains from other areas may not be as sensational as originally claimed. At Huntcliff, the excavators recognized a stone paving overlying the burnt layer in the gate area. This suggests a second phase of refurbishment post-dating the burning episode, but the excavators could not see past a violent episode of destruction of the fortlet and simply noted the presence of the paving. A second phase of activity at the gate is also attested at Filey, where the gate wingwall was demolished and replaced. Subsequently, a new ditch was dug and the old ditch infilled, and a post-Roman earth bank was constructed east of the site, blocking access to the headland that the site sits on. This post-Roman activity at Filey, with no clear dating evidence for abandonment or destruction contrasts with the evidence from Goldsborough and Huntcliff.

It should also be noted that an inscription was found at the fortlet at Ravenscar (*RIB* 721). This inscription is important because it is the latest known inscription from Roman Britain. On the basis of evidence from the other Yorkshire coastal fortlets, it was carved and set in the fortlet *c.* AD 370–400. A date focusing on the later 370s or 380s is

generally preferred on coin evidence, but a later date cannot be precluded. The inscription reads (as transcribed from a photograph; Haverfield 1912a:209):

IVSTINIANVSPP
VINDICIANVS
MASBIERIVRR (or PR)
MCASTRVMEECIT
A.. O

Collingwoog and Wright (1965:241) transcribed the stone as (and including their interpretation of some of the letters) IVSTINIANVS P(rae)P(ositus) / VINDICIANVS / MAGISTER TVRR / (e)M (et) CASTRVM FECIT / A SO(lo). Roughly translated, this reads "Justinianus, commanding officer, and Vindicianus, magister [a lower ranking officer of the later empire], built this tower (and) fort from ground-level" Interpretation of the inscription varies, but it can be suggested that Justinianus was the officer in charge of the construction of all the Yorkshire coastal fortlets, while Vindicianus was commander of the soldiers at Ravenscar. It is interesting that such a late inscription was found and this indicates that the practise of inscription had not completely disappeared by the late 4th century in Britain. However, it may be that Justinianus was an officer that was born, raised, and served in a different part of the empire where inscription was still common at this time, and the quality of the carving could be equally indicative of the lower level of inscribing practised in the region.

The Saxon Shore consists of a series of coastal forts that are generally rectangular in plan (except Pevensey) with projecting towers/bastions and recessed gates, though there is no uniformity of plan between these sites (Johnson 1979). No complete internal plan of any of the forts is known, and there is only a handful of recognisable stone-constructed military buildings: *principia* and small bath buildings at both Lympne and Richborough (Cunliffe 1977:5) and the barracks, bathhouse, and *principia* at Reculver (Johnson 1991:94). Otherwise, buildings at these sites tend to be constructed in timber framing, as at Portchester in the AD 340s and later, the church at Richborough, and the mortar-floored buildings at Burgh Castle (Johnson 1979:137–138, 150; Cunliffe 1977:5; Johnson 1983a:3). At Portchester, it has been claimed that military occupation had ended by AD 369 and was followed by civilian occupation on the basis of a decrease in planning, cleanliness, and intensity of occupation (Cunliffe 1975:425). It is unknown when the Saxon Shore command broke up. In general, it is assumed the Saxon Shore forts continued to be in military use until the end of the Roman period and that their garrisons functioned normally (Johnson 1977:69). However, it should be noted that there is also evidence for Early Medieval occupation at many of the forts. At Burgh

Castle, a 5th century hoard of glassware was found buried in an iron-bound bucket and bronze bowl, and the southwest corner of the fort had east-west aligned graves lacking gravegoods radiocarbon dated to the 7th–10th centuries (Johnson 1983a:3). At Portchester, Cunliffe (1977:6) argued that there was 5th century occupation. Late military occupation is present on the Saxon Shore, though inconsistent and perhaps even ephemeral. Unfortunately, the Saxon Shore is not as well excavated or published as Hadrian's Wall.

The frontiers on the Continent were not originally focused on the Rhine and Danube rivers, but by the 4th century, both these rivers had become convenient fortified boundaries along which a number of fortifications were reused from the earlier Roman period and built *de novo*. At Divitia on the Rhine, 4th and 5th century occupation is less clear than military occupation in previous centuries. There were few features to distinguish the function of interal buildings; there were no clear granary or barrack buildings (Carroll-Spillecke 1997). It has been argued from artefacts, however, that there was an increased female, perhaps civilian presence in the fort in the 4th century before the fort was occupied by Frankish *feoderati* in the 5th century, also argued from recovered finds. Such ambiguities in structural archaeology may be a result of regular invasion from across the Rhine through the 4th and 5th centuries, resulting in numerous repairs or refurbishments in which hasty construction was favoured.

A number of excavated forts along the Danube provide evidence for the *limitanei* in the part of the empire. At Transdrobeta, a number of timber houses (some with cellars) were built over earlier structures in the central area of the fort and inside the east gate in the early 4th century (Vasić 1999). Later in the 4th century, stone structures superceded those of the previous phase, with a granary built inside the east gate and overlying the road through the gate. This phase ended *c.* AD 378 with destruction by widespread fire, presumably due to Gothic attack following Adrianople. The following phase saw complete internal reorganization and refurbishment of the defences, with the south and west gates blocked by adding an external tower across the gates. Structures in the centre of the site had stone foundations with timber superstructures, and the stone granary was replaced by a house. This phase ended in destruction dated to the Hunnic invasion of AD 441, and the site was reconstructed in the later 5th century with timber structures with gravel floors.

Gradishte, near Dichin, was a newly constructed fort in the late 4th century, with a regular and uniform layout and internal structures built in mudbrick on earth-bonded stone foundations (Poulter 1999). This phase of occupation ended *c.* AD 475 due to

destruction by fire. A second period of occupation saw the structures of the previous period reused as foundations for new structures, but the new buildings were more roughly constructed. There was a small range of imported fine wares on the site, with 70% of the ceramics consisting of a grey-black gritty ware of variable colour and texture with a limited range of forms.

The fort at Halmyris was refounded in the late 4th or early 5th century (Zahariade 1991). The defences were built in stone with mortar bonding, and entrances into the site were limited as the north gate was blocked. The 5th century occupation (compared to that of the 4th century) had fewer buildings and less pottery and was argued to be of a degraded military character. The final phase of occupation, in the late 6th–early 7th century saw construction over the collapsed defences of the fort, with dispersed structures throughout the site.

North Africa bears a passing similarity to northern England, with the construction of numerous stretches of walls, called the *fossatum* and *clausurae* depending on which part of the frontier one is in (Daniels 1987; Mattingly and Hitcher 1995). These barriers seem to have been originally constructed in the Hadrianic period, but were subsequently modified. These curtains were different to Hadrian's Wall, however, in that while they possessed gates to allow passage through the walls, there was no regularity in form and spacing as seen on Hadrian's Wall in terms of regularly spaced turrets, milecastles, and forts. The North African curtains did contain towers and small installations, but these were inconsistently sited on the curtain or behind the curtain. Furthermore, these constructions are much more clearly related to the regulation of the movement of nomads and other transhumants with very little evidence to support a defensive function.

Unfortunately, textual sources, inscriptions, and surveys of standing remains (but not excavation of stratified levels) are the primary sources of information in the North African frontier (Daniels 1987; Mattingly and Hitchner 1995). Lacking detailed excavation reports, it is difficult to state with any confidence the nature of the latest Roman military occupation. Still, the inscriptions and documentary evidence point to professional occupation by the *limitanei* thorugh the 4th and early 5th century as well as occupation by *gentiles* (frontier tribesmen) in the 5th century. The relationship between the *limitanei* and *gentiles* is unclear at this point, particulary in reference to frontier defence.

This brief review of late Roman frontier fortifications suggests a number of changes. Late Roman military occupation, while archaeologically visible, is perhaps less substantial and standardized than in previous centuries. There seems to be an increased

use of timber and refurbishment does not necessarily adhere to a strict grid or previous layout. A consistent description offered by the excavators of these sites is one of military degradation or even an increased "civilian" presence. This suggests a fundamental change in the *limitanei*, perhaps all late Roman military forces.

2.5: THE END OF THE IMPERIAL ARMY IN THE WEST

The end of the Western imperial army is a problem that has not been sufficiently examined. Most hypotheses focus on the disintegration of the *comitatenses* through historical sources when considering the dissolution of the Roman military. There is little explicit consideration of the *limitanei*. Southern and Dixon (1996:179–180), representing a recent interpretation of the established view (Jones 1964:685–686), trace the end of the Roman military in the West to the problem of a shortage of manpower. This lack of manpower created the circumstances for increased recruitment of barbarians. Inconsistent success, poorer training, and a failing officer corps seriously diminished confidence in the imperial armies. The resultant decreasing public support and the loss of internal cohesiveness created a difficult situation to be recovered. Unfortunately, the time needed for such a recovery was never available in the West, and the failure of the armies resulted in the settlement of barbarian groups that eventually formed kingdoms and further undermined centralized imperial authority.

Alternatively, Liebeschuetz (1993) traces the end of the Roman military to the dissolution of standing field armies through the increasing reliance upon federate forces in the later Empire. The willingness of federates to serve for the course of a campaign and the ease by which they could be raised, when compared to the costs of maintaining standing field armies, made them preferable to a professional standing army. Importantly, the increased use of barbarians in this hypothesis is not related to a lack of manpower, but explained by financial efficiency, though with a similar result of the barbarization and the dissolution of the *comitatenses* through the 5th century.

The notion of increased barbarization of the Roman military has been dismissed by Elton (1997:134–152). Barbarian socio-cultural impact on the Roman military is inconclusive. The frequency of barbarian, or rather non-Roman names, has been cited as evidence of increased barbarian recruitment due to a shortage of manpower. However, a survey of names of officers reveals that less than one third of officers were of barbarian origin, and this ratio did not increase from the mid 4th through to the 5th century. The recruitment of non-Romans was a regular occurrence through Roman history, so barbarian recruitment on its own cannot be taken as an indication of a loss of manpower.

Furthermore, the commutation of recruits into money and the fact that a number of laws were not relaxed through the late 4th and 5th centuries suggests that regular manpower shortage was not a feature of the military (Elton 1997:152–154). Rather, there is "little perceptible decline" in the effectiveness of the Roman military between AD 350 and AD 425 (Elton 1997:265). The late Roman military was relatively successful due to the autonomy of local and regional commanders and the successful flow of information up the command structure, allowing for appropriate response and decisions to be made (Elton 1997:179). Thus, it was not a structural failure on the part of the military that led to its demise, but "inefficient and declining political actions" that reduced military effectiveness in the Western Empire through the 5th century (Elton 1997:266).

Whittaker (1993a; 1993b; 1994) sees the end of the Roman military connected to the collapse of the frontiers, which dissolved because of the disintegration (or inefficient and declining political actions) of the state. The changes in the military and the countryside were closely linked, and "it was the developments which took place in these areas especially which eased the transition from the Roman Empire to the barbarian kingdoms" (Whittaker 1993a:280). In the Eastern Empire, there is evidence suggesting the military officers were becoming landlords, while existing landlords used their wealth and influence to become warlords. A vocabulary also established itself in Greek and Latin in reference to private armies including words such as *oiketai* and *familia*.

Private armies (or militias depending on the scale), called *bucellarii*, were organized around a powerful magnate who acted as a commander and patron to these personal followers and were established through the 4th and 5th centuries. The term literally means "biscuit-eater", in reference to the military biscuit *bucella*. Both Romans and barbarians were members of these private armies. The *bucellarii* provided important contributions to warfare in the later Empire and came to be relied upon for expeditions by the 6th century (Grosse 1920:289; Liebeschuetz 1993:269; Southern and Dixon 1996:65, 72).

While such warlordism can be demonstrated in the Eastern Empire, there is no direct evidence for similar practises occurring in the West, but there is strong circumstantial evidence for the growth of military landlordism. In the West, according to Whittaker, the garrison commanders, alienated from the imperial state, would have had their units at their disposal to enforce their authority. These former Roman commanders, also powerful landlords through their position in the military, became the leaders of the *bucellarii*. The greater reliance upon personal followers is another indication of the fragmentation of the late Empire and increased emphasis on localized, personal relations.

Given the difficulties of assumed shortages of manpower and increased barbarization among the ranks, it is possible to provide a brief scenario (following Elton and Whittaker) by which to understand the end of the Western Roman military. Throughout the 4th century and into the early 5th century, the Roman Empire retained a powerful military force. As the Western Empire disintegrated through the course of the 5th century, the geographical position of frontiers changed. The Western Empire was not politically unified through the 5th century. Rather, powerful individuals presided over vast swathes of territory. It can be assumed that where frontiers remained the same, the *limitanei* continued to be stationed there, but as political and military figures grew in power they redistributed military forces at their disposal for maximized personal benefit. Imperial regional field armies were destroyed in warfare or absorbed by magnates, building personal armies rather than state armies. Barbarians were employed as needed for use in campaigns, and the competition between powerful Romans and barbarian kings and chiefs shifted the disposition of military units and obscured the location of the frontiers. Thus, as the Western Roman state dissolved into numerous kingdoms, the former frontiers of the Western Empire were no longer valid.

2.6: SUMMARY

This chapter has summarized structural and economic aspects of the Roman military in an attempt to provide detail that will be important throughout this thesis. Furthermore, the frontier and *limitanei* of northern Britain must be considered against this greater military backdrop. Structurally, it is clear that the Roman military was a large and highly organized institution that was generally successful. It had considerable economic power, due to the importance of the military to the Roman state, the size of the military, and the military's ability to control land and other resources by force of arms and political access. It is also clear that Roman military officers, from the level of garrison/regimental commander and up were powerful figures that exercised power beyond the remit of their military authority. Late sequences from other frontiers across the Roman Empire suggest that late garrisons underwent a number of changes, moving away from more traditional standardized layouts and structures. These factors will be considered in Chapter 3 when the military is considered from a social perspective and in reference to Britain in Chapter 4, when the northern British frontier is examined.

Chapter 3:
The Context for Hadrian's Wall, Part 2: Conceptual Development and the Use of Theory in Roman Frontier Studies

In the past 20–30 years, Roman frontier studies have expanded beyond the dominant traditional perspectives developed in "Britto-Germanic" Roman military studies descended from Mommsen and Haverfield (Browning 1991). Through most of the 20th century, the study of Roman frontiers was largely equated with the study of the Roman military. The classic approach of *Limesforschungen*, the detailed study of Roman frontiers through detailed documentary and archaeological research, has expanded in the later decades of the 20th century, more thoroughly exploring economic and social issues of processual archaeology. Even more recently, ideological interests of post-processual archaeology have also appeared in reference to Roman military studies. Importantly, frontiers have been examined in their own right, and it can be claimed that scholars have embraced a considered definition of the concept of frontiers. Unfortunately, recent notions of Roman frontiers are still constrained. This chapter critically examines past and current conceptions of the frontier and suggests a "reconstituted" definition of Roman frontiers. Ultimately, the objective of this thesis is to discover and understand how the role of Hadrian's Wall and its garrison changed in its last century. To that extent, an explicit framework, based on the anthropological and sociological concept of community and its material-correlates is put forward for analysis of the 4th century frontier of the Roman Britain.

3.1: DEFINING THE FRONTIER: PAST AND CURRENT CONCEPTIONS

The evolution of Roman military studies and the subsequent (unofficial) development of the Durham School by Eric Birley in the years following World War II have been well established. It is unnecessary to regurgitate this history as it is discussed elsewhere (James 2002), but it is important to consider the agenda and values of this group of scholars and the implications this has had on Roman frontier studies. Adherents of the Durham perspective placed emphasis on structural aspects of the Roman military to the exclusion of the realities of warfare and campaigning, the social relationships of soldiers and officers, and the wider context of the military in Roman society. This

approach favored detail, and synthetic treatment of various frontiers was limited. *Hadrian's Wall* (Breeze and Dobson 1976) was an exception.

The publication of Luttwak's (1976) *The Grand Strategy of the Roman Empire* had an important impact on Roman frontier specialists, particularly as Luttwak analyzed Roman practise from his position as a Pentagon Cold War strategist. Amongst the most influential works considering frontiers, Luttwak

> integrated both tactical and strategic aspects of the Roman Imperial army into a coherent view of Roman policy – a task Roman historians and frontier archaeologists had generally postponed for want of more complete archaeological evidence [Wheeler 1993:8].

Military force was focused on "scientific frontiers" for use in the state's exercise of power. The underlying assumption was that the Romans had a general staff of strategic planning and that wars were conducted with the aim of establishing/reinforcing defendable borders. The major criticism rested in the fact that frontiers evolved without strategic planning, and that there was no overarching frontier strategy, as decision making varied from emperor to emperor (Mann 1979b). Luttwak's contribution stimulated further research of Roman frontiers. However, there was still an implicit understanding that frontiers were centred on natural features like rivers or linear constructions like Hadrian's Wall.

Subsequent research was more explicit in acknowledging the difference between frontiers as zones and linear features as borders (e.g. Hanson 1989), but failed to fully define and examine frontiers as a concept divorced from a military context. A thorough historiography reveals that 18th, 19th, and early 20th century imperialism heavily informed European perspectives of frontiers (in contrast to North American perspectives; Turner 1893). Until the 1960s and 1970s, frontiers were often considered as "natural" or "scientific" boundaries, most often occurring in a linear form due to geographical features such as rivers and mountains, or along lines of ethnic or linguistic difference (Whittaker 1994:1–9, 60–62). These clean, unambiguous frontiers, however, have been demonstrated to be fallacies conceptualized through a colonialist perspective of core-periphery relationships (Febvre 1922; Lapradelle 1928; Lightfoot and Martinez 1994:471). In other words, frontiers cannot be conflated with clearly defined boundaries. Furthermore, there is no evidence that the Romans themselves conflated frontiers with defended borders (Isaac 1988). The *limites* were frontier ***districts***.

Frontiers must be considered as complex and dynamic zones in their own right, related to but separate from political boundaries (Kopytoff 1993; Lightfoot and Martinez 1995; Paynter 1985; Pohl *et al.* 2001; Turner 1893). Frontiers are best understood as

transitional zones. Whittaker (1994:85 building on Lattimore's 1940 research on Inner-Asian frontiers of China) argued that Roman frontiers

> represented a compromise between the range of conquest and the economy of rule. Inevitably this compromise was not a clear geographic dividing line but a broad transitional region – an inner and an outer frontier . . . where it was never obvious in the first instance whether the food supply or local production could sustain an army without its becoming and intolerable economic or logistical burden.

This definition identifies two key features of the frontier. First, it is a transitional zone that connects the core with the "outside" – socially and economically. Second, the establishment of a standing military force reduces the potential for surplus extraction directly benefiting the core, and may even require surplus exported from the core to subsidize the frontier.

In addition to this definition, Whittaker argued for a broader identification of a frontier zone beyond a military network or political boundary. Central to his argument was the recognition of the contradiction inherent in the ideology of the Roman Empire (Whittaker 1994:11, 37, 44, 72). The world belonged to Rome, and the eternal city had the right to rule the entire world. The formal recognition of boundaries of absolute political and military control was impossible because it would deny Rome's right to global domination by demarcating a limit to Roman imperium. However, the difference between a border **line** and a border **zone** must not be forgotten. Recognition of a border zone acknowledged the practical limits of direct control due to political, economic, and technological limitations while an ideology of world domination could still be succoured.

Local demographics, economics, political interests, and military logistics determined the formation of frontiers rather than a grand strategy (Fulford 1992; Isaac 1990; Whittaker 1994), and these factors have been used to explain the purpose of frontiers. Linear military works, like Hadrian's Wall in Britain and the *clausurae* in Africa, were built to control and supervise the movement of people and goods (Breeze and Dobson 2000:40; Trousset 1980:935). The full implication of this argument is that administrative lines were not exclusive of people outside the Empire. Rather, a frontier created an area of stability at the fringe of the Empire due to the imposed presence of the military. Given time, that stability further developed the economic and social dynamics that originally required a military garrison (Whittaker 1994:97). Over the course of generations and centuries, border peoples were assimilated politically, economically, and culturally to varying degrees so that in the end, it was unclear in the frontier zones exactly who was Roman and who was barbarian (Goetz 2001:74).

Yet the argument favouring the permeable but controlled frontier dismisses the potential threat/danger from external enemies and limits the purpose of military garrisons to basic policing and customs duties. The Roman government did perceive the barbarians as a threat and employed principles of strategy for use on campaign and against internal and external threats (Wheeler 1993a; 1993b with numerous examples from documentary sources). While policy could and did vary with each emperor, the integrated and proactive use of a variety of policy methods (e.g. building projects, military campaigning, political manipulation) for medium or long-term aims clearly indicates a desire to undermine potential and actual barbarian threats (Heather 2001:67).

This brief overview of the further development of Roman frontier studies has identified a schism in the aims and approaches of two groups of scholars: (1.) traditional Roman military specialists and military historians who have emphasized military structure and organization and (2.) socio-economic archaeologists that have drawn on research outside of the confines of classical scholarship and reduce the significance of military aspects of the frontier. Each group has made valuable contributions to Roman frontier studies, but the exclusion of certain factors by both parties has inhibited further development of the discipline. Thus, it is necessary to reconstitute Roman frontiers, taking into account offerings from each group.

The recognition of a frontier as a transitional zone is critical. Frontiers are meeting places between peoples of different cultures and with different interests. The Roman military is a significant presence. In addition to the threat of martial force and the stability or instability associated with that, the armies also imported goods and brought a reliable economic network into the frontiers that built regional economies, as noted in Chapter 2. Despite the significance of the military, however, there were still rural occupants of the frontier that worked and lived off the land, and urbanites that dwelled in the towns that developed. There may also have been visiting barbarian groups from outside the Empire. Thus, frontiers were inhabited by a number of social groups with different roles and agendas that contributed to the formation and maintenance of frontiers. Given the complexity of the area, it is critical that a theoretical framework is adopted that can cope with both military and non-military/civilian aspects of frontier populations. The framework forwarded in this thesis is that offered by community studies, as used in anthropological and sociological research, though it should be noted that the primary emphasis in this thesis is on military communities.

3.2: COMMUNITY STUDIES

A significant focus of anthropological and sociological research since the late 19th century has been the concept of the community and communitas – the sense of belonging to a community and the practises that membership incorporates. Despite the tradition in anthropology and sociology, community studies have not been incorporated into European archaeology (though see numerous studies on "identity" to which this is related: e.g. Giles 2000; Jones 1997; Mattingly 2004; Roymans 2004; Shennan 1989; Wells 2001).

There are multiple sociological definitions of community. The traditional definition, encapsulated by Tönnies' (1955; first published 1887) *Gemeinschaft*, understood a community to be a set of social relations most clearly achieved in traditional, rural village life. This definition has been strongly criticized and reworked since Durkheim's review in 1889 (Delanty 2003:36). The most recent and influential reconsideration of community was articulated by Cohen (1985), who argued that communities were a symbolically constructed reality, in which community membership and identity was recognized in contrast to outsiders. Significantly, this allows for community formation above and beyond the scale of a village. This agrees with Anderson's (1991, originally 1983) concept of imagined communities, by which large scale identity formations such as nationality may be understood across vast geographical units. Anderson also points out that a large scale sense of community also often contains an understood sense of comradery and general equality.

There are two notable problems, however, with Cohen's symbolically constructed community. First, the emphasis on the exclusive nature of communities detracts from the fluidity and dynamic nature of community formation and identification. Second, the idea does not consider that communitas can take violent forms and that violence is often a marker of community boundaries (Delanty 2003:47–48; though Anderson 1991 does highlight the significance of violence or violent pasts).

The multitude of definitions identifies the multitude of communities, with numerous approaches by which to study these communities (Bell and Newby 1974). There is no fixed and static notion of community.

> 'Community' stands as a convenient shorthand term for the broad realm of local social arrangements beyond the private sphere of home and family but more familiar ... than the impersonal institutions of the wider society ... [Crow and Allan 1994:1; reworking Elias' 1974:xix definition].

Put another way, community is a mode of social organization and a manner of belonging that can often be expressed in symbolic forms, but community is not an exclusively institutional arrangement (Delanty 2003:49). Different types of community can be distinguished according to their contrasting features and characteristics, what Stacey (1974) would identify as a local social system and what archaeologists have classified as identity.

As communities are generally considered as smaller scaled social formations, larger than families but smaller than tribes, it is possible for numerous communities to co-exist within larger social and political. This can take the form of several geographically distinct communities or different types of communities within a close proximity, or both. Thus, the Roman Empire can be said to have contained multiple communities dispersed throughout it at any one time.

Elias (1974:xxxviii) has noted that the development of communities "... goes hand in hand with state formation processes ...". The relationship between communities and state societies can be summarized succinctly. As social hierarchy and differentiation increases (through the accumulation of surplus), community integration decreases as the authority and range of decision-making moves upward. This relationship should not be referred to as "hand in hand", and it cannot be taken at face value. In some cases, state formation processes may enhance, strengthen, or fossilize certain aspects of communities, for example social hierarchies, or community identity. A more accurate description of the relationship between communities and state formations is that the rise and expansion of a state decreases the political and economic independence of a community. It is probable the reverse is also true – community political and economic independence increases with state disintegration/collapse processes. As a state disintegrates or collapses, political authority is limited to geographically smaller areas, reducing the spatial area over which tax/tribute can be extracted and thus, limiting the amount of surplus for redistribution. Access to certain specialized goods or labour may also be lost. With the overall reduction of surplus and political authority, there is a corresponding decrease in social hierarchy and differentiation (Tainter 1988). This suggests that there is the potential for community independence to increase as decision-making is reclaimed at the more local level. Obviously, the social formations that result in a community will vary depending on a number of circumstances, such as differential social power within and between communities, but this fundamental relationship between communities and state societies has clear applications for frontier studies.

Frontiers, as complex transitional zones of contact between the Western Roman Empire and barbarian societies, contained a number of different communities. Roman military communities are an obvious example and have been the most frequently studied group in the frontier, though rarely in the context of community studies. In addition, the development of towns in frontiers under the aegis of imperial domination and administration indicates that there were also urban community formations. Outside of the towns and distinct from the military were rural, "native" settlements that can generally be taken to indicate the presence of agrarian peasant communities. The final form of community present is the barbarian communities, which may or may not have varied considerably to native agrarian peasant communities in the frontier. Each community had different traditions, practises, institutions, and values, but these communities also would have come into contact with each other.

The benefit of community studies is that Roman frontiers can be considered holistically, without interpretation biased toward military structures or native settlement. Each community can be examined on its own terms rather than in direct comparison with the military, for example. However, it is useful to focus on a relatively universal social group that could be found in every frontier – the *limitanei*. A number of factors make the *limitanei* an appropriate social group to consider. First, *limitanei* were stationed in every frontier of the Roman Empire, and this makes them useful for comparisons between different frontiers, though such comparisons are not made in this thesis. As professional soldiers, they were integrated into the politico-military framework of the empire, socially, economically, and ideologically. Through the *limitanei*, the frontier can be related to the imperial system. This relationship to the imperial system also serves as a useful contrast for post-Roman transformations in frontiers. At the same time, the long-term stability of Roman frontiers and the preponderance for tax in kind in the later period socially and economically integrated the *limitanei* to the frontier sector of their posting. The late Roman military was explored in more detail in Chapter 2, but it is essential here to gain a theoretical understanding of this social group, as Roman military archaeology provides the vast majority of the evidence for this study.

3.3: THE ROMAN MILITARY AS A COMMUNITY

Previous studies of the Roman military focused on military structure. The primary problem with this concentration is that it facilitates assumptions about similarities with modern armies and can falsely characterize Roman soldiers as faceless cogs in a military machine (Haynes 1999a:8; James 2001:79; 2002). Recent research has

focused on more social aspects of the Roman military, illuminating the relationship between soldiers, the military, and society (e.g. Alston 1995; Goldsworthy and Haynes 1999; Isaac 1990; James 1999; 2001; King 1999; Pegler 2000; Pollard 2000). Soldiers are military agents by definition, but soldiers also have social identities beyond that of a paid fighter. It is these various relationships that have been highlighted by a number of scholars over the past 15 years.

Particularly notable is the debate between those that see Roman military garrisons/units as "total institutions" versus those who argue for a more integrative model between military and civilian bodies. The "total institution" model was defined by Goffman (1961:xiii) as "a place of residence and work where a large number of like-situated individuals, cut off from a wider society for an appreciable period of time, together lead an enclosed, formally administered life." Shaw (1983) argued that this approach was applicable to a legionary garrison, and Pollard (1996) has applied the concept to the auxiliary garrison of Dura-Europos. In contrast, Alston (1995) has maintained that relations between soldiers and civilians in Egypt were less formal and more relaxed. The relationships between garrisons and the non-military populations cannot be expected to be exactly the same throughout the Empire, but Haynes' (1999a:9) advocacy of the sociological theory of the occupational community (see Appendix 7 for a detailed discussion of this theory) has many merits. Primarily, this theory enables one to consider the identity of Roman soldiers in relation to their occupational identity, and the contribution this has to the formation of a physical and conceptual community (similar to Anderson's 1991 imagined communities) across the Roman Empire, but it does not exclude other notions of identy; it only reduces them to secondary or tertiary significance.

The Military Community – A Definition

The military community was formed around soldiers, but it was not exclusive to soldiers or exclusively martial in character. It included non-combatant support staff and soldiers' dependants that provided a considerable part of the immediate labour and productive capacity of a military community (James 2001). Beyond that, soldiers were participants in other social structures, particularly in the later Empire. They may have been husbands, fathers, and/or brothers, owners of slaves, and patrons of clients, or clients themselves. Thus, the Roman frontier garrison was a community in the physical and conceptual sense of the word, as a population living together in proximity that was bound through social, economic, and ideological relationships. Each garrison in the

frontier, however, participated in an empire-wide organization that allowed individual members from across the Roman Empire to comprehend and relate to each other's circumstances in a sociologically meaningful way. It was this participation in the Roman military that provided a foundation of identity for the soldier and structured his social life.

3.4: IDENTIFYING COMMUNITIES ARCHAEOLOGICALLY

In principle, each type of community noted above will have material correlates that make them archaeologically identifiable, and this aspect makes the community concept very useful for archaeologists. As the primary focus of this thesis are military communities, it is necessary to consider how the military is archaeologically distinguished.

Traditionally, Roman military installations are amongst the most easily recongnizable sites. A checklist can be created based on clearly definable attributes of military sites from excavations: a defensive circuit; planned internal arrangement of buildings; and construction of standardized buildings (preferably in stone, but also in timber). At any site that was occupied for any length of time, a second set of attributes can be added: construction in stone; good quality construction (often with architectural embellishments); inscriptions; and large artefactual assemblages that include imported and local ceramics and coins. These attributes make the Roman military a readily identifiable institution that is further enhanced by surviving textual sources like Vegetius' epitome of military practise.

However, the above attributes cannot be taken as a given. For example, marching and practise camps often have very little surviving or associated archaeological remains other than an earthen rampart, itself sometimes only visible through aerial photography (Welfare and Swan 1995). It cannot also be expected that there will be no changes to military installations over a long period of time. This is seen very clearly in the development of late Roman fort and fortlet plans (Johnson 1983b), in which upgrades are made to the defensive architecture of existing installations, and new installations make best use of the local topography. Internally, these forts can also be quite different. The examples of late Roman occupation cited in Chapter 2 demonstrate the variance from the established view of military archaeology, with the latest occupations of forts consisting of poorer quality buildings, replacement of official military structures like granaries, and a generally degraded military character.

This degraded military occupation raises the question of how we distinguish between an official state-supported military institution and a more local militia. The most obvious answer is that a state military will have at least a basic level of standardization that is seen across the state's territory. Further confirmation comes from inscriptions and other textual evidence. Lacking these, on what else can we rely upon? Artefactual evidence must come into play here. A state-level military would be expected to have a stable supply infrastructure, and it is consistency of supplies or a supply network that must also be looked for. In the case of the Roman military, tell-tale objects are coins and relatively uniform ceramic assemblages from installations in the same region. A local militia would not be expected to demonstrate the same consistency in supplies between settlements that a state-sponsored army would have.

It is these features noted above, artefactual assemblages and structural evidence that must be particularly noted at late Roman military sites. These features of the military community must be considered between sites for consistency and compared against sites associated with other types of communities.

3.5: CONCLUSION

The study of the late Roman frontiers is complex and requires a careful consideration of the situation of the later Empire. At the periphery of the Empire, the frontiers provided a transitional zone from the imperial provinces to the barbarian "kingdoms" and were home to numerous types of communities. The military garrisons of these frontiers were a significant component in the maintenance of the frontiers and propagation of the imperial system. As such, the frontier soldiers, the *limitanei*, are the vital link between the imperial state and local society. The late Roman military is relatively well understood, but given its importance in this study, an explicit discussion on how military communities will be identified was necessary. With this general framework put in place, we can now move on to a more specific examination of the military aspects of the frontier of north Britain in Chapter 4.

Chapter 4:
Hadrian's Wall:
Documentary and Archaeological Perspectives

By the start of the 4th century AD, northern England and lowland Scotland had been a frontier landscape for approximately two hundred years. Between the late pre-Roman Iron Age (LPRIA) and the sub-Roman/Early Medieval period, many changes occurred in north Britain. After decades of campaigning and martial dominance, the Roman Empire consolidated a frontier zone. Over the course of decades and centuries, the disposition of military garrisons and their posts changed to suit particular circumstances of the frontier and the needs of each emperor. By the early 5th century, the imperial frontier had collapsed, and the island of Britain was no longer included in the Roman Empire. By the 7th century, Anglian kings of Bernicia and Deira dominated the political scene across the region, until all of northern England and lowland Scotland were incorporated into the kingdom of Northumbria. This chapter reviews the traditional military history of the northern frontier through an overview of the history of the region in 4.1, the structural history and role of Hadrian's Wall in 4.2, the distribution and size of the military garrison in 4.3, relations with barbarian groups in 4.4, and the final section is dedicated to the end of Hadrian's Wall. This overview of the history of the frontier and Hadrian's Wall demonstrates the limitations of traditional military and historical perspectives in understanding transformation in the frontier as well as contributing to an understanding of how the role of Hadrian's Wall and its garrison changed over the course of three centuries.

4.1: THE MILITARY HISTORY OF NORTH BRITAIN

The following account draws on documentary sources from the Roman and post-Roman periods (cf. Salway 1997; Mattingly 2006; Frere 1987). The varying quality, agendas, and dates of these works necessitate that only a very loose narrative can be constructed without delving into the difficulties of each of the sources cited. Therefore, the dates and events discussed below are used to create a basic framework of the history of the frontier. However, it must be kept in mind that such a narrative is heavily influenced by the reliability of each account (e.g. Tacitus favoring Agricola), and political and military events historically attested may or may not agree with archaeological evidence. While this thesis seeks to transcend the constraints a historical agenda and framework places on archaeological evidence, it is necessary to present such

frameworks as they have formed the basis on which studies of the frontier of north Britain have proceeded thus far in most quarters.

The late pre-Roman Iron Age

Prior to the Roman invasion of Britain, the island was occupied by a number of competing tribal groups (see Fig. 4.1; Champion and Collis 1996; Cummins 1999; Cunliffe 2004; Harding 2004). The Parisi occupied the area that roughly corresponds with East Yorkshire today, with the Brigantes occupying the rest of northern England. It is believed that the Brigantes were a large tribal confederation composed of smaller tribal groups. For example, the Carvetii probably occupied northern Cumbria and the Textoverdi are believed to have occupied the area around Corbridge. This is an assumption, however, and it may be that these are sub-groupings of the Brigantes, rather than subjugated or federated small tribes following the leadership of the larger (or richer?) Brigantes. On the northern side of the Solway were the Novantae, and the Selgovae are thought to have occupied the Cheviots, with the Votadini occupying the eastern coastal lowlands between Edinburgh and the Tweed. The Dumnonii are believed to have occupied the area around modern Glasgow. The area north of the Forth-Clyde line and the Scottish highlands was occupied by numerous tribes called the Caledonii by Tacitus. Later, these tribes entered into large tribal confederations known as the Maeatae and Caledonians, and by the 4th century they were referred to collectively as the Picts.

These tribal groups seemed to have consisted of dispersed farming families that relied on arable agriculture and pastoral herds/flocks. Surplus was paid as tribute to warrior elites and tribal chieftains. Various sites throughout the north are known and associated with these Iron Age tribes (e.g. Traprain Law with the Votadini, Stanwick with the Brigantes), but there seems to be less archaeological evidence for power centres or concentrations of the northern tribal populations than observed with the southern British tribes. Few, if any, continental goods have been found at northern tribal sites, but this is not to say that the northern tribes were more primitive. In fact, northern resistance to Roman domination seems to have continued for many decades after the initial Roman invasion of the north.

Establishing the Tyne-Forth Frontier

The Roman conquest of northern England began to assist the client queen Cartimandua of the Brigantes defeat her former husband, Venutius, who led opposed tribal factions against Cartimandua and her Roman allies in the late AD 60s. This action

saw the establishment of legionary fortress at York, and a number of auxiliary forts in Yorkshire. Venutius was defeated in AD 71, but the conquest of north Britain and Wales continued under the leadership of Cerialis, Frontinus, and lastly, Agricola. Agricola's campaigns progressed into Scotland, where he established many forts. Tacitus (*Agricola* XX) claims that Agricola virtually conquered the northern half of Britain (Scotland) with victory at Mons Graupius, but Agricola was recalled in AD 83 or 84 and whatever gains he made were not consolidated. This has been attributed to the withdrawal of the 9th Legion, one of the four legions active in Britain, to deal with a crisis on the Danube. Furthermore, northern England had only been under direct Roman authority for 10–15 years, and this area may have required further consolidation. Campaigning after the loss of at least one legion would have weakened the military presence in northern England. By AD 88, the Roman troops were withdrawn from northern Scotland to the Forth-Clyde isthmus, and by the early 2nd century, troops had been withdrawn from lower Scotland to Tyne-Solway isthmus. The rebuilding of the legionary fortresses at Caerleon, Chester, and York at this time suggests that consolidation and increased stability were imperial goals for the foreseeable future (Breeze and Dobson 2000:14).

Upon withdrawing from Scotland, the northernmost concentration of garrisons was along the road connecting Corbridge to Carlisle, known as the Stanegate (Jones 1991). The Stanegate was a strategic road that connected the primary north-south roads on the east and west sides of the island (see Fig. 4.2). The development of the Stanegate garrison established a focused military presence on the Tyne-Solway isthmus, which suggests the need to defend Roman positions and roads from hostile native forces. When Hadrian came to power in AD 117, his apparent desire to stabilize imperial holdings led him to consolidate existing frontiers rather than initiate further conquest. The emperor visited Britain in AD 122, and recent hostilities underscored his policy of consolidation that led to the construction of Hadrian's Wall over the next 15 years (Bidwell 1999:17; Breeze 2003:15; see below for the structural history and development of the Wall).

The Construction of the Antonine Wall and the Return to Hadrian's Wall

Shortly after AD 138, Hadrian's Wall was largely, though not completely abandoned, and construction began on the Antonine Wall (see Fig. 4.3 for a detailed map; Fig. 4.4 locates the Antonine Wall in relation to the rest of Britain). It is not known why Hadrian's successor decided to advance into Scotland. Most likely, he needed a military victory to cement his claim to the purple, and it is possible that there was a short

war in north Britain that presented just such an opportunity to Antoninus Pius (Breeze and Dobson 2000:89–90).

The Antonine Wall ran approximately 60km across the Forth-Clyde isthmus. It was similar to Hadrian's Wall, though different in some aspects. Forts were spaced relatively evenly along its length with fortlets in between the forts. Unlike Hadrian's Wall, however, the Antonine Wall was of turf. To the north of the Wall was a ditch, but a new feature was added to the south. A road, called the Military Way, provided access to the forts and fortlets along the length of the Wall. It seems that the Antonine Wall was "designed, built and garrisoned in the light of experience gained on Hadrian's Wall..." (Breeze and Dobson 2000:94–115).

The specific reasons for the abandonment of the Antonine Wall are unknown, but Breeze and Dobson (2000:130–131) connect the withdrawal from Scotland to difficulties with other parts of the Empire. If Antoninus Pius' advance into Scotland was for military prestige, then there was no justification for holding on to Scotland longer than needed.

> The move forward to the Antonine Wall had perhaps never been more than a clumsy compromise, given total conquest was the optimum solution; it was abandoned as the two attempts at total conquest were because Britain was never an absolute priority for Rome [Breeze and Dobson 2000:131].

But this begs the question of why a wall was built with its high investment of labour if the Antonine occupation was only for the purpose of prestige? Perhaps the occupation was to accumulate military prestige, but there was an intention to integrate lowland Scotland into the empire, but its worth was lower than the necessary cost of investment and activities on the Continent forced Antonine to forget about conquering Britain. By withdrawing further south, soldiers could be freed up to deal with problems in other parts of the empire. Hadrian's Wall was then reoccupied in the AD 160s, with some forts in lowland Scotland retained.

The Late 2nd and 3rd Centuries

The late 2nd and early 3rd centuries seem to have been largely unsettled times (Breeze and Dobson 2000:133–142). Through the AD 170s north Britain seems to have been troublesome, but there was increased concern in the following decade when a Roman general was killed and his army massacred, reportedly when a wall was crossed by the barbarians (Dio Cassius LXXII.8). This may be either the Antonine or Hadrian's Wall, but victory was celebrated in AD 184 by Ulpius Marcellus. After this victory,

changes were made to military dispositions in the northern frontier. It seems that the forts at Birrens and Newstead were abandoned at this time. Furthermore, there were changes to regiments at the forts on Hadrian's Wall, clearly attested by inscriptions at Chesters and possibly at Birdoswald and Benwell. It was during this period, as well, that many turrets along the Wall were abandoned and milecastle gates were narrowed or blocked completely. This demolition and blocking activity, if it is associated with a crossing of Hadrian's Wall, may be an indication that regiments were spread out too thinly on the ground to counteract large-scale raiding

Despite the victory of Marcellus, the British army mutinied/rebelled the following year, twice (Dio Cassius LXXXII.9). This suggests unrest amongst the Roman soldiers, though whether or not this was related to warfare in the frontier is unknown. Commodus' assassination in AD 192 resulted in four years of civil war, during which time the governor of Britain, Clodius Albinus, rebelled against the succeeding emperor Septimius Severus. Albinus was defeated in AD 197, and it is possible that some of the units based in north Britain were sent to the continent to fight for Albinus, as there was trouble in the northern frontier (Dio Cassius LXXV.5.4). The new governor of Britain, Virius Lupus, purchased peace from the Maeatae. However, difficulties may have resumed in the following years. Victories are commemorated at forts in northern England in these years, for example at Benwell and Greetland (Yorkshire). Repairs were also made to forts in the Pennines and on the Wall. These repairs seem to have continued through the early 3rd century after Severus' visit to Britain. It was also at this time that Severus divided Britain into two provinces, *Britannia Superior* and *Britannia Inferior* (see Fig. 4.4).

Supposedly, barbarians overran Britain in AD 208 and more troops or the presence of the emperor was requested (Herodian III.14.1). This may have been an engineered excuse by Severus to remove his sons Caracalla and Geta from Rome and expose them to military life and discipline (Birley 1971). According to Dio Cassius (LXXVI.13), it was Severus' intent to conquer the rest of Britain, and preparations were made for the campaign. The fort at South Shields was converted to act as a supply base, and as the campaign advanced into Scotland, a number of forts were built, like the legionary base at Carpow. At the successful conclusion of the campaign, Severus returned to York, a legionary fortress and the capital of *Britannia Inferior*. A number of months later, the Maeatae and Caledonians in Scotland revolted, and preparations for another campaign were made. Severus remained in York due to illness while Caracalla led the campaign. Severus died in February, AD 211. Caracalla signed a treaty with the

barbarians and returned to Rome with his brother to consolidate his power. The withdrawal of Caracalla from Scotland was followed by the abandonment of the Scottish forts.

After Caracalla's succession, there may have been initial unrest in Britain, but generally speaking, the 3rd century is thought to have been the most peaceful century in the northern frontier (Breeze 1982:144–148). There was a general improvement of frontier conditions during this century. Aqueducts were built at Chesters, Chester-le-Street, and South Shields while bathhouses were repaired, extended, or added at other forts. Additionally, it was during the 3rd century that many of the *vici* outside of forts were founded and expanded. New forts were built at Piercebridge and Newton Kyme in the AD 270s. However, archaeological excavations have also demonstrated that many forts were in a state of disrepair, possibly due to reduced garrison strength (Breeze and Dobson 2000:222). While the northern frontier seems to have been quiet, Britain rebelled from the Roman Empire in AD 286 or 287 under the leadership of Carausius and Allectus. In AD 296, Constantius Chlorus, Caesar of the Western Empire, defeated Allectus and regained Britain for Rome.

The 4th Century

The 4th century saw regular conflict in the frontier (Breeze and Dobson 2000:234–244). In AD 297, Constantius Chlorus campaigned against the Picts, though whether this was in the frontier zone or in northern Scotland is unstated. There may have been further attacks by the Picts after AD 297, as Constantius Chlorus continued to direct campaigns in north Britain. In AD 306, he died in York, and his son Constantine was proclaimed emperor by his soldiers, at which point Constantine left for the Continent to consolidate his power and legitimize his claim. A coin issue of AD 312 and the assumption of the title *Britannicus Maximus* in AD 314 suggest further campaigning on the part of Constantine in north Britain. It was also during these early decades of the 4th century that the outpost forts north of Hadrian's Wall were abandoned, perhaps to provide soldiers for Constantine's field army. Following this, there was about 30 years of quiet in the frontier.

It should be noted that it was Constantine that finalized the separation of military and civilian offices in the Empire. In Britain, this established the office of the *dux Britanniarum* (the Duke of the Britains), who oversaw the northern frontier command, and possibly the office of *comes litoris Saxonici* (the Count of the Saxon Shore) who was in charge of the coastal forces of southern and eastern Britain (though it should be noted

that the Saxon Shore command or its precursor may have been established before the Carusian rebellion; see Johnson 1979). Constantine further sub-divided Britain into four provinces: *Maxima Caesariensis* and *Britannia Prima*, formerly *Britannia Superior*; and *Flavia Caesariensis* and *Britannia Secunda*, formerly *Britannia Inferior*.

A serious problem seems to have erupted in AD 342, as the emperor Constans travelled to Britain in the middle of the winter to deal with the diocese (Libanius *Oration* 59.139). The problem may have been in the frontier or it may have been related to the civil war between the sons of Constantine. However, the problem seems to have been dealt with, and later in the decade, Count Gratian was sent to Britain to command the army (Ammianus 30.7.3). At the rank of count, he presumably took command of the Saxon Shore or led a field army on campaign. There is no clear evidence that there was any trouble in the frontier after Constantine's campaigns until the reign of Julian as Caesar (but note Amm. 14.5.6–8 in reference to the notary Paul's inquisition following the death of the usurper Magnentius which may or may not have impacted on the military officers of the frontier).

In AD 360, the Scots and Picts were claimed to have laid waste to the territory near the frontier. Julian, busy campaigning in Gaul, sent a general, Lupicinus, and four regiments of the Western field army were sent to deal with the situation. Presumably they succeeded, as no further details are provided. The "peace" was broken again in AD 364, though no more is recorded. At this point, Julian had recently died on the Persian campaign and Valentinian was only recently enthroned. It is unlikely that there would have been any assistance from the imperial court, but it is feasible that assistance could have come from Gaul, if the *limitanei* were unable to contain the threat.

In AD 367 a number of barbarian tribes from Ireland, north Britain, and Germany attacked Britain in the so-called "barbarian conspiracy". Nectaridus, the *comes litoris Saxonici*, was killed while Fullofaudes, the *dux Britanniarum*, was ambushed and surrounded. The *arcani* or *areani*, or frontier scouts who were supposed to provide advance warning of enemy movements, were accused of betraying military dispositions of the Romans. Reportedly, military discipline collapsed and soldiers deserted their units and posts. The emperor Valentinian, busy campaigning against the Alamanni in Germany, finally settled on sending Count Theodosius with four regiments of the field army to Britain. Over the course of two years, Theodosius put down a rebellion lead by a certain Valentinus, restored order to the diocese and renamed or created a 5th province, *Valentia*, the location of which is disputed (Amm. 20.1; 26.4.5; 27.8; 28.3; note Bartholomew 1984 for a revisionist reading of the barbarian conspiracy).

There is little evidence that Hadrian's Wall suffered much damage or any destruction, though the frontier south of the Wall may have been attacked. The establishment of the Yorkshire coastal fortlets suggests the attacks may have come by sea, circumventing the Wall. This may explain how the *dux Britanniarum* was trapped. Barbarian seafaring on the Continent is known to have increased during the 3rd century (thus the establishment of the Saxon Shore forts along the coasts of Britain and Gaul), and references to barbarian sea-raiding increase in frequency from *c.* AD 350 (Haywood 1991:41). To this must also be added Irish piracy, and perhaps Pictish as well. It has also been claimed that the Wall may have been the safest place in all of Britain on the assumption that all attacks may have come from the sea rather than land (Breeze and Dobson 2000:236).

It must be remembered that the "barbarian conspiracy" may be an exaggerated account of warfare in the frontier meant to curry favour with the Emperor Theodosius by celebrating an important victory of his father, Count Theodosius. The fact that Count Theodosius only had four regiments to support his restoaration of the province can be taken to indicate that the disruption was minimal. On the other hand, Valentinian was campaigning against the Alamanni at the time and perhaps could only afford to send four regiments, and it took Theodosius two years to complete his military and administrative recovery of Britain. Whatever the scale of the barbarian conspiracy, Count Theodosius was credited with success and promoted to *magister equitum* (Jones 1964:140).

At some point following the "barbarian conspiracy", a third military office was appointed to the diocese, the *comes Britanniarum* (the Count of the Britains). This count was the commander of a mobile field army based in Britain. The date at which this office was created cannot be established with certainty. It was definitely established after AD 367, as Count Theodosius needed to be sent to Britain from the continent with an expeditionary force. However, the command was in place by the late 4th/early 5th century, when the *Notitia Dignitatum* (7; 29) records the office and nine units under his command. Generally, the establishment of the *comes Britanniarum* and the British field army is credited to Stilicho in the AD 390s.

Further campaigning in the north was led by Magnus Maximus in AD 382, whose official position is unknown. The following year he left for the continent to claim the imperial throne (Orosius 7.22.10). He may have taken soldiers from the frontier with him, though this cannot be proven. The panegyrics of Claudian also provide some basic information from the turn of the century. *Circa* AD 400, Stilicho is credited with directing a campaign against the Picts and Scots, though it is unknown whether or not he

was in Britain or on the continent. In AD 401, Stilicho withdrew troops from Britain for the defence of Italy, but the forts that the soldiers were drawn from are unspecified.

After Gaul was invaded in AD 406, a succession of usurpers was raised in Britain out of fear that Britain would be the next target of the barbarians in Gaul (Zosimus VI.3.1). This "fear" may have been a convenient excuse for ambitious magnates to seize power, however. The first two usurpers were killed before much, if anything, was accomplished. The final usurper, Constantine III, led a British army to the continent to claim the imperial throne. In AD 409, the Britons rebelled (presumably against Constantine III's regime) and overthrew the government (Zosimus VI.2–5; VI.5.2–3; and VI.10.2). It is possible that barbarian incursions into Britain had revealed the weakness or corruption of the government Constantine III had left in place, and the Britons saw to their own defence by taking up arms and repelling the barbarians, while at the same time eliminating a non-functional government. An appeal *may* have been made to the emperor Honorius for aid after the expulsion of Constantine III appointees, suggested by the Honorian Rescript of AD 410, which if addressed to the cities of Britain (rather than Bruttium, modern Calabria) instructed them to look after their own defence (see Bartholemew 1982 and Thompson 1983 regarding the controversy regarding the Honorian rescript). Whatever the case, after AD 410, Britain was never again incorporated into the Roman Empire, and whatever cultural similarities remained, the political and fiscal integration/domination of the island with the Roman Empire had permanently fractured.

North Britain in the 5th–8th Centuries

Our historical knowledge of the frontier zone after the early 5th century is based on a number of sources of varying quality. Interestingly, there is no explicit statement in any source concerning the collapse of the frontier. Is this because there was no complete withdrawal of soldiers from northern England, or is this because the region did not fall to raiders and invaders until later centuries? While the Early Medieval period falls outside of the main aims of this thesis, a brief review of textual sources with information about the former frontier zone in from the 5th–8th centuries is useful for the context it can provide in reference to the end of the Roman period. The closest textual source, chronologically and geographically, comes from St. Patrick, while Gildas, *Y Gododdin*, Bede, Brythonic vernacular poetry, genealogies, and saints' lives also contain details that have been used to construct historical narratives (Alcock 1971; Morris 1973; Snyder 2003; Woolf 2003; York 1990).

Following the usurpation of Constantine III and the Honourian Rescript, there is little information of detail, significance, or validity for north Britain. The writings of St. Patrick may be of some relevance, as Patrick may have been from northwest Britain, and his background was that of a Christian decurion-class family (Thomas 1997:123–128). Unfortunately, Patrick's writings do not provide testament to historical events. What can be gleaned, however, is that many concepts typical of late Roman authors, such as *patria* and *cives* and terms such as *decuriones* still had relevance in the mid–late 5th century (Snyder 1998:76–78).

Gildas' text is similarly unhelpful in regard to north Britain, for a number of reasons. He does write a "history" of Britain, noting the usurpation of Magnus Maximus, who took the whole of Britain's army to the continent, according to Gildas (13.1–14). Subsequently, Britain was subject to Scottish and Pictish raiding, and the Romans helped to build two walls in north Britain and defensive installations along the south coast (Gildas 15.1–18.3). Read literally, these passages demonstrate how removed (geographically and chronologically) Gildas was from the history of the frontier, but Woolf (2003) relates these actions to late Roman defensive refurbishments in the last years of the 4th century and the early years of the 5th. Appeals may have been made later in the 5th century to Roman authorities on the continent, like Aëtius (Gildas 20.1), requesting assistance against barbarian attacks, but the relevance of such requests to the frontier is unknown. Following this, British authorities settled Saxon federates to protect the island against the northern barbarians and these Saxons were settled on the east side of Britain. After initial success against the Picts (and the Scots?), the Saxons began plundering British towns. Warfare continued between Britons and Saxons until the British achieved a major victory at Badon Hill (22.3–26.1).

As a work of literature, Gildas' text is informative and interesting, but as a source for narrative history it is problematic. The only securely dated events are the usurpation of Maximus and the probable appeal to Aëtius, while all the other events can only be put into a sequential order. Relating these events to real dates is a matter of informed guesswork at best. It is believed that Gildas wrote in the mid 6th century, 44 years after the battle of Badon Hill he claims (26.1). This would place the battle of Badon Hill in the decades around AD 500. The reference to Badon Hill is important for a number of reasons. Folk tradition and the *Historia Brittonum* (Morris 1980) attribute this victory to the figure now known as King Arthur.

The figure of Arthur is problematic, but it is worth noting that some of the battles attributed to Arthur in the *Historia Brittonum* have been placed in northern England and

lowland Scotland from placename evidence (Morris 1980:5). Setting aside the difficulties and lack of evidence for a historical Arthur, the tradition of an Arthur-figure in the late 5th century, perhaps based in the North, supports a continued martial tradition in the frontier zone. This martial tradition is further reinforced by vernacular poetry, such as *Y Gododdin* and *Canu Taliesin*. In this poetry, warrior kings like Urien of Rheged are celebrated for their military accomplishments in the former frontier zone of Rome (Evans 1998).

Anglo-Saxon immigration is attested in the literary sources of the period, as well as archaeologically. The scale and date of this immigration is debated, and varies depending on which part of Britain is under consideration (see Jones 1996a for a discussion of the scale and extent of Anglo-Saxon immigration). The earliest Anglian settlement in the frontier is found in East Yorkshire in the later half of the 5th century, where the kingdom of Deira was established (Loveluck 2002). From this area Anglian material culture, and presumably society, spread west and north. Another Anglian kingdom, Bernicia, was established by Ida in the mid 6th century, with a focus on the Tweed (Yorke 1990:74–78). As the political power of Bernicia and Deira increased, as described by Bede and the *Historia Brittonum*, these Anglian kingdoms came into conflict with neighboring British kingdoms, the Picts, and other Anglo-Saxon kingdoms. By AD 600, both Anglian kingdoms were well established, and the 7th century saw the expansion of both at the expense of British kingdoms. From the reign of Æthelfrith in AD 604, both kingdoms were loosely united to form the kingdom of Northumbria, which was the political "super-power" in the region until the 9th century.

Ultimately, the Anglian kingdoms emerged as the dominant polities of the former Roman frontier, but this did not occur until the 7th century. Between the early 5th century and through the 6th century, the British polities remained politically and militarily important in the region, or so we assume. It is interesting, and perhaps significant, that the earliest Anglian settlement in the region occurred initially in East Yorkshire in the mid to late 5th century and in Tweed valley in the mid 6th century. These can be considered the southeastern and northeastern extremities of the frontier, and it may have been that a strong martial tradition remained in the frontier to resist invasive settlers. There have also been claims that Bernicia and Deira (and subsequently Northumbria) were not altogether hostile toward native British culture and adopted some aspects of British culture (Loveluck 1996; Woolf 2003:361)

This historical overview of the frontier provides an essential backdrop for further consideration of the structural history and purpose of Hadrian's Wall as well as subsequent changes in the size and distribution of frontier garrisons.

4.2: HADRIAN'S WALL: ITS STRUCTURE AND PURPOSE

The Structural History of Hadrian's Wall

Hadrian's Wall was a monumental testament to the strength of the Roman Empire. Conceived of and implemented by the emperor Hadrian, the Wall has a complex structural history from its initial design to its final form, achieved by the end of the 2nd century (see Fig. 4.5; for a detailed discussion of the structural history see Breeze and Dobson 2000; Bidwell 1999; Bennett 2002; and Hill 2004). As initially planned, the Wall was to stretch between Newcastle and Bowness-on-Solway, and it incorporated a system of coastal defences around Cumbria. Along the length of the Wall, milecastles were to be built to provide access through the curtain. Between each milecastle, two turrets were to be built every $^1/_3$ of a Roman mile. The curtain itself was to be ten Roman feet in thickness and probably between 15 and 20 Roman feet in height and built in stone. In front of the Wall was to be a ditch. This plan was implemented and begun in AD 122, though alterations were made subsequently (described below).

The Tyne-Solway isthmus was a good choice of placement for the Wall. This siting suggests that the Wall was planned with communication and supply mechanisms in mind, as it was built north of the Tyne, Irthing, and Eden rivers as well as the Stanegate. The Stanegate road and the forts along it ran through the Tyne-Solway gap, connecting Corbridge to Carlisle and providing a link to the major north-south roads that ran the length of eastern and western England. Following the Tyne-Solway gap, the Wall made use of the Whin Sill, north-facing, vertical crags formed by a volcanic outcrop up to 30m (100 feet) in height. It is also important to note that Hadrian's Wall was built through a relatively open, agricultural landscape, as evidence for agriculture has been found directly beneath the earliest Roman levels (Breeze and Dobson 2000:26–28; Bidwell 1999:10). The open, agrarian landscape may have impacted on the amount of timber available locally and affected the construction work.

Initially, the Wall was built in stone between Newcastle and Willowford, and in turf from Willowford to Bowness-on-Solway. In front of the Wall the ditch was dug to varying depths and widths depending on the local topography. After construction had begun, it was decided that forts should be attached to the Wall rather than left detached

to the south along the Stanegate. The Vallum was dug south of the Wall after the forts were added. The Vallum consisted of a broad ditch with a mound parallel to it on either side that had crossing points only at forts. After forts were added to the Wall and construction on the Vallum began, it was decided that the curtain did not need to be 10 Roman feet wide, and it was built six to eight Roman feet wide. Furthermore, the Wall was extended east from Newcastle to Wallsend. Forts were then built at Carrawburgh and Great Chesters, breaking up some of the longer distances between Chesters and Housesteads and Housesteads and Birdoswald, respectively. Following this, the Wall was rebuilt on a slightly different course and in stone in the Birdoswald sector.

All these changes were made between AD 122 and 138, when construction seems to have been completed (Bennett 2002; Bidwell 1999:17–23; Breeze and Dobson 2000:29–87). The number of changes made to the Wall suggests that the initial design was perhaps too idealized and not effective in real terms on the ground. These real terms may relate to the time available for construction, the availability of materials and/or labour, or the needs of the military in operating in a frontier region (Hill 2004:153–155). Particularly noteworthy is the addition of forts on the line of the Wall and the construction of the Vallum, reducing the number of crossing points from the original 72 to only 14.

After a brief period of general, though not total abandonment (while lowland Scotland was occupied and the Antonine Wall constructed; see above), Hadrian's Wall was reoccupied in AD 158. Subsequent changes to the Wall are well understood, and probably relate to lessons learned in the construction and occupation of the Antonine Wall (Bidwell 1999:23–24; Breeze and Dobson 2000:131–132). The curtain and forts were repaired and reoccupied. Where necessary, gates were replaced, and the remaining turf length of the Wall was rebuilt in stone. The Vallum was cleaned and the silt dumped on the south berm, forming the "marginal mound". The Military Way was constructed on the south side of the Wall, providing better lateral access and communications between the forts, milecastles, and turrets. However, it should be noted that in some stretches, the steepness and narrowness of the Military Way would have prevented its use by wheeled traffic. Thus, the Stanegate was still an important east-west route (Bidwell 1999:24).

From the AD 160s on, many turrets were not in use, as the doors were blocked with stone, and later in the 2nd century, many of these turrets were demolished. During this period, gates at many milecastles were narrowed to allow only pedestrian traffic. The demolition of turrets and narrowing or blocking of gates is typically dated to the

Severan period (AD 193–211), and extensive repairs were made to the Wall curtain. This was the last known period of extensive repairs to the whole of Hadrian's Wall. The "Theodosian restoration" is an assumption based on documentary sources and is archaeologically unproven, in terms of systematic, extensive repairs along the Wall. Where later repairs/refurbishments were completed, these tended to be localized to a damaged section rather than a comprehensive curtain refurbishment (Bidwell 1999:26). Generally, these late repairs were completed by adding another layer of facing stones that projected beyond the original line of the curtain face (e.g. at Wallsend and Denton).

It is unknown when the Wall curtain collapsed, and when collapse occurred it was probably a localized phenomenon related to topographical and environmental conditions as well as its state of repair. However, a TPQ has been provided at Sycamore Gap, where a coin hoard of 26 coins with the latest coin dated to AD 354–356 was found buried in the ground at the base of the Wall and was covered by the collapse of the curtain (Crow 1989:51; Frere 1984:280). So the possibility must be considered that the curtain was not continuous across the Tyne-Solway gap from the late 4th century on. This has important implications on the function of the Wall and will be considered further below.

It should also be noted that throughout the occupation and use of Hadrian's Wall, the general form and shape of the forts and milecastles never changed. While the internal plan of the forts and milecastles may have been significantly altered, they retained their original shape. The Wall never underwent any modifications to its defences in the late Roman period that were seen in other parts of Britain and the Empire (Johnson 1983b). Thus, there is no evidence for the reconstruction of D-shaped, projecting towers at forts or to replace turrets. Nor are there recessed gateways. Forts along the Wall also seem to have retained buildings in their central space rather than relocating buildings to the internal perimeter.

The Purpose and Role of Hadrian's Wall

Two crystallized, opposing viewpoints emerged in the 1970s regarding the purpose of Hadrian's Wall. Daniels (1979:360) argued that the Wall was undoubtedly defensive in its purpose. Donaldson (1988) further supported a defensive barrier interpretation, noting that the turrets served as excellent artillery positions. Breeze and Dobson (1976:143), on the other hand, argued that the Wall was a non-defensive barrier for controlling the movement of people and goods and for furthering peaceful economic exploitation. These opposing viewpoints are still present in the literature, with Breeze

(2006) maintaining the "control" interpretation and Bidwell (2005) supporting the "defensive" argument, emphasising the recent discoveries and interpretation of systematic obstacles set in the berm between the Wall and the ditch. Rather than set in opposition, it should be stressed that both perspectives, the defensive barrier and the monumental toll-booth, fulfill a military purpose. The opposition between these arguments is one of perspective. Contrary to this, Mann (1990) saw the Wall as a monumental piece of rhetoric in which the parts that were (militarily) useful, the forts and milecastles, remained in use while the Vallum, turrets, and curtain were eventually abandoned. Clearly, the Wall (and its garrison) had a military purpose, and there is ample support for each of the above interpretations.

According to the *SHA Hadrian* (5.1–2), when Hadrian came to power in AD 117, "the Britons could not be kept under Roman control." However, this oft-quoted fragment comes from a 4th century source at least two centuries removed from Hadrian and his intentions. Still, Hadrian's apparent desire to stabilize imperial holdings led him to consolidate existing frontiers rather than initiate further conquest.

The initial design of the Wall, with evenly spaced milecastles and turrets suggests that the Wall was ***not*** meant to be an impermeable barrier. A crossing every mile suggests an anticipation of regular movement north and south through the Wall along its full length. The regular spacing also lends support to the idea that the structure was to demonstrate Rome's might and sophistication. However, the addition of forts to the Wall, obstacles north of the curtain, and the digging of the Vallum south of it indicates a failure on the part of the original scheme. Perhaps warfare in the Wall area during construction demonstrated the need to move soldiers right up to the curtain for faster deployment and to restrict traffic and transhumance through the Wall to certain points (as Casey 1987 has argued). In effect, the addition of the forts and Vallum to the Wall transformed the monument from monumental Roman rhetoric to a defensive line. This is not to claim, however, that the Romans would have remained along the Wall, waiting for barbarians to attack. Typical early Roman military ideology prefered attack at the earliest convenience rather than waiting behind fortifications (Goldsworthy 1998:76–115).

Movement – in the form of people and/or goods for trade/sale and the practise of transhumance – was not stopped completely, as this was not the intention, but movement was considerably more controlled than before. The addition of forts at Great Chesters and Carrawburgh may also have been for logistical purposes, such as supply transport and provision of accommodation as well as increased coverage of the countryside by a

military unit. The extension east from Newcastle to Wallsend, however, suggests a need to protect circumvention of the eastern flank of the Wall, whether by smugglers or enemy raiders. Thus, in its early days, the Wall seems to have been altered with defensive benefits in mind, though such alterations also enhanced the control of movement through the Wall.

Donaldson (1988:126) has enumerated the "military" advantages that can be associated with Hadrian's Wall:

> First, it covered all possible axes of advance into the province; second, it minimized the likelihood of surprise incursions; third, it would slow down an attacker's rate of advance and withdrawal; fourth, it could provide cover for defending forces; fifth, it restricted the enemy's opportunities for intelligence gathering; and finally, it could only be outflanked from the sea.

The defensive importance of Hadrian's Wall must be related to the perceived threat from hostile forces (Donaldson 1988:126; Bidwell 1999:31).

The primary form of warfare of the native Britons was raiding in parties of various sizes. The degree to which hostile British forces could threaten the garrison on the Wall, or even damage/destroy the Wall itself is debatable. The traditional view that Hadrian's Wall suffered three major periods of destruction (in the late 2nd century, in AD 296, and AD 367) has largely been rejected, but evidence for destruction levels dated to the AD 180s at Corbridge, Halton Chesters, and Rudchester and at South Shields in the late 3rd/early 4th century demonstrate the plausibility of conflict along the Wall (Breeze and Dobson 2000:134; Hodgson 2005). Furthermore, in the late Roman period, barbarian groups were known to have been capable of fielding armies that numbered in the tens of thousands when they wanted to (Elton 1997). So barbarian raiding and warfare cannot be dismissed entirely and must be taken into consideration (see below in 4.4).

Nonetheless, assuming small-scale raiding was the primary form of physical native opposition (as opposed to cultural and psychological resistance; see Kurchin 1995), the Wall was an adequate response, as it served as "a positive obstacle to movement across the frontier line" (Dobson 1986:5).

> ... [T]he Wall is admirable for the halting of unauthorized movement on hoof or wheel, presents considerable difficulties to unauthorized movement on foot, and offers therefore much greater security for the frontier . . . [ibid, 22]

This notion not only reinforces the defensive nature of the Wall, it also underscores the control aspects of the monument. The Wall curtain presents an obstacle to raiding men, animals and vehicles, but it also interferes with local practises of transhumance (Johnson

1989:59). The forts and defended gateways were loci for channeling the movement of people and providing control on the movement of goods and regulating/monitoring transhumance into and out of the province (Breeze and Dobson 2000:40; de la Bédoyère 1998:25; Johnson 1989:60; Jones 1996:45). Thus, the collection and enforcement of taxation and tribute was facilitated along with the ideological reinforcement of Rome's domination.

The opposition between defensive and control roles is an unnecessary academic imposition relevant only to the early years of the Wall's function. Hadrian's Wall was a dual-purpose military monument. The regular spacing of milecastles and forts provided nodes of control for the movement of people, livestock, and goods under typical operational circumstances. Concurrently, the curtain and its forts could function as a defensive barrier for low intensity warfare until soldiers could arrive to counter attack, and it could serve as an operational platform for campaigning. Repairs to the curtain and continuing occupation of forts and milecastles indicate that Hadrian's Wall still served a purpose in the 4th century.

Continued maintenance of the curtain would be necessary to effectively control the flow of people and goods into and out of northern England, but it is difficult to confirm this. The TPQ of AD 356 for local curtain collapse at Sycamore Gap is the latest available date for a standing curtain (Crow 1989:51). This date for a standing curtain could be extended to the AD 370s–380s on the basis of Robertson's (1978:189–190) argument that coins of the reigning emperor often achieve their peak circulation 20–30 years after his death. If collapsed sections of the curtain remained unrepaired in the later 4th century, the ability to control overland movement would have been undermined. Thus, the possibility must be born in mind that the curtain of Hadrian's Wall no longer offered a completely effective barrier for land movment. However, this does not negate the necessity of a military presence, still based in forts.

The frontier was occupied throughout by dozens of garrisons (see Mann 1979 for a consideration of this system as defensive layers). North of Hadrian's Wall, High Rochester and Risingham were situated on the road that led south to Corbridge, while Bewcastle was situated on the Maiden Way, which led southeast to Birdoswald, and Birrens and Netherby sat on roads that led to Carlisle. In addition to the forts along the length of the Wall, a number of additional forts could be found immediately south of the Wall on the Stanegate. These include Corbridge, Vindolanda, Carvoran, and Carlisle (which are often included as Wall forts due to their proximity). South of the Stanegate, a number of other forts were positioned on roads leading north from the legionary

fortresses of York on the east side of Britain and Chester on the west. Additionally, forts were occupied in the Pennines and along the Cumbrian coast. Not all of these forts were occupied contemporaneously, but generally speaking there was a regiment stationed in most areas in northern England. The broad distribution of these forts demonstrates that the Roman state was committed to defending the British frontier and diocese. The distribution also attests to a perceived threat to imperial interests in north Britain. Thus, it is beneficial to consider the distribution and size of garrisons in northern England in the 4th century.

4.3: THE GARRISON OF NORTH ENGLAND IN THE 4TH CENTURY

Traditional enquiry into the Roman military across the Empire has been directed toward understanding two factors: the distribution of provincial garrisons, and the size of each garrison. Understanding the distribution and size of military units in northern England in the 4th century can be difficult. Yet, this could have had an appreciable impact on the scale and geographical significance of military communities in the frontier. Therefore, it is necessary to deal with these traditional aspects of Roman military studies, particularly given the perception amongst some scholars that there was a minimal military presence in northern England by the end of the 4th century.

The Disposition of Military Forces

As noted above, the various conflicts in the frontier and throughout the Empire impacted on the available military resources. Between *c.* AD 280 and *c.* AD 370, the number of forts occupied in northern England changed considerably (compare Fig. 4.6 with Fig. 4.7). While archaeological evidence provides confirmation of occupation at military installations, the *Notitia Dignitatum* is an invaluable asset for the distribution of military garrisons through the frontier at the end of the 4th century and provides an essential starting point. By the 4th century, it was rare to commission stone inscriptions (official or personal) in Britain, though this does not preclude the possibility that painted signs replaced stone inscriptions. Unfortunately, there is no evidence for this. Thus, the importance of the *Notitia* for identifying units in residence at forts is increased.

The function of the *Notitia Dignitatum* is disputed by modern scholars, but the document has three primary features (Hassall 1976:104). First, it presents the codicils of each office (though see Grigg 1979 and 1983 regarding the problems with this). Second, it accounts for the immediate staff of each office. Third, it indicates the sphere of influence of the office by noting the individuals under its direct command. At the very

least, the *Notitia Dignitatum* provides a list of the military and civil offices through the Eastern and Western Empires, and a hierarchy of these offices. Through the listing of offices and their subordinates, the distribution of military units through the Empire is also established.

In the past, the sections of the *Notitia Dignitatum* pertaining to Britain have been dismissed as relicts that bore no comparison to the reality of the situation, due to the dating of the document. From internal evidence, such as unit names, it seems the document was composed post- AD 395 with corrections and revisions made down to AD 425 (Bury 1920:137; Jones 1964:1417, 1423; Hodgson 1991:84). The primary problem was that if the *Notitia Dignitatum* was used until AD 425, then the British sections were 10–15 years out of date. If these sections were at least a decade removed from the reality of the situation in Britain, then why not 20, 50, or even 100 years out of date? This question in particular was aimed at the *per lineam valli* fragment of Chapter 40, the *dux Britanniarum* (Table 4.1 reproduces Chapter 40 of the *Notitia Dignitatum*). Many of the units noted on the Wall were the same units epigraphically attested at the same sites in the 3rd century, underscoring the belief that the section referring to the Wall was considerably out of date.

If the British sections are considered in the context of the entire document, rather than in isolation, then the longevity of the units is no longer a problem. Similar types of units from the 2nd century are reported in the sections from Egypt and Armenia along with newer 4th century units (Hodgson 1991:85). Further concerns regarding Chapter 40 have been demonstrated to have been general assumptions based on specific archaeological evidence (e.g. the total abandonment of Halton Chesters despite that evidence only pertains to a certain area of the fort) or historical events inappropriately applied to archaeological evidence (e.g. assumed destruction or abandonment following the usurpation of Allectus or the "barbarian conspiracy"; Hodgson 1991:85–86). Therefore, the British sections can be examined with some confidence that they reflected the reality of Britain in the late 4th/early 5th century.

A number of chapters of the *Notitia Dignitatum* pertain to Britain, but the most relevant for this dissertation is Chapter 40, the command of the *dux Britanniarum*. Several conclusions can be reached upon its careful consideration. Different elements of Chapter 40 are summarized in Tables 4.2 and 4.3, the former providing global totals of unit types while the latter considers disputed identifications. Traditional units of the 2nd century survive primarily along the Wall, with newer types of units found almost entirely south of the Wall (Hodgson 1991:84; see Fig. 4.8). There is no single explanation for

the replacement of "old" style units, as these units were replaced (or perhaps reformed) for different reasons at different times (Hodgson 1991:87). However, the units in the first part of the *dux*'s list consists partly of drafts from the continental field army, dated to between AD 367 and AD 373 from known unit movements through the Empire (Hoffman 1969:339; van Bercham 1955). This suggests a reorganization of frontier defences after the "barbarian conspiracy" of AD 367 that saw the provision of garrisons to the frontier south of the Wall as important.

Considered in greater detail, the first part of Chapter 40 consists of two groups: first, continental field army drafts from the AD 360s/370s (catafractarii, Nervii, defensores, Solenses, Pacenses); and second, the rest that were probably posted to their garrisons between the AD 270s and AD 360s (Hodgson 1991:89). The exception to this is the 6th Legion, which had been stationed in York since the early 2nd century. There is no detectable geographic order to this part of the list. Rather, the units are ranked hierarchically by status: legion → cavalry → infantry.

The next section of the chapter, *per lineam valli*, does follow a geographical order, with some probable *lacunae* included (Hassall 1976:112; Hodgson 1991:90). The list starts at Wallsend and continues to Vindolanda without a problem. However, the unit at Great Chesters, the 1st cohort of Asturians, should probably be the 2nd cohort, epigraphically attested at the fort in the 3rd century. The next difficulty is found after Carvoran. The 1st cohort of Dacians is placed in the list at Castlesteads, but this is probably due to an omission on the part of a copying scribe. The 1st Dacians have been epigraphically attested at Birdoswald, while the 2nd cohort of Tungrians is known to have been at Castlesteads. The error is explained in the similarity between the Roman names for Birdoswald (BANNA) and Castlesteads (CAMBOGLANNA), in which the scribe wrote down the unit from Birdoswald and made an error in skipping over the BANNA placename and following unit and recording CAMBOGLANNA. These *lacunae* have been corrected in Table 4.1. After Castlesteads, the list continues to Drumburgh. Interestingly, there is no unit recorded at Bowness-on-Solway. Following the *per lineam valli* section are eight units that are survivals of the 3rd century.

Chapter 40 of the *Notitia Dignitatum* can be mapped using identifiable locations. Figure 4.8 has been constructed through a consideration of the agreed upon placenames found in Chapter 40, incorporating the suggested corrections along the Wall (Breeze and Dobson 2000:291–299; Hodgson 1991). Unlocated or contested placenames have not been mapped, with the exception of DERVENTIO. It has been argued that DERVENTIO could be either Malton, Stamford Bridge, or Papcastle, but Malton has

been accepted as the more probable site, given that the unit located at DERVENTIO was the Supervenientes of PETVARIA (Brough-on-Humber). It seems more likely the unit was moved north from Brough-on-Humber to Malton than across the country to Papcastle. Furthermore, the placement of the unit at Malton provides for the possibility that vexillations were sent from Malton to garrison the Yorkshire coastal fortlets.

As noted above, the "old" style units are primarily seen along Hadrian's Wall, though cohorts are also seen at Ravenglass and Bainbridge. The 6th Legion also seems to have remained based at York, though this is unspecified in the *Notitia* and detachments could have been posted throughout the frontier. "New" style units are found almost exclusively south of Hadrian's Wall, with the exception of *numeri* at Burgh-by-Sands and South Shields.

The distribution of infantry units compared to cavalry units is also notable. Cavalry units on the Wall are found at Benwell, Halton Chesters, Chesters, and Stanwix. With the exception of Benwell, these forts are situated on or near roads that would further enhance deployment capabilities of cavalry units. While Benwell does not appear to be situated on a road, it may be placed to provide access to the lowlands north of the mouth of the Tyne. South of the Wall, the only known location of a cavalry garrison is at Ribchester, where a *cuneus* of Sarmatians was garrisoned. Ribchester was an important nexus of roads that would have allowed the cavalry to move in any cardinal direction with ease. Infantry units are concentrated along the length of the Wall and along the road through the Stainmore Pass in the Pennines. There is another concentration of infantry just south of the east end of Hadrian's Wall.

The overall distribution of garrisons sees the emphasis of military occupation in the north of the region. Seventeen garrisons noted in the *Notitia* are found along the line of the Wall or immediately south of it between South Shields and Drumburgh. That is just under half of the units listed under the command of the *dux*. Six more garrisons, at the very least, are within 50km of the Wall to the south. Of the clearly identifiable locations remaining, there are only five units more than 50km away from the Wall. Despite the number of unidentified locations, it seems clear that the distribution of known garrisons was for the purpose of dealing with a northern threat, the Picts (Breeze 1988:15–16; Breeze 1993:32).

However, the threat of seaborn raiding/invasion must also be kept in mind. The Yorkshire signal stations were built in the late 4th century (Esmonde Cleary 1995b:345; Haverfield 1912a; cf. Johnson 1979 on the Saxon Shore, though note Pearson 2005), and it is also likely that western coastal defences were garrisoned. This would suggest that

the Picts were not the only possible enemy. Documentary sources also mention the Attacotti and Scotti, raiders from Ireland. The strong presence of military forces listed in the *Notitia* supports notions that the Roman state perceived the Picts and the Scotti as a threat to the diocese of *Britannia*. Thus, the Wall garrisons were placed to deal with a northerly land-based threat while the coastal fortifications were the first line of defence against seaborn attack. The forts south of the Wall could then reinforce either the Wall or coastal regiments as needed. Unlocated garrisons would not significantly alter this view, but should be considered nonetheless.

There is a conspicuous absence of units documented in the *Notitia* in North Yorkshire and Durham, West Yorkshire, Lancashire, and Cumbria. These "empty" swathes of the frontier, however, were probably occupied. Eleven locations have yet to be identified confidently, and there are many possible sites where the units listed in the *Notitia* could have been posted. While the number of unidentified locations is visible in Figure 4.8, a number of observations can be made. First, it is very probable that either the *numerus* Pacenses of MAGIS or *numerus* Solenses of MAGLO was garrisoned at Old Carlisle, on the basis of a partial inscription found there providing the first three letters of its Roman placename, MAG... (Hodgson 1991:84). It also seems likely that some infantry units were garrisoned at some of the forts on the Cumbrian coast. Other likely positions for infantry garrisons were along the road between Carlisle and Ribchester, particularly Old Penrith, Low Burrowbridge, and Burrow in Lonsdale. Elslack and Ebchester are two more ideal infantry garrisons, consistent with the placement of infantry in highland areas (Elslack) and a short distance south of the Wall (Ebchester).

Ideally, cavalry would be garrisoned where roads could be most exploited (Breeze 1993:22). Therefore, Newton Kyme and Ilkley seem likely locations in the south of the frontier zone, while Brougham and Binchester present good locations in the north of the frontier, further supporting Hadrian's Wall. The difficulty with some of these projected locations, of course, is that the Roman placenames are already known (e.g. Binchester = VINOVIA), and the placename does not match or resemble one of the unidentified sites from the *Notitia*. However, the possibility must remain open that the placenames of Roman Britain changed over the course of centuries. Unfortunately, in the instances where this is known, the place tends to take on the name of the unit posted (e.g. Stanwix = VXELODVNVM becoming PETRIANA).

Another conspicuous absence is the lack of mention of the garrisons at Carlisle, Corbridge, and likely Catterick. Late 4th century occupation is attested at the fort in

Carlisle (McCarthy 2002) and the military compound at Corbridge (though on the basis of artefacts rather than occupational deposits; Simpson 1976), and a late fort has been discovered at Catterick, overlying the sites of earlier forts (Wilson *et al.* 2002). The lack of inclusion on the map by Breeze and Dobson of Carlisle and Catterick is understandable, as these have been recent discoveries, but they do not include Corbridge. The fact that these sites are not mentioned in Chapter 40 of the *Notitia* can also be dismissed on the grounds that many sites of known late 4th century occupation do not seem to have been included. The only thing that makes these sites distinctive is that they are adjacent to or within the limits of Roman towns. Carlisle and Corbridge were probably the two largest towns north of York in the Roman period, and Catterick is categorized as a "small town". This further highlights the discrepancy between documentary and archaeological evidence.

If Figure 4.8 is compared to Figure 4.7, it is clear that there is not a match between the documentary evidence of the *Notitia* and the archaeological evidence (cf. Breeze and Dobson 1985:17). This may simply be the difference of the nature of documentary evidence, which reflects the situation at a certain point in time, and archaeological evidence, which demonstrates activity over a period of time. While this must be considered as plausible, it may be that the difference between the *Notitia* and archaeological evidence indicates a real pattern. There are 10 more military sites occupied in the late 4th century than units listed in the *Notitia* under the command of the *dux Britanniarum*. The discrepancy between these two numbers suggests five possibilities.

1. Many forts were abandoned between the AD 370s and the compilation of the *Notitia Dignitatum*.
2. Detachments from units were stationed at forts in addition to their officially noted seat. For example, Carlisle and Corbridge would serve as excellent stations for a detachment from the 6th Legion in York, placed on major transport/supply routes as they were.
3. Units of the field army under the command of the *comes Britanniarum* were garrisoned, permanently, seasonally, or as needed in the frontier (Jones 1964:686).
4. The archaeological evidence for occupation of forts not listed in the *Notitia* may be civilian rather than military in nature (Breeze and Dobson 1985:17).

5. The *Notitia* does not accurately reflect the reality of the military situation at the end of the 4th century, and more forts were occupied than listed, perhaps by unacknowledged units such as barbarian *laeti*, for example the "large and strong force of Allamanni" sent to Britain in AD 372 (Amm. 29.4.7; James 1984:172).

The first possibility is a strong one. As noted earlier in the chapter, the usurpations of Magnus Maximus and Constantine III could have removed soldiers from Britain in support of their claims on the continent. It is also thought that Stilicho removed troops from Britain. In addition to these historical events, the *Notitia* does not list any garrisons from Wales even though the forts of SEGONTIVM (Caernarfon), Caer Gybi, and Cardiff, among others, were occupied into the late 4th century (James 1984:164; note that at least a detachment, if not the whole garrison from Caernarfon was transferred, as the Seguntienses were stationed in Illyricum in Chapter 5 of the *Notitia*). It should also be born in mind that we may be missing relevant sections of the *Notitia* that provide unit listings for Wales and Merseyside (Jones and Mattingly 2002).

The second possibility must also be born in mind. Soldiers were often detached from their base for a number of duties. Alternately, as the third possibility suggests, detachments or units from the field army could have occupied forts in the north. In either case, the core soldierly population of the unit is decreased by sending a detachment to another base. This latter group should be detectable archaeologically as a smaller, and perhaps less extensive garrison. The implications of such detachments would be that many installations would still be occupied by the military, but each installation had a relatively small soldierly population. As such, while each installation would appear to have a small population archaeologically, the total number of soldiers in the frontier is not actually reduced. It is simply more widespread, and this agrees with the emphasis on smaller, more mobile regiments that seems to have become established during the Tetrarchy (Elton 1997).

The fourth possibility is a rather complex issue. In northern England, there is not a clear divide between military and civilian in the vicinity of forts, artefactually speaking (Gardner 1999). Materially, forts and towns in the north are similar and distinct from rural settlements (Breeze 1988:19; Mattingly 2004). So it is entirely possible that forts could be occupied by a non-official, non-military population.

The fifth possibility is also worth considering. As Britain was "something of a dumping ground for captured barbarians" through the Roman period, there probably were *laeti* on the island (James 1984:172). While *laeti* are not included in the *Notitia* list

for Britain (perhaps another lost section of the *Notitia*, though they are listed for Gaul), the *cuneus* of Sarmatians is interesting. It is the *cuneus* and not a specified prefect that reports to the *dux*. Given its position in the *dux*'s list and its designation as a *cuneus*, the unit was probably reorganized by the late 3rd/early 4th century and first assigned to Britain with all the other Sarmatians by Marcus Aurelius in AD 175 (Mann 1988:21). So, at least one unit of Sarmatian cavalry remained in Britain to be included as part of its official garrison at the end of the 4th century. But there is no direct evidence for *laeti*, and (if they were in Britain) we do not know where they were settled. If there were *laeti* settled, then they seem to be materially undistinguishable from a typical late Roman military garrison.

The above possibilities do not even consider the consequences of the usurpation of Constantine III. He may have reorganized frontier forces, perhaps using *laeti*. Changes could also have been made in the aftermath of the rebellion. In any case, military regiments were distributed throughout the frontier, and it is necessary to consider the size of these regiments to establish the potential effectiveness of the late *limitanei* in northern England.

The Size of the Garrison

There is a large range of variation between estimated calculations of unit strength in the 4th century. While this numbers game can seem irrelevant, the strength of a garrison is important for many reasons. At the very least, it demonstrates a military presence throughout the region. These garrisons were probably put in place to deter or repel barbarian raiding. It is also possible that the *dux Britanniarum* and his soldiers inhabited the region as an occupying force, keeping the locals in line with the Roman state. Garrison strength also relates to the question of the effectiveness of military presence in the region. For instance, to what extent would a reduced garrison allow for detachments to turrets, milecastles, and other duties? The other important issue is that the larger a garrison, the larger the support staff and the more provisions needed for the running of each fort. Traditionally, it was argued that the British army was sizable through most of the 4th century, but that considerable troop withdrawals were made in the last decades of the 4th century and early in the 5th to support military adventure on the continent (James 1984:161–162) despite the fact that a tendency toward "… smaller army units has been recognized in the fourth century" in other parts of the Roman Empire (Duncan-Jones 1990:214). The smaller size of late Roman units has been argued from documentary evidence, like the Panopolis papyri, *Notitia Dignitatum* and other

sources, as well as archaeological evidence, such as the size of forts and the form of barracks (Coello 1996), though it should be noted that smaller unit sizes do not equate with an overall decrease in the total number of soldiers in the Roman military. In the case of Britain, smaller unit sizes were suggested from the 1980s on. Much was made of the change from the standard Hadrianic barrack block with 10 *contubernia* and a centurion's suite to the chalet style barrack block that consisted of five to eight separate (often detached or semidetached) huts with an officer's suite at the end (Daniels 1980; Bidwell 1991; Coello 1996:52–56).

Daniels proposed that the chalet barracks represented the accommodation for married soldiers and their families in the 4th century, following a reduction of troops on the Wall to man the Saxon Shore forts and a general running down of the frontier. This idea agreed with Septimius Severus extending the privilege of marriage to the soldiers in AD 197 and the presence of typically female objects and infant burials in late Roman forts. Daniels' hypothesis meant that a 4th century barrack block accommodated only five to eight soldiers, compared to the 80 soldiers of a Hadrianic barrack. Furthermore, the total number of chalets represented the total garrison size occupying a fort. Following these conditions, 4th century garrisons would have been 8–10% of their 2nd century strength. Thus, the military presence on Hadrian's Wall in the 4th century was significantly reduced, and the overall effectiveness of such small garrisons was called into question, though James (1984:182) argued that the much-reduced army was still able to successfully defend the frontier.

The notion of greatly reduced garrison strength has been critically reconsidered by Bidwell (1991). He argues that the change from Hadrianic barracks to chalet barracks occurred in the 3rd century in the earliest cases, dismantling the notion of reduced garrisons due to requirements on the Saxon Shore. Furthermore, traditional female artefacts were found in greater numbers along the Wall in the 2nd and early 3rd centuries than in the 4th century (Allason-Jones 1989), and infant burials are rare and do not directly attest the presence of families ***inside*** forts. Thus, there is no convincing evidence that chalet barracks were used as family residences for soldiers.

Reconsidering chalets as *contubernia*, Bidwell argued that chalet barracks do represent a reduction in the size of a century. Each chalet-*contubernia* would house five or six soldiers, down from the Hadrianic *contubernia* of eight to ten soldiers. Therefore, garrison strength varied between 40–60% of the 2nd century garrison, a far less drastic reduction that (ideally) would still enable the garrisons of the north to function in an effective military manner. Furthermore, maintenance of these accommodation units

would have been easier (as refurbishment did not affect the entire barrack block, only individual chalets) and would have provided individual soldiers with more space than those of the 2nd century (Coello 1996:55).

Therefore, there seems to have been a sizable presence of soldiers in northern England in the 4th century. A number of rough calculations can be made based on the estimated size of a given unit and the number of forts occupied (see Table 4.4). Jones (1964:680–681) applied a notional figure of 500 men to surviving *cohortes* and *alae* as well as the new *numeri* and *cunei*, while frontier legions were given a notional figure of 3,000 men. This would establish a figure of 21,500 men under the *dux Britanniarum* as listed in the *Notitia*. James (1984:166), on the other hand, applied a figure of 1,000 men for legions and 100 men for other units of *limitanei*, providing a figure of 4,700 men under the command of the *dux*.

I have provided a notional figure of 1,000 men per legion and 250 for all other units to calculate a figure of 10,250 men at the *dux*'s disposal. My calculations represent a compromise between Jones' figure of approximately 100% unit strength compared to 2nd century levels and James' figure of 20% unit strength, and better correspond with Bidwell's (1991) argument. As with all figures from Table 4.4, irregular units such as barbarian *laeti* and detachments from the field army have not been included in the calculations. Furthermore, if a fort was occupied to full capacity, it is possible that additional soldiers were billeted outside the fort walls. Such conditions would be found when supplemental forces were present, for example while an emperor or his agents were on campaign. Therefore, there could be in fact a great deal more soldiers to be added to those figures.

A more detailed approach has been taken by Hodgson (1999), in which he considered the size of late Roman garrisons in reference to the form, size, and number of barracks found at a fort. According to his calculations, the *numerus* at South Shields would have numbered between 300 and 400 men in the 4th century on the reckoning of six men per chalet. On this basis, each barrack (of at least five chalets) would hold at least 30 men. A typical fort built for an infantry cohort would contain six barracks, holding 180 men. As the infantry cohort was the smallest stationed on Hadrian's Wall, the minimum garrison size of a 4th century fort on the Wall would be 180 soldiers. Furthermore, there is a possibility that some soldiers were permanently outposted to additional installations such as milecastles and turrets, in which case accommodation would not be necessary at the main regimental base/fort. Cavalry forts such as Chesters or the milliary fort of Stanwix would probably garrison an even larger number of men.

Unfortunately, to use Hodgson's method requires the full plan of a fort to be known and this is not possible at most of the forts on Hadrian's Wall, let alone the rest of northern England. Therefore, we must rely on the approximate calculations provided in Table 4.4.

Alternatively, one could argue that the abandonment of *vici* by the early 4th century required its residents to live elsewhere, and that 4th century forts not only housed soldiers but also non-soldierly elements of the military community that formerly occupied the *vici*. Unfortunately, the only test of such a notion was largely inconclusive (Gardner 1999). Still, if this was the case, then the number of soldiers must be decreased accordingly. Further reasons for a smaller garrison may be due to normal attrition of soldiers via injury or fatality or retirement, but lacking an equivalent number of new soldiers. This could occur due to the distance of northern England to the Continent, or even because northern England was a low priority compared to *limitanei* units of the Rhine and Danube. Such an argument assumes a highly centralized recruitment and allocation system, which is unlikely but not impossible.

Perhaps the most significant point to make is that the numbers of soldiers in northern England could have fluctuated considerably through the 4th–early 5th century. The most logical assumption would be a normal rate of attrition with new soldiers provided from the diocese of Britain fairly regularly. Ideally, this would keep the number of soldiers stable, but a decrease in the number of soldiers in the region over the course of years and decades should not be dismissed. Imperial campaigning, whether taken by the emperor or one of his generals, would provide the dual prospect of bringing frontier garrisons up to strength or reducing the existing strength of "extraneous" soldiers for duty in other theatres. To fully appreciate the role of the garrison in the frontier and any requisite size and distribution in the 4th century, it is necessary to consider the barbarians in contact with this frontier.

4.4: BARBARIAN RAIDING IN THE 4TH CENTURY

The major barbarians that came into contact with the Roman frontier (excluding those that were soldiers in the Roman military*i*) were British tribes north of Hadrian's Wall, the Picts, and the Irish/Scotti, though possibly also Anglo-Saxons (Fig. 4.9). It cannot be assumed that all contact with these peoples was hostile. A good deal of barbarian-Roman interaction may have been peaceful and related to trading and diplomacy. On the other hand, textual sources indicate that raiding (presumably at a large scale to be mentioned in Continental sources) occurred throughout the 4th century, and smaller scale raiding may have been a regular feature of frontier life.

Archaeologically, the best information comes from Roman objects found outside the Roman Empire. These artefacts are most commonly interpreted as plunder/booty from raiding or as evidence of diplomatic gifts or evidence for cross-frontier trade. Unfortunately, it is often very difficult to distinguish by which manner Roman material culture has passed into barbarian hands. Each of the major barbarian groups is considered in brief, followed by a discussion of raiding culture and how this impacted the frontier.

The lowland Scottish tribes and the Picts were the only groups that could approach (in peace or war) the frontier without recourse to sea-travel. There is no unambiguous evidence for conflict with the lowland tribes of Scotland, though the possibility of raiding should not be precluded. The concentrations of 4th century Roman objects north of Hadrian's Wall could be evidence for raiding as much as diplomatic and/or trade relations. Perhaps more suggestive are the genealogies of the Early Medieval kingdoms of Strathclyde and Manau-Gododdin, in which ancestors of the royal line bear Roman names such as Aeternus, Tacitus, Coroticus, Quintilus, and Clemens (Chadwick 1949:142–149). The significance of these names is much debated, but at the very least they demonstrate an accepted Roman influence that has been interpreted as indications that these tribes formed "buffer states" on generally friendly terms with Roman authorities (Mann 1979a).

The Picts, on the other hand, are mentioned explicitly as enemies of the Roman state in the 4th century. The traditional model (Mann 1974) argues that the Picts were created from an amalgamation of highland tribes over time in opposition to the Roman state. In such a model, the threat of Rome is the cause of Pictish ethnogenesis, and therefore the natural enemy of the Picts. However, Hunter (2005) has demonstrated that this model is too simple. Artefactual evidence from across Scotland indicates distinct regional patterns from LPRIA up through the 2nd century AD, demonstrated in artefactual decorative motifs and the presence of Roman material goods. These patterns of access to Roman goods changed in the 3rd and 4th centuries to something more homogeneous rather than regionally distinct. "Rather the distribution shows wider connections across north Britain and Ireland: a shift in patterns of contact, with an emphasis now on wider connections" (Hunter 2005:238). A number of options explain these material changes (e.g. purely internal changes in Pictish society unrelated to the Roman presence; or the withdrawal of Roman diplomatic subsidies resulted in the collapse of dependent Pictish elites). At present the most likely possibility is that the incoming wealth of the Roman occupations and large campaigns of the 1st–3rd centuries in Scotland had a destabilizing

effect, causing internal unrest that led to social changes with new leaders and great social upheaval. In such a situation, Roman authorities may have lost contact with the individuals/dynasties that were previously dealt with, and the new social elite sought to solidify their position by attacking the Roman Empire or renewing demands for diplomatic gifts.

It is unknown to what extent Pictish raiding was directed into the Roman frontier via land or sea. Raiding probably came from both directions, but unfortunately we know very little of Pictish boat technology other than that they had mastless rowing or paddling boats (Foster 1992:102). If raiding was directed toward the Roman province (rather than neighboring British tribes), then the maritime option may have been preferable, as it reduced the potential for conflict by avoiding the tribal "buffer states".

Irish raiding on the west coasts of Britain is also reported in the sources, with perhaps the best known evidence for Irish piracy coming from the autobiography of Saint Patrick, captured from his estate in Britain as an adolescent or teen. Early Medieval archaeology, in conjunction with placename evidence, concentrates the main areas of Irish settlement (presumably related to earlier raiding) in southwest Wales and along the west coast of Scotland (Thomas 1971; Rance 2001). The best archaeological testimony to Irish raiding in Britain is the construction of late military installations to protect the western British coasts at Cardiff, Caer Gybi (on Anglesey), and the refurbished or continued occupation of Cumbrian coastal sites as at Lancaster, Ravenglass, and Maryport. In Ireland, a number of Roman artefacts have been recovered, but it has been pointed out that these are rarely the high-status or precious metal objects valued by pirates (Allason-Jones, pers. comm; though the silver hoards from Ballinrees and Balline are notable exceptions, Edwards 1990:4). To accomplish this raiding, the Irish would have required boats or ships, most of which were oar-based but the largest of which could be fitted with a mast and sail (Foster 1996:102). If masted ships were available to the Irish before the 5th/6th century, this may indicate incorporation of Roman maritime technology and facilitated raiding by minimizing the labour and time investments that oared vessels require.

Evidence for a threat from Germanic piracy and raiding in the frontier is non-existent. It has been argued that seafaring technology amongst the Germans was not sophisiticated enough in the 4th century to make rapid raiding across the North Sea feasible on the basis of Germanic peoples only having oared vessels available (Cotterill 1993:227–228; see above). However, it should be noted that the archaeological record for barbarian ships in the North Sea region is incomplete and biased due to the small

number of vessels recovered (Jones 1996a:82–85). In any case, any threat from Germanic barbarians would more likely have been directed toward southeast Britain, and Cotterill (1993:229–231) has argued that Britain did not face any true threat from Germanic raiding until the early 5th century, following the collapse of the Rhine frontier forces.

If this is so, it begs the question of the purpose of the Saxon Shore forts. Johnson (1979) claimed these coastal forts were the English counterpart of a system that was established to dominate and control maritime access of the English Channel. Furthermore, the siting of the forts is predominantly on natural harbours or at the mouth of rivers that offer good inland access. While maritime technology amongst Germanic and Scandinavian barbarians may have been limited to paddling and oared vessels, such vessels were well suited to short distance piracy and raiding, and the sharp increase of references to Saxon piracy in Roman sources indicate that it probably was a very real concern (Jones 1996a). However, Anglo-Saxon raiders were probably not a primary concern for the northern frontier of England.

It is worth considering raiding in terms of its purpose, execution, and how it related to Roman military arrangements. Raiding can be considered low intentsity warfare that need only include a handful of individuals in the raiding party, though it can include hundreds or thousands of individuals at its largest scale. Its success generally rests upon the element of surprise – people do not know when or where to expect it. Furthermore, at smaller scales, such activities are very difficult to counter. Counter-measures typically take the form of a visible deterrent military force that includes regular patrolling activities (though this itself is often ineffective) or counter-raiding.

The purpose of raiding must be separated into its socio-cultural role, its economic benefits, and the logistics of its execution. Ethnographic literature provides numerous examples of the social role of raiding and other low-intensity forms of warfare in tribal societies (e.g. Nugent 1993; Sweet 1965; Kurtz 1969). Generally speaking, raiding contributed to enhanced or increased social status. Raiding (whether real or ritualized) allowed males and warriors the chance to demonstrate skills of martial merit, including daring/boldness/courage, cunning, stealth, speed, endurance, and prowess at arms. In a tribal society led by warrior aristocracies, raiding allowed young men to prove themselves, as well as gain prestige, and tribal leaders or aspiring leaders could also benefit from the status earned in leading a successful raid as well as reinforcing relationships with other males under their authority. Thus, raiding would have been a socially rewarding activity for the barbarian peoples outside the frontier.

Raiding also offered valuable opportunities for acquisition of wealth. Such wealth could have an intrinsic value, like gold or silver jewellery, or an associated symbolic status (e.g. like the taking of weapons from a foe). Objects of Roman manufacture may have had a value associated with their "Romanness" due to the political dominance of Rome. In terms of inherent value, precious metal and high value objects are often considered here, but other booty could be taken in a raid. Livestock and cattle-rustling is a regular feature of low-intensity warfare in Irish vernacular sources, and we can assume that this was also the case for the northern British tribes. Slaves were another possibility, and these could be retained by the raiders themselves or sold to Continental slave-traders, as attested by St. Patrick.

However, the logistics of raiding must be considered. There is a tension between various factors, such as the material benefits of raiding, the potential loss of life, and the requirements of time and space needed to complete a raid. The manner of raiding, by land or sea, has different restrictions. If by land, then driving off of livestock and slaves is a feasible option, assuming the raiders are undetected. But depending on the size of the raiding party, its means of transport (by foot, horse, cart/wagon) and the amount of booty seized (and its mobility), escape/withdrawal can be slowed or hindered. If by sea, then tides and vessel size (in terms of cargo capacity) are restrictive factors. It is here that a rowing or sailing vessel has important implications. Rowing, particularly over long distances is labour intensive and would potentially tire the rowing crew before they set foot on-shore to raid, let alone if a hasty retreat was needed. Sailing vessels, on the other hand, generally had a greater cargo capacity and required fewer men and less energy in its operation while offering a longer striking distance.

The Roman frontier soldiers, established in fixed installations, were probably limited to a small number of options when dealing with raids. The soldiers could attempt to meet the raiders if their whereabouts were known in a timely fashion, or they could attempt to follow any trails left by them. There was always the possibility of counter-raiding or punitive expeditions if the enemy group was identified. Regular patrolling and scouting ideally forewarned Roman regiments of potential raids and areas of trouble. But without planned campaigning, there was little else Roman soldiers and frontier commanders could do.

Logistically, the state of repair of Hadrian's Wall has considerable implications on any type of low-intensity overland warfare. However, the main barbarian threat may have been from the sea rather than land. It has already been noted above that the disposition of military units was concentrated along Hadrian's Wall and along the coasts,

by which raiding or invasion could be monitored, deterred, and retarded/stopped. Inland forts south of the Wall and off the coast were situated to support units both along the Wall and the coast and control the road network. This distribution, however, does not demonstrate a bias toward stopping a threat from land or sea, nor does it rely upon a complete and well-maintained curtain in the form of Hadrian's Wall. It is likely that the military installations and their units were still required to fulfill a defensive role in the frontier, but that the Wall curtain itself was redundant. If this were the case, then overland raiding would be facilitated without a large obstacle blocking the path of escape (though note the Vallum and ditch to the north of the Wall could still be considerable obstacles).

Unfortunately, we cannot comment on the state of the Wall curtain with any confidence after the mid 4th century, but its state of repair may have played an active part in any frontier warfare. Indeed, a ruinous or collapsed state of the curtain would further justify a military presence for defence in the face of barbarian raiding.

4.5: THE END OF HADRIAN'S WALL AND THE NORTHERN FRONTIER

As noted in Chapter 1, hypotheses and speculations on the collapse of Hadrian's Wall and the frontier zone have changed over the past half-century. The traditional idea that the Wall forts, and by extension all the garrisons south of it were denuded of all troops by the AD 380s to serve on the continent has been dismissed. Archaeological evidence has demonstrated that many forts through the north of Britain were occupied to *c.* AD 400, and probably until the traditional end date for the Roman period in Britain, AD 410. While the frontier was still garrisoned, though, the size of units was at least 50% smaller than in previous centuries, so military strength was not as pronounced as previously. However, if the idea that ***all*** soldiers were removed from Britain by Stilicho in AD 401 and the usurper Constantine III in AD 407 has lost much of its influence, there is still an assumption by some that any garrisons remaining in Britain following the revolt against Constantine III would have rapidly dissolved, due to being cut off from pay (Holder 1982:103; Mann 1979; Solway 1997:327). Thus the frontier would have dissolved in the early 5th century.

Excavations at Vindolanda (Bidwell 1985), South Shields (Bidwell and Speak 1994), and Birdoswald (Wilmott 1997) arguably demonstrated occupation at these forts into the 5th century beyond AD 410. While the population of forts may have remained, the impact of the cessation of official imperial pay and supply of arms cannot be stated

with any confidence. Two opposing stances have developed in consideration of recent archaeological evidence.

One interpretation sees the garrison of Hadrian's Wall disbanding rapidly after AD 410, coming to an abrupt and distinct end. Despite this initial abandonment, however, the Wall was reoccupied at some point later in the 5th or perhaps the early 6th century (Dark and Dark 1996:68). Furthermore, it is argued that when the evidence on the Wall is considered in conjunction with other sites in the Roman north (e.g. Catterick, Brougham), it is possible to observe a pattern, as seen in Fig. 4.10 (Dark 1992; Dark and Dark 1996). Dark believes this distribution map supports the notion of a sub-Roman, regional potentate, probably an elite of the Brigantes, loosely based on the territory formerly commanded by the *dux Britanniarum*. The redefence along the line of the Wall and the defence of the road between York and the Wall is suggestive of at least regional cooperation if not an over-arching regional potentate. However, this pattern may also be indicative of bias among archaeologists in selecting sites to excavate. Dark (1994:116–117) would further suggest that the archaeological evidence seen along the Wall – inscribed stones, long cist burials, and defensive structures, to name three examples – is typically interpreted in the sub-Roman period to determine boundaries between territories. Such an interpretation indicates that these are not the seats of local headmen in the centre of their realms, but consciously occupied border forts. Hadrian's Wall, argues Dark, is a defended boundary occupied at various points by warrior-elites and their warbands, under the command of a regional potentate, perhaps based at York.

The second stance contrasts strongly with Dark's hypothesis. Casey (1993a; 1993b) and Jones (1996b) support the notion of military continuity into the 5th century, at least in some form. The garrisons along Hadrian's Wall were left in place in AD 410, but they were cut off from pay and state supply mechanisms. It is argued that the soldiers would have formed a relationship of mutual dependence with the surrounding population, exchanging food for protection. Such a localized supply system would have kept the forces along the Wall from uniting under one command. The local elites that emerged along the Wall were possibly in direct competition with each other (Casey 1993a and 1993b; see also Wilmott 2000).

Jones (1996b), in general agreement with Casey, sees a continued military presence until the mid 5th century, implying a continued military frontier command. He suggested five scenarios to explain what happened after the loss of Roman government, but the five scenarios can be presented in a more organized fashion (collapsing two of Jones' scenarios into the "Disband" category), as seen in Table 4.7. Unfortunately, these

scenarios provide generic "catch-all" possibilities for the post-Roman frontier rather than detailed explanations.

These two opposing stances, of discontinuity followed by reconstruction of the command of the *dux*, and of a continued (if ambiguous) role for the garrisons in the sub-Roman period, are at present the primary hypotheses available for explaining the collapse of the Roman frontier in northern England. Neither hypothesis adequately describes, let alone explains, the collapse or transformation of the frontier in any detail. This is an unsatisfactory state of affairs for Romano-British archaeology and the archaeology of Roman frontiers. Compared to the amount of ink spent on the formation of the frontiers, our understanding of the collapse of frontiers is lagging. For example, in the latest edition of *Hadrian's Wall* (Breeze and Dobson 2000), 152 pages are spent on establishing the frontier while only 5–10 pages deal with the end of the Wall. Thus, the collapse of the frontier in northern England must be considered more critically and in detail.

Interestingly, none of the above hypothesis attribute a collapse or end of the frontier to overwhelming barbarian invasion. The 4th century saw regular conflict in the frontier, as demonstrated by the traditional military history approach, but these enemies were not invaders – they were raiders. Frontier regiments were certainly smaller in size than their 2nd century predecessors, and they were distributed throughout the frontier. However, the *limitanei* were still a significant and successful factor in frontier defence and stability. This is illustrated by the fact that central imperial authorities did not have to intercede frequently in frontier defence. Thus, Hadrian's Wall was an important military structure that could function as a defended barrier, or as a monument of control, channeling people, livestock, and goods through pre-approved checkpoints. However, this role may have changed in the 4th century depending on the state of repair of the Wall curtain. All these military factors are important, but the frontier was not simply a zone of military occupation. Peasant farmers could also be found in the region, and a number of conditions in the frontier would have affected the military. Chapter 5 explores the non-military aspects of the frontier.

Chapter 5:

The Frontier Landscape of North Britain

The hypotheses on the end of Hadrian's Wall summarized in Chapter 4 highlight three major problems. First, there is a tendency to allow hypotheses to be constructed on a framework of historical events, biasing archaeological perspectives in understanding the late Roman north. Second, late and sub-Roman activity along the Wall is perceived and understood with reference to the collapse of Roman imperial authority in Britain rather than being considered in the context of the collapse of a late Roman frontier. Third, any continuity in the form of military occupation required the logistical needs of the garrison to be met. Such needs are identified, but not explored in any depth. Therefore, the late Roman military economy and its reliance on state subsidy and/or authority on the one hand and local supply on the other must be examined in detail. Nevertheless, 4th century dynamics are essential to understanding change in the frontier and perhaps can establish a trajectory for those interested in transformation in the post-Roman centuries.

These problems can be overcome in a number of ways, allowing the bias toward military history and events to be surmounted. Rather than seeking to construct a historical framework, our understanding of the collapse and transformation of frontiers can be better accomplished through an analysis of archaeological evidence, providing contextual information needed to establish how different communities in the frontier were linked. That is to say, Hadrian's Wall and the frontier will be considered archaeologically and as part of an empire. This chapter explores the physical geography of the region including geology, soil types, natural resources, and the transport network. This provides a foundation for the examination of the long-term exploitation of the region, explored through palynology. Having established the long-term exploitation of the frontier, the settlement archaeology is considered. Such information clearly and effectively expands upon a military understanding of the frontier and provides an opportunity for deeper insights related to the logistics of maintaining a late Roman garrison.

5.1: THE PHYSICAL GEOGRAPHY OF THE FRONTIER

Geology and Soil Types

The geology and soil types are the primary factors underlying the topographical formation and settlement of northern England. This geology can be graphically demonstrated, in a simplified form, as numerous zones (see Fig. 5.1). A general summary of the geological history of northern England is found in Eastwood (1963). Central uplands composed of carboniferous limestone and gritstone form the Lake District, the Peak District, the Pennines, and the Cheviots, which separate the lower lands to the east and west. These uplands are closer to the west coast, are generally steeper on their western faces, and also form the principal watershed. The lowland zones sit on sedimentary geology of chalks, clays, and sandstones. In some upland areas igneous rock predominates, and ancient seismic activity is evidenced in the faults found in north Britain. The most recent significant shaping of the natural geology occurred in the Pleistocene ("Ice Age"), during which time expanding glaciers carved out much of the shape of the countryside, and when the glaciers retreated, they blanketed the bedrock in drift deposits. Natural processes of erosion formed the major river channels and over time the topsoil was formed from deposited glacial till and other geological processes (Eastwood 1963:1–12; Higham 1993:2–4; cf. the Countryside Agency 2003 for a more descriptive account of the topography).

A "wide variety of soil types" in upland Britain "markedly influence" land use (Askew *et al.* 1985:6). Essentially, similar soils existed in the uplands from the Bronze Age on, even though the distribution patterns of such soils have undoubtedly changed. Three broad climatic soil zones can be recognized in Britain with altitudinal boundaries that vary throughout the island (Askew *et al.* 1985:6):

1. A lowland zone of mineral soils occurs where the climate favors organic matter decomposition, so that the soils, such as brown earths, gleys, rendzinas and podzols are composed predominantly of mineral materials, except in certain topographical basins where water logging preserves organic materials so that peat is formed, as in the Fens.
2. A middle zone of peaty soils occurs where a cooler and wetter climate retards the rate of organic matter decomposition so that peaty organic materials form the major part of the soil. Stagnohumic gley soils (i.e. peaty gleys), stagnopodzols (peaty gley podzols) and peat soils are the common soil types in this zone.

3. An upper zone of skeletal mineral soil occurs where severe exposure and very cold conditions severely limit plant growth and soil formation. Shallow, stony soils are formed composed mostly of mineral materials, as very little organic matter is produced by sparse vegetation.

All three soil zones are found in the Roman frontier region. There is also a correlation between the lower boundary of the peaty soils and the upper limits of permanent agricultural settlement (Askew *et al.* 1985:7). Figure 5.2 represents the different soil types and broad distributions of those types in northern Britain. Specific descriptions of different types can be found in Askew *et al.* (1985:7–9) that correspond to those in Figure 5.2. Greater soil variation is seen at a local scale.

The agricultural improvements of the 18th century and later have significantly impacted on the productivity of soils in the region, primarily through the installation of drainage systems. Prior to this (and to this day), the best soils for agriculture in northern England could be found in the Yorkshire Wolds. Other areas of relatively productive soils can be found in lowland situations, such as the Till valley, along coastal Northumberland, the district around Hexham, the middle Tees and Ure valleys, the Solway and Eden valleys, as well as some parts of Cumbria (Higham 1987:38–39). These better soils clearly underlie much of the "native" settlement pattern of the region. Agricultural settlement will be discussed in more detail below, but it is important to consider some of the other natural resources and "industries".

Natural Resources

The extent of woodland clearance was variable during the early Roman period in northern England, but it can generally be said that the best agricultural land was cleared of woodland and under cultivation prior to the Roman invasion. Agriculture was expanded and intensified during Roman occupation of Britain, increasing the amount of land cleared of woodland. As land under plow and hoof expanded and resource extraction intensified, demand for woodland resources also increased to meet the needs of Roman society. Given the amount of open space (for arable and pasture), woodland must have been extensively managed as a renewable resource to meet the needs of society (Dark 2000:128–129). It is known from the writings of Columella that the Romans practised woodland management, though we do not have any knowledge of the sites of Roman period forests (Rackham 2001:40–41). An example of woodland management is found at Roman Carlisle where well-preserved poles and timbers

demonstrate managed growth patterns throughout the Roman and into the post-Roman periods (Groves 2000:69–70).

Industrial production in late Roman Britain was diversified and well organized. Figure 5.3 illustrates the geographical distribution of raw materials, principally metal ores. In the 3rd century, the Romans saw Britain as a valuable producer, and it was known for its abundant crops, verdant pastures, and copious quantities of metal ores (Salway 1997:455). Listed briefly, the industries of late Roman Britain were: metal-working (gold, lead and silver, iron, copper, and tin), fine and coarse ware pottery and other ceramics, wool/weaving, stone quarrying, coal-mining, and salt production (de Brisay and Evans 1975).

In the north, there is limited large-scale industrial activity when compared to lowland Britain, though there is a sampling bias in favour of the south of Britain. Even within the north, there is sub-regionalisation, as evidenced by Crambeck ware and the northern British potteries (Evans 1989; 2000). In the early 4th century, Crambeck greyware is limited almost exclusively to the area east of the Pennines. By the later 4th and early 5th century, the distribution expanded westward, though the majority of material is still found east of the Pennines. The distribution and speed with which Crambeck became established as the major pottery supplying the north suggested to Evans (1989:80) that there was some form of "military contract" in effect. A similar distribution has been observed with the late Roman Yorkshire calcite-gritted (YCG) wares, particularly the Huntcliff types, which have been linked to salt production and distribution (Whyman 2001). Both Crambeck and YCG distributions may be related to military supply and trade networks, though not necessarily exclusively so, as sherds have been found on rural non-military sites across the Yorkshire Wolds.

While ceramics are the most archaeologically visible products of northern production, there were other "industries" associated with certain natural resources. Considerable quantities of coal, from opencast coal mining, have been found in the north along Hadrian's Wall (cf. Dearne and Branigan 1995). Lead mining is often associated with the Roman military, and the economic importance of the military in northern England, as well as lead deposits, marks this industry as perhaps regionally significant (Salway 1997:455). Given that the lead deposits in northern England are argentiferous, lead extraction may have been of secondary importance to silver, while copper was another valuable ore available in the north (Shotter 2004b:133).

Building stone was a readily available material in much of the north and the quarrying of it will have required work parties and labour forces of varying sizes,

depending on the project. In the case of imperial projects, the military probably provided the labour in the form of soldiers and/or servants. The significant levels of industrial activity in the north, then, suggests that the military had an important relationship with at least some industrial activity, and this has significant implications for our attempts to understand economic relations in the region.

Transportation Network

The road network of Britain was created to meet the needs of the Roman military and its conquest and consolidation of the island. Broadly speaking, the roads connect forts and were built to facilitate the movement of troops and supplies. Forts were situated for tactical purposes, such as holding/monitoring a key passes through the Pennines or to secure a port, river, or ford as a means of guaranteeing the further distribution of supplies.

To that end, marine and riverine transport was just as important as the road infrastructure and perhaps even more so. The extent to which water transport was available and preferable to road transport has been debated (Selkirk 1983; Anderson 1992; Middleton 1979:95), but a number of major rivers would have provided significant penetration inland for Roman vessels (e.g. the Ouse, the Tees, the Wear, and the Tyne on the east coast and the Mersey, the Eden, and the Esk on the west coast; see Cleere 1978).

The natural resources and transport infrastructure of north Britain provides a brief picture of how the frontier landscape may have been perceived by a Roman governor, but these aspects do not adequately reflect human occupation or exploitation of the frontier. This can be achieved at a very general level through a consideration of pollen studies.

5.2: PALYNOLOGICAL EVIDENCE FOR HUMAN EXPLOITATION OF THE FRONTIER FROM THE 4TH–7TH CENTURIES

Northern England has been extensively investigated by pollen specialists, and a number of sequences provide an excellent regional overview. The Hadrian's Wall area has the greatest concentration of pollen sequences compared to the rest of Britain (Dark and Dark 1996:65). An informative and concise review of palynological methodology is provided for the archaeologist by P. Dark (1996; 2000). In reference to the Roman period, palynology has been most frequently employed by archaeologists and historians

to demonstrate the impact of the Roman invasion and imperial collapse on agriculture (e.g. Dumayne and Barber 1994; McCarthy 1997).

A study by Turner (1979) provided an early summary of the vegetation history of the frontier. According to Turner, there was no widespread woodland regeneration following the Roman period in northeast England. She argued for agricultural continuity between the Roman and immediate sub-Roman decades, with woodland regeneration occurring in the late 6th century based upon evidence from four sites: Fell End Moss, Steng Moss, Hallowell Moss, and Steward Shield Meadow (Turner 1979:289, 290). Turner's conclusion is interesting. Continuity of agriculture at the same scale between the Roman and sub-Roman period suggests not only economic stability in the transition from one period to another, but also that consumption rates remained consistent as well.

However, there are problems that should be noted with Turner's study. The four sites are only distributed throughout the eastern half of the region through which Hadrian's Wall runs (see Fig. 5.4). Therefore, it is not truly representative of the entire length of Hadrian's Wall. Secondly, Stewart Shield and Hallowell Moss are local and extra-local in their pollen catchment sizes, respectively. Turner's claim of general agricultural continuity from the Roman period is based on two regional scale sites, with two additional sites demonstrating the same pattern at a local level. The observation made by Turner is not wrong so much as tenuous, requiring further demonstration.

Casey (1993a; 1993b) employed six pollen sites to argue continuity of occupation along Hadrian's Wall: Fellend Moss; Steng Moss; Hallowell Moss; Moss Mire; Pow Hill; and Thorpe Bulmer. Casey (1993:261) concluded that woodland regeneration did not occur until well after the "formal end of Roman occupation in the area" and that "food resources continued to be available after the decline of Roman administration over a wide area of the north-east for at least a century." There are two primary problems with Casey's interpretation. First, the range of dates he correlates with each site is too narrow. In some cases he assigns woodland regeneration to a brief period of only 30 years, but carbon-dating does not provide so narrow a window for a date. Secondly, as Casey himself acknowledges, the sites are only indicative of the eastern end of Hadrian's Wall, yet he is providing a model for the entire length of the Wall. Jones (1996:50) employs the same six sites that Casey used in support of his hypothesis, and so the same criticisms apply to his application of palynology.

The most recent critical, comprehensive examinations of pollen sequences for the late to sub-Roman transition have been completed by P. Dark (1996) and Dumayne-Peaty (1999). P. Dark's hypothesis of the late and sub-Roman environment around

Hadrian's Wall disagrees with Turner's assessment in that it envisages reduced agricultural activity and increased woodland regeneration in the sub-Roman period (Dark and Dark 1996:68; Dark 1996:39). This hypothesis is based on the use of 11 sites that P. Dark considered to be reliable, with their pollen catchment areas following in parentheses: Bollihope Bog (local), Bolton Fell Moss (regional), Burnfoothill Moss (regional), Fellend Moss (regional), Fozy Moss (regional), Glasson Moss (regional), Hallowell Moss (extra-local), Quick Moss (extra-local to regional), Steng Moss (regional), Steward Shield Meadow (local), Walton Moss (regional). The decrease in land exploitation in the sub-Roman period were interpreted as a direct result of the Roman military withdrawal in the late 4th and early 5th centuries, when the movement of soldiers eliminated the vast consumer body of the Roman army and the flow of money into the area from the state. Therefore, less land was needed in the area to provide subsistence for the reduced military presence. One site, however, should be noted as indicating a different pattern. The Fozy Moss sequence indicates an initial decrease of land-use followed by a period of increased land-use (Dark and Dark 1996:68). P. Dark's thesis carries some weight because at least seven of the sites have a regional catchment, and those sites are more evenly distributed throughout the Wall region. Barber *et al.* (1993:225) made the same observation as P. Dark, further noting that the "degree of clearance is related to distance from Roman structures . . ."

Dumayne-Peaty (1999) broadly agrees that woodland regeneration seems to occur along the Wall in the 5th century, and attributes this to the withdrawal of Roman soldiers. However, she took a broader geographical scope and noted that the regional pattern was not consistent with Hadrian's Wall. South of the Wall, and not very far south at that, clearance levels were maintained into the sub-Roman period. North of the Wall, clearance varied, with some sites maintaining levels of clearance while others were not cleared to any extent until the 5th or 6th centuries at the earliest. Thus there is considerable variation within the frontier. Unfortunately, Dumayne-Peaty largely connects human impact on the vegetational history of the region to the traditional perspective of conquering and occupying Romans as distinct from the native population.

Another analysis of the pollen evidence would be useful, as evidence from the same sites has been used in support of opposing claims (Casey 1993a; 1993b v. P. Dark 1996 v. Dumayne-Peaty 1999). It is interesting to compare the interpretation of P. Dark to each site's author(s), as seen in Table 5.1. Her portion of the chart indicates vegetational changes around AD 400. "Monastic times" as indicated by the original authors of certain sites can be interpreted to relate to either the 7th/8th century or the late

11th/12th century. On the basis of the authors' academic backgrounds and basic comparison with other pollen charts in the region, the later date has been adopted. P. Dark's interpretation of the pollen evidence contrasts with five of the original authors' interpretations, at Hallowell Moss, Quick Moss, Steng Moss, Stewart Shield Meadow, and Walton Moss. Dark indicated woodland regeneration from approximately AD 400 at all but two of the sites she analyzed, Bollihope Bog and Glasson Moss. This disagreement, focused on a certain date and related to a historical event (the supposed withdrawal of Roman soldiers) makes P. Dark's conclusions questionable. Thus, a geographically and chronologically extended study of pollen sites located in the frontier was undertaken (initially Collins 2001, but expanded here).

Table 5.2 lists 69 pollen sites located in the frontier south of the Tweed and north of the Humber. All 69 pollen sites were reviewed. Appendix 1 provides a summary of all 69 sites surveyed listed in Table 5.2, determining whether the site can be included for analysis, and if so noting the relevant details. Thirty-three sites were dismissed from inclusion in the analysis for a number of reasons. Some sites have no radiocarbon dates and were stratigraphically correlated with similar or identical stratigraphy from dated samples. More sites were culled by eliminating those with questionable radiocarbon dates that affect the interpretation of late and sub-Roman vegetation. Camp Hill Moss, the Dod, and Pow Hill all have unreliable C14 dates. When these dates are removed from the analysis of the sequence, the temporal resolution for the historical period is inadequate. The Dod had numerous radiocarbon dates, but the stratigraphy of the relevant section has been disturbed, inverting four dates. Even if the authors' deductions and interpretations are correct, enough doubt can be cast upon the sequence as to make it unreliable for this analysis. Thus, little to nothing can be said about the transition between the Roman and sub-Roman periods with any confidence at any of these sites. There is an inversion of two radiocarbon dates at Hallowell Moss, but it does not seem to be an analytical problem for the authors or P. Dark and will be included in this study as well. Further sites can be eliminated from the list on the basis that all the radiocarbon dates are prehistoric, for example at Mordan Carr, Bishop Middleham, and Valley Bog. Thus, the temporal resolution at each of these sites is questionable beyond the late Iron Age, when human activity is most likely to affect local-regional site formation. That leaves 36 pollen sites, which are listed in Table 5.3 and located in Figure 5.4, and Figure 5.5 depicts conservative estimates of the catchment areas of the pollen sites.

Tables 5.4–5.8 present all 36 pollen sites used in this study grouped by geographical position in the frontier and records vegetational change between the 4th and

7th centuries. Figures 5.6–5.9 show these changes geographically. These tables and figures are important because they demonstrate vegetational change in the landscape that results, at least in part from human activity. If maintained levels of clearance and woodland are taken to mean that the extent of agricultural activity has remained the same, then a clearance event or increase in clearance levels indicates an expansion of agricultural activity. Woodland regeneration identifies reduced agricultural activity.

Broadly speaking, agricultural activity continues at the same level during the 4th and 5th centuries throughout the entire frontier. This would suggest that the scale of agricultural activity was unrelated to Roman troop movements, or that there were no drastic troop movements that impacted on agricultural activity in the frontier zone, both assuming a substantial garrison numbering in the thousands was present in the frontier. On closer inspection, however, there is some change through the 4th and 5th centuries in the pollen record. In five cases (Bolton Fell Moss, Fairsnape Fell, Thorpe Bulmer, Walton Moss, and Willow Garth), there are decreases in arable indicator taxa but not in taxa indicative of pastoral activity. This suggests that in the 4th and 5th centuries there was decreasing arable activity, but maintained or increased pastoral activity. This change could be related to decreasing population or troop withdrawals/decay, a changed emphasis in diet or food procurement, or a mix of both possibilities. Such a change has also been related to a more fundamental shift in the imposition of collectable storable tax/tribute in the Anglo-Saxon period (Carver 1989:142, 157–158). Greater changes in the landscape are more evident in the 6th century. Woodland regeneration becomes more widespread along the Wall and south of it, while clearances were seen at the far north of the frontier zone. These patterns observed in the 6th century generally continue through the 7th century.

Overall, the most drastic change in woodland cover in the frontier occurs between the 5th and 6th centuries. Other studies indicate the same trends in smaller regions of the frontier (Pratt 1996; Wells 2003). If these changes are considered in terms of human activity, it becomes apparent that change affecting clearance levels in the landscape began during the 4th century, before the traditional end date for Roman Britain, or in the late 5th/6th century, a century later than the traditional end date. While forest regeneration does occur in the former Roman frontier, this does not necessarily occur simultaneously or at a massive scale. Dumayne-Peaty's (1999:662) study indicated that:

> ... there was a considerable spatial and temporal variability in vegetation over relatively short distances and that local environmental conditions and settlement histories were probably important in determining the exact nature of vegetation change.

Rackham (2001:42, 43) agreed, further noting that woodland management must have continued as a common practise due to the lack of building with materials such as stone and brick.

The evidence suggests a change in local landscape exploitation and management that cannot be simply equated with the withdrawal of soldiers at the end of the Roman period in Britain. A tentative explanation for this change is that the reduced presence of soldiers in the 4th century (compared to previous centuries and perhaps evidenced by changed barrack arrangements) reduced pressure on staple arable production, allowing for an expansion of pastoral activity at the expense of extensive fields of cereals. If this were the case, however, it raises more questions. Why would there be a preference for extensive pastoral regimes rather than arable? Could it be that the cereal requirements of garrisons were being met to such an extent that more land could be given to pasture? Is it an indication in a shift in diet that favors meat and dairy on a more equal footing with grain? Or perhaps livestock was seen as a more valuable commodity, easier to transport and easier to "store" than grain, making livestock a preferred measurement of tax, and thus wealth and status. Despite these uncertainties, the pollen evidence indicates relatively stable levels of clearance that can be associated with general demographic and agricultural continuity.

5.3: NON-MILITARY SETTLEMENT ARCHAEOLOGY

Settlement Distinctions and Hierarchies

Historically, archaeological investigation in northern England has been dominated by Roman military installations. Over the past 50 years, however, a number of non-military sites have been investigated. Principally, these have been rural settlements, or the so-called "native farmsteads" and villas. Other sites investigated have been the *vici* outside of Roman forts and small towns such as Catterick and Sedgefield. Carlisle, Corbridge, and York were the only towns in the frontier.

The *vici*, positioned as they were immediately adjacent to forts, were clearly economically and socially related to the military. The relationships between farmsteads, small towns, and the large towns and the military, however, is more ambiguous. Archaeologically speaking, farmsteads and towns are quite distinct from Roman military settlements, but it must be remembered that non-military and military settlements cannot be considered as unrelated and divorced from each other. Indeed, the primary towns in

the frontier, York, Corbridge, and Carlisle, each had resident military populations in the local fort.

Urbanisation is limited in northern England, and this is probably related to the dynamic between military dominance and civilian administration. York was the preeminent town in the North, serving both as the capital of its province and most probably as the seat of the *dux Britanniarum*, in addition to serving as the base of the 6th Legion (Ottaway 2004). Thus, York was the political centre of the frontier. Carlisle and Corbridge may have developed in relation to economic aspects of the supply of Hadrian's Wall, in a manner similar to that postulated for the *vici* outside of forts (McCarthy 2004). The *vici* seemed to have been abandoned by the early 4th century, although our understanding of these settlements is limited (Snape 1991). Larger urban settlements, for example Catterick, Carlisle, and York were occupied after AD 410, but the character of these towns in the 5th century is largely unknown. The archaeological evidence suggests that in the sub-Roman period, settlement in towns was no longer urban in character (e.g. Roskams 1996 for York). This is unsurprising, as urbanism was a feature of the political and economic organization of the Roman Empire. With the loss of centralized imperial authority, the role of urban settlements would have altered significantly, if they had not become completely irrelevant.

Rural Settlement

The vast majority of the population in the frontier was found in the countryside in rural settlements. High status rural settlements, "villas", have been found in East Yorkshire, North Yorkshire, and County Durham. However, these villas are poor reflections of the rich villa complexes of south Britain. Clearly, the northern villas are high status rural settlements identified by concentrations of coins and relatively high status finds, such as finewares and some architectural embellishment such as tessellated floors, tiled roofs, and plastered/painted walls that distinguish them from more typical rural settlements with their earthen floors, thatch roofs, and dry-stone walls. Examples of these northern villas are Dalton Parlours, Rudston, Langton, and Beadlam (Branigan 1980; Ramm 1978). While these settlements can be accepted as villas due to their incorporation of traditional traits, the term villa has also been applied to farmsteads that do not exhibit these traits, such as examples at Wharram Percy. Such sites exhibit some Roman characteristics and material culture, but should not be equated materially (and thus socially) with the more traditional villas found in the North (Atha, in prep.). Interestingly, the northern villas are limited to the lowlands east of the Pennines, and

apart from one early example at Welton Wold (Mackey 1999), they are dated to the mid to late 3rd century at the earliest. This suggests that Roman military authorities maintained a direct control of northern England until at least the early 3rd century. After this, control by local civil administrations allowed for the accumulation of private wealth that would have facilitated the development of villas amongst the local elite. Perhaps this relates to practical administrative aspects prior to Severan provincial reorganization.

Low status rural settlements are found throughout the frontier (Bewley 1994; Clack 1982; Higham and Jones 1975; Jobey 1960; 1974; Jones and Walker 1983; Shotter 2004b:137–147). These farmsteads are typically one or more circular, sub-circular, or rectangular structures associated with curvilinear or rectilinear enclosures, perhaps for livestock. Ditches, earth banks, and palisades have been found enclosing the entire farmstead, though many are unenclosed. These morphological characteristics have been used for dating (e.g. Higham and Jones 1975), though such sites are notoriously difficult to date without excavation. Where complete or near complete distributions of these settlements have been assumed, concentrations occur in river valleys or lowlands where the best agricultural land can be found (e.g. Bewley 1994). Thus, Medieval and post-Medieval settlement activity has probably destroyed (or at best, masked) the full extent of farmstead distribution along river valleys, particularly in upland zones like the Pennines or the Lake District where good agricultural land has always been at a premium.

However, upland settlements are not uncommon. Dating of these settlements is often problematic, as frequently the only datable finds are Roman period artefacts from the 1st to 4th centuries (Jobey 1974:17). However, it should be noted that the majority of artefacts date to the 2nd century. Broadly speaking, there is an assumed basic continuity of settlement patterns from the pre-Roman to post-Roman period (Clack 1982:381; Higham 1979).

These sites were almost certainly occupied by kin-groups engaged in agriculture (Hingley 1989). Traditionally, these natives were believed to have relied primarily on a pastoral lifestyle centred around flocks of sheep and herds of cattle (Richmond 1958), but charred grain assemblages (van der Veen 1989), traces of cord rig observed through aerial photography (Frodsham 2004:58), and the many querns of the Yorkshire quern survey (Atha, pers. comm.) all attest to arable activity. The general paucity of artefacts recovered from farmsteads datable to the Roman period suggests the presence of a rural peasantry materially and economically distinct from occupants of the forts, *vici*, and towns of the frontier.

While the basic social unit occupying a farmstead was probably a nuclear or extended family (as opposed to a clan), we have no evidence in north Britain for understanding the social organization of family units, let alone higher social relations. Who owned/controlled the farmstead and land? Was there a recognized (official or unofficial) head of a farmstead or family? Presumably, kin-based farmsteads provided tribute to tribal elite in the late pre-Roman Iron Age, but there is no material evidence for a tribal elites existing in the frontier after the early 2nd century. So did Roman military authorities simply replace the tribal elite and demand tax rather than tribute? These difficulties aside, farmsteads are the primary site type for a landscape of agricultural production, and agricultural surplus was essential for the military garrisons of the frontier.

Agriculture in the Frontier

Agricultural change during the Roman period was a long-term process of agricultural intensification with new crop species and animal breeds being introduced, and with changing methods of cultivation and new developments in horticulture and hay production (Jones 1989; 1991). The changes introduced by the Romans had a greater impact in the later Roman period, seen as the culmination of a long-term process of agrarian development.

In general, it can be said that agriculture in the Roman period in Britain was characterized by expansion, notably of cereals, to meet the increased demand of an expanded non-producing population. In the frontier, this non-producing population was a large concentration of soldiers and support staff that required regular sustenance in sufficient quantities to maintain an effective military presence. A number of strategies were available to Roman and native farmers and herders (van der Veen and O'Connor 1998:129), but it is often difficult to archaeologically identify such strategies, how different strategies may have interacted, or to what extent such strategies can be linked to broader social organization and development. Unfortunately, this limits us to summarizing evidence for agricultural production, distribution, and consumption.

Two major types of field cultivation have been identified in the late Roman period and would have been practised in different parts of the frontier (Jones 1991:23). The first consisted of shallow cultivated fields plowed with a wooden ard and cultivated with spelt wheat and/or six-row barley mixed thick with wild grasses and other weeds. The larger weeds would have often been harvested and eaten with the crop. The other type of cultivation would have been found in fields deeply furrowed with plows with

metal parts. Such fields were ideal for bread/club wheat, perhaps in a maslin with rye, oats, and beans, growing in conditions cleaned of weeds.

The first cultivation type was a low-risk system with a broad range of crops and weeds "that could be relied upon to produce something edible whatever the growing conditions" (Jones 1991:23). Such a strategy would be beneficial in agriculturally marginal area, like northern England. The second is an intensive system that needs deep plowing, relatively clean fields, and crops responsive to those conditions. Based on archaeological evidence, this type of system became more prominent on land associated with large Roman villas in the later period in the lowland zone.

Agricultural surplus was redistributed to urban and military centres. In north Britain, forts were the primary focal sites for the collection and storage of agricultural surplus, whether produced and collected locally or imported from outside the region. The scale of redistribution and storage in the Roman period meant that grain (and other foods) likely suffered from regular pest infestation and spoilage due to the climate of north Britain, although the construction of granaries would have helped reduce wastage.

Three water mills found along Hadrian's Wall suggest that the military was supplied with grain rather than flour (van der Veen 1989:315). Huntley (1995:58, 64) has indicated a general pattern of cereals in the frontier. Hulled 6-row barley seems to be the dominant cereal at military sites in the north, while spelt wheat was found at all the sites Huntley examined. Oats were important from the early Roman period west of the Pennines, and became more important east of the Pennines in the 3rd and 4th centuries. Further change is seen in the post-Roman period, when there is a general decrease of spelt wheat, while barley remains common and bread wheat becomes more important. However, these changes occur broadly over the Early Medieval period and do not happen immediately or even shortly after the supposed Roman collapse of the early 5th century.

Faunal assemblages have provided the evidence for animal exploitation in the Roman period (Grant 1989; King 1991). Stallibrass (1995; 1998; 2000a; 2000b) has provided a focused consideration of the late Roman and Early Medieval faunal evidence in northern England. Unfortunately, there are very few assemblages available – less than 10 or 12 for either the late Roman or Early Medieval period – and there is a limit to the interpretations that can be made from existing evidence (Stallibrass 2000b:73). The reasons for the paucity of evidence are simple. There are relatively few post-Roman sites known, and what assemblages we have from Roman sites are predominantly from military and/or urban contexts. In other words, there is no substantial assemblage from a rural settlement, which would be representative of the vast majority of the population.

The few rural assemblages we have are from the southeastern part of the region: Cleveland, North Yorkshire, and East Yorkshire. Furthermore, soil types, land-use and post-War development have hindered and/or determined the assemblages that have been recovered. There are, however, two important trends that have been observed (Stallibrass 2000b).

Within the Roman period, assemblages are dominated by cattle bones. The exception is the Vale of Mowbray, the northern arm of the Vale of York, where sheep bones were nearly as numerous as cattle bones. In general, however, cattle bones tended to account for >70% of the total number of identified fragments of cattle + sheep/goat + pig bones from the late 1st century AD on. There is also a general lack of contrast between military and non-military reliance on cattle. The variation in the pattern in the southeastern part of the region could be due to several factors, such as topography or environment, cultural or ethnic affiliations, and economic influences. This same region correlates with a greater reliance on ceramic artefacts when compared to the rest of northern England (Stallibrass 2000a:67).

There seems to be evidence from Carlisle that the military had preferential access to meat from animals raised specifically for that purpose. Civilians, on the other had, tended to eat animals that were utilized primarily for other purposes (e.g. traction, breeding stock, dairy, etc.) (Stallibrass 2000a:67). Butchery patterns involving systematic treatment of the carcass, especially the scapulae, seem to be related/restricted to military sites, indicating a systematic practise of butchery associated with the army. Another item of note is the time lag between adoption of the new, bigger stock in the northeast and northwest. There is evidence from York that larger cattle are being used by the 2nd century, but these do not appear west of the Pennines until the 3rd/4th century, and even then only rarely. This difference may be economic or cultural/ethnic in influence. For example, a farmer may be unwilling to accept the new breed due to novel traits of the cattle, such as colour, temperament, or milking quality, among others (Stallibrass 2000a:69).

The primary differences occur between the areas east and west of the Pennines, and both of which contrast with the apparent uniqueness of East and northeast Yorkshire (though this may be an archaeological bias rather than a real pattern). The variability across northern England may be due to the cultural, religious, and ethnic mix of the population of Roman Britain. There is an assumed initial increase in cultural diversity in the 1st and 2nd centuries AD, with the introduction of Roman troops and administrators contrasted to an implied generally homogeneous population of native inhabitants.

Unfortunately, there is a paucity of late Iron Age collections from the region to compare to the Roman period evidence (Stallibrass 2000b:74).

During the late Roman period and continuing into the post-Roman period, the meat diet becomes more diverse with the addition of greater quantities of venison, wildfowl, fish and shellfish, and the three main domesticates become less important, relatively. The increase in meat source diversity corresponds with evidence for the plant diet diversifying as well. Stallibrass (2000b:74) believes that this is evidence for continued or developed social networks. It can also be understood as a renewed integration with the natural environment, perhaps as an ideological expression of landscape control or an expression of elite display and interaction with the area. Thus, an elite lays claim to a territory through hunting and exploiting wildlife resources just as much as by consuming agricultural produce. More importantly, the dietary evidence alone is enough to deny a reversion to Iron Age modes of subsistence, and by extension, society.

Unfortunately, at present it is impossible to determine the levels to which arable and pastoral agriculture was practised in the frontier. Agricultural surplus, the production of which is suggested by the distribution of mostly undated rural farmsteads, would have helped to sustain a military presence in the region, as well as feed the population of urban centres.

5.4: SUMMARY OF THE LATE ROMAN FRONTIER LANDSCAPE

Through the 4th century, barbarian raiding became increasingly common and disruptive to the security of the frontier of northern Britain. These barbarians were based north of Hadrian's Wall and in Ireland. The threat posed by these barbarians is difficult to determine, but this menace to the north and west of the frontier required that Hadrian's Wall and the other forts of northern England were occupied at least until the early 5th century by the *limitanei*.

The *Notitia Dignitatum* suggests that many of the units in northern England were based as the same fort for at least a century. Given the duration of each unit's posting, the *limitanei* garrisons were likely to be socially and economically integrated in the locality of their posting. By the late Roman period, the majority of soldiers and support staff were probably recruited from Britain, if not the frontier zone, and thus would have family and friends in the diocese as well as any friends in the military. In addition to personal social ties, it is likely that a unit was traditionally identified with its post and locality. The preponderance for tax in kind, as well as each unit's labourers producing

food and other goods would have served to economically link a garrison with the surrounding countryside. Further connections between the local and military populations may have been established and reinforced by the unit commander. As discussed in Chapter 2, garrison commanders in the Eastern Empire were important officials and their social authority extended beyond their defined military authority. A similar role for garrison commanders in the Western Empire, particularly in the frontiers, would reinforce military authority and potentially stabilize relationships between military and non-military communities (Whittaker 1994:258–269).

Pollen evidence supports the notion of basic landscape continuity between the Roman and Early Medieval periods. Forest regeneration began in the 4th century, possibly associated with a shift to increasing pastoral activity. Farmer/soldier interaction is largely unknown, but a relationship certainly existed. The native peasantry was engaged in surplus arable and pastoral agriculture, but the extent of arable and livestock surpluses is unknown.

Frontier society was composed of three basic types of communities: military, urbanite, and rural peasants. The social and economic interaction of these three communities establishes a basis for understanding frontier society and economy. Subsequently, the collapse/transformation of the late Roman frontier should be archaeologically visible, particularly through military remains.

5.5: CASE STUDY SELECTION AND METHODOLOGY

Given the paucity of documentary evidence from Britain in the 4th to 5th centuries, the period in which the Roman frontier declined, collapsed, or transformed, archaeological evidence provides the most effective means of understanding the transformation of the frontier. Hadrian's Wall is an ideal area to focus on, as the landscape around the Wall has been well investigated over the past century and longer. Furthermore, a holistic understanding of the frontier, incorporating evidence beyond the category of military is likely to better explain the transformation. The size of the region makes a detailed study of the entire frontier or even Hadrian's Wall impractical. Therefore, it was decided to conduct case studies to examine particular sectors of the frontier landscape in detail.

Three case study areas have been identified, centreed on forts with good evidence for 4th and 5th century occupation. A scoping exercise was conducted that briefly reviewed sites along Hadrian's Wall in order to identify sites of critical importance in understanding the late to sub-Roman transition of the frontier. A number of factors were

considered, but two factors dominated the final decision: the accessibility of excavation archives/publications; and well-dated finds and stratigraphic sequences dated to the 4th century and later. The scoping exercise identified seven sites that had high quality information in regards to 4th century occupation: South Shields, Wallsend, Newcastle, Housesteads, Vindolanda, Birdoswald, and Carlisle. All of these sites had excavated evidence of late Roman activity. A further important factor in the final selection was the decision to place the case studies so that lowland and upland sectors of Hadrian's Wall would be included. Furthermore, Hadrian's Wall is often considered as a linear barrier, but social and economic dynamics may have differed between the eastern and western halves of Hadrian's Wall. Three sites were chosen as the foci of the case studies: Newcastle, Birdoswald, and Carlisle (see Fig. 5.10).

Selection of these forts provided coverage of both the east and west ends of the Wall as well as some of the central sector. Topographically, this also covered both lowland and upland zones. The placement of the case study areas thus accounts for variability in upland and lowland landscapes and differences between the east and west ends of the Wall, and centring each case study on a Wall fort allows for differentiation north and south of the Wall. Given the close proximity of forts along the Wall, a radius of 10km in every cardinal direction seemed adequate to investigate each fort in the context of its immediate landscape while also including forts to the east and west to establish any relationships between them. A square of 20 by 20km with a fort at its centre provided an area of 400km^2 for a case study. However, the possibility of 10km being too small a distance to demonstrate meaningful patterns between the Wall and its northern and southern hinterlands suggested that at least one case study should be larger. Given the proximity of the Birdoswald and Carlisle case studies, it was decided to double the radius of the Newcastle case study to 20km. Thus the total area of the Newcastle case study is 1,600km^2. This greater size had the further benefit of including not only the forts at Wallsend and South Shields but also forts south of Hadrian's Wall. The distribution and size of the case studies thus only excluded Housesteads and Vindolanda, but evidence from these forts (presented in Appendix 5) is integrated in the final analysis in Chapter 6. Appendices 2.5, 3.5, and 4.5 present the results of the Newcastle, Birdoswald, and Carlisle case studies, respectively. Before these results can be reviewed, however, it is first necessary to provide an overview of the case study methodology.

Each case study was completed using the same methodology. Upon identification of the focus of the case study, the appropriate SMR/HERs were consulted

to construct a database that included all Roman period sites and findspots. Prehistoric settlements from the Iron Age were also included on the basis that there is seldom any clear distinction between Iron Age and Roman rural settlement when dating evidence is unavailable. Given the general long-term continuity of rural settlement, such sites were inferred to have been occupied to maximize the presence of rural agrarian communities in the frontier. These databases have been included as Appendices 2.1–2.4 for the Newcastle case study, 3.1–3.4 for the Birdoswald case study, and 4.1–4.4 for the Carlisle case study. The database was then used as a guide for a literature review and to eliminate sites with no activity datable to the 4th century.

It should be initially noted that post-Medieval changes to the landscape impacted on the survival of archaeological remains in the case studies. Industrial mining and quarrying of metal ores, coal, and certain types of rocks have physically altered and shaped the landscape, changing not only the lay of the land, but also removing archaeological material (Countryside Agency 2002a). The agricultural improvements of the 17th and 18th centuries altered the land and buildings upon it by introducing systematic drainage systems. In Northumberland and northern Cumbria, Medieval fortified structures and Roman ruins were incorporated into farmhouses and structures or into designed parkland (Countryside Agency 2002b). While such "improvements" are not limited solely to the extreme north of England, it should be noted that subsequent landscaping has removed archaeological deposits. The establishment of quarries and mines, and the construction of railways, roads and improved farms have thus impacted the archaeological visibility either by outright destruction of archaeological deposits or the robbing of building material. Despite this activity, significant amounts of archaeological material survived into the present and have been methodically examined. Whitworth (2000) has discussed the impacts of Hadrian's Wall on the later landscape in more detail.

Where possible, the literature review relied on published sources which were consulted in reference to specific sites and finds, and archives were examined where it was clear that a site had a potentially important stratigraphic sequence or a find came from a significant context. Throughout the literature survey, all information relevant to the chronological parameters of this study was recorded and reported.

It should be noted that the process of data gathering, based as it was on published literature and archives, was variable within and between each case study. The accessibility of excavation results occasionally proved problematic. In most cases, published excavation reports were available for consultation. Unfortunately, in some

cases excavations were never published, but where this occurred archives were consulted instead. This most frequently occurred in the Carlisle case study, where the dissolution of the Carlisle Archaeological Unit has caused a publications backlog. Such situations, however, were infrequent and attempts were always made to access information via personal communication to overcome this difficulty.

Variable quality of published or archived reports was an obstacle for the consistent gathering of data, and sites with a long history of investigation are particularly noteworthy here. The high standards of contemporary excavation reports, with their inclusion of as much information as possible, is a relatively recent development in archaeology. At sites where no modern excavations have taken place, much has to be made of the limited information provided in excavation reports. In many cases, early excavators were biased toward determining the origins of the site, and late Roman material is only mentioned in brief. When reviewing antiquarian and excavations of the first half of the 20th century, certain phrases and descriptions were often typical of late 4th century structures. For example, "Theodosian" period building was identified by its cruder workmanship when compared to early building phases and was found sequentially later than the latest burning or destruction episode. The very change in masonry style was indicative not only of a destruction and/or abandonment episode, but also of the site's reconstruction under Count Theodosius. The scholarship of the time was a product of the Culture History approach and limited by its underlying assumptions of how to best "understand" the past. To overcome this bias, three descriptive elements proved invaluable for the recognition of late 4th century and later activity from pre-modern archaeological investigation: "rough" workmanship following periods of high quality masonry; by noting the use of the term "Theodosian"; and by taking note of dated artefacts. Due to the lack of absolute dating techniques in old excavations, most of the evidence is stratigraphic or artefactual, generally coins and ceramics. These elements, coupled with a thorough examination of old excavations generally allowed for a confident interpretation of results, with the greatest limitation being a lack of detail. When possible, evidence from older excavations has been corroborated with more modern excavations. South Shields and Birdoswald are notable examples where old excavation results have been successfully integrated with modern excavations.

Unpublished material and archives typically suffered from brevity and a lack of detail beyond a basic reporting of stratigraphy. In such situations, personal communication was used to provide desired information, such as if there were any associated finds and where information or artefacts were deposited.

In cases where recent excavations have yet to be completed or published (e.g. South Shields, Newcastle, Carlisle), this information was incorporated into the thesis as fully as possible. However, such information was provided at the beneficence of excavators who understandably have a duty to protect their own work. Thus, future anticipated publications may supplement or contradict some information presented in the case studies. That said, great care was taken to accurately and faithfully incorporate such information.

The cases studies provide detailed overviews of a specific sector of Hadrian's Wall. Individual findspots and sites dated to the period of this study were put into a third database (Appendices 2.3, 3.3, and 4.3) for purposes of digital mapping and consolidation, but the majority of detail in each case study comes from excavation reports. Published literature and archives were used to write a summary of the site from the 4th century to the end of its occupation, focused on the form of the settlement site and changes through time. Where possible, relationships between sites in the case studies are examined, and these detailed examinations provide the primary information for analysis.

The case studies do not present results of statistical manipulation of the settlement archaeology in relation to geological or geographical information, as statistical manipulation would be misleading, given the nature of the sample. Nor are artefacts a central focus of case study analysis, but artefactual information is incorporated into analysis as often as possible to convey a positive identification or understanding of the use of a given environment. That said, there is no quantitative or qualitative assessment of the artefactual assemblages in the case studies as the varied methods of excavation and degree of reporting would bias artefactual assessment toward modern excavations. The case studies draw out relevant information that is then used to identify trends and themes across all three case studies in Chapter 6. Also, for the benefit of the reader, Figure 5.11 has been included to facilitate the use and understanding of Latin terms in reference to the spatial organization of Roman forts.

Chapter 6:

The Final Phases at Roman Forts

The three case study areas, centred on Newcastle, Birdoswald, and Carlisle, covered a significant portion of the landscape of Hadrian's Wall: of the *c.* 135km distance between South Shields and Bowness-on-Solway, approximately 80km of Hadrian's Wall was included. The greatest amount of evidence is from archaeological excavations, primarily at forts. Thus, the significance of forts looms large in this thesis, and forms the basis for most of the discussion below. This chapter compares the results of all three case studies. The initial discussion focuses on broad comparisons between the case studies, related to distribution patterns in 6.1. After this, more focused discussion thematically considers changes in late forts in 6.2–6.5, with a summary of the 4th century sequences at the legionary fortress at York beginning each section. The first theme examines changes to the overall structure and organization of forts, notably defences, gates, and the internal plan. The second theme explores the changing plan and function of fort buildings, starting with *principia* and then including other buildings. The third theme explores evidence for the economies of forts, including aspects of supply. Finally, the chapter concludes with a brief summary in 6.6.

6.1: BROAD OVERVIEW OF CASE STUDIES

Each case study has generated a series of maps illustrating the distribution of the total sites and findspots dating to the Roman period, the distribution of sites with 4th century occupation, and farmsteads and agricultural sites. The results of these case studies are presented in Table 6.1, with percentages included in addition to real numbers to allow for comparison of information between the Newcastle case study (with a 20km radius) and the Birdoswald and Carlisle case studies (both with 10km radii). For each case study, these site distributions have been discussed, in addition to detailed review of the evidence from relevant sites. When considering these distributions, the impact of post-Roman activity must not be forgotten. With the agricultural improvements and industrial revolution of the post-Medieval period, and with the resultant expansion of the population of northern England, archaeological preservation has been better in the uplands, where there has been less direct impact from large populations and development in the post-Medieval period. Nonetheless, some important, probably "real" patterning emerges.

The overall distribution of sites and findspots from all three case studies is graphically depicted in Figure 6.1. The case studies covered the eastern lowlands of the Wall, the western upland sector, and most of the western lowlands of the Wall. The distribution is dominated by the line of Hadrian's Wall, visible through the position of forts, milecastles, and turrets. There are also clusters of other sites, primarily farmsteads, north and south of the Wall. A number of observations can be made by comparing distributions from the case studies, many of which are observable in the distribution of farmsteads.

At the eastern end of the Wall farmsteads occur in high numbers. A cluster is seen at the western end of the Wall, but the majority of the farmsteads are south of the Wall. This seems to reflect a difference in settlement between the east and west. If this distribution was due to the construction of the Wall, a difference in farmstead distribution between the north and south should be seen at both the east and west ends. As it is not, I would suggest that the eastern end of the Wall cut through a tribal territory while the western end may have corresponded to tribal boundaries, which in turn may have been dictated to some extent by the Solway Firth.

It is also noteworthy that nearly all the farmsteads occur at less than 200m O.D. altitude, the exceptions being at the lower reaches of higher altitudes. The Birdoswald case study, which incorporated the most upland area, contained only nine farmsteads, compared to the 81 and 38 farmsteads from the Newcastle and Carlisle case studies, respectively. Of the total number of sites and findspots, the farmsteads formed 18.24% and 16.67% of the Newcastle and Carlisle case studies compared to the 3.83% of the Birdoswald case study. The relative closeness of the percentages for the Newcastle and Carlisle case studies indicated a real preference for agricultural settlement in the lowland zones. Whereas the differences in farmstead distribution between the east and west ends of the Wall can be attributed to tribal territories, the lack of farmsteads in upland areas is due to ecological factors. This in itself is not surprising, but this distribution is important in terms of the impact that farmstead distribution could have on provisioning garrisons along the Wall.

It is important to recognize that despite the overall high number of farmsteads in the case studies, only six of these rural sites provided evidence for occupation in the 4th century or later. At a basic level, this underscores the disparity between the general distribution and the ability of archaeologists to accurately date occupation of these types of sites. At a more fundamental level is the fact more farmsteads are datable to the 1st and 2nd centuries by Roman finds (Allason-Jones 1991). Does this mean that farmsteads

that are occupied in the 2nd century are abandoned by the 4th century? Or is it that diagnostic Roman artefacts, particularly coins and ceramics, are not being brought to or used on farmsteads because of differing materialities of existence? I find this latter reason more likely, and this suggests a significant shift in social and economic relations between native farmers and the Roman military between the 2nd and 4th centuries.

Sites from the late 4th century were limited almost exclusively to military sites. With the abandonment of the outpost forts north of the Wall in the early or mid 4th century, all the military settlement is found along Hadrian's Wall or south of it. Every fort in the Newcastle and Carlisle case studies provided evidence in some form of late 4th century occupation activity. In the third case study, the forts at Birdoswald and Great Chesters had conclusive late 4th century activity whilst Carvoran and Castlesteads are likely to have been occupied at this time.

Evidence from milecastles is uneven across the case studies, but where there have been internal excavations, coins or pottery tend to bear out occupation until at least the late 4th century, and likely into the 5th century (e.g. milecastle 54), though the role of milecastles at this date is uncertain. Evidence from turrets is even less frequent than that from milecastles, but occasionally turrets are used in the 4th century or later, though the exact purpose is not always clear (e.g. turret 51b). Activity from the late 4th century was observed at five milecastles and one former turret in the Birdoswald case study. This compares to no evidence from milecastles or turrets in the Carlisle case study, and only one milecastle and one turret from the Newcastle case study. This could reflect a real upland/lowland difference that saw the continued importance of turrets and milecastles in the uplands during the latest phases of occupation of Hadrian's Wall. If this was the case, a probable reason is that the pastoral regimes of upland areas required more surveillance and regulated crossing points to maximize both tax/toll opportunities and security. On the other hand, this pattern is more probably indicative of the greater survival of archaeological remains of milecastles and turrets in the uplands, where the stone from these structures was not stolen as extensively in later centuries.

The greatest general differences between the case studies, as revealed by distribution patterns, are related to the distribution of farmsteads, milecastles and turrets. Differences in farmstead distributions have been explained as relating to both tribal territories and ecological factors. Milecastle and turret distributions may be due to post-Medieval agricultural, industrial, and settlement developments, or possibly reflect a late Roman distribution related to monitoring of people and livestock in the uplands. The

vast majority of detailed evidence, however, was from military structures on Hadrian's Wall, primarily forts.

6.2: LATE CHANGES IN FORTS

A number of specific trends consistently found at forts across all three case studies were identified that suggest considerable material changes were occurring along Hadrian's Wall from the mid–late 4th century (Appendix 6). But are these changes relevant only to Hadrian's Wall or to the whole of the frontier zone? As part of a frontier system, the changes seen on the Wall should be seen at other garrisons of the British frontier. Appendix 5 summarizes the evidence from the remaining forts on the Wall and the forts occupied in the 4th century between the Humber and the Wall that were not included in the case studies. Tables 6.2 and 6.3 summarize the results of observed traits at forts in the case studies as well as those Appendix 5. The geographic distribution of the frequency of these trends are demonstrated in Figure 6.2, but unfortunately this figure only illustrates a bias toward excavation and publication (notably along Hadrian's Wall) more than any real patterning. For example, coastal installations are clearly under investigated and under published, while the sites with the most trends are along Hadrian's Wall. Interestingly, the site with the most trends, South Shields, has had its archaeology subject to truncation, outright destruction, and archaeological investigation over the past 200 years. Yet, modern excavation and reassessment of previous excavations has proved rewarding, elucidating many aspects of the latest Roman deposits. The changes evident in late Roman frontier forts are discussed below in a thematic fashion, with a brief summary of the sequences at the legionary fortress at York beginning each section. As the legionary fortress – the *limitanei* regiment of the highest military status, the site can be seen as the pre-eminent military installation in the frontier, and this site provides a baseline that other frontier forts can be compared to.

The legionary fortress at York was first established in the late 1st century and was built to accommodate an entire legion of the principate, approximately 5,000 soldiers plus support staff and animals. After the Severan provincial reorganization, York, by this time incorporating suburbs and a *colonia* in addition to the legionary fortress, became a provincial capital and retained this status until the end of the Roman period. It is also assumed that York served as the headquarters of the *dux Britanniarum*. So while York was situated at the southern fringes of the frontier, it was still a politically important settlement that would have maintained contact with imperial authorities. Despite this importance, a number of changes have been noted through excavation in the

4th century that appear stark in comparison to the planned and orderly fortress of the 2nd century.

The excavations at the legionary fortress at York have demonstrated similar traits to those seen at the forts on Hadrian's Wall and throughout the northern frontier, but there are some differences. Primarily, the difference is one of chronology; the changes seem to be occurring later at York than the other forts. The second major difference is the continued use of stone in construction and refurbishment to a later date. These differences noted, however, do not indicate that the development of the legionary fortress through the 4th century is significantly different to other military installations in the frontier. Bearing in mind the traits observed in frontier forts noted above, and the similarity of the legionary fortress sequence to these forts, allows for a thematic discussion of changes in the 4th century frontier focused on changes in fortification, changes in building plan and function, and changes in supply and economy. For specific details and references for aspects in the following discussion, the reader is referred to the appropriate appendix where the text is fully cited.

6.3: CHANGES IN FORTIFICATION AND LAYOUT

Changes in the fortifications of forts are seen in three separate but interrelated defensive features: gates; ditches; and curtain wall. Changes to fort layout take numerous forms, but each contributes and alters the way in which people would have moved around a fort. At York, there is no evidence for activity at gates dating to the 4th century, but there is significant evidence from the western quadrant of defences. Excavations at interval tower SW5 found that repairs to the southwest wall of the fortress after AD 300 were of poorer quality masonry (Sumpter and Coll 1977:90). Soil and rubbish was allowed to accumulate on the *via sagularis* inside the defences, which was eventually repaved twice in the later 4th century, but these later repavings were of poorer quality than previous road surfaces (note also the dark silty loam accumulation on the *via sagularis* in the Alwark/Bedern area in the mid 4th century; Ottaway 1996:217). However, the area arounder interval tower SW5 appears to have hosted considerable activity throughout the 4th century and possibly after as suggested by stratigraphically later features. Nearby, in the northwest wall of the fortress, a tower was built in a dilapidated section. This tower, known as the Anglian Tower, does not have a confirmed construction date but seems to have plugged a gap in the defences. The tower was probably built in the late 4th or 5th century on the basis that the tower is built of "fresh" stone rather than reused building stones from other buildings (Buckland 1984:56). This

suggests that the defences were still a desirable element of the fortress and that buildings inside the fortress were still being used, so fresh building stone had to be used. There is also evidence that the fortress ditch in front of the southwest wall was recut in the later 4th century (Ottaway 2004:141).

In the rest of the frontier, alterations to fort gates, both cardinal and minor (*portae principalis* and *quintana*, respectively), occur throughout the Roman period. In most cases, the alterations include the narrowing or blocking of passageways. Along Hadrian's Wall this occurred in the late 2nd/early 3rd century at both forts and milecastles, but a second phase of gate blocking occurred in the 4th century along the Wall (e.g. Great Chesters) and throughout the frontier (e.g. Lanchester, Ilkley). This suggests a desire to minimize access into forts, either for defensive purposes (any entrance is a weak point in defences) or for better management of traffic into, out of, and through a fort. There is little clear consistency between which gates were selected for blocking. Where excavated, the north gates of forts attached to Hadrian's Wall seem to have retained one portal, presumably to allow access north of the Wall. However, this is the only consistent element in gate blocking (allowing access north through the Wall curtain), but it can be speculated that gates were chosen on the basis of their relationship to the local topography and possible extramural settlement.

Outside the fort, it has been observed that later forts tend to have one large ditch rather than the typical two or three ditches of earlier forts (Evans 1984). However, these single, broad ditches tend to be a feature of forts south of Hadrian's Wall, like Piercebridge. So ditch shape itself cannot be taken as a diagnostic feature of late defensive changes, but the use of a single ditch may be significant. Late 4th or 5th century cleaning and recutting of a single ditch have been observed at Birdoswald and South Shields. So the use of only a single ditch outside the fort may be feature of late fortification.

Further defensive refurbishments were seen along curtain walls. Through most, perhaps all of the 4th century, repairs and refurbishment of curtain walls were completed in stone, though this was of variable quality in shape and execution (e.g. Birdoswald, Vindolanda, York). Often, this late defensive refurbishment collapsed in whole sections (as at Birdoswald) and left significant gaps in the defences. Subsequent repairs then seem to have been earthen ramparts with timber or stone revetments rather than true stone walls backed by an earthen rampart. Such defences are somewhat less sophisticated and less labour-intensive to build, but retain a roughly equal defensive capability. At Housesteads, timber towers also replaced the stone towers, and the

independence of the timber towers to the stone curtain indicates they were inserted after the addition of the late earth rampart. Dating this refurbishment is difficult and could belong to the final years of the 4th century or the sub-Roman period. The frequency of this type of refurbishment along Hadrian's Wall (at 6, possibly 7 sites) might suggest a central policy for use of revetment. But if this was the case, it seems not to have included the forts south of the Wall corridor, where only two sites (Malton and Bowes) possibly refurbished their defences with an earthen bank and timber or stone revetments.

It has been argued that this type of defensive refurbishment dates to sub-Roman occupation of the forts in the 5th, 6th, and/or 7th centuries, and two factors favor sub-Roman dating. Comparable building activity at sub-Roman sites in other parts of Britain, notably southwest England (e.g. South Cadbury, Somerset; Alcock 1995), Wales, and Scotland (e.g. Dunadd, Argyll; Lane and Campbell 2000) are found dating from the 4th to 9th centuries (Alcock 2003:179–183). This parallel is not necessary, however, as the defensive value of earthen ramparts was well known to the Romans, and it is an easy solution to arrive at without needing to know of a parallel. A second and stronger factor favoring a sub-Roman date for this type of defensive refurbishment is that parallels are not known from milecastles. At milecastles where very late Roman occupation or activity is attested, primarily through Huntcliff type wares, the defensive circuit was still a stone-built wall backed by an earth rampart. This suggests that when earthen banks with stone or timber revetments became the primary method of defence, milecastles were no longer occupied or utilized in a military capacity.

Defensive aspects of forts were maintained through the 4th century and at least until the end of the Roman period. In general, the form of these defences also remained the same even if in the literature such refurbishments are called crude or rough. The continued use of stone for repairs and redigging of ditches does not depart from traditional military defensive architecture in the frontier. However, a significant shift in defensive construction occurred in the final years of the 4th century or after, particularly on Hadrian's Wall. It may be that the change to earthen rampart with stone or timber revetment is a feature of sub-Roman occupation, but the date cannot be proven at this point. The ultimate fate of the defences at many of the forts in the frontier is unknown, as excavation has typically focused on gates. Overall, it seems clear that where evidence has been gathered, defensive architecture seems to be intact until at least the end of the Roman period. It should also be noted that these structural changes in defensive architecture do not fundamentally alter the tactical advantage or function that such

architecture entails. Thus, while the fort would look different in appearance, such a makeover would have little appreciable difference if the fort were to be directly attacked.

While changes to the defences had little functional difference, a number of changes impacted on the internal layout of forts from the mid 4th century and later. Gate blocking limited access into or out of forts and directed all traffic to fewer specified points. The quality of road repavements often decreased through the 4th century, and in a number of cases, new or refurbished buildings projected onto roads, effectively narrowing streets. Functional changes to buildings (discussed below) suggest that clearly defined zones of accommodation, storage, and industry were less discrete than previously as these functions were taken up side-by-side in numerous areas in a fort. All of these individual changes in plan or function to building have a knock-on effect in terms of the overall internal organization and plan of the fort. Unfortunately, there are not enough complete late fort plans by which to determine if such changes in layout were consistent throughout the frontier or if each fort was different in its layout.

6.4: CHANGES IN BUILDING PLAN AND FUNCTION

A number of changes relate to the plan and function of internal buildings in forts. Through the first half of the 4th century, any alterations tend to be repairs or refurbishments to existing buildings with minimal changes in plan to either the buildings or the fort. There are exceptions to this, though. For example, the fort at South Shields seems to have undergone a significant reorganization and refurbishment in the late 3rd/early 4th century in which a new *praetorium* was built and the numerous *horrea* from the supply base phase were converted into barracks. A notable exception to exclusive 4th century change in buildings are barracks. The change from traditional Hadrianic stone built barrack blocks to chalet style barracks of detached or semidetached structures begins in the mid 3rd century (e.g. Wallsend, Housesteads), though this change does not occur concurrently at every fort and the trend of building chalet style barracks continues through the 4th century (e.g. Birdoswald).

The most significant excavations in the legionary fortress were those at York Minster, which revealed an interesting sequence in the *principia/basilica*, three barrack buildings northwest of the *principia*, and a building (Building 4) across a street to the northeast of the *principia* (Phillips and Heywood 1995). For ease of discussion, these excavations are separated into a discussion of the *principia* followed by the barracks and other internal fortress buildings.

The *principia* saw a redesign and rebuilding of the *basilica* in the early 4th century, in which more internal divisions and doors/thoroughfares were built. An important element in this was the construction of an "imposing" door in the northeast wall of the *principia*, allowing a tentative identification of Building 4 as the *praetorium*, the commanding officer's house (Carver 1995:184). At this time, the *principia* portico was enclosed, altering an open communal space into a confined corridor, perhaps also separated into chambers though there is no evidence for this at present.

In the later 4th century, pedestals for altars or statues were placed beside columns in the *basilica*, and a railed enclosure was inserted. Disarticulated human bones were found inserted in the southeast corner of the *basilica*. These changes have suggested to Carver (1995:185) a greater emphasis on ritual or ideology for the *basilica* in the late 4th century.

The final period of the Roman sequence dated to the end of the 4th to the 8th century (on the basis of TPQs and TAQs), and saw a drastic change in the building. In the *principia*, a sequence of events reveals changes in the use of the space. In the northwest end of the *basilica*, the flagstone floor was removed. This was followed by a period in which multiple layers accumulated, demonstrating intermittent use of the hall. The uppermost occupation layer contained lots of animal bones and traces of infestation by small mammals. In the southeast of the *basilica*, after the flagstone floor was removed, metalworking hearths were inserted. These hearths and the uppermost layer in the northeast of the *basilica* were overlain by collapse deposits. Overlying this was a thick layer of dark earth, which was then used as a cemetery in the Anglo-Scandinavian period (Carver 19995:188). The pottery from this period is almost exclusively late 4th century ceramics, and coins from the industrial layers are also from the 4th century. The animal bone assemblage was dominated by small pigs (less than a year in age) and radiocarbon dated (cal.) to AD 343–416. On the basis of late 4th century artefacts from stratigraphically earlier layers, an early 5th century date is preferred for the deposition of the animal bone. The difficulty of dating this final period of occupation means that this late activity in the *principia* could have occurred anytime between the late 4th century and the 8th century, but on the basis of comparison (see below) the changed use of *principia* space for metalworking and butchery fits comfortably in a late 4th or early 5th century context.

Interpretation of the function of the legionary *principia* rests largely on the faunal evidence. Carver (1995:189) has suggested that the faunal assemblage was typical of a non-urban subsistence economy specialising in pigs and sheep, with a few cattle used for

draft work, which would support a small community, though others have interpreted the assemblage as evidence of feasting and conspicuous consumption (Roskams 1996; Gerrard 2007). It is likely the animals were slaughtered in the *basilica* (Carver 1995:189). Carver also argued that the *basilica/principia* became an agricultural building or a "species of market hall" in the late 4th/early 5th century and later. In this way, according to Carver, the building provided centralized local services to a reduced community that no longer had access to the supply system of an imperial state. On the other hand, the preference for suckling pig fits known patterns of a Roman elite diet, and the spatial distribution of faunal remains suggests periodic dumping, which further suggests intermittent feasting. Roskams (1996:284) argued that the individual or group engaged in feasting exerted economic control over agrarian production. Furthermore, the act of consuming the pig before the age of optimum meat production is an act of selection related to notions of status and identity of the consumer (Gerrard 2007), in this case a preference for or the desire to emulate elite Mediterranean consumption patterns, perhaps signaling the high status of some of the population of the legionary fortress. Thus, despite the considerable change in rubbish disposal and function of the *principia*, it still seems to have occupied an important role in the legionary fortress and provides evidence for continued elite activity.

The barrack buildings in the early 4th century at York generally retain the plan of earlier phases, but are refurbished with some alterations. In late 4th century Barrack 1, across a street to the northwest of the *principia*, an infant burial was found in a renovated centurion's quarters, and the *contubernia* were partly demolished. In Barrack 2, northwest of Barrack 1 across a street, the centurion's quarters were redesigned; partitions were removed to create bigger rooms, the courtyard was expanded, and a hypocaust was constructed in the north corner room. Overall, the centurion's quarters resembled a small villa. The northeastern-most *contubernia* had a hypocaust inserted. In Barrack 3, across a narrow alley to the northwest of Barrack 2, rooms were enlarged in the centurion's quarters. The adjacent *contubernia* had a small chamber built in it with stone benches or floor supports and an amphora was found *in situ* for use as a urinal (Carver 1995:186).

The late 4th/early 5th century and after saw the deposition of wind-blown detritus in Barrack 2. This was followed by reflooring and occupation of room 5 in the centurion's quarters. Roof collapse may have followed this occupation, but overlying the roof collapse, a corn-drier and metalworking hearth were inserted. These were dated by thermoluminescence to AD 728-1026 and AD 710-900, respectively. Overlying these

hearths was a layer of dark earth, the analysis of which suggests was brought from somewhere nearby in York and dumped there. The interpretation put forward for this sequence was that there was a late/sub-Roman occupation of the centurion's quarters (room 5) followed by abandonment/collapse of the building. The space was then used in the Anglian period for metalworking and horticultural purposes (Carver 1995:191).

In the fortress *praetentura* at 9 Blake Street, there was a reordering on the site at the beginning of the 4th century. The large range of a building was demolished and clay was dumped over the remains of the building and over adjacent areas to level the site, but the narrow range of the building remained in use. The narrow range stood at least into the 5th century, as mortar floors and domestic layers were found post-dating coins of AD 388. The standard of cleanliness declined through the 4th century in the building and on the street it was sited on. Across the street, near barrack buildings, a possible rubble-founded mortar structure was built overlying part of the street in the later 4th century (Hall 1993:387; Ottaway 2004:145-146).

Other forts in the frontier demonstrate similar changes of plan and function as those seen at York and include a broader range of buildings. *Principia* at a number of forts throughout the frontier seemed to have taken on news functions. At Corbridge, Vindolanda, and Housesteads the offices in the rear range of the building seem to have been converted to domestic occupation. Forecourt verandahs and porticoes were also walled up and dividing walls were inserted (e.g. South Shields, Carrawburgh, Housesteads, Carlisle, possibly York), and at Housesteads this seems to be related to storage activity to judge from the hundreds of arrowheads found in one of these chambers. The *principia* at Ambleside and Housesteads provided evidence for metalworking, as did the legionary *principia* in York. There was also evidence for butchery at York. Rather than convert the appropriate space for industrial activity at Bainbridge, the *principia* was demolished and replaced by a sequence of smaller timber buildings with floor levels that indicated limeworking and bronzeworking. Finally, it has been argued that a church was inserted in the *principia* forecourt at South Shields, though it is uncertain if this was of late 4th/early 5th century date or later in the sub-Roman period.

There are intriguing if limited indications of a change in expression of military authority and power. The *praetorium* at South Shields was newly constructed in the early 4th century on a Mediterranean model. However, changes in the second half of the 4th century saw a decline in opulence of the commanding officer's residence. Floors were relaid, and many of these were still high status *opus signinum* pavements, but the

excavators imply a lesser quality of later refloorings and refurbishment. At Birdoswald, there is no *praetorium* excavation to compare to, but the construction of a series of timber halls (typical of Early Medieval date), possibly as early as the AD 370s may suggest a change in the relationship between the fort commander and its occupants. At other forts, only small areas of *praetoria* have been excavated and these suggest continued use of the buildings with late changes like the subdivision of rooms.

Horrea demolition or conversion occurred at a number of forts along Hadrian's Wall. The replacement of the *horreum* at Birdoswald with a timber hall is perhaps the most well known and drastic example, but there are many other cases of conversion or demolition. Change of function is often indicated by an infilling of the subfloor and reused of the shell of the building. Palaeobotanical evidence from South Shields, comparing a sample from the pre-infilled subfloor to a sample from the infilled subfloor indicated a real change in function from a granary to something else. At Newcastle a furnace was inserted into the infilled subfloor of one granary, which was then used for metalworking. At Housesteads, the northern half double-granary was allowed to collapse while the southern half was partitioned with one end providing domestic accommodation while the opposite end seemed to have retained its storage function. The *horreum* at Vindolanda was also converted for accommodation. At Benwell, the northern end of the granary seems to have been demolished down to the foundations at some point (undated) and replaced with a stone-paved surface. This conversion or outright demolition of *horrea* is quite significant in terms of supply and storage issues, which will be discussed in more detail below. It should be noted, however, that there seems to have been another building constructed in the late 4th century along the *via principalis* at Housesteads to replace the loss of granary space.

The general orthodoxy in plan and function (excepting barracks) begins to change in the mid–late 4th century. Former gate spaces after having been blocked are used for accommodation (e.g. South Shields, Lanchester) or metalworking (e.g. Birdoswald), and barracks are also converted for use as metalworking (e.g. South Shields) or completely demolished (e.g. Chester-le-Street). Accommodation has also been found outside of barracks, for example in the *valetudinarium* at Housesteads. At a number of forts (e.g. Vindolanda, Chester-le-Street, Binchester, and Ilkley), the bath suites attached to *praetoria* were enlarged by additions. Contrary to this, the *praetorium* bath suite at South Shields was reduced to leave only the hot and warm pools, while the cold pools and rooms and used for metalworking. At Housesteads, a small bath suite was added to

one end of a storage building on the *via principalis*. Additional changes are also consistently seen in specialized buildings, notably *horrea* and *principia*.

Unrelated to any functional activity of a structure as a whole, there are also significant structural changes to many of the late 4th century buildings in forts. For example, rooms in barracks, *praetoria*, *principia*, *valetudinaria*, and bath suites have been subdivided into smaller units by the insertion of dividing walls (e.g. South Shields, Benwell, Chester-le-Street, Binchester). Other structural activity includes the increased use of timber in late 4th century structures (e.g. South Shields, Birdoswald, Stanwix, Carlisle, Bowness, possibly Malton, Ilkely, Ribchester, possibly Watercrook, Ravenglass, Maryport) either as timber framing set in the ground or on stone foundations or as timber-post buildings. Timber was used for various structures such as rampart buildings, lean-to structures, barracks, towers, and larger hall-like structures. Furthermore, this 4th century construction and refurbishment often does not adhere to previous boundaries or spatial limits within the fort. Hence, new construction or refurbishment infringed on road space and/or lost the even spacing between buildings associated with forts of the early Empire. The roads that were retained are typically repaved, but excavators have noted that the quality of repavement declines or is, at best, inconsistent from the mid 4th century.

6.5: CHANGES IN ECONOMY

Changes in the economy of 4th century forts are not always clear. In such cases where there is unambiguous evidence that relates to supply, like ceramics or faunal assemblages, then conclusions can be reached fairly directly and these changes are described here. Evidence for the supply of goods to each fort garrison is inconsistent in the frontier and depends largely on the date at which excavations were carried out, with more modern excavations and (re)assessments providing a fuller range of information. Traditional notions of supply have rested largely on ceramics, though palaeobotanical and faunal evidence will also be also be included.

At York, a number of excavations throughout the fortress provide uneven interpretations of the legionary economy in the 4th century (Cool *et al.* 1995; Monaghan 1997; Phillips and Heywood 1995). General supply to the legionary fortress and *colonia* can be summarized by the ceramic evidence (Monaghan 1997:866–867). The late 3rd to mid 4th century saw the establishment and expansion of the Crambeck industries in East Yorkshire and the first expansion of calcite-gritted ware. These wares rapidly and drastically (almost completely) replaced Ebor ware and BB1 and BB2. Grey wares were

supplied, most probably from local manufacturers, and "exotic" pottery became rare. Those forms from outside the region that continue in sufficient numbers are from Nene Valley and Cantley/Swanpool manufactures. There were fewer amphorae imported, and those were from North Africa. The second half of the 4th century saw another shift in ceramic supply and use. Huntcliff type vessels replace the former calcite-gritted ware, and these overtook the supply of Crambeck wares, though Crambeck parchment ware and painted mortaria were introduced in this period. Nene Valley supply expanded from the early 4th century beaker forms to further include dishes, bowls, and flagons. However, there is a general trend in York for a significant decline in the variety of forms and fabrics available in the very late 4th/early 5th century. A very few exotic vessels from Argonne, Oxford, Hadham, and Midlands manufacturers have been found. The late 4th/early 5th century also saw an increase in handmade coarsewares that are similar to calcite-gritted and Huntcliff forms, but more diverse, and these vessels have been taken to represent local household production, though it should be noted that such vessels are concentrated in the west corner of the fortress near the Anglian Tower and interval towers. A further noteworthy distribution is the concentration of amphorae in the *principia*.

The faunal assemblage from the legionary *principia* and its significance has been discussed above, but it should be noted that this assemblage contrasted with areas outside the *principia basilica* (Rackham 1995:549–555). In Barrack 2 and the centurion's quarters in the 4th–5th centuries, cattle bones were dominant, and the vast majority were adult in age and probably less than five years old. This suggests supply geared toward optimum beef or hide production, and should be contrasted with the higher prestige of the piglet bones in the *principia*.

Other types of artefacts indicate the importance of copper-alloy and ferrous objects to the fortress population, as is expected. Unfortunately, the only area unambiguously determined to be a metalworking area in the 4th century or later is in the *principia basilica* at the latest phases of "Roman" occupation. Cool *et al.* (1995) have noted the occurrence of glass drinking and food preparation vessels that are generally typical of 4th century assemblages, but it is unknown if glass production was local or imported.

Assemblages from other forts throughout the frontier tend to agree with the trends established in York. In the early 4th century, the vast majority of military pottery assemblages, with the exception of amphorae, were supplied by British potters. Through the 4th century, ceramic assemblages become less diverse, and by the mid 4th century, the

East Yorkshire kilns that produced Crambeck and calcite-gritted/Huntcliff type vessels became the dominant supplier of ceramics to the whole of northern England (Evans 2000:40). Other industries such as Dales ware, Nene Valley, and Mancetter-Harshill are still represented, but in considerably lesser numbers. By the late 4th/early 5th century, the East Yorkshire ceramics account for over 90% of the ceramic assemblage. Furthermore, the assemblages of the later 4th century are functionally dominated by jar forms, rather than the tendency toward more tablewares seen in southern Britain (Evans 2000:40). Additionally, the location of production sites for the major industries represented in the later 4th century suggests that supply lines ran up the east coast and roads. A significant difference between the legionary fortress and the other frontier forts, however, is the occurrence of late local handmade ware. These vessels occur in small numbers at some forts (e.g. Ravenglass), but thus far they are not regularly encountered, let alone in similar quantities as seen in York.

Arable agriculture occurred in the vicinity of forts, as the field systems at Housesteads show, and grain would have been the primary staple for garrisons. Palaeobotanical evidence from 3rd century South Shields suggests that the spelt wheat supplied to the fort was grown in northeastern England, while bread wheat was imported from outside the region (though in unknown quantities). If cereals cultivated in the region were being supplied to forts in the 3rd century, then we can be confident that this local-regional supply continued through the 4th century. Evidence from 3rd century Newcastle may indicate an increased use of barley through the 3rd century and into the 4th century, and this was also probably grown the region. As noted in Chapter 5, oats were more broadly exploited west of the Pennines, and this increased into the late Roman and Early Medieval periods. Palaeobotanical samples from the recent excavations at Carlisle will provide further detailed evidence of 4th century grain supplies.

Faunal remains from Birdoswald and Carlisle testify to the butchering of a local breed of cattle, as congenital features associated with cattle skull remains were found occurring at a higher frequency than the Romano-British average. This suggests that the garrisons at Birdoswald and Carlisle were drawing on the same genetic cattle population for provisions. The simplest explanation for this is that the remains from both forts are from a breed of cow widely found west of the Pennines and that they are locally raised and procured. Another feasible explanation is that the cows are from a large herd in the vicinity of one fort that are then redistributed to other forts. In either case, the cattle are arriving at both Carlisle and Birdoswald on the hoof, as the congenital traits are associated with the skull, and if the cattle were butchered before redistribution it would

be unlikely that the skulls would be included. There was also an observed age difference in the cows from Carlisle and Birdoswald. The remains from Carlisle were of younger individuals at their optimum age/weight for butchering while the individuals from Birdoswald were past the optimum age/weight for meat consumption. This suggests the fort at Carlisle (and perhaps Stanwix) had preferential access to meat over other military units. An alternative suggestion could explain this as a topographic difference. Carlisle could be drawing on lowland herds bred specifically for meat production, whilst the upland herds that Birdoswald was drawing on were primarily dairy producers and butchered and consumed only after the optimum milking age had been passed.

Unfortunately, there are no comparable faunal assemblages from the eastern half of Hadrian's Wall to compare the Cumbrian evidence to. However, the assemblage from York contrasts rather strongly as faunal assemblages are not significantly dominated by cattle remains; the *principia* is predominantly composed of pig bones while cattle dominance was limited to the barracks. As noted above, pork is a favoured meat in Mediterranean consumption patterns, and this contrasts with the preference for beef in northern Europe (King 1984). Thus, the small pig horizon in the *principia* at York can be taken to represent a person or group of some status in residence in the legionary fortress in the early 5th century. This interpretation is further reinforced by the likelihood of the assemblage representing intermittent feasting. As such, this high status faunal assemblage contrasts strongly with the more typical assemblages from Carlisle and Birdoswald, also providing a hierarchy (discussed in the following chapter). Further contrast between Hadrian's Wall and York is seen in the very fact that York had access (perhaps even preferential access) to considerable numbers of young pigs. This selectivity is not seen on the Wall.

6.6: SUMMARY

The case studies indicated a number of trends observed at 4th century forts on Hadrian's Wall. Upon conducting a survey of other frontier forts in northern England, it was demonstrated that these trends were seen throughout the entire frontier zone, including the legionary fortress at York. From the trends, it is evident that a number of changes occurred in the *limitanei* garrisons of the 4th century frontier in terms of fort defences, structural aspects of internal buildings, and various aspects of supply. These changes noted, it now remains to present a picture of the last century of military occupation of the Roman frontier of northern England.

Chapter 7:

Hadrian's Wall from the 4th–5th Centuries: Decline, Collapse, or Transformation?

The aim of this dissertation has been to explain the collapse and transformation of Hadrian's Wall and the northern frontier of Britain. It has been argued that previous efforts to do this have been built upon historical narratives rather than upon a consideration of archaeological evidence in the context of the late Roman military occupying a frontier. The imposition of a standing army and its supply network was highlighted as significant and universal to all Roman frontiers, although the form and details of such networks would have varied across the Empire. Following a review of the frontier landscape, detailed case studies were conducted to examine forts and other late Roman military installations in reference to the surrounding countryside. Evidence for changes in late Roman forts was reviewed in the previous chapter, and it is now desirable to present a picture of the final century of military occupation of the frontier.

7.1: SOCIAL AND ECONOMIC CHANGE THROUGH THE 4TH CENTURY AND AFTER

At the start of the 4th century, the frontier forts of northern England had altered little from their establishment in the 1st and 2nd centuries. Changes were limited to regimental redistribution during various conflicts on the Continent and in Britain and the adoption of chalet style barracks beginning in the mid 3rd century. The 3rd century, as was noted in Chapter 4, was also considered to be relatively peaceful in the frontier, and this period saw the establishment and/or expansion of *vici* outside of the frontier forts as well as the successful growth of towns at York, Catterick, Corbridge, and Carlisle. This period of peace came to a close with the end of the century, and the 4th century can be characterized as a time of strife in the frontier.

Archaeological evidence for military installations at the beginning of the 4th century bears little difference to that of the 2nd and 3rd centuries, with the obvious exception of different finds assemblages. There is very little evidence from turrets along the Wall indicating any occupation, and what we have typically suggests occupation of the shell of the demolished structure rather than occupation of a complete turret itself (e.g. Turret 51b). The tower at Pike Hill seems to be an exception, and while its exact function is unknown, it may be related to signaling. At milecastles, there is typically

very little internal evidence to indicate the nature of occupation, but coins and pottery suggest occupation until at least the late 4th century, and probably the early 5th century. The best evidence for the function of a milecastle in the late 4th century comes from Sewingshields (milecastle 35), which seems to have been used for metalworking (Haigh and Savage 1984). Unfortunately, it is unknown if this represents an exception or is a typical use of milecastles at this time. In either case, the primary settlements along the Wall were the forts. As noted in the previous chapter, a number of changes occur in the last decades of the 4th century, but the forts are occupied until the early 5th century and in some cases later.

The role of the Wall curtain is unclear from the late 4th century on. The main qualm is how late the curtain was still standing. Localized repairs occurred in the 4th century, but these are not always well-dated. On the basis of the coin hoard found in the Housesteads sector underneath Wall collapse, the curtain stood until at least the AD 350s, perhaps the AD 370s. Beyond this, its fate is unclear. If the curtain remained standing until the end of the Roman period, perhaps even further into the 5th century, then forts would have been important crossing points, particularly for wheeled traffic. Roman roads crossed the Wall at a number of points, and the forts in these areas can be expected to have been important: possibly at Newcastle, Halton Chesters and Corbridge, Birdoswald, and Stanwix and Carlisle. If the curtain suffered localized collapse in the late 4th and 5th centuries, then the function of Hadrian's Wall in controlling movement was made redundant. In such circumstances, the curtain of the Wall would no longer have any purpose, but the garrisons may have continued to play an important role in the frontier, maintaining general landscape security.

Overall, fort archaeology seems remarkably conservative, with phasing marked by periods of refurbishment. Most other forts retained their previous plans, but the fort at South Shields is a notable exception, which underwent an extensive reorganization. This must be considered in conjunction with imperial campaigning in the frontier in the first decades of the 4th century, and Constantine's reorganization of the military into *comitatenses* and *limitanei*.

As the 4th century progressed, further material changes become evident. Significant distributions of mid to late 4th century coins were noted in the forts at Wallsend, Newcastle, and Carlisle. At the latter two, this coin distribution has been interpreted as evidence of forts hosting market activity. The coins are attributed to the Houses of Constantine and Valentinian, so this could have begun as early as the AD 340s and continued until at least the 370s, and probably later on the basis of the Carlisle

evidence. Following Robertson's (1978) argument that peak circulation was achieved 20–30 years after an emperor's death, it may be more reasonable to suggest that radical change in fort activities occurred in the AD 360s or 370s. These later dates could then correspond to many of the other major changes noted at forts: the blocking of gates; deterioration of road quality; and the many other trends summarized in Appendix 6. Thus the period from *c.* AD 360 on marks a fundamental change in the archaeology of frontier forts. The dating of the changes at forts is not precise enough to attribute to a single emperor's reign, but falls in the last years of the House of Constantine and the rise and fall of the House of Valentinian, a period that saw the collapse of two dynastic families and the establishment of a third. While these alterations have been discussed thematically in the previous chapter, the social and economic implications of such transformations for the military communities have not been explored.

Economic Changes

There are a number of indicators of economic change from the beginning of the mid 4th century into the early–mid 5th century, such as the use and quality of building materials, the conversion or demolition of formerly specialized buildings, and changes in artefactual and environmental assemblages. The declining quality of construction in stone, in both buildings and roads, is probably related to economic factors. Working in stone is labour intensive, as quarrying and transport takes considerable time and energy, even if dressing stone is comparable to preparation of timber. Does this suggest a lack of labour or resources in late 4th century forts? Are there too few soldiers or military servants/slaves to carry out the work? Is this due to labour demands for higher priority military duties, or is there some other reason? The increased use of timber may relate to the deteriorating quality of stonework and can be explained functionally. Timber is faster to procure, and it may have been a more readily available material than good building stone. It is also likely that skilled carpenters were more widely available than masons, as stone tends to be used in limited quantities outside of monumental projects. These factors noted, however, timber construction can be just as sophisticated and complex as stone construction, and an ideological significance for timber cannot be excluded.

The demolition or conversion of *horrea* also has a significant economic impact on fort garrisons. When a granary was demolished or converted for use for some other aspect, what alternative storage facilities were provided? Have late Roman *horrea* taken on a different form in the northern frontier that is as yet unrecognized? Perhaps there

was a switch from bulk storage in one or two dedicated structures to smaller storage units, scattered in different chambers and buildings throughout the fort. Such a decision would further impact on supply as the importation of goods in any quantity, particularly cereals or liquids (in barrels or amphorae), was no longer focused on a particular building on a main fort road. Deliveries may still come to one point, but how widely were these goods scattered within a fort? The more locations for storage, the more labour (in time or manpower) would be required. On the other hand, as regiments were almost certainly smaller than their 2nd century precursors, and/or detachments may have been distributed throughout the frontier at other installations, the need for bulk supply and storage would be reduced.

These potential indications of a smaller or more limited labour force in late 4th century forts noted, there are other indications that a sizable labour force was still present. Defensive refurbishment, as well as the refurbishment of any of the large central buildings like *principia* and *praetoria* would require a respectable number of labourers. The dissemination of metalworking and other craft activities to areas scattered throughout the fort is probably also related to economic factors, but at this point those factors are unclear. It may be related to less formally organized production of metal objects, perhaps associated with an increase of part-time craftworking rather than by dedicated professional craftsmen.

Artefactual evidence, particularly from ceramics but also from environmental evidence, indicates a shift in the supply and dietary economy in the late frontier. These shifts must be considered in reference to the geographic origins of objects and aspects of cultural practise. As noted in the previous chapter, ceramics throughout the northern frontier were dominated by East Yorkshire products, with occasion vessels from further afield being imported. In terms of ceramic supply and the products contained by the ceramics, this suggests that frontier supplies were largely drawn from northern England. The forms of the various vessels provide an understanding of cultural culinary economy. The dominance of jar forms and other coarse wares in forts (rather than table wares) has been taken to mean a "reversion" to native Iron Age styles of cooking and eating (Evans 2000). Such an interpretation cannot wholly be accepted, as ceramic assemblages in the late 4th/early 5th century are still more diverse in terms of vessel forms and fabric than in the late pre-Roman Iron Age, as is diet (Stallibrass 2000). Cups, beakers, bowls, and mortaria still have their place in culinary culture of the late frontier, but how these related to the increased "native" culinary traditions is unclear. Perhaps this is an indication of an increasingly northern British population rather than a population from outside the region.

On the other hand, it may be that fort populations, regardless of their geographical origins, were incorporating local culinary traditions into traditional military practises. Such culinary traditions may also be related to the provisions supplied, in which products of the region are provided to each unit that do not require the full ceramic diversity of earlier decades and centuries.

Other artefacts proved a better understanding of long distance supply to the frontier, particularly coins and arms. Late Roman coins are relatively easy to source due to mintmarks on the reverse, and would have been imported into the frontier from Continental mints. Coins loss patterns suggest an economic shift in the final decade of the 4th century. At military sites in northern England, Theodosian coinage occurs in much smaller numbers than the preceding Valentinianic and Constantinian issues. Along Hadrian's Wall and in its southern hinterland, a single coin of AD 388–402 fits a normal profile, and most of these coins that are recovered date to AD 388–395 (Brickstock 2000:35). This contrasts with profiles from civilian sites, sites in southern Britain, and the national average. In these latter examples, there is not a steep decline in coin loss between Valentinianic and Theodosian coins, and on some sites there is even an increase (Reece 1995). Brickstock has suggested this disparity between military and civilian sites is due to tax reasons, with the implication that taxation-in-kind in military areas negates many official imperial reasons for issuing small denomination coins. Furthermore, the lack of copies of coinage of the AD 390s suggests that existing coinage in circulation was sufficient to meet the cash-exchange needs of the region. However, it is also possible that the populations at forts were not wholly dependant on coin-based exchange as in previous decades. This is not to say that coin-based exchange collapsed or was made redundant simply due to tax-in-kind. Rather, a barter-exchange economy may have existed alongside a cash-exchange economy for small goods. Evidence for the utility of coins continuing into the early 5th century is arguably demonstrated by a coin group from Great Whittington and a hoard from Heddon-on-the-Wall, both of which contain early 5th century issues uncommon in Britain (Collins *in press*). Yet another possibility is that a low level of soldiers meant that fewer coins were exported from Continental mints to the northern British frontier.

Very few 4th–5th century weapons or armour have been found in the frontier zone; so little can be surmised from their manufacture in terms of production and supply. However, crossbow brooches may offer a suitable substitute in this case as items of official uniforms or offices, and they seem to have been primarily manufactured in state factories in Pannonia and also west of the Rhine (Swift 2000:3, 73). Notably, there are

considerably fewer crossbow brooches in northern England than in southern England, and those in the frontier tend to be focused along the Hadrian's Wall corridor (Swift 2000:27, Fig. 12). The northern British frontier contrasts considerably with the Rhine and Danube frontiers, where crossbow brooches seem to be more prolific. Furthermore, the majority of brooches found in the northern England are forms dated to the early–mid 4th century, following Pröttel's (1988) typology (see also Swift 2000). While the distribution and typology of crossbow brooches in the frontier requires further attention, this cursory survey suggests a supply shift in the second half of the 4th century, which may also extend to other official military equipment like arms and armour. If there was a change in supply from Continental state factories, this begs the question as to why and what the implications of this were (discussed below).

At a more regional level, there is evidence that suggests and important east-west division in certain agricultural practises. The distinct cattle breed evidenced from Birdoswald and Carlisle has already been mentioned, and this should also be considered alongside the slow adoption of larger breeds of cattle introduced by the Romans west of the Pennines. This suggests a conservative practise of cattle management, in contrast to the area east of the Pennines where large breeds of cattle introduced by the Romans were adopted by the 3rd century. Added to this is the late "small pig horizon" from the legionary *principia* at York and cattle from legionary barracks. Taken together, there is a basic indication of hierarchy. The legionary fortress has access to suckling pig, a high status meat by Mediterranean standards, and optimum-age cattle, while the fort at Carlisle seemed to eat beef at the optimum meat age, and the beef at Birdoswald was from old cows and possibly tough. The main distinction is that higher status forts had access to purpose-bred meat, while other forts may have relied on meat as a secondary product from animals bred for traction, diary, or wooling purposes. The faunal evidence, then, indicates a hierarchy of legionary base→urban/lowland fort→rural/upland fort in addition to a basic distinction between the eastern and western half of the frontier indicated by a regionally distinct breed of cattle.

Palaeobotanical evidence reinforces the east-west distinction. Oats were more broadly exploited west of the Pennines and became increasingly common in the later Roman and Early Medieval centuries east of the Pennines. Furthermore, when palynological evidence indicates woodland regeneration, this begins first in the Pennines and on the western fringes of the Solway in the 4th century. Woodland regeneration does not begin east of the Pennines until the 6th century. This regeneration seems to be indicative of a shift to expanded pastoral activities at the expense of arable. Pastoral

agriculture is predominant in the western half of the frontier in the 4th century, and this regime extends east across the Pennines in the 6th century. These differences and changes of stock preference, cereal preference, and arable/pastoral balance are indicative of different agricultural regimes to either side of the Pennines. It is likely that these relate to the differential patterning of farmstead distribution at either end of the Wall noted in Chapter 6. Furthermore, such regimes would have impacted on the frontier forts. Those in the Pennines and to the west may have eaten more barley and oats than those east of the Pennines. They may also have been more reliant on imported cereals, whereas the forts east of the Pennines seemed to have a fair amount of land dedicated to arable production on the basis of the pollen record.

Manning's (1975:115) calculation of at least one square mile of arable land providing the annual grain and seed requirement for a population of *c.* 500 people has important implications for the provisioning of Hadrian's Wall. It has been estimated that by the later 4th century there were between 100–300 soldiers garrisoned at a fort. The non-soldierly and dependant population is unknown, but it could easily match or exceed that of the soldiers, providing a combined fort population of at least 300–500 people. Thus, at least one square mile of land would have to be dedicated to cereal agriculture to support the fort population for the year. In principle, this much land should easily be provided within the *territorium*, though more would be required for cultivation of other foodstuffs. Additional land would be needed for pasture for garrison animals, not to mention fields devoted to production of hay and winter fodder and land set aside for management of timber and fuel supplies.

Considered as a block, the 20 square miles needed to supply all 20 forts along Hadrian's Wall is clearly feasible. The Wall forts in a lowland situation could certainly sustain themselves. The forts in upland positions may have had more difficulty, however. Yet there was more than enough fertile agricultural land available in northern Cumbria and Tyne and Wear/Co. Durham to provide supplemental grain for areas that had insufficient tracts of arable. This suggests a necessary and likely economic link between upland and lowland garrisons that would need to be maintained for cereal provisioning. The additional 30 forts in northern England would require at least another 30 square miles for arable supply. As a region, northern England could supply the cereal, pasturage, and fodder requirements for the military communities as well as supporting peasant farmers and the towns of York, Corbridge, and Carlisle. Thus, provisioning the military and civilian populations from within the frontier was feasible. Ensuring that each garrison received the necessary supplies, however, would have

required a functioning supply network. To this extent, the office of the *dux Britanniarum* was important for central oversight of provisioning and redistribution of goods.

Taken together, the palaeoenvironmental and archaeological evidence suggests diversity within the region in the 4th century, with a possibly increasing reliance on more pastoral regimes and native culinary practises by the late 4th/early 5th century. At forts, there are also hints of a reduced or restricted labour force. These economic trends also suggest increasing regionalisation through the 4th century, in the sense that there are few significant economic links outside of the region. Those that did exist tend to be biased toward pottery manufacturers/suppliers found in other parts of Britain and products shipped in amphorae from the Mediterranean. As an indicator of official long distance, state-sponsored supply, crossbow brooches suggest a decrease of this in the later 4th century. Does this mean that the frontier was largely and increasingly economically self-sufficient in the 4th century or does it mean the northern British frontier was a lower priority for imperial authorities? It is difficult to demonstrate this directly, but the economic self-sufficiency of the region is feasible in principle. In fact, it almost certainly required a person or office with the authority to redistribute goods between highland and lowland zones. Yet, it can be tentatively suggested that the 4th century frontier economy fundamentally shifted so that by the late 4th/early 5th century – the end of the Roman period – forts were drawing on supplies almost entirely from within the region and were perhaps not as reliant on coin-based exchange.

Social Changes

Significant social changes in late 4th century forts are implied by a number of features. Initially, this is seen in the overall change in the layout and plan of a fort, but there are also indications that this occurred at all scales of unit social formations: centuries and *turmae*, officers and specialized members of the unit, and commanding officers. Some aspects of late fort occupation even suggest a fundamental change in the nature of occupation, perhaps the nature of the frontier military itself.

Movement through a late 4th century fort was considerably different than in previous decades and centuries. The relatively standardized plan was still retained, to some degree, but a number of aspects considerably altered the way in which the internal space of a fort was utilized. Along Hadrian's Wall, the first changes were the blocking of some gates or gate portals in the 2nd century, but the later phase of gate blocking in the 4th century was not restricted to the forts along the Wall. Thus, soldiers and other

members of the military community as well as visitors to the fort were channeled to certain gates. Upon entering the fort, a person or cart would then be further limited by the quality of the roads or the fact that buildings were built over and projecting onto former road space. Significant buildings, such as the *principia*, *praetorium*, and *horrea* were generally still situated centrally, but the path to such buildings may have been less direct, depending on which gates were blocked and which were usable and how the layout of buildings interfered with the road plan. Residential changes would have further impacted this movement.

At the individual level, the construction, repair, and habitation of a chalet style barrack with soldiers of the same *contubernia* created and maintained a small-scale social unit, in which a row of chalets probably indicates an infantry century or cavalry *turma*. So the spatial arrangement of living accommodation told a soldier who his closest colleagues (and probably friends) were, from *contubernia* to century/*turma*. This maintained traditional sub-unit organization but in a different form. On the other hand, chalets lacked the standardized regularity found in Hadrianic barrack-blocks, and neighbouring chalets could vary in size and layout. The implication is that each *contubernia* was responsible for each chalet, and this suggests that each *contubernia* had more independence than in previous centuries in regards to its own quarters.

Further residential changes are seen in the occupation of offices in the *principia* and other formerly specialized spaces like *valetudinaria* as well as the subdivision of rooms. The actual significance of this latter trend is unknown, but it can be speculated that spaces were being parceled for individual or smaller social groupings of only a few individuals. This further suggests two possibilities: residential space was at a premium due to a large population so that larger spaces had to accommodate more and more people; or there was an increased emphasis on more personal space, enhancing the individual at the expense of breaking up social groups. The impact of such residential changes suggests two possibilities. One is that there was an increased demand for space indicated by infringement of buildings onto roads and subdivision of larger rooms into smaller units. Another possibility is that there was a lack of demand on internal space indicated by the demolition/conversion of *horrea* and barracks.

Religious practise probably also changed in the later 4th century, if not before. There are very few inscriptions dated to the 4th century, and these tend to be official dedications (e.g. *RIB* 1912 from Birdoswald and 721 from Ravenscar) rather than altars to deities or memorial stones found through the 2nd and 3rd centuries. Furthermore, locations of cult worship are known to have been purposefully (if not violently)

demolished in the mid–late 4th century, like the *mithraeum* at Carrawburgh and nearby Coventina's Well (Allason-Jones 2004; Allason-Jones and McKay 1985). The construction of probable churches in Roman forts would have a significant impact on the military communities. The evidence ranges from apsidal-ended buildings to the remains of an altar and artefacts marked with *chi-rho*. At Housesteads and Birdoswald, the probable churches are found in the northwest quadrant of the fort, while at South Shields the church occupied the *principia* forecourt and at Vindolanda, it was built over the courtyard of the *praetorium*. Churches, in conjunction with Christian-marked artefacts and long cist burials, are cited as evidence for Christian communities in Roman forts, though it should be noted that long cist burials are a mortuary tradition of northern Britain and do not directly attest Christian worship. Church structures area dated to the last decades of the 4th century or after, with the churches at South Shields and Vindolanda more probably dating to the 5th century. The position of a church within a fort may be important. The placement of a church in the *principia* suggests Christianity was on par with, if not actually replacing regimental and imperial shrines. This central situation could reflect the perceived importance of a church for the military community, and the placement of a church in the *praetorium* could be seen as official endorsement of the religion (elaborated below).

Constantine's conversion in the early 4th century provided political incentive for the conversion to Christianity, and the provision of a church by the *praepositus* could enhance his status amongst his superiors as well as generate a sense of gratefulness and religious cohesion on the part of any Christian elements of his garrison. Such political motivations in religious practise are not unheard of, and a similar suggestion has been made in reference to the cult of Mithras (Allason-Jones 2004). Indeed, Thomas (1971:13) notes that Carlisle could have been an important late Roman Christian centre because of its urban setting and proximity to the frontier, implying that the Christian church provided political and/or ideological reinforcement. Petts (2003:167, 168) has also noted the presence and significance of gravestones, finds, and hoards in the frontier. The latter category consists of the silver hoards with Christian inscriptions found at Traprain Law and near Corbridge, both of which may indicate the presence of rich Christians in the frontier. Finds such as finger rings and gravestones, on the other hand, suggest the entire military community of soldiers and non-soldiers were involved in Christian worship. However, there is little evidence for the spread of Christianity beyond the urban and military communities.

A number of important conclusions can be reached regarding the role of *praepositii* in the later 4th century in northern England. The *praetorium* at South Shields in its second phase of occupation in the later 4th century was less opulent than in its first phase. This could suggest that the material differentiation between the *praepositus* and his soldiers was decreasing. Thus, he anyhow still occupied a significant portion of the fort and was the social pinnacle of the settlement, but perhaps he did not (or could not) distinguish or differentiate himself to the same degree. It is likely that the decreased opulence seen at the South Shields *praetorium* is related to increased regionalisation of the frontier and reduced social and economic links with people outside the frontier and closer to the imperial core. Reduced material wealth would have impacted on status, so the *praepositus* would have needed to maintain and enhance his position through social relationships rather than economic ones. Indeed, the halls at Birdoswald, if they are interpreted as Early Medieval halls, suggest that the *praepositus* socialized with his soldiers more, using enhanced personal loyalties and relations to reinforce his institutional authority. The open, communal space of a hall must be contrasted with the restricted and private spaces of a *praetorium*. The excavation of the *praetorium* at Birdoswald would provide complementary evidence for the changing role of the commanding officer in a fort. Given the presence of these halls, one might expect a reduction in the size of the *praetorium* or a less opulent (though still elite) residence as seen at South Shields. Additionally, the small pig horizon at York suggests an elite feasting culture in the legionary *principia*, and this may further indicate reinforcement of patronage and social ties amongst the officers of the legion.

At Vindolanda, the construction of a probable church in the *praetorium* courtyard might suggest the *praepositus* financially supporting a priest and thus acting as a spiritual patron for his soldiers and their families. The construction of churches at forts would be a valuable asset to the *praepositus* as a patron through the promotion of a unifying, hierarchical ideology. By providing the only church, he would make his fort a religious focus, through which he could further enforce his position of authority, perhaps stretching beyond the military settlement and into the countryside. Further social enhancement can be associated with bath suites in the *praetorium*. It is worth noting that baths in *praetoria* seem to have continued in use until at least the end of the Roman period, for the provision of facilities for hygiene and social interaction for his officers and favoured friends/guests. The *praepositus* also seems the most likely figure to have organized the refurbishment of fort defences. In addition to their defensive function, the

defences would have further acted as a social enhancement of the *praepositus*' seat of power as well as reminding his soldiers of their social position and military identity.

The most significant indication of social change in late 4th century forts can be associated with changes in *principia*. Traditionally, *principia* acted as the official and ceremonial focus of a fort. The changed use of this building impacted on these aspects. The offices in the rear range were no longer only offices. They seem to have provided accommodation, probably to the very clerks that used them before. Furthermore, there is evidence of butchery and metalworking occurring in *principia*, and forecourt verandahs and porticos have walls inserted creating a number of small chambers. Such changes are seen at the legionary *principia* at York as well as *principia* throughout the frontier. At South Shields, a church seems to have been built. At Newcastle, and possibly at Carlisle, there are suggestions that the *principia* was related to marketplace activity in the fort. These activities are not those associated with traditional *principia*. In reference to Newcastle but relevant to most *principia* at this period, Bidwell and Snape (2002:280) argue that the building could no longer be considered a *principia*. This begs the question of where the essential functions of a *principia* could be completed, and whether or not a single building dedicated to these functions was necessary. There is no evidence that clerical functions were abandoned in such buildings, nor that the shrines of the standards were no longer maintained or allowed. Forecourts also seem to remain intact. The changes are to other areas, notably verandahs and crosshalls. Are these activities being given official sanction or priority by taking place in the *principia*, or is it that there is no other available space, or is the *principia* no longer the semi-sacred building it once was? The intermittent feasting at York and marketplace activity at Carlisle and Newcastle suggest that the central placement of the *principia* was important, rather than prioritising such activity. So it seems likely that the *principia* had lost its semi-sacred and exclusive status. This impacts on our interpretation of the late frontier military and will be considered further below.

All these social and economic changes taken together indicate a fundamental change to the late 4th century forts in northern England, and by extension the entire frontier. It is therefore necessary to summarize the state of the frontier in the last decades of Roman rule in Britain.

7.2: THE LATE 4TH CENTURY FRONTIER SUMMARIZED

Occupation of the frontier continued until at least the end of the Roman period, and almost certainly beyond, though whether or not this occupation was military is a

complex issue. Hadrian's Wall, or rather the military installations along the Wall, seem to have been occupied until the late AD 390s on the basis of coin TPQs and ceramics from stratified contexts. In most cases, it is accepted that occupation continued into the early 5th century, as no coins minted later than AD 402 have been found in the northern forts (though note a recent find of a *Gloria Romanorum* issue dated to AD 406–408 found in the Hadrian's Wall corridor and the redating of the Heddon-on-the-Wall hoard from the late 4th to the early 5th century; Collins, *in press*).

Any military role for units would depend largely on the barbarian threat, a factor considered in Chapter 4. An important hypothesis of the Early Medieval period sees the increasing use and significance of maritime travel, such that Early Medieval geography can be described as it relates to the North Sea and the Irish Sea (Carver 1992). This increased use of seaways by barbarians begins in the late 3rd and 4th centuries, and the mention of Saxon and Frankish pirates in contemporary accounts, as well as Irish raiders, suggests that late Roman defences may have been orientated toward the sea. In such a situation, the installations at the east and west ends of Hadrian's Wall might be expected to retain their military significance while the centrally placed inland garrisons were abandoned as unnecessary. In fact, this is not the case. While the eastern and western extremes were occupied, there is nothing to suggest that any of these forts was more important than any other (Carlisle is an exception to this, but this is perhaps related to the fact that the Carlisle fort was adjacent to a town). Additionally, the forts in the central upland sector continue to be occupied, for example Carrawburgh, Housesteads, Vindolanda, Carvoran, Great Chesters, and Birdoswald. Thus, it cannot be claimed that the only threat came by the sea. There was probably a land-based threat, and this could have been the tribes to the north of the Wall (e.g. Selgovae, Votadini) and/or the Picts, who could also circumvent the Wall along the coast.

It is also likely that there were various relationships established between the military communities of forts and the urban and rural agrarian (and barbarian) communities along the Wall corridor, as well as to its north and south. Of the hundreds of native farmsteads in the case study areas, only six had any evidence of late 4th century occupation, and this was from finds of East Yorkshire pottery. This is important, because it indicates that ceramics being supplied to forts (and possibly their contents) were reaching at least a few farmsteads by some mechanism for the exchange of goods. It can also be confidently asserted that rural communities provided foodstuffs – cereals and livestock – to fort populations. Further relationships can be speculated, such as the provision of labourers and/or recruits for military units, or spouses for soldiers. It is

typically assumed and probable that recruits for units were provided locally and regionally (though not exclusively), and this would have provided various social bonds between military and non-military communities. Such local or regional links would further impact on any potential removal or redeployment of the *limitanei*.

The possibility of the removal or redeployment of frontier soldiers must be carefully considered, as this presumed action is cited in various accounts of the end of Roman Britain. Known historical events provide a number of occurrences when troop withdrawals from the frontier were possible, perhaps even probable. The first is the "barbarian conspiracy" of AD 367. It may be that there was widespread chaos and damage in the frontier, and the garrisons never truly recovered. The usurpation of Magnus Maximus in AD 383 provides another context for the withdrawal of some soldiers from the frontier to the Continent. Stilicho's withdrawal of AD 401 may have impacted on northern English garrisons, as could Constantine III's usurpation and Continental conquest in AD 406/407. However, the first two events – the barbarian conspiracy and the usurpation of Magnus Maximus – can both be suggested as having limited impact. Numismatic evidence is found in forts clearly post-dating both events. And the same source that claims Stilicho withdrew soldiers from Britain also credits him with successfully campaigning against the Picts and Scots the previous year. Given that the source is a panegyric and its purpose was propaganda as much as flattery, the troops that Stilicho withdrew may have been the very same that he brought with him/sent to Britain to previous year. Perhaps the most likely event for the removal or soldiers from Hadrian's Wall and the frontier was the usurpation of Constantine III.

However, against these known historical events we must also consider additional textual and archaeological evidence. Consultation of known textual sources for the period does not shed much light. With the important exception of the *Notitia Dignitatum*, military regiments are not specifically mentioned in reference to northern England. Raiding and campaigning are reported in a number of sources in north Britain, but without reference to specified units. Yet the *Notitia Dignitatum* should not be ignored. If the document can be accepted as presenting a military reality in northern England *c.* AD 400, then we must accept that forts were occupied by soldiers until at least this date. Unfortunately, neither the *Notitia* nor any other textual source provides any detail on the movement of northern English regiments in the early 5th century, including the raising of frontier units to the status of *pseudocomitatenses* in contrast to Saxon Shore units. So it is possible that Constantine III could have removed the frontier regiments, but it must be emphatically stressed that thus far, ***there is no archaeological***

evidence supporting the rapid and total abandonment of fort sites. This is significant, and there is a reasonable explanation that makes good strategic sense.

Any usurpation starting in Britain and moving toward the Continent needed soldiers, but it also needed a protected flank. If the frontier was completely stripped of its garrisons, then there was a danger of barbarian raiding. Such raiding would destabilize the frontier and perhaps other parts of Britain, which in turn would diminish much needed support for the usurper from the diocese of Britain. The most likely source for any soldiers for military enterprise on the Continent would be the British field army (see also Casey 1993a; 1993b). Failing this, the soldiers on the Saxon Shore would be more readily accessible to the Continent and could also be sent back to their original posts more easily if/when necessary or if they became redundant. It is significant that coinage of Constantine III is known from hoards from southern England, but it is not found in the northern frontier hoards. It seems likely that Constantine III, like most emperors and usurpers, spent his money in areas where he needed loyalty, and in this case his loyal army was formed in southern England and Gaul. Lacking coins of Constantine III and archaeological evidence for widespread and rapid abandonment, it seems likely that the *limitanei* were not withdrawn from northern England, at least not wholesale. It now remains to offer an interpretation of the end of the Roman frontier.

7.3: THE "END" OF THE ROMAN FRONTIER

A number of interpretative scenarios can be provided for the last century of Roman occupation of the frontier from the evidence available, though these scenarios themselves do not provide an explanation of how the frontier ended.

1. The *limitanei* remained effective as a managed imperial garrison until the early 5th century, with some depreciation in supply and occupation. However, such changes were simply a veneer and the *limitanei* were relatively unchanged over the course of the 4th century.
2. The *limitanei* underwent major changes indicative of demilitarization in the course of the 4th century, suggesting that the frontier and its garrison became militarily redundant, with the Wall itself only marking a convenient east-west corridor.
3. The *limitanei* underwent major changes in the later 4th century, becoming more markedly local, but still remaining an effective imperial military presence.
4. The major changes of the later 4th century indicate that much of the frontier was decentralized to local command or local polities served by a militia rather than official state military occupation.

The first and second scenarios can be dismissed. In the case of the first scenario, such an interpretation rests on the fact that forts are clearly occupied into the early 5th century on the basis of numismatic and ceramic evidence as much as accepting the *Notitia Dignitatum* at its word. While this occupation until the end of the Roman period is acceptable, it not only minimizes the significance of the changes observed at forts in the late 4th century, but undermines the fundamental premise of archaeological study in which material remains reflect the realities of the past. The second scenario suggests that the changes seen at forts indicate a military in decline because a military presence was unnecessary. In addition to the danger of creating a circular argument, this seems unlikely on the basis of the known campaigns and military activities in the frontier. Thus, the third and fourth scenarios are preferred.

The difference between them rests on whether or not the occupants of late 4th century forts were professional soldiers of the imperial state or a number of supervised local militias. There is overwhelming evidence for increased regionalization/localization of frontier units, and this evidence has to be measured against the factors that indicate official military occupation discussed in Chapter 3. Initially, some of the archaeological evidence favours the "local militia" interpretation. The introduction of accommodation, butchery, and metal working into the official and sacred space of the *principia* suggests that the building was no longer used for its traditional Roman military functions. Furthermore, the conversion or demolition of *horrea* suggests a significant shift in food storage. This significance should not be underestimated. Without *horrea*, where was bulk food stored? Did storage become the responsibility of each soldier or *contubernia* rather than the regiment? The transformation of these two buildings that are so essential to the traditional upkeep and operation of a Roman regiment suggests a fundamental change in the occupation of forts that cannot be conceived of as typically military. On the other hand, if such an interpretation was to be accepted, the consistency of the trends occurring throughout the frontier must be explained as well as the presence of late coinage and the general dominance of Yorkshire ceramics, particularly Huntcliff type jars. These aspects favour an official state-sponsored military occupation of the frontier because of the scale and consistency of the noted changes and supply.

Other aspects are somewhat ambiguous, for example the presence of typically female objects like bracelets. These have been found inside and outside of forts (e.g. South Shields; Bidwell and Speak 1994:184, 185), but it is unclear if women are living inside the fort and the proportion of the female population. It is unsurprising that women and children should be present in the military community, but their numbers and housing

are still unresolved. Ultimately, each fort population would have become independent with the disintegration from the Roman Empire, but the question becomes when, and what local circumstances dictated the complete localization of the military community?

The dating evidence is not accurate enough to demonstrate the degree to which these changes are contemporaneous at each fort, or the extent to which each fort underwent such changes independently. The general consistency of numismatic and ceramic assemblages underscores that such changes are contemporaneous within a few years of each other, but such alterations were probably indenpendently undertaken rather than following instructions from a higher authority, such as the *dux Britanniarum*. Under such circumstances, perhaps the military units in the frontier were gradually or rapidly replaced by irregular units, local militias, or warbands with local or tribal leadership that answered to a regional commander. Replacement by irregular (barbarian) units or local militias contradicts the evidence of the *Notitia Dignitatum*. However, an interpretation of *limitanei* units becoming increasingly localized, in the sense that the soldiers have psychologically divorced themselves from the rest of the Empire, also fits the evidence without the need to insert local militia or barbarian irregulars. Indeed, using the theory of occupational communities, this evidence offers a coherent interpretation that sees the *limitanei* transform from a relatively standard Roman frontier army to a highly regionalized army (Appendix 7). This is not to say that the *limitanei* do not consider themselves Roman soldiers, but they consider themselves to be soldiers of the Wall frontier first, and only a soldier of the Roman Empire second. Thus, the continued occupation of the frontier by official Roman soldiers that experienced significant social changes is the preferred scenario here, and further suggests that the late Roman military was perhaps more fundamentally different than has been previously acknowledged.

In either case, local militias or localized *limitanei* and a lack of evidence for a military withdrawal, the latest occupation of the frontier seems to have been militarily successful. A number of forts have stratigraphic sequences that arguably demonstrate occupation continuing well into the 5th century (e.g. South Shields, Newcastle, Housesteads, Vindolanda, Birdoswald, possibly Stanwix, and Carlisle along Hadrian's Wall; York, Catterick, and Binchester south of it; see Table 7.1). This sub-Roman evidence is difficult to compare to the late Roman evidence due to its often fragmentary nature in the archaeological record. The clearest picture emerges at Birdoswald, where the presence of timber halls provides a recognisable form of an Early Medieval building with an associated social structure. Unfortunately, there is no evidence from other

important military buildings, like the *principia* or *praetorium* to measure the emergence of a timber hall against. On the whole, the basic conclusion that can be reached via the sub-Roman evidence is that Roman forts continued to play a role in the settlement of the sub-Roman North. This is reinforced by a number of Anglo-Saxon artefacts found at these same forts and Wallsend, Benwell, and Corbridge. In most cases, the artefacts are indicative of burial rather than occupational activity, and this suggests that Roman forts were at least a focus of ritual activity, if not settlement.

Britain's divorce from the Western Empire had considerable implications for the cultural development of populations in the former Roman diocese. Whether or not this separation was immediately recognized is debatable, but the implications would have been particularly marked for military communities. At the broadest level, the *limitanei* (or local militias) could not expect any reinforcements or officer transfers from the Continent. It may even have been the case that the frontier was *ex communicato* with imperial high command. Such circumstances were not unheard of, and generally speaking garrisons continued to perform their duties until links were reestablished. What makes the situation after AD 410 exceptional is that at some point the officers and soldiers would have realized they were no longer part of the official imperial military network. It is at this point that the scenarios put forward by Jones (1996b; mentioned in Chapter 4; Table 4.5) must be considered.

Evacuation and disbanding do not concern us here, as these actions would have removed the presence of a military community and for which there is no evidence. However, the maintained and mutated scenarios are quite important. Even with the strongest desire of a Roman unit to maintain themselves as professional soldiers of the empire, this was not feasible. Change or transformation was enevitable despite the best effort to unfailingly maintain various cultural customs, traditions, and practises. Old coins could have been reused; dress fashions could have remained the same; records could be perfectly kept; all military duties could be carried out. However, it would be impossible for these garrisons not to change, as the dynamic world around them and changing material conditions would have necessitated some adjustments be made. Without an emperor to swear allegiance to, or an institutionalized hierarchy to issue orders, hierarchical relationships would have relied on personal associations.

Any military community that continued to function as such would have mutated over the course of years, decades, and generations. With the reduction in scale of the military community, at its largest the whole frontier and at its smallest the local garrison, career prospects for ambitious soldiers and officers were limited. In many cases, the

localized career-sphere would not have impacted on a typical soldier, but for a "junior-officer" class and specialized workers (like craftsmen and clerks), there was only so far a career ladder extended. So former incentives for promotion would have lost their lustre. For example, literacy would no longer have been as important. Smaller garrisons, geographically smaller supply networks, and reduced job prospects made literacy less necessary. Furthermore, to what extent was the frontier population still speaking vulgar/insular Latin? Was Latin ever spoken as the primary language by the people of the frontier outside of military communities? If not, then Latin could be used as another marker of military identity, or it could be dismissed as a pointless language that was no longer necessary or functional, particularly if everyone else spoke a British P-Celtic language?

Reduced access to prestige goods must also be considered. With the loss of access to the social and trade networks of the Roman Empire, emphasis and importance was assigned to different goods and markers to indicate status. The loss of imperial trade/supply networks may have made the basic need of any military leader to supply weapons and armour a marker of high status, let alone other desirable goods. Furthermore, greater effort might have been needed to acquire metal ores for smiths than was previously necessary. Under such circumstances, an upland garrison may have been in a geographically advantageous situation if there were ferrous and other metallic ore deposits in the vicinity. Such materials would be valuable in the production not only of weapons and armour, but also for personal ornaments and various fittings and for trade. Exchange of valuable natural resources could perhaps offset the decreased agricultural productivity of an upland environment.

In any case, the evidence from northern England demonstrates that significant changes were occurring at late frontier forts during the last decades of Roman rule of Britain. The lack of evidence for a complete military withdrawal, from either documentary or archaeological sources indicates that the *limitanei* continued to play an important part in the frontier until the end of the Roman period, and probably beyond. This continued occupation of the frontier must now be considered in the greater context of the end of Roman Britain, and the Western Empire in general.

7.4: FRONTIER STABILITY AND IMPERIAL COLLAPSE

It is beyond the scope of this dissertation to compare the results of the case studies with other late Roman frontiers, or to consider the emergence of Early Medieval polities (see Whittaker 1994 for the former, and Wickham 2005 for the latter as the most

recent synthetic treatises on each topic). Despite the general acceptance and recognition of a Late Antique period with vibrant artistic and cultural achievements (e.g. Brown 1971), the Western Empire ***did*** collapse, destroying the centralized political and fiscal network across a vast territory (Heather 2005; Ward-Perkins 2005). What has not been clearly conveyed is how the decline of frontiers in particular related to the collapse of the Western Empire as a whole. In the case of Britain, the northern frontier changed through the later 4th century, which can perhaps be seen as decline. The diocese was separated from the Empire through usurpation and revolt, but the northern frontier did not rapidly collapse in response to this political schism. On the basis of existing evidence, there are no widespread destruction or abandonment layers above the latest Roman coins and pottery at forts that indicate such a rapid collapse or withdrawal. On this footing, it is worth considering expectations of similarity or diversity in the trajectories of late Roman frontiers. While broadly similar patterns may be expected across a number of Roman frontiers, the innumerable cultural, environmental, and situational circumstances of each frontier mitigates against exact parallels. As such, very similar problems between frontiers may in fact demonstrate a diversity of response.

Let us consider the situation of northern Britain. As noted in Chapter 4, there was regular martial conflict in northern Britain through the 4th and into the early 5th century, but the defence of the frontier was left to the *limitanei*. Field armies were only sent in exceptional circumstances or during planned campaigns. Thus, the situation in northern England can be seen as relatively stable, if not peaceful. There were no recurring pressures on the northern frontier that were experienced in other areas of the Roman Empire. Considered in this light, the frontiers of North Africa, Egypt, Arabia, Mesopotamia, and Syria can also be characterized as stable (Whittaker 1994:218, 219).

Similar trends to those seen in northern England may be expected in other relatively stable frontiers, though only in the broadest sense. The similarity between northern England and North Africa has been commented on (Whittaker 1994:249), and the situation in Noricum, described in the *Life of St. Severinus*, has been offered as a model for the situation in sub-Roman Britain (Heather 2005:407–415). However, the proximity and inclusion of these stable frontiers in the Mediterranean world, with its well established traditions of urbanism and long distance trade, also means there will be many differences.

In the case of Noricum, the *Life of St. Severinus* (Robinson 1914) provides a number of anecdotes indicating a significantly reduced *limitanei* presence in the second half of the 5th century than recorded in the *Notitia Dignitatum* (though this same

document provides some of the reason in that some of the Norican *limitanei* were raised to the field army as *pseudocomitatenses*). It seems that not all the soldiers were removed, as two passages reveal – the well-known account of soldiers of the Batavian unit leaving their fort to seek pay only to be killed by barbarians *en route*, and another account of an officer hesitating to pursue routed barbarians on account of poor armament. As Heather (2005:409) points out, a reader must be somewhat skeptical as the purpose of the work is the emphasis of Severinus' strength in God, rather than a history of the province. Another factor that must be considered is that while Noricum may have avoided earlier ravages due to its distance from the main roads, it was still proximal to considerable barbarian invasions (notably the Goths and Huns), and the barbarian settlements of Alamanni and Rugi provided a relatively close threat to provincial security. Noricum may provide some parallels for the situation in northern England, for example the gradual dissolution of *limitanei* due to lack of pay and/or supply (including recruits). But Noricum was also subject to pressures different to northern England due to its proximity to the Rhine and Danube frontiers and supporting field armies.

The Rhineland and Danubian frontiers lay at the other end of this spectrum of stable frontiers like Britain (Whittaker 2004:251, 254). Frequent warfare, both low intensity and large scale campaigns, and trans-frontier movements of barbarian groups required the Roman state to pay constant attention to the vast stretches of the Rhine and Danube. Thus, these frontiers were a priority for the state rather than the stable frontiers in other areas of the Empire. The frequency of campaigning and response to perceived invasions increased the use and importance of mobile field armies in these frontiers, potentially marginalizing the role of the *limitanei*. However, the frequency of campaigning and presence of generals dispatched from the imperial court kept these *limitanei* in contact with the imperial core. Furthermore, as land was lost to invaders or granted to *feoderati*, the fixed location of defended frontiers changed or became irrelevant and soldiers were shifted. In such cases, one would not expect to see similar trends as found in northern England. Rather, *limitanei* garrisons on the Rhine and Danube should provide evidence for maintained or increased standardization and supply followed by an abrupt or distinct end to military occupation. Archaeological evidence seems to bear this out, as noted at the forts along the Danube briefly summarized in Chapter 2. It "... is not really possible to detect a coherent Roman frontier on the middle Danube after about 420..." (Whittaker 1994:256), while "[t]he archaeological evidence

shows that about 441 a radical change took place on the lower Danube, where forts were destroyed..." (Whittaker 1994:254).

Trends and themes indicative of the decreasing standardization of the late Roman military should be looked for across the Empire, but we should not expect to see these trends everywhere. Where decreasing standardization and thus increasingly regionalized/localized military communities are seen, it is not because defence of that particular frontier is irrelevant, but due to the very stability of the frontier and its subsequent decrease in priority by central imperial officials. The success of the *limitanei* to fulfill their duties meant that regular attention from the central state was not required. That is to say, the *limitanei* were victims of their own success. Perhaps unsurprisingly, the increased regionalization of the *limitanei* contributed to their integration with and contribution to post-Roman Early Medieval polities.

7.5: SUGGESTIONS FOR FUTURE RESEARCH

This thesis has identified key issues that have hampered academic understanding of the late Roman frontier. Further research into any of the following topics would further enhance the interpretation of settlement and social relationships in the later frontier. The discussion begins with suggestions for methodological improvements for study of the period, including scientific dating techniques, further detailed analysis and integration of artefactual evidence, and the unrealized potential of landscape evidence. Late Roman burials and the officers of the *limitanei* are offered as topics with great potential to advance our understanding of late Roman frontiers. The discussion concludes with a plea for more sophisticated conceptions of the late Roman to Early Medieval transition.

While dating of late Roman sequences from modern excavations has generally been clear, dating post-Roman sequences is still problematic. Any site with organic remains from late and post-Roman strata must undertake rigorous C14 dating. However, to increase the impact of scientific dating and be efficient with funding at a time when commercial archaeological units are responsible for most UK excavations, C14 dating must be used in conjunction with organic evidence that can also independently provide important information to any site interpretation. Furthermore, the completion of other scientific dating techniques would be highly advantageous. A number of sites along Hadrian's Wall have already produced artefacts or features/strata suitable for scientific dating. For example, the hearth in the hall at Birdoswald would have benefited from an

archaeomagnetic date. Oxidisable carbon ratio testing could have been completed on the "abandonment" soils in the late 4th century *principia* at Newcastle.

Advancements in artefactual studies offer clear advantages for future analysis. At present, typologies of Roman and Early Medieval artefacts are fairly robust, but there is a dearth of diagnostic 5th and 6th century "British" material. Scientific analysis of ceramics offers the most potential. Thermoluminescence and electron spin resonance should be applied systematically to ceramics (particularly of East Yorkshire manufacture) between sequential strata and different sites. The assemblage from the Wellington Row site in York probably contains "post-Roman" Huntcliff type pottery (Whyman 2001). Using scientific techniques on this site in conjunction with other northern sites, particularly Binchester, Newcastle, Vindolanda, and Carlisle, would be beneficial. Another contribution of scientific techniques would be the recognition of recycled metals and alloys and changes and metallurgic ratios, which may also help distinguish between late Roman and sub-Roman artefacts in a manner that typological analysis does not. Successful analyses would nominally distinguish between the Roman and post-Roman production, however, the more significant implication of such analyses would be the extent to which they could improve our current understanding of production and supply and how it relates to the perceived end of the Roman period.

At the same time, specialist artefact reports also need to be more successfully integrated into excavation analyses. The separation in site reports between stratagraphic description, artefact reports, and conclusions often leave the marriage of these different classes of evidence to merely dating strata or determining the nature of activity. The mid–late 4th century coin distribution in the fort at Newcastle is an excellent example of the significance of contextualising finds. What would have perhaps provided more illumination to this distribution would have been the inclusion of ceramic and bronze finds on the same map, and noting any significant patterns (or lack thereof) of vessel types or fabrics or classes of finds.

Artefacts also offer the potential to address large, conceptual problems. Two classes, in particular, merit mention here: coins and Huntcliff type pottery. There is an underlying assumption in both excavation reports and general literature that the military economy is understood, but the use and role of coinage in the late Roman north has never been successfully addressed in relation to the notion of supply in kind. There has also been no comprehensive treatment of 4th century coinage from military sites despite the knowledge that these sites fall under the command of the *dux Britanniarum*. Coin loss patterns have been compared to create a military profile, but these de-contextualize the

coins. For example, to what extent do coins of the House of Constantine still occur in contexts and strata that also contain Theodosian coinage? The frequency by which this occurs and the contextual implications of coin loss could further refine dating by TPQ. The frequency of loss of various issues and their distributions need to be further analyzed in relation to their function in society. Which emperors are best represented on coins, and how does this relate to the supply of small denomination coins to the frontier? Were specific issues dispersed in the British frontier for propagandist purposes? Were coins still a feature of daily exchange in the late 4th/early 5th century on military sites? Addressing these questions would provide a fuller awareness of the monetization and demonetization of specific issues, and the role of coinage for the late Roman military. This would be particularly useful as the loss of a cash-based economy is considered a marker of the collapse of Roman culture in Britain. Yet, Pirie (2004:75) has argued that Early Medieval Northumbrian coinage more effectively monetized Northumbria than currencies in other Anglo-Saxon kingdoms and that there was a significant British influence on Northumbrian currency. Does this mean that the use of late Roman coins continued far later than is normally considered? Addressing and answering these questions could feasibly demonstrate that many late stratigraphic sequences may be later than we realize.

Further excavation is also to be encouraged. Excavations focusing on native farmsteads are particularly important, given their potential importance in supply to the military. Such investigations would also enhance present understanding of the dichotomoy between military and rural communities. Within any excavation project, adequate funding must also be provided for any environmental evidence. Environmental evidence provides a rich resource for reconstruction of past landscapes and environmental conditions that is often unrecognized. Faunal, entymological, and palaeobotanical remains from military sites all provide organic dating material while at the same time offering information on site supply, consumption, and environment that can be further incorporated into broader landscape interpretations. Such information would also be enhanced by local catchment pollen studies, targeting small bogs and ponds. The benefits of this type of investigation have been demonstrated in South West England (Fyfe and Rippon 2004). Furthermore, it is recommended that open-area excavation be employed whenever possible, both on rural sites and military or urban sites with more complex stratigraphy. Only in this fashion is it possible to best identify the more ephemeral features left by timber structures and provide confident

interpretations. There are, however, two topics that bear further investigation and would shed significant light on our understanding of the 4th century frontier in Britain.

Late Roman mortuary evidence is noticeably absent in the literature. At present, there are no identified 4th century cemeteries identified along Hadrian's Wall or most other late Roman forts. So the first priority is to locate and recognize late 4th century mortuary archaeology. Unlike the 2nd and 3rd centuries, there are few tombstones to provide personal information. Thus, more scientific techniques would be necessary. Ideally, osteological preservation would allow for C14 dating, with genetic and stable isotope analyses providing information on biological and geographical origins. Stable isotope analysis would be particularly beneficial, as it would ideally provide recognition of local and long-distance elements of the population, further supporting or challenging the idea of local recruitment in the later empire. At present, skeletal evidence from York and the various Yorkshire coastal stations present a significant resource that has yet to be recognized.

The *praepositii* of the *limitanei* have been identified as a key social group in the transformation of late Roman frontiers, yet we know very little about them as a class aside from Abinnaeus. *Praepositii* occupied a critical structural position in the military hierarchy. They had general autonomy in the running of garrisons and fulfillment of duties, but they were also responsible for issuing and executing orders in the theatre of operations. In this sense, they were powerful front-line officers that had the freedom to carry out orders imposed from an absent higher authority or pursue their own agenda. Given their relatively high status, Roman frontier archaeology is ideally suited to enhance our knowledge of these individuals and how the social transformation of the late Roman military and fragmentation of the Western Empire affected them.

Finally, and most importantly, scholars of the Roman and Anglo-Saxon period must appreciate and construct more sophisticated models of the late Roman to Early Medieval transition. The "end" of Roman Britain in AD 410 provides a convenient chronological marker that did not necessarily exist in reality. The impact of the political and economic divorce of Britain from the Western Empire must always be contextualized. It is not enough to argue for a continuity or discontinuity of activity or settlement. Concepts of transition and transformation must be embraced, as these notions can cope with a tangle of minor continuities and discontinuities. Particularly relevant to the late Roman to Early Medieval transition, indeed any Late Antique study is the concept of transmission. Which aspects were passed on? How and by whom? What changed in the transmission process? Furthermore, archaeological (or anthropological,

sociological, or geographical) theory must be embraced. Theory provides frameworks by which the data can be understood and explained and further reduces the impact of implicit assumptions on interpretation.

7.6: CONCLUSION

This dissertation has examined the 4th century frontier in detail, considering notions of the decline, collapse, or transformation of the frontier. Lacking evidence for collapse, significant changes were noted at forts occurring in the last decades of the 4th century. These changes can be seen as a decline in the military standard of the late *limitanei*, perhaps involving their replacement by local militias. However, an interpretation that sees these changes as an increasingly regionalized or localized *limitanei* is favoured by the author. Furthermore, it is argued that this process of localisation was possible due to the relative stability of the northern frontier and the success of the *limitanei* in fulfilling their military duties. Archaeological evidence also suggests that forts remained an important settlement focus in the immediate post-Roman period. Despite the emphasis on Roman military archaeology, much effort has been made to relate this archaeology to the frontier landscape to provide a greater context for the *limitanei*. The palynological evidence reinforces the archaeological evidence of broad agricultural and settlement stability. Thus, it can be boldly claimed that the Roman frontier of northern England did not collapse – it survived Britain's separation from the Roman Empire. Future research must consider what happened in the post-Roman centuries, and how the late Roman frontier contributed to the formation of Early Medieval polities.

Appendix 1:

Pollen Sites

Palynology is a complex specialism requiring a high degree of knowledge of plant ecology. It is inappropriate here to discuss sampling methodologies and site formation processes. What follows is a brief introduction and overview of pollen site formation and interpretation, followed by an explanation of the format and information contained in this appendix. For more detailed information, the reader is directed to Moore *et al.* (1991) and Prentice (1988).

Numerous factors affect the formation and interpretation of a pollen assemblage according to differential sensitivity to various environmental factors, namely plant production and dispersal of pollen, meteorological patterns, and site taphonomy (Moore *et al.* 1991; Prentice 1988). The interpretation of each pollen assemblage can be unique from site to site because the arrival, movement, and preservation of pollen grains differ from one source to another (Moore *et al.* 1991:10).

The physical topography of the local environment is often indicative of the scale of reconstructed vegetational histories. In theory, pollen source areas should increase with basin size (Prentice 1988:21). Jacobson and Bradshaw (1981) have constructed a model to estimate pollen catchment based upon site diameter. Generally speaking, lakes and bogs tend to provide a regional representation, while peat is representative of local vegetational sequences (Moore *et al.* 1991:14–21). The location of a site, including altitude, prevailing winds, moisture levels, and cover from nearby vegetation or geology, can allow more or less pollen to accumulate on a site, determining whether a site is locally (< $1km^2$), extra-locally ($1km^2$–$5km^2$), or regionally (> $5km^2$ up to hundreds of km^2) representative of vegetational sequences.

Often, it is the changes or continuity in pollen types that is of interest. A continuity of pollen representation indicates little vegetational change in a landscape. Changes in the dominant species in an assemblage indicate a change in vegetation. These changes may be the result of natural processes or anthropogenic indicators of human activity (P. Dark 1996:25; Moore *et al.* 1991:9). So there may be deforestation and an intensification of agricultural or pastoral practises, or a decrease of agricultural plants, and forest regeneration across the land.

A pollen diagram is constructed by calculating pollen percentages. The amount of pollen from a given taxa is compared with the quantities of pollen from other species. When done stratigraphically, the changing percentages of certain taxa indicate vegetational changes. Numerous carbon dates from each site date vegetational changes, enhancing site interpretation and calculating more accurate sediment accumulation rates for tracking change over time in portions of the sample that are not scientifically dated.

What follows is a list of pollen sites in the frontier region between the Humber and the Tweed that were reviewed for the analysis in Chapter V. The site name and reference(s) are provided for all sites. If a site was deemed unsuitable for use in the analysis, this was noted and a justification given. If a site was deemed suitable for use in the analysis, the grid reference, catchment area, relevant radiocarbon dates, and site summary were provided. Not all radiocarbon dates from a site are reported, only the radiocarbon dates from the Roman and Early Medieval periods (or closest to these periods). Note that radiocarbon dates are reported uncalibrated in years before present.

Akeld Steads

Reference: Borek 1975

Suitable for use in study: No
Justification: no radiocarbon dates

Appletree

Reference: Wiltshire 1997

Suitable for use in study: No
Justification: pre- and early Roman focus with no late or post-Roman information

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Birdoswald

Reference: Wiltshire 1997

Suitable for use in study: No
Justification: pre- and early Roman focus with no late or post-Roman information

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Bishop Middleham

Reference: Bartley *et al.* 1976

Suitable for use in study: No
Justification: all radiocarbon dates prehistoric with the latest date calibrated to 3369±80 BP

Black Carts

Reference: Huntley 1998

Suitable for use in study: No
Justification: pollen related to the construction of the Vallum with no late or post-Roman information

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Blackpool Moss

Reference: Butler 1992 in Pratt 1996

Suitable for use in study: No
Justification: insufficient information was available to make an accurate assessment

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Bloak Moss

Reference: Turner 1965

Suitable for use in study: Yes

Grid Reference: NS 370460 **Catchment:** regional

C^{14} Dates: 2375±100 BP; 1500±100 BP; 1370±100 BP

Summary: Extensive clearance of woodland first occurred in the 6th century. Woodland regeneration occurred by the 7th century and these levels were maintained until the 19th century.

Bloody Moss

Reference: Moores 1998; Moores and Passmore 1999

Suitable for use in study: Yes

Grid Reference: NT 910024 **Catchment:** regional

C^{14} Dates: 2900±70 BP; 1290±110 BP

Summary: Peak clearance of heath moorland environment in 4th or 5th century, with presence of *Plantago lanceolata* and cereals. Woodland regeneration occurs in the 6th century, and these levels are maintained in the 7th century. Despite the woodland regeneration of the 6th century, agricultural indicators are still present (though reduced in levels), suggesting a reduction in grazing intensity.

Bollihope Bog

Reference: Roberts *et al.* 1973

Suitable for use in study: Yes

Grid Reference: NY 980358 **Catchment:** local

C^{14} Dates: 1730±100 BP; 180±80 BP; 170±80 BP

Summary: There was a sharp tree pollen decrease between 200 BC and AD 300, though the landscape was still wooded. These levels of clearance continued for more than 1,000 years with no stratigraphic disagreement. Compared to Stewart Shield Meadow, there were fewer anthropogenic indicators, suggesting less intensive human exploitation of the locale. The area was probably covered by galleries of woodland, and in the Medieval period was known for boar hunting.

Bolton Fell Moss

References: Barber 1981; Barber *et al.* 1994

Suitable for use in study: Yes

Grid Reference: NY 488692 **Catchment:** regional

C^{14} Dates: 2575±35 BP; 1270±35 BP; 985±35 BP; 870±35 BP; 865±35 BP

Summary: Minor woodland regeneration began in the 5th century, but clearance levels remained relatively open, though with a decline in arable indicator pollens, until the 9th century. This suggests expansion of pasture at the expense of arable.

Bradford Kaims, Bamburgh

Reference: Bartley 1965

Suitable for use in study: No
Justification: no radiocarbon dates

Broad Moss

Reference: Davies and Turner 1979

Suitable for use in study: No
Justification: no radiocarbon dates

Brownchesters Farm

Reference: Moores 1998

Suitable for use in the study: Yes

Grid Reference: NY 889922 **Catchment:** local

C^{14} Dates: 1205±110 BP

Summary: The results are from Terrace 8 with only one carbon date, so the trends are less securely dated than they could be. The valley floor was extensively exploited for agriculture, with particularly high quantities of wheat and oat pollen. Agricultural practises continued throughout the period, though there was some woodland regeneration through the 4th and 5th centuries, with woodland levels maintained in the 6th and 7th centuries.

Burnfoothill Moss

References: Tipping 1995a; 1995b

Suitable for use in study: Yes

Grid Reference: NY 263737 **Catchment:** regional

C^{14} Dates: 1965±45 BP; 2015±45 BP; 1490±45 BP; 1365±45 BP; 1100±45 BP; 1045±45 BP

Summary: Woodland clearance peaks *c.* AD 150 with arboreal recovery beginning *c.* AD 300. There is further agricultural decline *c.* AD 400 and continued forest regeneration with a notable absence of anthropogenic indicator taxa. There is renewed woodland clearance *c.* AD 600, but this is not a significant shift. Relatively dry environmental conditions prevailed in the 4th and 5th centuries AD, with a pronounced wet shift *c.* AD 750.

Burnhope Burn

Reference: Turner and Hodgson 1981

Suitable for use in study: No
Justification: no radiocarbon dates

Callaly Moor

Reference: Macklin *et al.* 1991

Suitable for use in study: No
Justification: there is a 2,000 year gap in the pollen record between the Bronze Age and the later Medieval period with no evidence pertaining to the Roman and Early Medieval periods

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Camp Hill Moss

Reference: Davies and Turner 1979

Suitable for use in study: No
Justification: last two radiocarbon dates are contaminated and are unreliable; all other dates are prehistoric with the latest reliable date calibrated to 2670±70 BP

Carsegowan Moss

Reference: Dumayne-Peaty 1999

Suitable for use in study: Yes

Grid Reference: NX 425587 **Catchment:** regional

C^{14} Dates: 2095±45 BP; 2005±40 BP; 1680±45 BP

Summary: Woodland regeneration begins in the 3rd century and continued through the 6th century. Renewed clearance occurred in the 7th century to the 9th century.

Caudhole Moss

Reference: Moores and Passmore 1999

Suitable for use in study: No
Justification: all radiocarbon dates are prehistoric with the latest date at 5440±70 BP

Coom Rigg Moss

Reference: Chapman 1965

Suitable for use in study: No
Justification: no radiocarbon dates

Denton Bank

References: Huntley 1999

Suitable for use in study: No
Justification: no pollen survived

Din Moss

Reference: Hibbert and Switsur 1976

Suitable for use in study: No
Justification: all radiocarbon dates are prehistoric with the latest date at 5340±70 BP

The Dod

Reference: Innes and Shennan 1991

Suitable for use in study: No
Justification: pollen preservation was generally not good and there was an inversion of a section of the core including three radiocarbon dates

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Dogden Moss

Reference: Dumayne-Peaty 1999

Suitable for use in study: Yes

Grid Reference: NT 684495 **Catchment:** regional

C^{14} Dates: 2365±40 BP; 1540±40 BP; 250±40 BP

Summary: Gradual woodland regeneration begins in the 2nd century, with gradual clearance recurring from the late 5th/early 6th to the 8th century with a corresponding increase in agricultural indicator taxa.

Drowning Flow

Reference: Moores 1998

Suitable for use in study: Yes

Grid Reference: NY 760975 **Catchment:** regional

C^{14} Dates: 2880±70 BP; 1880±50 BP

Summary: Increased use of upland for grazing from Iron Age to the early 7th century, with the high quantities of *Calluna vulgaris* and low values of *Alnus* and Coryloid types suggesting either over-burning or over-grazing of heathland vegetation. *Plantago lanceolata* occurs for the first time in the 4th century or later. There is a brief period of forest regeneration in the 6th century, following by increased clearance in the 7th century.

Ellergower Moss

Reference: Dumayne-Peaty 1999

Suitable for use in study: Yes

Grid Reference: NX 482795 **Catchment:** regional

C^{14} Dates: 2915±40 BP; 930±40 BP

Summary: Woodland regeneration begins in the 2nd century and continued through the 8th century.

Fairsnape Fell

Reference: Mackay and Tallis 1994

Suitable for use in study: Yes

Grid Reference: SD 590740 **Catchment:** regional

C^{14} Dates: 2105±40 BP; 2025±40 BP; 1735±45 BP; 1595±45 BP; 840±45 BP; 815±40 BP

Summary: Forest clearance began in the late Iron Age, with maintained clearance levels into the Roman period. Increasing levels of *Plantago* pollen suggests a strong cattle-based pasturing, but consistent presence of cereal pollen indicates importance of arable cultivation. A renewed phase of forest clearance and agricultural expansion took place in the 4th century and these levels were maintained through the 5th century. Decreased pollen of agricultural indicator species and increasing tree pollen attest to forest regeneration in the 6th and 7th centuries, followed by a gradual decrease in forest levels until the late 12th century.

Fellend Moss

Reference: Davies and Turner 1979

Suitable for use in study: Yes

Grid Reference: NY 679658 **Catchment:** regional

C^{14} Dates: 1948±45 BP; 1330±40 BP; 945±40 BP

Summary: Woodland clearance peaks in the Roman period in association with cereal cultivation and pasture. Clearance levels are maintained until the late 7th/early 8th century, followed by a minor increase in woodland that was maintained until the 11th century.

Fen Bogs

Reference: Atherden 1976

Suitable for use in study: Yes

Grid Reference: SE 853977 **Catchment:** regional

C^{14} Dates: 2280±120 BP; 1530±130 BP; 1060±160 BP

Summary: Peak clearance was achieved in the late Iron Age or early Roman period, with levels of clearance associated with agricultural pollens maintained through the 5th century. Some forest regeneration occurred through the 6th and 7th century, with likely renewed clearance in the 8th century.

Fenton Cottage

References: Huckerby *et al.* 1992; Middleton *et al.* 1995; Wells *et al.* 1997

Suitable for use in study: Yes

Grid Reference: SD 404449 **Catchment:** regional

C^{14} Dates: 1590±50 BP; 1380±60 BP

Summary: Coverage in the Roman period was a mix of woodland, grassland, heath, and arable. A decrease in grasses and ribwort plantain with increases in heather, birch, alder, oak, and ash was seen in the 6th century, though cereal pollen continued to occur sporadically. There was woodland regeneration, but the shift in pollen may represent an expansion of pastoral activity at the expense of arable.

Flanders Moss

Reference: Turner 1965

Suitable for use in study: No
Justification: no radiocarbon dates

Fotherley Moss

Reference: Turner and Hodgson 1981

Suitable for use in study: No
Justification: no radiocarbon dates

Fozy Moss

Reference: Dumayne and Barber 1994

Suitable for use in study: Yes

Grid Reference: NY 830714 **Catchment:** regional

C^{14} Dates: 1820±45 BP; 925±45 BP

Summary: Woodland regeneration begins in the 4th century AD and these levels of woodland coverage remain relatively stable through the Early Medieval period with increased clearance occurring again in the 11th century.

Glasson Moss

Reference: Dumayne and Barber 1994

Suitable for use in study: Yes

Grid Reference: NY 238603 **Catchment:** regional

C^{14} Dates: 2215±45 BP; 1860±40 BP; 960±40 BP

Summary: Woodland regeneration begins in the 4th century AD and these levels of woodland coverage remain relatively stable through the Early Medieval period with increased clearance occurring again in the 11th century.

Hallowell Moss

Reference: Donaldson and Turner 1977

Suitable for use in study: Yes

Grid Reference: NY 251439 **Catchment:** extra-local

C^{14} Dates: 2233±80 BP; 1956±70 BP; 1782±60 BP; 1355±50 BP; 1522±65 BP; 907±55 BP

Summary: High clearance levels were achieved in the Roman period with less than 5% tree pollen with no associated shrub increase, indicating well managed land. Maximum clearance occurred after AD 410 and clearance levels were maintained until the late 7th century. An increase in hazel scrub was followed by woodland regeneration in the 8th century.

Hutton Henry

Reference: Bartley *et al.* 1976

Suitable for use in study: Yes

Grid Reference: NZ 410350 **Catchment:** extra-local

C^{14} Dates: 1842±70 BP

Summary: Peak clearance was achieved at *c.* AD 110, with a subsequent rise of herbaceous taxa, suggesting expansion of agriculture. Clearance levels were generally maintained for some time, perhaps as late at the 10th or 11th century.

Lamb Shield

Reference: Turner and Hodgson 1981

Suitable for use in study: No
Justification: no radiocarbon dates

Linhope Burn

Reference: Topping 1991

Suitable for use in study: No
Justification: no radiocarbon dates

Linton Loch

Reference: Mannion 1978

Suitable for use in study: No
Justification: no radiocarbon dates

Longlee Moor

Reference: Bartley 1965

Suitable for use in study: No
Justification: no radiocarbon dates

The Lough, Lindisfarne

References: Brown *et al.* 1995; Walsh 1995

Suitable for use in study: Yes

Grid Reference: NU 130420 **Catchment:** extra-local

C^{14} Dates: 1229±60 BP; 620±60 BP

Summary: Woodland clearance is in evidence from at least the 6th century, and this continued through the Early Medieval and Medieval period. Cereals are present from at least the 6th century, but the primary agricultural focus seems to be pastoral, as there was a steady expansion of grasses and slow increase in heather levels.

Midgeholme Moss

References: Innes 1988; Lewis 1993; Wiltshire 1997

Suitable for use in study: Yes

Grid Reference: NY 613665 **Catchment:** regional

C^{14} Dates: 2100±60 BP; 2040±80 BP; 1970±60 BP; 1740±90 BP

Summary: Late forest clearance in the Iron Age was followed by substantial woodland regeneration. There was renewed clearance during the Roman period that was maintained into the late 5th

century, followed by increasing levels of willow pollen, suggesting less maintained land with possible woodland regeneration between the 6th and 8th centuries.

Mordan Carr

Reference: Bartley *et al.* 1976

Suitable for use in study: No
Justification: all radiocarbon dates are prehistoric, with the latest date calibrated to 4543±70 BP

Muckle Moss

Reference: Pearson 1960

Suitable for use in study: No
Justification: no radiocarbon dates

Neasham Fen

Reference: Bartley *et al.* 1976

Suitable for use in study: Yes

Grid Reference: NZ 332166 **Catchment:** local

C^{14} Dates: 2488±75 BP; 1213±60 BP

Summary: There was no major change in clearance between the Iron Age and 7th century AD. The first major clearance of woodland occurred *c.* AD 737.

Newcastle Milecastle (Westgate Road)

References: Huntley 1985; Huntley 1999

Suitable for use in study: No
Justification: pollen associated with pre-construction environment of 1st and early 2nd centuries

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Nunstainton Carrs

Reference: Bartley *et al.* 1976

Suitable for use in study: No
Justification: no radiocarbon dates

Pow Hill

Reference: Turner and Hodgson 1981

Suitable for use in study: No
Justification: last radiocarbon date contaminated and all other dates prehistoric with the latest date calibrated to 4310±40 BP

Quick Moss

Reference: Rowell and Turner 1985

Suitable for use in study: Yes

Grid Reference: NY 878467 **Catchment:** regional

C^{14} Dates: 2429±50 BP; 2035±50 BP; 1470±50 BP

Summary: Peak clearance was achieved in the late Iron Age or early Roman period, with levels of clearance maintained until the 6th century, when forest regeneration occurred at the expense of grassland.

Round Loch of Glenhead

Reference: Jones *et al.* 1989

Suitable for use in study: Yes

Grid Reference: NX 450805 **Catchment:** regional

C^{14} Dates: 2250±70 BP; 1810±60 BP

Summary: Clearance levels remained relatively constant from the Bronze Age until the 19th century. Forest clearance was associated with an increase of anthropogenic pollen indicators of pasturing.

Rusland Moss

Reference: Dickinson 1975

Suitable for use in study: Yes

Grid Reference: NY 334886 **Catchment:** regional

C^{14} Dates: 2329±45 BP; 1963±50 BP; 1552±55 BP; 1535±50 BP; 1511±50 BP; 1361±55 BP; 805±50 BP

Summary: Iron Age levels of clearance were maintained through the 5th century, after which there was widespread forest regeneration that continued until renewed clearance was observed in the 9th century.

Sells Burn

Reference: Moores 1998

Suitable for use in study: No

Justification: all radiocarbon dates are prehistoric, with the latest calibrated to 2800±50 BP. Constant accumulation rates make a projection into the relevant centuries possible, but this was not thought to be accurate enough.

Snabdaugh Farm

Reference: Moores 1998

Suitable for use in study: Yes

Grid Reference: NY 787846 **Catchment:** local

C^{14} Dates: 1625±115 BP; 815±135 BP

Summary: Terrace 5 provided information for Roman and Early Medieval occupation. The valley was a largely treeless environment throughout the 1st millennium AD. Clearance levels were maintained through the 4th and 5th centuries, with some woodland regeneration occurring in the 6th century (though minor). Woodland levels were maintained through the 7th century.

Sourhope

Reference: Tipping 1996; Dumayne-Peaty 1999

Suitable for use in study: Yes

Grid Reference: NT 858199 **Catchment:** extra-local

C^{14} Dates: 4100±50 BP; 1382±70 BP

Summary: Limited clearance of woodland began in the late Iron Age, and these levels were maintained until the 6th century, associated with limited agriculture. More extensive clearance began in the 6th century and was thereafter maintained.

Steng Moss

Reference: Davies and Turner 1979

Suitable for use in study: Yes

Grid Reference: NY 965913 **Catchment:** regional

C^{14} Dates: 2528±35 BP; 1970±60 BP; 1490±60 BP; 1085±35 BP

Summary: Levels of clearance were maintained from the late Iron Age through to the 6th century, with evidence for cereal cultivation and an increase in arable and pastoral activity in the later half of the Roman period. Forest regeneration occurred from the 7th century until the 9th century.

Stewart Shield Meadow

Reference: Roberts *et al.* 1973

Suitable for use in study: Yes

Grid Reference: NY 980428 **Catchment:** local

C^{14} Dates: 2060±120 BP; 840±100 BP

Summary: There was a sharp decrease in tree pollen in the late Iron Age and Roman period. Levels of clearance were maintained for approximately 1,000 years.

Swindon Hill

Reference: Tipping 1992; Tipping 1996; Dumayne-Peaty 1999

Suitable for use in study: Yes

Grid Reference: NT 760320 **Catchment:** extra-local

C^{14} Dates: 3100±50 BP; 1380±70 BP

Summary: Woodland levels were maintained through the 5th century. The first notable clearance occurred in the 6th century, associated with agricultural indicators.

Talla Moss

Reference: Chambers *et al.* 1997

Suitable for use in study: Yes

Grid Reference: NT 152203 **Catchment:** regional

C^{14} Dates: 2116±45 BP; 1930±45 BP; 1094±45 BP; 871±45 BP

Summary: Peak clearance was achieved in the 2nd or 3rd century, followed by a period of forest regeneration from the 4th to late 5th/early 6th century. Renewed clearance occurred from the 7th century and thereafter clearance levels were generally maintained until the present day.

Tarraby Lane

Reference: Balaam 1978

Suitable for use in study: No
Justification: no radiocarbon dates and pollen from a pre-Hadrianic ground surface

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Thorpe Bulmer

Reference: Bartley *et al.* 1976

Suitable for use in study: Yes

Grid Reference: NZ 453354 **Catchment:** local

C^{14} Dates: 2064±60 BP; 1730±120 BP; 852±60 BP

Summary: High levels of clearance and the presence of cereal and *cannabis* pollens suggest an arable landscape in the early Roman period. After the early 3rd century, there was a decline in *cannabis* pollen and an increase in grasses, suggesting increased pasturing in the late and post-Roman periods, though there were still traces of local arable activity. These levels of clearance and arable and pastoral activity remained level through the Early Medieval period.

Valley Bog

Reference: Chambers 1978

Suitable for use in study: No
Justification: all radiocarbon dates prehistoric with the latest date calibrated to 2175±45 BP

Vindolanda

Reference: Manning *et al.* 1997

Suitable for use in study: No
Justification: no radiocarbon dates and pollen dated through correlation with archaeological deposits to late 1st and late 2nd centuries

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Wallhouses

Reference: Balaam 1983

Suitable for use in study: No
Justification: no radiocarbon dates and pollen from a slow silting of the Vallum ditch

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Walton Moss

References: Dumayne and Barber 1994; Hughes *et al.* 2000

Suitable for use in study: Yes

Grid Reference: NY 504667 **Catchment:** regional

C^{14} Dates: 2000±40 BP; 1925±40 BP; 135±40 BP

Summary: There was a decrease in clearance in the 4th century, but no corresponding woodland regeneration, suggesting a change from arable to pasturage. These levels of clearance are maintained through the 6th century with subsequent woodland regeneration through the rest of the Early Medieval period. Increased clearance occurred again in the 11th century. Wet shifts were dated to *c.* AD 200, 500, and 650.

Wheeldale Gill

Reference: Simmons and Cundill 1974

Suitable for use in study: Yes

Grid Reference: SE 760997 **Catchment:** regional

C^{14} Dates: 2390±80 BP; 2100±90 BP; 1570±90 BP

Summary: Peak clearance appears to have been achieved in the very late Iron Age or Roman period, when there was evidence of widespread farming evidences by cereal pollens. This period of clearance was followed by modest woodland regeneration in the later 5th or 6th centuries. Renewed clearance began after a period of woodland regeneration, perhaps in the 10th century.

White Moss

Refernce: Bartley *et al.* 1990

Suitable for use in study: Yes

Grid Reference: SD 792546 **Catchment:** regional

C^{14} Dates: 5080±100 BP; 1470±100 BP

Summary: There was low-level clearance and woodland regeneration recurring cyclically from the Bronze Age through the Roman period. The first major clearance occurred in the 5th century, and this was associated with a major increase of agricultural pollens. Clearance levels were maintained thereafter.

Willow Garth

Reference: Bush and Flengley 1987

Suitable for use in study: Yes

Grid Reference: TA 126676 **Catchment:** regional

C^{14} Dates: 2120±50 BP; 1300±50 BP; 1170±50 BP; 700±50 BP

Summary: Major clearance began in the Bronze Age and increased until clearance peaked in the Roman period. This clearance is associated with increases in arable and pastoral indicator pollens. Woodland regeneration occurred in the 4th century and lasted until the late 7th century at the expense of arable, but not pasture.

Wooler Water

References: Clapperton *et al.* 1971; Tipping 1992; Harrison and Tipping 1994

Suitable for use in study: No

Justification: The uppermost peat was dated to *c.* 4000 cal. BP, predating the period of interest by approximately 2500 years.

Yetholm Loch

Reference: Tipping 1992; Tipping 1996; Dumayne-Peaty 1999

Suitable for use in study: Yes

Grid Reference: NT 803277 **Catchment:** regional

C^{14} Dates: 4690±110 BP; 1750±60 BP

Summary: Levels of clearance were maintained from the 3rd century to the 6th/7th century, associated with agricultural indicators.

Appendix 2:
Newcastle Case Study

The following sections reproduce data from databases constructed in Microsoft Access for the Newcastle Case Study.

APPENDIX 2.1: NEWCASTLE CS TOTAL DATA

Site Name	Type	Period	Date	X	Y	SMR #	County
Anfield Plain find 1	find	Roman	114-117	416100	551900	1891	Durham
Apperley Dene Fort	farmstead	Roman	4th c.	405550	558020	9839	Northumberland
Backworth	enclosure	roman, prehistoric		430800	572060	4836	Tyne and Wear
Backworth find 1	find	Roman	2nd c.	430000	572000	744	Tyne and Wear
Benkley find 1	find	roman, prehistoric		421700	575100	1327	Tyne and Wear
Benwell	fort	Roman		421600	564780	208	Tyne and Wear
Benwell burial 1	burial	Roman		421660	564640	5271	Tyne and Wear
Benwell cemetery	cemetery	Roman		422000	564600	1505	Tyne and Wear
Benwell find 1	find	Roman		420000	564000	1255	Tyne and Wear
Benwell find 2	find	Roman		421230	564330	5267	Tyne and Wear
Benwell find 3	find	Roman	hadrianic	421460	564500	5268	Tyne and Wear
Benwell find 4	find	Roman		421420	564560	5272	Tyne and Wear
Benwell find 5	find	Roman	2nd c.	421710	564670	5273	Tyne and Wear
Benwell find 6	find	Roman		421600	564700	5296	Tyne and Wear
Benwell structure 1	structure	Roman		421300	564500	5263	Tyne and Wear
Benwell structure 2	structure	Roman		421550	564630	5264	Tyne and Wear
Benwell structure 3	structure	Roman		421569	564592	5265	Tyne and Wear
Benwell structure 4	structure	Roman		421710	564670	5266	Tyne and Wear
Benwell structure 5	structure	Roman		421530	564560	5269	Tyne and Wear
Benwell structure 6	structure	Roman		421620	564610	5270	Tyne and Wear
Benwell vicus	vicus	roman		421600	564600	5262	Tyne and Wear
Black Callerton	enclosure	roman, prehistoric		417730	570350	4841	Tyne and Wear
Blyth Enclosure 1	enclosure	roman, prehistoric		429000	578200	11474	Northumberland
Blyth Enclosure 2	enclosure	roman, prehistoric		425200	575500	11476	Northumberland
Blyth Enclosure 3	enclosure	roman, prehistoric		425530	579530	11486	Northumberland
Bottle Bank	site	roman	2-4th c.	425500	563500	0	Tyne and Wear
Broomley/Stocksfield find 1	find	roman		405750	561110	10130	Northumberland
Buck's Nook	enclosure	roman, prehistoric		411400	561480	172	Tyne and Wear
Bullock Steads	enclosure	roman, prehistoric		420130	569290	1909	Tyne and Wear
Bullock Steads 2	enclosure	roman, prehistoric		420880	569460	4840	Tyne and Wear
Burradon	enclosure	roman,		428000	573400	177	Tyne and Wear

Site Name	Type	Period	Date	X	Y	SMR #	County
		prehistoric					
Burradon 1	enclosure	roman, prehistoric		426900	572900	305	Tyne and Wear
Burradon 2	enclosure	roman, prehistoric		426900	572900	306	Tyne and Wear
Burradon 3	enclosure	roman, prehistoric		427000	572300	309	Tyne and Wear
Burradon 4	enclosure	roman, prehistoric		428110	573330	4833	Tyne and Wear
Byker find 1	find	roman		426400	564600	1414	Tyne and Wear
Castle Hill find 1	find	roman	258-268	413300	549400	5233	Durham
Castleside a1	aqueduct	roman		410730	547370	1869	Durham
Castleside find 1	find	roman		410720	547420	1868	Durham
Chester-le-Stree cemetery 2	cemetery	roman		427000	551110	2170	Durham
Chester-le-Street bathhouse	bathhouse	roman		427630	551180	2168	Durham
Chester-le-Street cemetery 1	cemetery	roman	3rd c?	427990	551170	2167	Durham
Chester-le-Street church	church	early medieval		427600	551320	2150	Durham
Chester-le-Street find 1	find	roman		428400	550300	33	Durham
Chester-le-Street find 10	find	roman		427500	551300	2626	Durham
Chester-le-Street find 11	find	roman		427590	551137	5286	Durham
Chester-le-Street find 2	find	early medieval		427600	551400	700	Durham
Chester-le-Street find 3	find	roman		427500	551300	2619	Durham
Chester-le-Street find 4	find	roman		427500	551300	2620	Durham
Chester-le-Street find 5	find	roman		427500	551300	2621	Durham
Chester-le-Street find 6	find	roman		427500	551300	2622	Durham
Chester-le-Street find 7	find	roman		427500	551300	2623	Durham
Chester-le-Street find 8	find	roman		427500	551300	2624	Durham
Chester-le-Street find 9	find	roman		427500	551300	2625	Durham
Chester-le-Street fort	fort	roman	3rd-4th c.	427500	551300	2153	Durham
Chester-le-Street site	site	roman		426000	550000	2148	Durham
Claxheugh find 1	find	roman	2nd c.	436200	557700	19	Tyne & Wear
Consett	signal station	roman		411400	553200	1894	Durham
Cramlington New Town 2	enclosure	roman, prehistoric		425700	576200	11472	Northumberland
Dalton-le-Dale find 1	find	early medieval		440800	548000	732	Durham
Damhead Wood	enclosure	roman,		419200	561100	173	Tyne and Wear

Site Name	Type	Period	Date	X	Y	SMR #	County
		prehistoric					
Denton culvert	culvert	roman	2nd c.	419170	565840	1284	Tyne and Wear
Denton find 1	find	roman	2nd c.	419000	565000	1256	Tyne and Wear
Denton find 10	find	roman		418980	565910	1270	Tyne and Wear
Denton find 11	find	roman	1st-2nd c.	419100	565800	1292	Tyne and Wear
Denton find 12	find	roman, prehistoric		419200	565500	1321	Tyne and Wear
Denton find 2	find	roman		420000	565000	1257	Tyne and Wear
Denton find 3	find	roman	2nd c.	419860	565380	1263	Tyne and Wear
Denton find 4	find	roman	2nd c.	419870	565400	1264	Tyne and Wear
Denton find 5	find	roman	2nd c.	419850	565380	1265	Tyne and Wear
Denton find 6	find	roman	2nd c.	419700	565470	1266	Tyne and Wear
Denton find 7	find	roman	2nd c.	419680	565450	1267	Tyne and Wear
Denton find 8	find	roman		419000	565000	1268	Tyne and Wear
Denton find 9	find	roman	2nd c.	419600	565500	1269	Tyne and Wear
Dunston find 1	find	roman		422000	561000	1504	Tyne and Wear
Durham City 1	enclosure	roman, prehistoric		430000	544800	373	Durham
Durham City 2	enclosure	roman, prehistoric		431400	543900	389	Durham
Earsdon 1	enclosure	roman, prehistoric		431780	572810	4835	Tyne and Wear
Earsdon 2	enclosure	roman, prehistoric		432310	572210	4847	Tyne and Wear
Earsdon 3	enclosure	roman, prehistoric		432700	572600	5679	Tyne and Wear
East Brunton 1	enclosure	roman, prehistoric		423640	570680	4837	Tyne and Wear
East Brunton 2	enclosure	roman, prehistoric		423450	570490	4838	Tyne and Wear
East Brunton 3	enclosure	roman, prehistoric		423430	570290	4839	Tyne and Wear
East Holywell	cropmark	roman, prehistoric		431330	573350	745	Tyne and Wear
East Holywell find 1	find	roman, prehistoric		431160	573450	5219	Tyne and Wear
Ebchester find 1	find	roman		410360	555450	1910	Durham
Ebchester find 2	find	roman		410100	555100	3062	Durham
Ebchester find 3	find	roman, prehistoric		410350	555500	3908	Durham
Ebchester fort	fort	roman	2nd-4th c.	410350	555500	1911	Durham
Ebchester monastery	monastery	early medieval	7th c.	410360	555450	1909	Durham
Ebchester site	site	roman		415000	555000	4418	Durham
Edmondsley	enclosure	roman, prehistoric		425800	549600	361	Durham
Finchale	enclosure	roman, prehistoric		429700	547500	378	Durham
Fullwell find 2	find	roman	3rd c.	439000	559000	22	Tyne & Wear
Fulwell find 1	find	roman	2nd-3rd c.	438900	559600	33	Tyne & Wear
Fulwell find 3	find	roman		438100	559300	359	Tyne and Wear

Site Name	Type	Period	Date	X	Y	SMR #	County
Fulwell Quarries find 1	burial	roman		438000	559000	398	Tyne and Wear
Fulwell Quarries find 2	find	roman		438000	559000	400	Tyne and Wear
Gardener's Houses	enclosure	roman, prehistoric		420920	574220	176	Tyne and Wear
Gateshead find 1	find	roman	2nd c.	425000	563000	271	Tyne and Wear
Gateshead find 2	find	roman	2nd c.	423000	560000	275	Tyne and Wear
Gateshead find 3	find	roman		425500	563600	5635	Tyne and Wear
Gateshead settlement	settlement	roman		425300	563600	5633	Tyne and Wear
Gosforth find 1	find	roman	2nd c.	424400	567700	1349	Tyne and Wear
Great Usworth	enclosure	roman, prehistoric		430200	559200	328	Tyne and Wear
Harraton find 1	find	roman	2nd c.	429900	553800	4605	Tyne and Wear
Haswell	enclosure	roman, prehistoric		436900	544500	402	Durham
Hazlerigg 1	settlement	roman, prehistoric		423080	571690	1968	Tyne and Wear
Hazlerigg 2	enclosure	roman, prehistoric		423330	571190	1969	Tyne and Wear
Hazlerigg north	enclosure	roman, prehistoric		423460	571720	174	Tyne and Wear
Hazlerigg south	enclosure	roman, prehistoric		423320	571400	175	Tyne and Wear
Hebburn find 1	find	roman	4th c.	400000	500000	970	Tyne and Wear
Heddon-on-the-Wall	structure	roman		412240	567290	10894	Northumberland
Heddon-on-the-Wall find 1	find	roman		409000	567000	10043	Northumberland
Heddon-on-the-Wall find 2	find	roman		413790	566740	10857	Northumberland
Heddon-on-the-Wall find 3	find	roman		413400	566900	10858	Northumberland
Heddon-on-the-Wall find 4	find	roman		412600	567190	10859	Northumberland
Heddon-on-the-Wall find 5	find	roman		410370	567670	10861	Northumberland
Heddon-on-the-Wall find 6	find	roman		411250	567350	10862	Northumberland
Heddon-on-the-Wall find 7	find	roman		410000	567000	10892	Northumberland
Heddon-on-the-Wall find 8	find	roman		414000	566800	10895	Northumberland
Heddon-on-the-Wall find 9	find	roman		413000	566000	10899	Northumberland
Heworth find 1	find	roman	2nd c.	429740	561120	699	Tyne and Wear
High Barnes	enclosure	roman, prehistroic		425550	574120	4832	Tyne and Wear
High Close House West	enclosure	roman, prehistoric		411820	565720	10877	Northumberland
Holystone	enclosure	roman, prehistoric		430030	570830	5470	Tyne and Wear
Holywell Dene	enclosure	roman,		432700	574900	12030	Northumberland

Site Name	Type	Period	Date	X	Y	SMR #	County
		prehistoric					
Holywell Grange Farm	enclosure	roman, prehistoric		431440	573330	4834	Tyne and Wear
Horsley 1	settlement	roman		409800	565600	12492	Northumberland
Horsley 2	settlement	roman		409200	565800	12493	Northumberland
Horsley 3	field system	roman		409300	566200	12506	Northumberland
Horton Grange	enclosure	roman, prehistoric		418100	576600	10957	Northumberland
Houghton-le-Spring find 1	find	roman		434000	549000	269	Tyne and Wear
Houghwell Burn find 1	find	roman, prehistoric		419000	553900	3950	Durham
Hylton find 1	find	roman		435100	556900	44	Tyne & Wear
Hylton find 2	find	roman		435000	556900	4991	Tyne and Wear
Hylton structure	bridge	roman		435070	556930	4623	Tyne and Wear
Iveston	enclosure	roman, prehistoric		414700	549300	1887	Durham
Ivestone find 1	find	roman		414400	549200	3432	Durham
Jarrow find 1	find	roman		433000	565000	983	Tyne and Wear
Jarrow find 10	find	roman	2nd/3rd c.	433880	565220	992	Tyne and Wear
Jarrow find 2	find	roman		433900	565200	984	Tyne and Wear
Jarrow find 3	find	roman		433900	565200	985	Tyne and Wear
Jarrow find 4	find	roman		433900	565200	986	Tyne and Wear
Jarrow find 5	find	roman		433700	565400	987	Tyne and Wear
Jarrow find 6	find	roman	1st c.	433900	565200	988	Tyne and Wear
Jarrow find 7	find	roman	1st c.	433000	565000	989	Tyne and Wear
Jarrow find 8	find	roman	3rd c.	433700	565200	990	Tyne and Wear
Jarrow find 9	find	roman	2nd/3rd c.	433880	565220	991	Tyne and Wear
Kibblesworth	cropmark	roman, prehistoric		422900	556310	4844	Tyne and Wear
Kibblesworth 1	enclosure	roman, prehistoric		422590	556640	4615	Tyne and Wear
Kibblesworth 2	enclosure	roman, prehistoric		423460	556760	4843	Tyne and Wear
Kimblesworth	enclosure	roman, prehistoric		425500	546700	383	Durham
Kimblesworth village	settlement	early medieval		425956	547335	4564	Durham
Lambton Castle	enclosure	roman, prehistoric		428000	553300	407	Durham
Lancehster a4	aqueduct	roman		414063	546712	1870	Durham
Lanchester a1	aqueduct	roman		411650	546040	1870	Durham
Lanchester a2	aqueduct	roman		415094	546462	1870	Durham
Lanchester a3	aqueduct	roman		414452	546752	1870	Durham
Lanchester a5	aqueduct	roman		412980	546140	1871	Durham
Lanchester a6	aqueduct	roman		412430	546330	1871	Durham
Lanchester a7	aqueduct	roman		415000	546200	3044	Durham
Lanchester a8	aqueduct	roman		412220	546940	3044	Durham
Lanchester a9	aqueduct	roman		414800	546000	3044	Durham
Lanchester bathhouse	bathhouse	roman		416030	546910	6319	Durham

Site Name	Type	Period	Date	X	Y	SMR #	County
Lanchester cemetery 1	cemetery	roman		415610	546580	2179	Durham
Lanchester find 1	find	roman		415000	546400	1847	Durham
Lanchester find 10	find	roman		415900	546800	2629	Durham
Lanchester find 11	find	roman		415900	546800	2630	Durham
Lanchester find 12	find	roman		415900	546800	2631	Durham
Lanchester find 13	find	roman		415900	546800	2631	Durham
Lanchester find 14	find	roman		415900	546800	2633	Durham
Lanchester find 15	find	roman		415900	546800	2634	Durham
Lanchester find 16	find	roman		415900	546800	2635	Durham
Lanchester find 17	find	roman		415900	546800	2636	Durham
Lanchester find 18	find	roman		415900	546800	2637	Durham
Lanchester find 19	find	roman		415900	546800	2638	Durham
Lanchester find 2	find	roman		415840	546760	1848	Durham
Lanchester find 20	find	roman		415900	546800	2639	Durham
Lanchester find 21	find	roman		415900	546800	2640	Durham
Lanchester find 22	find	roman		415900	546800	2641	Durham
Lanchester find 23	find	roman		415900	546800	2642	Durham
Lanchester find 24	find	roman		415900	546800	2643	Durham
Lanchester find 25	find	roman		415900	546800	2644	Durham
Lanchester find 26	find	roman		415900	546800	2645	Durham
Lanchester find 27	find	roman		415900	546800	2646	Durham
Lanchester find 28	find	roman		415900	546800	2647	Durham
Lanchester find 29	find	roman		415900	546800	2648	Durham
Lanchester find 3	find	roman		415000	546000	1849	Durham
Lanchester find 30	find	roman		415900	546800	2648	Durham
Lanchester find 31	find	roman		415900	546800	3228	Durham
Lanchester find 32	find	roman, prehistoric		416000	547000	3905	Durham
Lanchester find 33	find	roman		415800	547300	6825	Durham
Lanchester find 4	find	roman		415720	547160	1853	Durham
Lanchester find 5	find	roman		416000	546000	1856	Durham
Lanchester find 6	find	early medieval		414110	548050	1883	Durham
Lanchester find 7	find	roman		415600	546600	2103	Durham
Lanchester find 8	find	roman		415900	546800	2627	Durham
Lanchester find 9	find	roman		415900	546800	2628	Durham
Lanchester fort	fort	roman	2nd-4th c.	415940	546890	1850	Durham
Lanchester vicus	vicus	roman		416050	546950	6318	Durham
Lanchester village	settlement	early medieval		416552	547603	4567	Durham
Langley Park 1	enclosure	roman, prehistoric		420600	546200	384	Durham
Langley Park 2	enclosure	roman, prehistoric		420300	545900	385	Durham
Leamside find 1	find	roman	284-305	430650	546400	5670	Durham
Low Fell find 1	find	roman, prehistoric		426220	560960	4606	Tyne and Wear
Low Ford find 1	find	roman	3rd-4th c.	435960	556940	30	Tyne & Wear
Marden	enclosure	roman,		435300	570800	304	Tyne and Wear

Site Name	Type	Period	Date	X	Y	SMR #	County
		prehistoric					
Marsden find 1	find	roman		439000	565300	934	Tyne and Wear
Marshall Lands	enclosure	roman, prehistoric		421300	560200	688	Tyne and Wear
Middle Brunton 1	enclosure	roman, prehistoric		422170	571510	1967	Tyne and Wear
Middle Brunton 2	enclosure	roman, prehistoric		422330	571040	1961	Tyne and Wear
Milecaste 15, Whitchester	milecastle	roman		409240	567910	10003	Northumberland
Milecastle 10, Walbottle Dene	milecastle	roman		416470	566750	217	Tyne and Wear
Milecastle 13, Rudchester Burn	milecastle	roman		412100	567330	10851	Northumberland
Milecastle 14, March Burn	milecastle	roman		410670	567690	10854	Northumberland
Milecastle 4, Westgate Road	milecastle	roman		424520	564010	205	Tyne and Wear
Milecastle 8, West Denton	milecastle	roman		419250	565800	211	Tyne and Wear
Milecastle 9 find 1	find	roman		417860	566270	1272	Tyne and Wear
Milecastle 9, Chapel House	milecastle	roman	2nd-4th	417860	566270	214	Tyne and Wear
Monkseaton find 1	find	roman		434500	572100	743	Tyne and Wear
Monkwearmouth find 1	find	roman	4th c.	440170	557780	61	Tyne and Wear
Monkwearmouth find 2	find	roman		440200	557800	414	Tyne and Wear
Monkwearmouth find 3	find	roman		440200	557800	415	Tyne and Wear
New Horton Grange 1	enclosure	roman, prehistoric		419550	575420	10963	Northumberland
New Horton Grange 2	enclosure	roman, prehistoric		419550	575420	1322	Tyne and Wear
Newburn find 1	find	roman	2nd c.	416950	565140	1287	Tyne and Wear
Newburn find 2	find	roman		416500	565300	1288	Tyne and Wear
Newcastle	fort	roman		425000	563900	204	Tyne and Wear
Newcastle burial 1	burial	roman	2nd-4th c.	424540	563930	1447	Tyne and Wear
Newcastle burial 2	burial	roman		424930	563780	1450	Tyne and Wear
Newcastle find 1	find	roman	3rd c.	425020	563870	1469	Tyne and Wear
Newcastle find 10	find	roman	3rd-4th c.	425100	563900	1478	Tyne and Wear
Newcastle find 11	find	roman	1st, 3rd c.	425190	563750	499	Tyne and Wear
Newcastle find 12	find	roman	2nd c.	425200	563700	500	Tyne and Wear
Newcastle find 13	find	roman		426000	564000	1415	Tyne and Wear
Newcastle find 14	find	roman		424840	563660	1438	Tyne and Wear
Newcastle find 15	find	roman		424900	563800	1443	Tyne and Wear
Newcastle find 16	find	roman	2nd-3rd c.	424860	563800	1445	Tyne and Wear
Newcastle find 17	find	roman	2nd-3rd c.	424540	563930	1449	Tyne and Wear
Newcastle find 18	find	roman		424930	563880	1453	Tyne and Wear
Newcastle find 19	find	roman		424950	563810	1456	Tyne and Wear
Newcastle find 2	find	roman		425110	563860	1470	Tyne and Wear

Site Name	Type	Period	Date	X	Y	SMR #	County
Newcastle find 20	find	roman	2nd c.	424830	563950	1457	Tyne and Wear
Newcastle find 21	find	roman		424900	563900	1458	Tyne and Wear
Newcastle find 22	find	roman		425100	563910	1459	Tyne and Wear
Newcastle find 23	find	roman	2nd c. +	425040	563850	1460	Tyne and Wear
Newcastle find 24	find	roman	2nd or 3rd c.	425000	564000	1461	Tyne and Wear
Newcastle find 25	find	roman	2nd c.	425190	563750	1462	Tyne and Wear
Newcastle find 26	find	roman		424700	563960	1465	Tyne and Wear
Newcastle find 27	find	roman		425020	563880	1467	Tyne and Wear
Newcastle find 28	find	roman		425000	563870	1468	Tyne and Wear
Newcastle find 29	find	roman	3rd c.	425190	563750	1482	Tyne and Wear
Newcastle find 3	find	roman		425110	563860	1471	Tyne and Wear
Newcastle find 30	find	roman	2nd/3rd c.	425000	563800	1483	Tyne and Wear
Newcastle find 31	find	roman	1st c.	425000	563900	1484	Tyne and Wear
Newcastle find 32	find	roman	2nd c.	424980	564030	1485	Tyne and Wear
Newcastle find 33	find	roman	1st c.	425020	563880	1487	Tyne and Wear
Newcastle find 34	find	roman	3rd c.	425040	563850	1488	Tyne and Wear
Newcastle find 35	find	roman		425020	563880	1489	Tyne and Wear
Newcastle find 36	find	roman	2nd c.	424000	563000	1496	Tyne and Wear
Newcastle find 4	find	roman	2nd c.	425110	563860	1472	Tyne and Wear
Newcastle find 5	find	roman		425110	563860	1473	Tyne and Wear
Newcastle find 6	find	roman		425000	564000	1474	Tyne and Wear
Newcastle find 7	find	roman	2nd c.	425190	563750	1475	Tyne and Wear
Newcastle find 8	find	roman	1st c.	425000	563800	1476	Tyne and Wear
Newcastle find 9	find	roman	2nd c.	424900	563900	1477	Tyne and Wear
Newcastle structure	structure	roman	2nd-3rd c.	424860	563800	1446	Tyne and Wear
Newcastle Town Moor	settlement	roman, prehistoric		423690	566380	5894	Tyne and Wear
North Gosforth find 1	find	roman		424630	570110	168	Tyne and Wear
North Gosforth find 2	find	roman	2-3	424630	570110	169	Tyne and Wear
North Hylton find 1	find	roman	4th c.	435000	558000	4606	Tyne and Wear
North Hylton find 2	find	roman, prehistoric		434600	556800	4649	Tyne and Wear
North Shields	enclosure/camp	roman, prehistoric		433000	569000	179	Tyne and Wear
Ouston	enclosure	roman, prehistoric		426300	553800	388	Durham
Paddock Hill find 1	find	roman		417800	560100	619	Tyne and Wear
Park View school	site	roman		427650	551365	5954	Durham
Plawsworth	enclosure	roman, prehistoric		428200	548300	372	Durham
Ponteland Enclosure	enclosure	roman, prehistoric		415500	572500	10997	Northumberland
Prestwick Carr find 1	find	roman	2nd c.	418900	573400	1324	Tyne and Wear
Rowley village	settlement	early medieval		408600	548100	4596	Durham
Ruchester mithraeum	vicus	roman	3rd-4th c.	411060	567450	10898	Northumberland
Ruchester vicus	vicus	roman		411300	567300	10897	Northumberland
Rudchester find 1	find	roman		411060	567450	10891	Northumberland

Site Name	Type	Period	Date	X	Y	SMR #	County
Rudchester find 2	find	roman		411180	567300	10863	Northumberland
Rudchester fort	fort	roman	2nd-4th c.	411270	567550	10856	Northumberland
Ryhope Bridge find 1	find	roman		441600	552000	267	Tyne and Wear
Ryhope Dene find 1	find	roman	4th c.	441800	552000	229	Tyne and Wear
Ryton find 1	find	roman		415000	565000	622	Tyne and Wear
Sacriston	find	early medieval		423650	548500	56	Durham
Sacriston Wood	enclosure	roman, prehistoric		423000	548000	390	Durham
Seaham	church	early medieval		442240	550498	762	Durham
Seaham cemetery	cemetery	early medieval	7th-9th c.	442271	550658	4713	Durham
Seaham find 1	find	roman	3rd, 4th c	442000	549000	69	Durham
Seaham find 2	find	roman		440800	549100	70	Durham
Seaham find 3	find	roman		442400	548800	75	Durham
Seaham find 4	find	roman		441500	551550	5671	Durham
Seaham village	settlement	early medieval		442500	549400	4612	Durham
Seaton Delaval Enclosure 1	enclosure	roman, prehistoric		430340	574850	12033	Northumberland
Seaton Delaval Enclosure 2	enclosure	roman, prehistoric		431000	574770	12034	Northumberland
Seaton find 1	find	roman	3rd c.	439800	549800	1155	Durham
Seaton find 2	find	roman	2nd c.	438150	548350	5672	Durham
Seven Mile House Farm	enclosure	roman, prehistoric		422900	574900	1323	Tyne and Wear
Shiney Row	enclosure	roman, prehistoric		423900	551600	4845	Tyne and Wear
South Hylton find 1	find	roman		435450	556780	31	Tyne & Wear
South Hylton find 2	find	roman	3rd c.	435630	556730	32	Tyne & Wear
South Sheilds burial 1	burial	roman		436500	567620	1888	Tyne and Wear
South Sheilds burial 2	burial	roman		436640	567460	1890	Tyne and Wear
South Sheilds find 2	find	roman		436500	567730	892	Tyne and Wear
South Sheilds find 9	find	roman	2nd or 3rd c.	436400	567500	899	Tyne and Wear
South Shields	fort	roman	2nd-4th c.	436500	567900	914	Tyne and Wear
South Shields cemetery 1	cemetery	roman		436000	567000	902	Tyne and Wear
South Shields cemetery 2	cemetery	roman		436400	567500	903	Tyne and Wear
South Shields find 1	find	roman	4th c.	436850	567040	489	Tyne and Wear
South Shields find 10	find	roman		436400	567500	900	Tyne and Wear
South Shields find 11	find	roman		436000	567000	901	Tyne and Wear
South Shields find 12	find	roman		436500	568000	905	Tyne and Wear
South Shields find 13	find	roman	2nd/3rd c.	436500	568000	906	Tyne and Wear
South Shields find 14	find	roman		436700	568200	907	Tyne and Wear
South Shields find 15	find	roman		437800	567300	908	Tyne and Wear
South Shields find 16	find	roman		438400	566700	909	Tyne and Wear
South Shields find 17	find	roman		437800	567300	911	Tyne and Wear

Site Name	Type	Period	Date	X	Y	SMR #	County
South Shields find 18	find	roman		437800	567300	912	Tyne and Wear
South Shields find 19	find	roman		437800	567300	913	Tyne and Wear
South Shields find 20	find	roman		436500	567900	917	Tyne and Wear
South Shields find 21	find	roman		436200	567900	918	Tyne and Wear
South Shields find 22	find	roman		436200	567900	919	Tyne and Wear
South Shields find 23	find	roman	4th c.	436100	567600	920	Tyne and Wear
South Shields find 24	find	roman		436300	567800	921	Tyne and Wear
South Shields find 25	find	roman		436000	567000	926	Tyne and Wear
South Shields find 26	find	roman	2nd/3rd c.	437600	568600	927	Tyne and Wear
South Shields find 27	find	roman	2nd c.	437600	568600	928	Tyne and Wear
South Shields find 28	find	roman		436000	567000	931	Tyne and Wear
South Shields find 29	find	roman	2nd c.	438930	565370	933	Tyne and Wear
South Shields find 3	find	roman		436000	568000	893	Tyne and Wear
South Shields find 30	find	roman		436500	567700	1885	Tyne and Wear
South Shields find 31	find	roman	4th c.	436600	567790	1886	Tyne and Wear
South Shields find 32	find	roman		436480	567610	1887	Tyne and Wear
South Shields find 33	find	roman	early	436600	567590	1891	Tyne and Wear
South Shields find 34	find	roman	1st c.	436350	567750	1892	Tyne and Wear
South Shields find 35	find	roman		436110	567930	1894	Tyne and Wear
South Shields find 36	find	roman	early	436290	567910	1895	Tyne and Wear
South Shields find 37	find	roman	early	436360	567950	1896	Tyne and Wear
South Shields find 38	find	roman	4th c.	436220	567280	1903	Tyne and Wear
South Shields find 39	find	roman	2nd c.	436700	568200	4672	Tyne and Wear
South Shields find 4	find	roman		436200	567700	894	Tyne and Wear
South Shields find 40	find	roman	3rd/4th c.	436400	567900	4673	Tyne and Wear
South Shields find 41	find	roman	2nd c.	436400	567900	4674	Tyne and Wear
South Shields find 42	find	roman	3rd c.	436400	567900	4675	Tyne and Wear
South Shields find 43	find	roman		436010	566960	5190	Tyne and Wear
South Shields find 5	find	roman		436700	567800	895	Tyne and Wear
South Shields find 6	find	roman		436500	567500	896	Tyne and Wear
South Shields find 7	find	roman		436490	567550	897	Tyne and Wear
South Shields find 8	find	roman		436490	567480	898	Tyne and Wear
South Shields port	port	roman		436100	567900	910	Tyne and Wear
South Shields structure 1	structure	roman		436330	567980	1897	Tyne and Wear
South Shields structure 2	structure	roman		436380	568050	1898	Tyne and Wear
South Shields structure 3	structure	roman		436620	568040	1899	Tyne and Wear
South Shields structure 4	structure	roman		436610	567970	1900	Tyne and Wear
South Shields vicus	vicus	roman		436000	567000	891	Tyne and Wear
South Shields well	well	roman	2nd c.	436340	567840	1893	Tyne and Wear
Southeast Farm East	enclosure	roman, prehistoric		413510	573810	10983	Northumberland
Southeast Farm West	enclosure	roman, prehistoric		412600	573700	10977	Northumberland
Southwick Quarry	quarry	roman		438190	559810	27	Tyne & Wear
St. Andrew's Chruch	find	roman, early		413380	566890	10870	Northumberland

Site Name	Type	Period	Date	X	Y	SMR #	County
		medieval, medieval					
Stanley find 1	find	roman	161-180	420500	551450	2142	Durham
Stannington Enclosure 1	enclosure	roman, prehistoric		421850	581110	11700	Northumberland
Stannington Enclosure 2	enclosure	roman, prehistoric		422400	581200	11700	Northumberland
Stannington Enclosure 3	enclosure	roman, prehistoric		421970	581230	11700	Northumberland
Stannington Enclosure 4	enclosure	roman, prehistoric		422220	581200	11700	Northumberland
Stannington Enclosure 5	enclosure	roman, prehistoric		421860	581200	11700	Northumberland
Stannington Enclosure 6	enclosure	roman, prehistoric		422000	581500	11700	Northumberland
Sunderland find 1	find	roman	4th c.	435000	557000	29	Tyne & Wear
Sunderland find 10	find	roman	4th c.	440420	555510	72	Tyne and Wear
Sunderland find 11	find	roman	2nd c.	435960	554240	241	Tyne and Wear
Sunderland find 12	find	roman	4th c.	440640	553780	282	Tyne and Wear
Sunderland find 2	find	roman	3rd-4th c.	439760	557050	34	Tyne & Wear
Sunderland find 3	find	roman	1st c.	441000	557000	56	Tyne and Wear
Sunderland find 4	find	roman		441000	557000	60	Tyne and Wear
Sunderland find 5	find	roman	4th c.	440100	556900	62	Tyne and Wear
Sunderland find 6	find	roman	3rd c.	441080	555860	68	Tyne and Wear
Sunderland find 7	find	roman		441000	556000	69	Tyne and Wear
Sunderland find 8	find	roman	4th c.	440800	558600	70	Tyne and Wear
Sunderland find 9	find	roman	4th c.	440500	558600	71	Tyne and Wear
Sunderland fort	fort	roman	2nd-4th c.?	439400	557100	39	Tyne & Wear
Throckley	enclosure	roman, prehistoric		416460	569010	189	Tyne and Wear
Throckley find 1	find	roman		415000	566000	1283	Tyne and Wear
Throckley find 2	find	roman	2nd c.	415100	566300	1418	Tyne and Wear
Turpin's Hill	burial	roman	2nd c.	410900	568540	10873	Northumberland
Turret 10a, Throckley East	turret	roman		416020	566820	219	Tyne and Wear
Turret 13a	turret	roman		411630	567450	10852	Northumberland
Turret 15a	turret	roman		408750	568050	10004	Northumberland
Turret 6b, Benwell Hill	turret	roman		421290	564910	0	Tyne and Wear
Turret 7a, Denton Hall	turret	roman		419850	565550	210	Tyne and Wear
Turret 7b, West Denton	turret	roman		418800	566110	0	Tyne and Wear
Turret 8b, Union Hall	turret	roman		418340	566110	213	Tyne and Wear
Turret 9b, Walbottle	turret	roman		416940	566590	216	Tyne and Wear
Tyne bridge	bridge	roman	2nd c.	425200	563800	450	Tyne and Wear
Tynemouth Castle find 1	find	roman	4th c.	437100	569400	122	Tyne and Wear
Tynemouth find 1	find	roman	4th c.	437100	569400	1937	Tyne and Wear
Tynemouth Priory	settlement	roman	roman, prehistoric	437300	569400	119	Tyne and Wear

Site Name	Type	Period	Date	X	Y	SMR #	County
Tynemouth Priory find 1	find	roman		437300	569400	120	Tyne and Wear
Tynemouth Priory find 2	find	roman		437300	569400	121	Tyne and Wear
Walbottle	enclosure	roman, prehistoric		416700	567600	1317	Tyne and Wear
Walbottle find 1	find	roman	2nd c.	417000	566000	1275	Tyne and Wear
Walbottle find 2	find	roman	2nd c.	416680	566690	1276	Tyne and Wear
Walbottle find 3	find	roman	2nd c.	416500	566700	1282	Tyne and Wear
Walbottle find 4	find	roman, prehistoric		417100	566300	4618	Tyne and Wear
Walbottle Hoard	find	roman	3rd c.	414950	566870	1241	Tyne and Wear
Walbottle structure 1	structure	roman		417070	566390	5290	Tyne and Wear
Waldridge sites	site	roman		425000	550000	2146	Durham
Walker find 1	find	roman		428000	565000	1392	Tyne and Wear
Walker find 2	find	roman		429430	565770	1397	Tyne and Wear
Wallsend	fort	roman		430100	566000	198	Tyne and Wear
Wallsend find 1	find	roman		430010	565850	814	Tyne and Wear
Wallsend find 10	find	roman	3rd c.?	429580	565710	828	Tyne and Wear
Wallsend find 11	find	roman	2/3rd c.	429000	565000	829	Tyne and Wear
Wallsend find 12	find	roman	2nd c.	429000	565000	1400	Tyne and Wear
Wallsend find 2	find	roman		429580	565710	819	Tyne and Wear
Wallsend find 3	find	roman		429500	565700	820	Tyne and Wear
Wallsend find 4	find	roman		430000	565000	821	Tyne and Wear
Wallsend find 5	find	roman	2nd c.	429500	565700	822	Tyne and Wear
Wallsend find 6	find	roman	2nd c.	429500	565700	823	Tyne and Wear
Wallsend find 7	find	roman		429670	565820	824	Tyne and Wear
Wallsend find 8	find	roman		429000	565000	825	Tyne and Wear
Wallsend find 9	find	roman		429000	565000	826	Tyne and Wear
Wallsend vicus	vicus	roman		429000	565000	806	Tyne and Wear
Washington find 1	find	roman	4th c.	431000	556000	341	Tyne and Wear
Washington find 2	find	roman	4th c.	430490	555940	1999	Tyne and Wear
Washingwell	fort	roman	1st	421900	560200	143	Tyne and Wear
West Boldon find 1	find	roman		435100	561120	5189	Tyne and Wear
West Haugh Field	find	roman		409880	555200	9838	Northumberland
West Monkseaton	enclosure	roman, prehistoric		433270	571470	5102	Tyne and Wear
West Rainton 1	enclosure	roman, prehistoric		432800	547000	379	Durham
West Rainton 2	enclosure	roman, prehistoric		432500	546200	399	Durham
Whickham find 1	find	roman		420000	560000	1506	Tyne and Wear
Whitburn find 1	find	roman	2-4th c.	441000	562000	871	Tyne and Wear
Wideopen	enclosure	roman, prehistoric		424510	572550	5178	Tyne and Wear
Willington find 1	find	roman		431500	567800	778	Tyne and Wear
Wilton Gilbert	enclosure	roman, prehistoric		424600	545500	397	Durham
Windyside Plantation	enclosure	roman, prehistoric		415600	579100	10969	Northumberland

Site Name	Type	Period	Date	X	Y	SMR #	County
Witton	settlement	early medieval		423540	546010	2060	Durham
Witton find 1	find	roman		424600	545400	6824	Durham
Wrekenton	fort	roman		426900	559050	283	Tyne and Wear

APPENDIX 2.2: NEWCASTLE CS FARMSTEAD DATA

Site Name	Type	Period	Date	X	Y	SMR #	County	Other
Apperley Dene Fort	farmstead	roman	4th c.	405550	558020	9839	Northumberland	4th c. pottery
Backworth	enclosure	roman, prehistoric		430800	572060	4836	Tyne and Wear	single ditched rectilinear enclosure
Benwell	fort	roman		421600	564780	208	Tyne and Wear	
Black Callerton	enclosure	roman, prehistoric		417730	570350	4841	Tyne and Wear	polygonal single ditched enclosure
Blyth Enclosure 1	enclosure	roman, prehistoric		429000	578200	11474	Northumberland	cropmark
Blyth Enclosure 2	enclosure	roman, prehistoric		425200	575500	11476	Northumberland	cropmark
Blyth Enclosure 3	enclosure	roman, prehistoric		425530	579530	11486	Northumberland	cropmark, excavated 2000 - no trace of any feature
Buck's Nook	enclosure	roman, prehistoric		411400	561480	172	Tyne and Wear	rectilinear enclosure
Bullock Steads	enclosure	roman, prehistoric		420130	569290	1909	Tyne and Wear	single ditched rectilinear enclosure
Bullock Steads 2	enclosure	roman, prehistoric		420880	569460	4840	Tyne and Wear	single ditched rectilinear enclosure
Burradon	enclosure	roman, prehistoric		428000	573400	177	Tyne and Wear	rectilinear enclosure
Burradon 1	enclosure	roman, prehistoric		426900	572900	305	Tyne and Wear	rectilinear enclosure
Burradon 2	enclosure	roman, prehistoric		426900	572900	306	Tyne and Wear	rectilinear enclosure
Burradon 3	enclosure	roman, prehistoric		427000	572300	309	Tyne and Wear	rectilinear enclosure
Burradon 4	enclosure	roman, prehistoric		428110	573330	4833	Tyne and Wear	single ditched sub-rectilinear enclosure
Chester-le-Street fort	fort	roman	3-4th c.	427500	551300	2153	Durham	
Cramlington New Town 2	enclosure	roman, prehistoric		425700	576200	11472	Northumberland	cropmark
Damhead Wood	enclosure	roman, prehistoric		419200	561100	173	Tyne and Wear	rectilinear enclosure
Durham City 1	enclosure	roman, prehistoric		430000	544800	373	Durham	rectilinear ditches enclosure with internal circular feature
Durham City 2	enclosure	roman, prehistoric		431400	543900	389	Durham	rectilinear ditched enclosure with

Site Name	Type	Period	Date	X	Y	SMR #	County	Other
								internal circular feature, entrances on east and west
Earsdon 1	enclosure	roman, prehistoric		431780	572810	4835	Tyne and Wear	single ditched oval enclosure
Earsdon 2	enclosure	roman, prehistoric		432310	572210	4847	Tyne and Wear	rectilinear enclosure
Earsdon 3	enclosure	roman, prehistoric		432700	572600	5679	Tyne and Wear	rectilinear enclosure
East Brunton 1	enclosure	roman, prehistoric		423640	570680	4837	Tyne and Wear	single ditched rectilinear enclosure
East Brunton 2	enclosure	roman, prehistoric		423450	570490	4838	Tyne and Wear	single ditched rectilinear enclosure
East Brunton 3	enclosure	roman, prehistoric		423430	570290	4839	Tyne and Wear	single ditched rectilinear enclosure
East Holywell	cropmark	roman, prehistoric		431330	573350	745	Tyne and Wear	cropmark
Ebchester fort	fort	roman	2-4th c.	410350	555500	1911	Durham	
Edmondsley	enclosure	roman, prehistoric		425800	549600	361	Durham	3 sides of sub-rectangular enclosure attached to a linear feature
Finchale	enclosure	roman, prehistoric		429700	547500	378	Durham	three sides of rectilinear ditched enclosure with bowed sides
Gardener's Houses	enclosure	roman, prehistoric		420920	574220	176	Tyne and Wear	rectilinear enclosure
Great Usworth	enclosure	roman, prehistoric		430200	559200	328	Tyne and Wear	rectilinear enclosure
Haswell	enclosure	roman, prehistoric		436900	544500	402	Durham	irregular, double-ditched/palisaded enclosure with internal circular feature
Hazlerigg 1	settlement	roman, prehistoric		423080	571690	1968	Tyne and Wear	hut circle
Hazlerigg 2	enclosure	roman, prehistoric		423330	571190	1969	Tyne and Wear	rectilinear enclosure, roundhouse & pit alignment
Hazlerigg north	enclosure	roman, prehistoric		423460	571720	174	Tyne and Wear	rectilinear enclosure
Hazlerigg south	enclosure	roman, prehistoric		423320	571400	175	Tyne and Wear	rectilinear enclosure
High Barnes	enclosure	roman, prehistroic		425550	574120	4832	Tyne and Wear	single ditched sub-rectilinear enclosure
High Close House West	enclosure	roman, prehistoric		411820	565720	10877	Northumberland	cropmark of rectilinear enclosure
Holystone	enclosure	roman, prehistoric		430030	570830	5470	Tyne and Wear	rectilinear enclosure
Holywell Dene	enclosure	roman, prehistoric		432700	574900	12030	Northumberland	cropmark

Site Name	Type	Period	Date	X	Y	SMR #	County	Other
Holywell Grange Farm	enclosure	roman, prehistoric		431440	573330	4834	Tyne and Wear	single ditched rectilinear enclosure
Horton Grange	enclosure	roman, prehistoric		418100	576600	10957	Northumberland	cropmark of double ditched rectangular enclosure
Iveston	?enclosure	?roman, prehistoric		414700	549300	1887	Durham	U enclosure and earthworks
Kibblesworth	cropmark	roman, prehistoric		422900	556310	4844	Tyne and Wear	cropmark
Kibblesworth 1	enclosure	roman, prehistoric		422590	556640	4615	Tyne and Wear	enclosure
Kibblesworth 2	enclosure	roman, prehistoric		423460	556760	4843	Tyne and Wear	single ditched rectilinear enclosure
Kimblesworth	enclosure	roman, prehistoric		425500	546700	383	Durham	rectilinear ditched enclosure
Lambton Castle	enclosure	?roman, prehistoric		428000	553300	407	Durham	circular enclosure with nearby ring-ditch; likely to be late Neolithic
Lanchester fort	fort	roman	2-4th c.	415940	546890	1850	Durham	
Langley Park 1	enclosure	roman, prehistoric		420600	546200	384	Durham	sub-rectangular ditched enclosure with uncertain relationship to field system
Langley Park 2	enclosure	roman, prehistoric		420300	545900	385	Durham	sub-rectangular ditched enclosure with linear feature abutting
Marden	enclosure	roman, prehistoric		435300	570800	304	Tyne and Wear	rectilinear enclosure
Marshall Lands	enclosure	roman, prehistoric		421300	560200	688	Tyne and Wear	rectilinear enclosure
Middle Brunton 1	enclosure	roman, prehistoric		422170	571510	1967	Tyne and Wear	sub-oval enclosure
Middle Brunton 2	enclosure	roman, prehistoric		422330	571040	1961	Tyne and Wear	rectilinear enclosure
New Horton Grange 1	enclosure	roman, prehistoric		419550	575420	10963	Northumberland	cropmark
New Horton Grange 2	enclosure	roman, prehistoric		419550	575420	1322	Tyne and Wear	rectilinear enclosure
Newcastle	fort	roman		425000	563900	204	Tyne and Wear	
Newcastle Town Moor	settlement	roman, prehistoric		423690	566380	5894	Tyne and Wear	possible prehistoric settlement
North Shields	enclosure	roman, prehistoric		433000	569000	179	Tyne and Wear	
Ouston	enclosure	roman, prehistoric		426300	553800	388	Durham	rectilinear ditched enclosure with curvilinear east end - debatable
Plawsworth	enclosure	roman, prehistoric		428200	548300	372	Durham	rectilinear ditched enclosure with linear earth work

Site Name	Type	Period	Date	X	Y	SMR #	County	Other
Ponteland Enclosure	enclosure	roman, prehistoric		415500	572500	10997	Northumberland	cropmark
Rudchester	fort	roman	2-4th c.	411270	567550	10856	Northumberland	ceramic and structural evidence
Sacriston Wood	enclosure	roman, prehistoric		423000	548000	390	Durham	rectilinear ditched enclosure
Seaton Delaval Enclosure 1	enclosure	roman, prehistoric		430340	574850	12033	Northumberland	cropmark, now developed on
Seaton Delaval Enclosure 2	enclosure	roman, prehistoric		431000	574770	12034	Northumberland	cropmark, now developed on
Seven Mile House Farm	enclosure	roman, prehistoric		422900	574900	1323	Tyne and Wear	ditched enclosure
Shiney Row	enclosure	roman, prehistoric		423900	551600	4845	Tyne and Wear	single ditched rectilinear enclosure
South Shields	fort	roman	2-4th c.	436500	567900	914	Tyne and Wear	
Southeast Farm East	enclosure	roman, prehistoric		413510	573810	10983	Northumberland	cropmark
Southeast Farm West	enclosure	roman, prehistoric		412600	573700	10977	Northumberland	cropmark
Stannington Enclosure 1	enclosure	roman, prehistoric		421850	581110	11700	Northumberland	earthwork
Stannington Enclosure 2	enclosure	roman, prehistoric		422400	581200	11700	Northumberland	earthwork
Stannington Enclosure 3	enclosure	roman, prehistoric		421970	581230	11700	Northumberland	earthwork
Stannington Enclosure 4	enclosure	roman, prehistoric		422220	581200	11700	Northumberland	earthwork
Stannington Enclosure 5	enclosure	roman, prehistoric		421860	581200	11700	Northumberland	earthwork
Stannington Enclosure 6	enclosure	roman, prehistoric		422000	581500	11700	Northumberland	earthwork
Throckley	enclosure	roman, prehistoric		416460	569010	189	Tyne and Wear	rectilinear enclosure
Tynemouth Priory	settlement	roman		437300	569400	119	Tyne and Wear	timber-built settlement
Walbottle	enclosure	roman, prehistoric		416700	567600	1317	Tyne and Wear	rectilinear enclosure
Wallsend	fort	roman		430100	566000	198	Tyne and Wear	
West Monkseaton	enclosure	roman, prehistoric		433270	571470	5102	Tyne and Wear	rectilinear enclosure
West Rainton 1	enclosure	roman, prehistoric		432800	547000	379	Durham	small D-shaped ditched enclosure with internal circular feature
West Rainton 2	enclosure	roman, prehistoric		432500	546200	399	Durham	rectilinear ditched enclosure with internal circular feature
Wideopen	enclosure	roman,		424510	572550	5178	Tyne and Wear	rectilinear enclosure

Site Name	Type	Period	Date	X	Y	SMR #	County	Other
		prehistoric						
Wilton Gilbert	enclosure	roman, prehistoric		424600	545500	397	Durham	rectilinear ditched enclosure with entrance to east
Windyside Plantation	enclosure	roman, prehistoric		415600	579100	10969	Northumberland	earthwork

APPENDIX 2.3: NEWCASTLE CS LATE ROMAN DATA

Site Name	Type	Date	X	Y	SMR #	County	Other
Apperley Dene Fort	farmstead	4th c.	405550	558020	9839	Northumberland	4th c. pottery
Benwell	fort		421600	564780	208	Tyne and Wear	
Bottle Bank	site	2-4th c.	425500	563500	0	Tyne and Wear	strip building, ditches, gullies, and road (Brit. 2001:339)
Chester-le-Street fort	fort	3-4th c.	427500	551300	2153	Durham	
Ebchester fort	fort	2-4th c.	410350	555500	1911	Durham	
Lanchester fort	fort	2-4th c.	415940	546890	1850	Durham	
Milecastle 9, Chapel House	milecastle	2-4th	417860	566270	214	Tyne and Wear	coin of Valentinian I (364-375)
Newcastle	fort		425000	563900	204	Tyne and Wear	
North Hylton find 1	find	4th c.	435000	558000	4606	Tyne and Wear	5 coins of 335-378; suspect coordinates
Rudchester	fort	2-4th c.	411270	567550	10856	Northumberland	ceramic and structural evidence
South Shields	fort	2-4th c.	436500	567900	914	Tyne and Wear	
Sunderland find 1	find	4th c.	435000	557000	29	Tyne & Wear	coin of Valens (364-378)
Turret 7a, Denton Hall	turret		419850	565550	210	Tyne and Wear	huntcliff ware
Tynemouth find 1	find	4th c.	437100	569400	1937	Tyne and Wear	coin of Magnentius and jug/flagon pot
Wallsend	fort		430100	566000	198	Tyne and Wear	

APPENDIX 2.4: NEWCASTLE CS EARLY MEDIEVAL DATA

Site Name	Type	Date	X	Y	SMR #	County	Other
Benwell find 1	find	6th c.	421700	564670	1497	Tyne and Wear	Anglo-Saxon bronze brooch
Benwell find 2	find	7th c.	421600	564600	1498	Tyne and Wear	Anglo-Saxon bronze brooch
Chester-le-Street church	church		427600	551320	2150	Durham	documentary evidence from 9th c.
Chester-le-Street find 2	find		427600	551400	700	Durham	cf. #700-712; anglo-saxon sculpture from cross(es)
Dalton-le-Dale find 1	find		440800	548000	732	Durham	cross-shaft built into church wall
East Boldon burial	burial	6th-7th c.	436000	561000	885	Tyne and Wear	inhumation with Anglo-Saxon buckle
Ebchester monastery	monastery	7th c.	410360	555450	1909	Durham	supposed site of Aebba's monastery
Gateshead	settlement		425300	563600	5636	Tyne and Wear	possible early med settlement
Gateshead monastery	monastery	7th c.	425000	563000	273	Tyne and Wear	
Grindon Hill burials	burial		435900	554600	158	Tyne and Wear	inhumations
Heworth find 1	find		428660	561940	523	Tyne and Wear	supposed Anglo-Saxons coins in a pot
Houghton-le-Spring burial	burial		435340	549220	437	Tyne and Wear	inhumation and cist burials
Hylton find 1	find		434300	556700	347	Tyne and Wear	small longbrooch
Jarrow cemetery	cemetery	7th-11th c.	433880	565200	1227	Tyne and Wear	
Jarrow monastery	monastery	7th-9th c.	433900	565200	994	Tyne and Wear	
Jarrow structure 1	structure	7th/8th c.	433700	565400	1232	Tyne and Wear	pre-Conquest ditches
Kimblesworth village	settlement		425956	547335	4564	Durham	placename
Lanchester find 6	find		414110	548050	1883	Durham	weapon hoard found in bank of rivulet in 1861
Lanchester village	settlement		416552	547603	4567	Durham	placename
Monkwearmouth Monastery	monastery	7th-9th c.	440200	557800	87	Tyne and Wear	
Monkwearmouth stucture	structure	7th-8th c.	440000	557000	417	Tyne and Wear	glassworks
Newburn	settlement		416000	565000	1296	Tyne and Wear	Saxon burgh
Newcastle	cemetery	6th-8th c?	425000	563900		Tyne and Wear	Anglo-Saxon cemeter inside fort
Newcastle find 1	find	7th c.	425060	563870	1495	Tyne and Wear	Anglo-Saxon glass bead

Site Name	Type	Date	X	Y	SMR #	County	Other
North Shields find 1	find	7th c.	434000	566000	184	Tyne and Wear	Anglo-Saxon brooch
Pennywell find 1	find	6th c.	435370	555570	35	Tyne and Wear	Anglo-Saxon bead
Rowley village	settlement		408600	548100	4596	Durham	placename
Seaham cemetery	cemetery	7th-9th c.	442271	550658	4713	Durham	burials, C14
Seaham church	church		442240	550498	762	Durham	late 7th/early 8th c. nave; similar to Escomb; burials from 7-9 century
Seaham village	settlement		442500	549400	4612	Durham	7th c. church
South Shields find 1	find		436500	567900	938	Tyne and Wear	Anglo-Saxon spearhead
South Shields fort burials	burial	5th c.	436430	567900	916	Tyne and Wear	post-Roman burials
South Shields monastery	monastery	7th c.	436000	567000	274	Tyne and Wear	
Sunderland find 1	find		440400	557200	5460	Tyne and Wear	stone bowl
Sunderland settlement	settlement	7th c.	440300	557400	1988	Tyne and Wear	village?
Tynemouth monastery	monastery	7th c.	437300	569400	123	Tyne and Wear	
Wallsend	find	6th-8th c?	430100	566000		Tyne and Wear	Anglo-Saxon stamped cremation urn
Wearmouth	harbor	7th c.	440000	558000	83	Tyne and Wear	possible Anglo-Saxon harbor
Wearmouth cemetery	cemetery	7th-11th c.	440200	557800	420	Tyne and Wear	
Witton	settlement		423540	546010	2060	Durham	possible village site

APPENDIX 2.5: NEWCASTLE CASE STUDY TEXT

2.5.1: INTRODUCTION

Case Study 1 is centreed on the city of Newcastle in modern Tyne and Wear (Fig. 5.10). The Tyne and Wear district encompasses all of the greater metropolitan area of Newcastle, with the county of Northumberland bounding its north and west sides and county Durham to the south. While the Carlisle and Birdoswald case studies both had a catchment radius of 10km, the Newcastle case study used a 20km radius. There are some deficiencies in data that have resulted from the urban development of the greater Newcastle area before the modern practise of rescue archaeology was implemented. However, the expanded size of this case study provides a broader picture around the greater Newcastle area.

The chapter begins with an overview of the case study area. This overview includes both archaeological and palynological information to establish an impression of the case study in brief. The remainder of the chapter is devoted to an examination of important sites in the case study. Following this,

significant finds and patterns from the case study are considered and the implications that these have on the late Roman to Early Medieval transition are noted. The chapter concludes with suggestions for future research in the case study area.

2.5.2: CASE STUDY OVERVIEW

The Newcastle case study is characterized by its large size and the many sites and findspots dating to the Roman and Early Medieval periods up to the 8th century (T=444; Appendix 2.1). As Figure 6.1 demonstrates, the sites and findspots are found throughout the case study area. However, a number of patterns can be observed. A striking distribution is the lack of sites and findspots in the greater metropolitan area of Newcastle, roughly corresponding the modern district of Tyne and Wear. This pattern is most easily observed in the general absence of native farmsteads (see Fig. 6.2), the distribution of which forms a ring around modern Newcastle and demonstrates the differential survival between "town and country".

Also relating to the phenomenon of urban development is the differential preservation of structures along the eastern end of Hadrian's Wall. While the positions of all the forts are known, the exact course of the Wall is still disputed in some positions. Thus, a conservative approach was taken to the inclusion of turrets and milecastles in the case study. That is to say only milecastles which have been discovered and confirmed by modern authorities have been included, even though the position of additional turrets and milecastles have been confidently speculated (e.g. Bennett 1998). West of the fort of Benwell, turrets, milecastles, and findspots graphically demonstrate the course of the Wall.

All the forts are sited either along a major river or a road, sometimes both (e.g. Chester-le-Street, Newcastle). Farmstead distribution does not conform to this, but generally speaking, the farmsteads are found in river valleys in the coastal lowlands.

The palynological evidence for the easternmost sector of Hadrian's Wall is provided by 12 pollen sites that surround the case study to the south, west, and northwest: Neasham Fen, Thorpe Bulmer, Hutton Henry, Hallowell Moss, Stewart Shield Meadow, Quick Moss, Fozy Moss, Sells Burn, Drowning Flow, Brownchesters, and Steng Moss (located in Figs. 5.6–5.9). There are no pollen sites in the immediate vicinity of Newcastle, and the north-northeastern extent of the case study is completely lacking in pollen sites. Only three of the pollen sites provide regional pictures that apply to the case study, and one site has an extra-local catchment. Quick Moss covers the southwestern extent of the case study, while Fozy Moss covers the western extent and Steng Moss the northwestern extent. Hallowell Moss covers the southern extent of the case study. Unfortunately it is only these few sites that are closest to the case study and must be used for general information. All four sequences were dated using a series of radiocarbon dates.

Samples from Hallowell Moss demonstrated that forest clearance occurred during the Roman period, and the lack of proportional shrub pollen increase demonstrates the area was probably effectively managed for agrarian purposes. This level of clearance was maintained into the post-Roman period with maximum clearance occurring at approximately AD 600. In the 7th century there was a reversion to hazel scrub, followed by woodland regeneration/expansion, demonstrating that the area was no longer used for agricultural purposes and perhaps less managed (Donaldson and Turner 1977).

Peak woodland clearance at Quick Moss occurred at some point in the 1st or 2nd century and these levels of clearance were maintained until the 6th century, when woodland expanded at the expense of grassland/possible pasturage (Rowell and Turner 1985).

At Fozy Moss, peak clearance seems to have occurred during the Roman period, but the 4th century saw woodland regeneration, and these levels were maintained for centuries. Renewed clearance did not occur until "monastic times", here interpreted as the 11th/12th century (Dumayne and Barber 1994).

High levels of forest clearance were maintained at Steng Moss from the late 1st century BC to the late 5th/early 6th century AD. During this period there was an increase in herbaceous taxa and traces of cereal cultivation, suggesting an increase in arable activity local to the site and pastoral activity in the region. Woodland regeneration occurred from the early 6th century, and these levels were maintained until the mid 9th century (Davies and Turner 1979).

The overall pattern as suggested by these four pollen sites is that there was a general maintained level of clearance in the eastern area of the Wall. Where woodland regeneration was observed, it was in the central, upland sector of the Wall and it began in the 4th century – before the traditional end date of Roman Britain. It should be noted that there is no reason to think that woodland regeneration is rapid or extensive and dominating. Steng Moss, north of the Wall, was the only site to provide evidence for cereal cultivation and agricultural activity relatively close to the sites in the case study. While this does not demonstrate cereal cultivation within the case study area, it does indicate agriculture continuing to be practised locally. In other words, land was not just abandoned with the collapse of Roman authority in Britain. A likely inference from these four sites is that agricultural activities continued to use the same amount of land, but these activities were perhaps not as intense or entirely different agricultural regimes. For example, there may have been a switch from arable land exploitation to a more extensive pastoral use

of the land. Furthermore, some of these changes began before the collapse of the Roman administration, as at Fozy Moss.

At a very general scale, the palynological evidence indicates landscape continuity. It is necessary to examine more specific and localized site information. The increased size of the case study has produced interesting results in terms of site and findspot distribution, but the bulk of information relevant to this thesis is from the forts in the case study. There are many other sites in the surrounding countryside, but few of these have received much, if any, archaeological investigation.

2.5.3: SITE OVERVIEW

The following section provides an overview of the relevant sites in the case study area. Relevant in this case means that only sites with evidence for activity from the 4th to 7th centuries were examined in detail and included in the following discussion (Fig. 6.3). The sites have been separated into a number of general categories for discussion in the following order: forts, milecastles and turrets, other sites, and "native" farmsteads. The majority of information comes from forts, which are presented in geographical order, starting with the fort at South Shields and moving west along the Wall to Rudchester before discussing the those south of Hadrian's Wall.

Forts

ARBEIA, *South Shields*

The fort at South Shields is one of the most well known and most excavated forts in the northern frontier zone of Britain. Prior to 1983, there were four major excavations at the site. In 1875, the site was sold by the Ecclesiastical Commissioners of the Dean and Chapter of Durham Cathedral to the Corporation of South Shields so that more housing could be constructed for the growing population of the town. Extensive excavations were carried out in advance of the construction between 1875 and 1876, and some parts of the site were exposed until at least 1883. The central part of the fort was enclosed and preserved as the Roman Remains Park. Four accounts of this work exist (Bruce 1880; 1884; Hooppell 1878a; 1878b). Later, Richmond (1934) reassessed the previous investigation and led his own investigations in 1949–1950 (Richmond 1953; 1955). In the mid 1960s, the Victorian housing on the site was removed, allowing extensive excavations to be carried out between 1966 and 1975 (Dore and Gillam 1979). Further investigations between 1977 and 1981 concentrated on the defences (Miket 1983). Intensive excavations have been carried out at South Shields from 1983, with considerable consolidation of the remains and improvements made to the museums (Bidwell and Speak 1994). Since 1983, Tyne and Wear Museums have been involved in all research and improvements undertaken at the fort.

The fort at South Shields sits on the southern headland at the mouth of the River Tyne. It is ideally situated to monitor local coastal and river traffic as well as act as a port. The fort lies at the northeastern end of the Wrekendike, providing a road link to Dere Street, approximately 13 km to the southwest. It is possible that a fort was established somewhere in the vicinity in the Flavianic-Trajanic period (Period 1), but the first known fort to occupy the headland at South Shields was established under Hadrian (Period 2). By *c.* AD 163, much of the fort was built in stone, but there was a reduced occupation in the late 2nd century (Period 4). A major reorganization of the fort occurred in the early 3rd century, when South Shields was converted to act as a supply base, with a capacity of 24 *horrea* and accommodation for the garrison provided in a southern extension to the fort (Periods 5 and 6). The fort seems to have continued in its role as a supply base until at least the late 3rd/early 4th century, when the fort was destroyed by fire, now interpreted to be from "enemy action" (Hodgson 2005). After the fire, the fort was again reorganized (Period 7), as a new *principia* was built and some of the *horrea* were converted into barracks. A large *praetorium* was also built in the eastern corner of the fort. In the mid–late 4th century (Period 8), there were widespread minor alterations and the possibility of the continued function of the fort as a supply base, though at a reduced capacity. Evidence from the area of the southwest gate and the *principia* indicate very late Roman and post-Roman activity (Period 9). There is no evidence for on-site activity after this until the Medieval period, when the site was under plow (Bidwell and Speak 1994:9). With the exception of Period 9, all the other periods were dated on the basis of coin and ceramic finds. Therefore, most of the dating is broadly accurate, though more specific dates were often lacking. In the case of Period 9, TPQs were provided by Theodosian coins of AD 388–395 and Huntcliff type wares. The labeling system used by Bidwell and Speak (1994) has been retained in the following discussion (e.g. C16, C00, C15, etc.).

PERIOD 7

Following the fire of the late 3rd/early 4th century (the Period 6–Period 7 boundary), the interior of the fort was entirely replanned (Fig. 6.4). The quality of construction in this period was of a very high standard. While the masonry was generally reused, it was all bonded with mortar, and there was a "lavish use of *opus signinum* for flooring" and 13 hypocaust systems have been found among the *principia*, barracks, and *praetorium* (Bidwell and Speak 1994:33).

The Period 5 *principia* crosshall was restored to use, having been converted into a *horreum* in Period 6 (Bidwell and Speak 1994:93–101). A rear range was added to the northwest of the crosshall, consisting of the rebuilding of the (semi-sunken) strongroom and *aedes* above it in the centre, flanked on each side by two offices. A channel hypocaust heated the offices, which also had *opus signinum* floors. In the northeastern end of the restored crosshall, a raised tribunal was constructed. A paved forecourt with a colonnaded verandah was added to the southeast of the crosshall. The *horreum* northwest of the *principia* remained in use, but the flagged floor was sealed by a layer of *opus signinum*. The road between the *principia* and the *horreum* also seems to have been repaved.

In the *praetentura* (southeast of the *principia*), ten barracks were built, eight of which were converted remains of the southernmost row of *horrea* from the previous period (Simpson 1934:94–97; Wilkes 1965:135; Bidwell and Speak 1994:35). The conversion took the form of placing dividing walls across the *horrea* every 5–6m to create suites very similar to *contubernia*. Excavations have also demonstrated that the *horrea* were lengthened to the southeast (e.g. C15, C00, and C16), and these extensions contained channels suggestive of a channeled hypocaust overlain by *opus signinum* floors. A similar arrangement of *contubernia* suites with officers' quarters at the end was seen in the excavation of the barrack building immediately northwest of the courtyard house.

The large courtyard house, 42m by 24m, constructed in the eastern corner of the fort is believed to be the *praetorium* (Hodgson 1994:37–39; 1996). The structure was constructed at the beginning of Period 7, and a series of alterations were carried out at some point in the first half of the 4th century. The plan was recovered in sufficient detail to determine the function of most of the rooms in both phases of activity with some confidence (Fig. 6.5; Hodgson 1996). The function of each room is not elabourated on here, but function was determined by a combination of material remains from each room (e.g. *opus signinum*, painted walls) and correlation with examples from the Mediterranean. The differences between the two phases were not great and primarily involved reflooring to increase the amount of rooms heated by hypocausts.

A number of other building activities are associated with Period 7. At this time, two tile kilns were constructed on the site of the demolished double granary. It is believed from pottery found in association with the kilns that they were constructed and used for the extensive rebuilding of the fort at the beginning of Period 7 (Bidwell and Speak 1994:35). In the southern corner of the fort, substantial buildings found in the 1875 excavation are known, but their full plan and function are unknown (Hooppell 1878a:13; Bidwell and Speak 1994:40). The walls were "still many feet in height", and plans of the 1875 excavation show rectangular structures. Northeast of the *principia*, Hooppell (1878a:11, 43–44) reported the remains of a "large and wealthy house" with a hypocaust. Photographic evidence demonstrates the pillared hypocaust occurring stratigraphically higher and likely later than *horreum* C16 in the background, but Bidwell and Speak (1994:40) caution the unreserved acceptance of Hooppell's account, in which he may have mistaken remains of different periods and structures to represent one large building. A long rectangular structure, C21, was encountered southeast of the *praetorium*, likely inserted into the earth rampart backing the southeast wall of the fort. Its function is unknown. The northeastern gate was partially, if not entirely blocked at some point, probably by the early 4th century at the latest. The southeastern portal of the gate was converted for use as a dwelling, as a number of *pilae* were discovered that supported a raised floor and there were traces of red and blue coloured plaster from the walls (Bruce 1884:231). It has been suggested that perhaps the gate was incorporated into a more extensive structure (Bidwell and Speak 1994:40).

PERIOD 8

Period 8 was characterized by a series of modifications in many buildings in the fort dated to the second half of the 4th century (Fig. 6.6). In the *principia*, there was at least one phase of modifications, with another phase of modifications probably belonging to Period 9 (Fig. 6.7; Bidwell and Speak 1994:101–105). In the forecourt, the verandah was walled up, as sockets were found in the surfaces of stylobates at intervals of *c.* 0.30m (many of which over the positions of the verandah columns) that presumably held timber uprights for wattle and daub walls. In form, these are very similar to the park railing stones seen at Halton Chesters, Rudchester, and Carlisle, where the stones were dated to the late 4th century. Perpendicular to the walled verandah in the northeast and southwest corners of the verandah were remains of walls reported by Bruce (1884:312), and noted on the plans provided by Hooppell (1878b:fig. facing 378), Bruce (1884:230), and Richmond (1934:89, 103). The walling created at least three chambers in the northeast and southwest verandah, if not more. However, the function of these rooms is unknown. At the same time as the verandah was altered, the entrances to the forecourt and the crosshall were narrowed by the addition of stone walling to the southwest side of the doors. This reduced the forecourt entrance from 2.60m to 1.10m and the crosshall entrance from 2.84m to 2m. While these changes in the *principia* are attributed to the late 4th century, there is no more specific evidence to date the alterations.

A worn coin of Valens (dated to AD 375) with Huntcliff type pottery and other late 4th century East Yorkshire wares were found in deposits in between the sleeper walls of the *horreum* northwest of the *principia*, dating activity to the last decades of the 4th century, if not later, at which time the flagging was

removed and the subfloor was infilled to create a solid floor. Thus, the function of the building changed very late in the Roman period. A blocking wall of roughly dressed sandstone blocks bonded by poor quality mortar also seems to have been built at this time, blocking the space between the northeast ends of the *horreum* and the *principia*. There is also the possibility that a church was constructed in the *principia* forecourt in Period 8, though this activity probably occurred during Period 9, and will be discussed below.

Evidence from the northwest row of *horrea* in the *retentura* suggests that the subfloors were infilled at some point in Period 8, though a more exact date is not possible (Dore and Gillam 1979:42–44; Bidwell and Speak 1994:43–44). The barracks southeast of the *principia* (C15, C00, and C16) underwent changes in Period 8. In C16, the hypocaust went out of use in the mid 4th century, the furnace in an adjacent room was paved over and an industrial hearth inserted. There was also a 4th century infant burial in the adjacent room. In C00, the hypocaust was infilled by animal bone and spindle whorls – though no pottery – and an industrial hearth was inserted into the officer's quarters at some point in Period 8. In between C15 and C00, a late 4th century street was revealed that overlaid a finer street of Period 7 (Esmonde Cleary 1996:408). The barrack northwest of the *praetorium* in the east corner of the fort was altered with the removal of the L-shaped partitions and renewed flooring. The new flooring sealed pottery from the second half of the 4th century, and it is also possible that internal divisions were replaced with timber partitions that left no archaeological trace.

The courtyard house/*praetorium* retained its general plan, but a number of changes occurred from the mid 4th century on (Hodgson 1994:44). Most of the rooms in the southeast, northeast, and northwest ranges were repaved to varying quality using facing stones. A late 4th century date is also given to very crude paving in Room 7 and portions of the ambulatory. The flagged central courtyard was relaid to level areas of subsidence, and the baths suite was altered. It seems likely that in the last half of the 4th century the baths were reduced to include only the most southerly rooms. An archaeomagnetic date of post AD 403 indicates that the furnace in Room 16 was last fired around the beginning of the 5th century (Nick Hodgson, pers. comm.). At some point after this, the furnace area was used for industrial activity and then filled and covered with a very rough paving.

By Period 8, the northeast gate was almost certainly blocked (see above), and the northwest gate was also no longer functioning as a gate (Dore and Gillam 1979:16–19, 68). The southwest portal had been blocked and the northeast tower was demolished and replaced by a small building. The southwest gate was also altered (Fig. 6.8; Snape 1994:125–126). The northwest portal had been blocked in late 2nd/early 3rd century, and in Period 8 the southeast portal was partly blocked by a timber structure of unknown purpose that would have restricted access through the gate to pedestrian traffic. Later in Period 8, the timber structure was removed and the road through the gate was remetalled twice, dated by Huntcliff type pottery and a coin of the House of Theodosius, AD 388–402. The ditches outside the southwest gate were maintained throughout Period 8 and were recut in the late 4th century, though silting occurred by the end of the period (Snape 1994:137–142). Masonry found outside the southwest gate and stratigraphically above the Period 8 ditches suggests that the southwest gate and/or fort wall had been in a poor condition, perhaps ruinous, by the end of the period.

PERIOD 9

Period 9 is dated to the end of the Roman period and after, though in truth there is little dating evidence available except for TPQs and a few radiocarbon dates. Activity was seen in three areas: the *principia*, the *praetorium*, and the southwest gate. On the northeast side of the *principia* forecourt an upright stone pedestal was found *in situ* with a large stone block with a sinking on one face found beside it. On three sides, this pedestal was surrounded by drystone walls forming a recess. These remains have been interpreted as a Christian altar and the remains of a church that was built in the *principia* forecourt (Bidwell and Speak 1994:103–104). The projected size of any church built in the forecourt is consistent with known examples of Romano-British and early Anglo-Saxon churches (Thomas 1981:186–190). Hooppell (1978a:9, 23) reported the incomplete remains of three individuals found in the strongroom or crosshall area, though it is uncertain whether these remains were formal burials or part of the demolition of the *principia*. However, prior to the demolition/abandonment of the *principia*, there may have been some alterations in the crosshall, as there are reports of drystone walls constructed across part of the crosshall.

The final abandonment of the *principia* was attested by the collapse of a substantial part of the southeast wall of the crosshall that fell across the forecourt. Between the latest forecourt paving and the collapsed wall was up to one foot of soil, which suggests a considerable period of post-Roman occupation. There was no recorded activity later than the collapse of the wall, and the *horreum* northwest of the *principia* and the adjacent street to the northeast was robbed of stone at some point in Period 9 (Bidwell and Speak 1994:105–106). The robbing of building stone and street metalling suggests the materials were needed in some other location in the fort in Period 9.

In the central courtyard of the *praetorium*, the latest Roman levels were cut by a broad pit 1.50m deep containing building debris and two dismembered human skeletons, the skulls of which had been split with a sharp instrument (Bidwell and Speak 1994:46). The individuals were radiocarbon dated to 1,720±60 BP (AD 170–290) and 1,540±80 BP (AD 330–490) (Grove 1994:269). The uppermost levels of

the burial pit (though not the skeletons) were disturbed by Medieval activity. The grave was placed on the central axis of the open courtyard, suggesting that the outlines of the building were at least still visible, if not still upstanding.

At the southwest gate, it seems likely that the gate was blocked off. A ditch was cut through the road in front of the gate, and there was no evidence for a bridge being built over the ditch. Subsequently, the gate was "reopened", as the remaining ditches in front of the gate were infilled and two timber posts were inserted to either side of the southeast portal (Snape 1994:126–127; 142–144). A new road surface was also laid. At some later point, the area outside the southwest gate was used for burial activity, as four burial pits containing evidence for five individuals cut through the latest road and ditch infills. Two of these burials were radiocarbon dated to 1,590±60 BP (AD 300–420) and 1,470±70 BP (AD 410–550) (Grove 1994:268–269). Tentative sexing of the remains suggests three possible males, one possible female, and one unsexed. Four of the individuals were identifiable adults, and dental attrition suggests ages ranging from 25–45.

The barracks southeast of the *principia* were occupied to an uncertain date. It is possible that the aceramic packing of the hypocaust in building C00 was filled in the sub-Roman period, which would have been more likely in a situation where the fort no longer had pottery supplies available. The stone walls of these buildings were robbed at some point in the post-Roman period (Esmonde Cleary 1996:408). Other than in these four areas of the fort, there was no other evidence for post-Roman activity.

FINDS

South Shields has a large small finds and pottery assemblage that is generally well published (Allason-Jones and Miket 1984; Bidwell and Speak 1994; Miket 1983). The pottery provides information on supply at a broad level for the fort. By the late 3rd/early 4th century, nearly all the ceramics in the fort were supplied by potteries around Britain, with the exception of amphorae. Supply of East Yorkshire grey wares began in significant numbers in the 3rd century, while there was only very limited presence of calcite-gritted wares at the same date. The East Yorkshire ceramics, both grey wares and calcite-gritted wares dominated the deposits of Periods 8 and 9, though Dales ware was also present. Huntcliff type wares were found in significant amounts in Period 9, but it is unknown to what extent the ceramics are residual (Bidwell and Speak 1994:225).

Several samples of carbonized organic and faunal remains were recovered from various areas of the fort, and these have provided some basic idea of the supply of the fort in the later Roman period. The samples were obtained from the subfloor of the *horreum* northwest of the *principia* and the barrack northwest of the *praetorium*. The *horreum* contained two deposits, 12236 (associated with 3rd century finds) and 12176 (associated with later 4th century material). Deposit 12236 was recovered from the base of the subfloor, representing an accumulation of material while the *horreum* was in use. It was composed of 90%+ grain with minor remains of chaff fragments and weed seeds. None of the grain was germinated and there was no evidence for beetle infestation, implying the storage conditions in the 3rd century were very good. In general, the cereal was "cleaned", suggesting it was processed before being taken into the fort. Deposit 12176 was from the infilling of the subfloor of the *horreum* in the later 4th century. In general, there were far lower numbers of cereal grains, and remains of arable weeds are virtually absent. There are two possible interpretations of this evidence. It may be that grain was processed and stored more efficiently by the later 4th century, or it suggests the building was not used as a *horreum*. A palaeobotanical deposit from the barrack mirrors the profile of 12236, albeit in smaller numbers. The majority of the grain from all samples was spelt wheat, but bread wheat was present, as was barley in smaller quantities. The presence of heath grass seeds (*Sieglingia decumbens*) indicates that the spelt wheat was probably grown and harvested in the northeast of England, but the bread wheat was almost certainly imported from outside the region (van der Veen 1994:243–260).

The small mammal bones from deposits 12236 and 12176 reinforce the conclusions established by the carbonized plant remains. Several species of rodent seemed to have lived and bred within the fort in Period 6, and the MNI values are quite high. This suggests that pest control was probably economically important for the fort garrison, as the high numbers of rodents, let alone insects or climate conditions, could spoil the grain stores. Deposit 12176 saw a much-reduced presence of rodents, and this factor lends support to the notion that the building was no longer used as a *horreum* (Younger 1994:266–268).

DISCUSSION

South Shields was probably a significant element in the supply of campaigns and garrisons in the northern frontier of Britain, both as a port and as a supply base. While the fort achieved its greatest capacity as a supply base in Period 6, Bidwell and Speak (1994:40–42) argue that South Shields continued to function as a supply base until at least the mid 4th century based on the orientation of the *principia*. The Period 7 replanning is attributed to the garrisoning of *numerus barcoriorum Tigrisiensium*, the commanding officer of which probably occupied the large courtyard house in the eastern corner of the fort. Furthermore, the possibility of there being a second high status house to the northeast of the *principia* suggested to Bidwell and Speak a commander in residence for the supply aspect of the base. Thus, South

Shields would have housed two units. There is no evidence to reinforce this interpretation, and it seems unlikely that the "Tigris bargemen" would not be employed to support the logistical aspects of port and frontier supply. The question that must be considered in reference to this unit is whether or not they were exclusively detailed to transport duties, or whether they also had a soldierly role in patrolling the area, on land or sea. Another possibility is that the prefect of the Tigris bargemen was responsible for local land and riverine duties, but another unit, perhaps naval, was stationed at South Shields. There is no indication of this in the *Notitia Dignitatum*.

The scale or even the continuity of South Shields as a supply base in the late 4th century is unknown. The infilling of at least some of the *horrea* in the northwestern "supply section" of the fort suggests that the importance of the fort in supply was diminished even further from Period 7. Only the southeastern gate provided for wheeled traffic into the fort in Period 8, but this was not situated for facility of provisioning. The three gates of the fort allowing access to the supply section were blocked or narrowed by Period 8, allowing only pedestrian access. Thus, any wheeled traffic would have been driven along the *via principalis* toward the *principia* before it could access the supply section of the fort. The orientation of the *principia* toward the southeastern gate as well as the positioning of the *praetorium* just inside the gate indicate that it was this gate that most traffic was directed through in the 4th century, and probably after. It seems that the role of South Shields was considerably reduced in terms of its function as a supply base by Period 8. However, the increased barbarian attacks of the later 4th century and the establishment of the East Yorkshire signal stations suggests that the garrison at South Shields still had an important military role to play, guarding access up the Tyne at the very least.

The sequences at the *praetorium*, the *principia*, and the southwest gate all indicate that the fort was occupied beyond the accepted end of the Roman period. Unfortunately, there is no clear evidence as to how or when the fort ceased to be occupied. The individuals buried in the *praetorium* met a violent end at some point in the 5th century or later, but there is no reason to suggest that they represent an end to the occupation of the site or even the *praetorium*. The late 4th/early 5th century firing of the *praetorium* baths furnace is indicative of retained bathing habits until the end of the Roman period, though altered from the classical model. Further changes in the *praetorium*, such as the less sophisticated repavings and introduction of a metalworking area indicate a change in the commanding officer's exploitation of his household space. The possible siting of a church in the *principia* in Period 8 or 9 suggests that the *principia* continued to play a ritual role for some occupants of the fort. The sequence at the southwestern gate suggests defence was still a priority in the 5th century.

Hooppell (1878a:14; 1878b:380) observed ashes and traces of burnt masonry as evidence for the final destruction of the fort. He attributed this to Leland's statement that Caer Urfa was burnt to the ground by the Danes in the 8th or 9th century. This would imply a long period of post-Roman occupation of the site that is not clearly attested by archaeological evidence. However, a number of Anglo-Saxon pinheads dated to the 8th century have been found unstratified in soils from the fort (Bidwell, pers. comm.). Bidwell and Speak (1994:47) dismiss both Leland's claim that Caer Urfa (philologically derived from Arbeia) was destroyed by Danish raiding and that South Shields was occupied that far into the Early Medieval period. However, the early date of most of the excavations as well as the widespread construction and subsequent demolition of Victorian housing on the site could have destroyed scant traces of Early Medieval occupation, which probably would have been very different in nature and scale to even the late Roman occupation. There is also a tradition that Caer Urfa was the birthplace of Oswin, a king of Deira in the first half of the 7th century (Bidwell and Speak 1994:47). This claim is not easily dismissed, and the proximity of Jarrow, Monkwearmouth, and a number of other Northumbrian monastic foundations reported by Bede underscores the number of high status Anglo-Saxon settlements in the area. The ruins (or upstanding remains) of a Roman fort would be an ideal site for a settlement.

SEGEDVNVM, *Wallsend*

Excavations at the fort at Wallsend have most recently taken place from 1997 to 1998 to further investigate the claims of previous excavations, namely those of the late Charles Daniels, who excavated at least 65% of the interior of the fort between 1975 and 1984 (Figs. 6.9 and 6.10). At the time, it was believed these investigations would be necessary to recover important information about the fort in advance of development on the site. Since the 1975–1984 excavations, however, the fort has become an archaeological park and there are no further plans for development on the site. Prior to the late 1970s, the site was occupied by low-income Victorian housing for workers of nearby collieries and shipyards. Prior to the late 18th century and the exploitation of coal resources, it is known that the site was under plow (Daniels 1978:55; Hodgson 2003:1).

The fort is situated on a small rise on the north bank at a bend of the river Tyne with extensive views of two stretches of the river. The Long Reach, extending four miles from the mouth of the Tyne to the fort and the Bill Reach, extending two miles south from the fort, are both visible from the ramparts of Wallsend (Hodgson 2003:11). The fort is also positioned at the east end of Hadrian's Wall and the Military Way starts outside the *porta quintana sinistra* (the minor west gate) south of the Wall as well as being easily accessible from the river. The first fort was built in the Hadrianic period with stone built

central buildings. Between the mid-Antonine period and the late 2nd century the rest of the fort buildings were replaced in stone. By the late 2nd century a *vicus* also developed outside the fort and was occupied until the late 3rd/early 4th century. Inside the fort, *c.* AD 225–235+, there was a reorganization of the buildings, clearly evidenced in the *retentura*, less so in the *praetentura*. Mid to late 4th century evidence seems to be sparse, due to agricultural, mining, and building activities on the site in the post-Medieval period (Hodgson 2003:13–17).

Daniels excavations have yet to be published, but interim accounts were found in *Britannia* and in Daniels 1989. These reports provided a number of plans that demonstrated the development of the fort, with the late 4th century plan containing many irregular buildings in the *retentura* that contrasted with the regular buildings of the fort through the 2nd and 3rd centuries (Fig. 6.11). At the moment, an excavation report, including specialist reports is being prepared by the Archaeological Practise at the University of Newcastle (Hodgson 1999:83), but the more recent excavations have reconsidered Daniels' periodisation and suggested significant changes (Hodgson 2003:5). For example, Daniels assigned the construction of chalet barracks in the *retentura* to the late 3rd/early 4th century. These chalet barracks were altered in the mid 4th century, and the hospital was demolished and replaced by timber "strip-houses" at the same time. Hodgson's work redates the construction of the chalet barracks to the first half of the 3rd century, as well as the destruction of the hospital and the subsequent replacement by barrack buildings (split into individual *contubernia*), on the basis of ceramic and numismatic evidence. Later in the mid 3rd century, alterations are made to the chalet barracks. The only undisputable evidence for 4th century activity encountered by Hodgson was in the area of the *porta quintana sinistra* (minor west gate) and the road surfaces in that area. So it is this activity that must be considered in greater detail.

New road surfaces were laid at the western end of the *via quintana* (including the gate passage) and along the intervallum north and south of the minor west gate. This pavement activity was dated by coins of Tetricus (AD 273+) found in the pavement and a TAQ was provided by a coin of the House of Constantine (AD 341–346) found on the surface of the overlying pavement in the gate passage (Hodgson 2003:163, 164). A renewed road surface was laid through the minor west gate, and a drain was inserted leading from *via quintana* west through gate passage. Curbstones in line with drain formed the north border of the *via quintana* and packing material was laid between curb and the lowest course of the demolished buildings north of the road, raising the surface to the height of the top of the curbstones and narrowing the width of the *via quintana*. Subsequently, the gate passage drain was infilled and the passage was relaid with latest found street surface.

Toward the west end of gate passage, the southern half of gate portal was crossed by deposit of sandstone and limestone blocks, measuring 1m north–south by 0.7m east–west, overlying a 0.02m deep deposit of red-brown silt. This stonework may represent a remnant of wall blocking the gate passage. At approximately the same time, the intervallum was repaved. The sequence ended with the area south of the minor west gate overlain by soil accumulation associated with late/end Roman deposits.

FINDS

The latest pavement through the gate contained coins mostly of Constans and Constantius II (AD 346–355), but there was also one coin of Valentinian I (AD 367–375). A fragment of copper alloy from a bracelet and a fragment of a stone quern was found in association with the gate blocking, but there was no diagnostic dating material. The latest intervallum pavement had two sherds of Yorkshire calcite-gritted ware, Huntcliff type rims and two probable Huntcliff rims, and a battered Crambeck parchment ware flanged bowl dated to mid–late 4th century as well as a coin of Valentinian I (Hodgson 2003:164–166).

The distribution of mid 4th century coinage found in the area of the minor west gate suggested "marketing activity" to the excavators (see Fig 6.12). Furthermore, the sharp falloff of coins between the gate and the excavation limits suggests that the activity was limited to the gate area. The interpretation provided was that the gate area was closely supervised to provide limited space for "market activity" of peddlers/traders for the inhabitants of the 4th century fort (Hodgson 2003:167). This evidence should be contrasted with that from the forts at Newcastle and Carlisle, where the mid 4th century coin distributions were found in the central range of the fort in front of the *principia*. The difference has been explained by the fact that Newcastle and Carlisle served as more important settlements each situated at a nexus of roads, while the activity at Wallsend reflects an entirely local activity.

An alternative interpretation of the coin distribution at the minor west gate as that the gate served as a customs point for people crossing the Wall through the fort from the north or east gate to the minor west gate. Once the gate was blocked, such traffic was perhaps diverted through the south gate. This is only speculative, but the distribution of coins strictly confined to the gate area contrasts strongly with the more dispersed coin distribution at Newcastle and Carlisle.

DISCUSSION

The latest coins found in the 1997–1998 excavations were of Valentinian I, dated to AD 364–375, but previous archaeological investigations have produced coins of Gratian, dated to AD 383 (e.g. Corder 1912:212). However, there are no known coins dating later than Gratian. While this could support an

interpretation that the fort was abandoned by the late AD 380s, evidence from the forts South Shields and Newcastle indicate the forts were occupied until at least the end of the Roman period. Furthermore, the *Notitia Dignitatum* indicates that Wallsend was occupied by the 4th Cohort of Lingones. Therefore, it seems unlikely that Wallsend was abandoned before the early 5th century. Rather, post-Medieval agricultural, mining, and shipyard activity has probably demolished the latest Roman stratigraphy. It should also be noted that evidence from the external ditches surrounding the fort suggest that every major gate (with the exception of the west gate/*porta principalis sinistra*) was accessible in the 4th century. There was a substantial road at least 12m wide running out of the east gate and there was a road 7m wide running south from the west portal of the south gate (Hodgson 2003:19–20).

Anglo-Saxon artefacts have been found in the area of the fort. One of these is a pottery fragment dated to the 6th century, perhaps to be associated with funerary context, found unstratified in the area of the *principia*. A post-Roman deposit outside the east gate produced a glass bead with polychrome decoration that has been tentatively dated to the 6th century. Thus, the "fort may have been a focus of interest for the first Anglian communities to arrive in the area" (Hodgson 2003:19).

PONS AELIVS, *Newcastle on Tyne*

The Roman fort at Castle Garth, Newcastle was examined through a series of excavations from 1976–1992 and 1995–1996. The site is occupied by a Medieval castle (including standing remains of the Keep, the Black Gate, and sections of the northern and southern curtain wall), and 19th and 20th century constructions (a railway viaduct, the Vermont and Bridge Hotels and the Moot Hall). The building of these structures disturbed and destroyed some the Roman and Early Medieval deposits (Snape and Bidwell 2002:1). The excavations have allowed for a tentative plan based on trenches sited west and north of the Medieval keep, in the western-central and northern ranges of the fort (see Fig. 6.13; Bidwell and Snape 2002:272–273).

The fort is situated on a triangular promontory, now called the Castle Garth, immediately on the north bank of the River Tyne. The sides of the promontory are bounded by steep slopes, and the height at the top (27m OD) provided a good vantage point for guarding the northern bridgehead of the Tyne at Newcastle. In addition to the fort's proximity to the Tyne, it was sited on a north–south road, Margary's (1967) route 806 and the Military Way ran east–west behind Hadrian's Wall. South of the Tyne, another road, the Wrekendike, runs from South Shields to join route 806. It is also possible that an extension of the Stanegate ran east from Dere Street at Corbridge to Newcastle, though there is no evidence for this (Bidwell and Snape 2002:251).

Agricultural activity, seen in traces of narrow rigg and furrow, took place on the promontory before the construction activity prepared the site for the construction of the fort in the late 2nd/early 3rd century. The earliest structures encountered from the fort were built in stone and include the western area of the *principia*, the northeastern portion of the *praetorium*, two *horrea*, and three structures running east off of the *via praetoria*. In the 3rd century, there do not seem to have been many major changes to the structures or layout of the fort with the exception of a probable *schola* added to the south of the *principia* (Bidwell and Snape 2002:266–269; Spain and Simpson 1930). However, from the late 3rd/early 4th century, a number of changes occurred in the fort until the fort was abandoned in the early 5th century, if not later. There is also building activity that post-dates the Roman period and could be associated with Anglo-Saxon burial activity.

The plan of the fort, as suggested by excavations is different to that of the other forts on the Wall. The fort is not the traditional playing-card shape, but a polygonal sub-rectangular shape. The fort wall was also freestanding, and not backed by an earth or clay rampart. The *principia* was also not the typical Hadrianic *principia* with a forecourt preceding the crosshall and rear range. The *principia* at Newcastle did not have a forecourt at all, only the crosshall and rear range. These differences are attributed to the later construction date of the fort. Seen in the context of when the fort was established, the "irregularities" become normal aspects for forts established in the later 2nd century (Bidwell and Snape 2002:273).

THE EARLY 4TH CENTURY

In the later 3rd/early 4th century, a number of changes to the buildings and space in the fort occurred (see Figs. 6.13 and 6.14). Building II in the *praetentura*, immediately north of the broad metalled street, was demolished and replaced with Buildings III and IV. Building III was built in stone while Building IV was smaller and built partly in stone, partly in timber (Snape and Bidwell 2002:87). Pottery sherds in demolition contexts pre-dating new building construction dated this sequence. The *via praetoria* was resurfaced at this time (dated through associated coinage), and the eastern *horreum* was also modified. The sub-floor was filled in and *opus signinum* was laid over the infill (McMaster 2002:70–72). Pottery from the infill dates these alterations to the late 3rd century at the earliest. In the rear range of the *principia*, ceramic evidence dated the robbing and infilling of hypocaust channels over which a new floor was laid (Snape and Bidwell 2002:34–35). There were traces that the southern intervallum street was remetalled and the timber structures in that area were demolished, dated by a coin of Constantine II from

AD 320 (Oram 2002:110). Metalworking hearths in the extra-mural area immediately north of the fort also went out of use at this time.

In the second quarter of the 4th century (see Fig. 6.14), with dates provided by coins of the AD 330s, the north wall of the *principia* was completely rebuilt. The extent of this rebuilding probably also required that the roof in this section would have been rebuilt, as well (Snape and Bidwell 2002:37). Concurrently, there were two phases of rebuilding in the *praetorium*, to the west of the *principia*. The first phase was dated to the AD 330s through associated coinage, but the second phase was undated. In the first phase, the hypocaust channels were infilled with and overlain by clay, above which there was a spread of mortar, small stones, and a number of layers of clay. A hearth was constructed, consisting of an arc of stones bonded with clay and set on a cobble foundation, and which contained an ashy fill. One of the clay layers contained a coin of Constantine I, AD 330–331, dating this sequence. The second phase saw the construction of a new east wall that contained a doorway at the northern end, positioned opposite of the doorway in the northwest corner of the *principia*. An *opus signinum* floor was laid, but this was destroyed when a new channel hypocaust was constructed (Snape and Bidwell 2002:43–44). The street north of the central range buildings, tentatively identified as the *via principalis*, was remetalled twice during the second quarter of the 4th century, and the loading bay of the eastern *horreum* was renovated/repaired at this time with a timber porch and/or steps. Ceramic evidence from postholes dates this activity (McMaster 2002:70–72).

THE LATER 4TH CENTURY

Further remetalling occurred along the *via principalis* and *via praetoria* in the second half of the 4th century, and this resurfacing included large blocks of re-used stone probably taken from demolished/modified buildings (Fig. 6.15; Snape and Bidwell 2002:52). The cross hall of the *principia* was refloored with stone flags in the AD 360s or later, dated by coin and ceramic evidence. At some later point, it is likely that the *principia* was abandoned, as the floor was robbed and there was an accumulation of loam. However, the loam accumulation was only found in the central part of the crosshall. There was no evidence for wall collapse, so it may only have been the central area (across from the entrance) that was unused and the loam could have accumulated simply due to neglect. Unfortunately, no micromorphological analysis of this soil has been completed. A date for the period of "abandonment" was provided by a group of coins ending with a Theodosian issue of AD 388–395 and a Huntcliff-type rim of the late 4th century. A clay leveling layer containing red deer antler was deposited over the loam, and a flagged floor was laid through the cross hall. Spreads of ashy soil lay over the flagged floor in the cross hall, and in the rear range of the *principia* a floor surface comprised of a layer of brown soil, ash, mortar, and flat sandstone fragments overlaid the "late Roman" flagged floor. Unfortunately, there was no dating evidence for the late floor in the rear range (Snape and Bidwell 2002:37–40).

The *praetorium* east wall was demolished and a demolition layer of brown soil, mortar, cobbles, and flecks of ash was spread over the eastern edge of the remains of the wall and into the alley separating the *praetorium* from the *principia*. The hypocaust went out of use and the channels were infilled. Reconstruction seemed to immediately follow the demolition, and coins from the demolition layer in the alley provide a TPQ of AD 346–348. A clay leveling layer was spread over the interior of the *praetorium* and the remains of the wall. A new east wall was constructed, east of the previous wall, extending the building slightly to the east. Over the clay leveling layer were spreads of *opus signinum*. A further phase of activity was seen with the construction of a raised floor built on *pila*, one of which was found *in situ* in addition to a likely padstone (Snape and Bidwell 2002:44–47).

Further late 4th century activity was found in the western *horreum* and in the buildings in the *praetentura*. In the second half of the 4th century, the raised floor of the west *horreum* was removed, the sleeper walls were reduced in height and the spaces between were infilled. Overlying this was a deposit of dark soil with clay and mortar patches. In places there was burnt material and charcoal, reddened clay and lumps of coal. The dark soil contained a sherd of painted Crambeck ware dated to AD 370 or later, providing a TPQ for the activity. A trench hearth was inserted in the centre of the structure near the western edge of the excavation, and this feature combined with the burnt material and coal suggests that the structure was converted from a *horreum* to be used for industrial activity (Snape and Bidwell 2002:62–66).

Ashy layers found in Buildings I, III, and IV in the *praetentura* contained coins mostly from the mid 4th century, but also late 4th century pottery, including a Huntcliff-type rim. In Building IV, a samian spindle whorl, typical of late 4th century (Cool 2000:53), was also found in the ash layer. The function of these buildings cannot be determined, but at least there is evidence for occupational activity.

THE POST-ROMAN SEQUENCE

The fort at Newcastle was clearly occupied in the post-Roman period, but almost all the evidence is undated and the basic chronology is provided through the stratigraphic relationships between the latest dated Roman levels and the Anglo-Saxon cemetery (Figs. 6.16 and 6.17). Snape and Bidwell (2002:111) identify two phases of post-Roman/pre-cemetery activity:

1. the decay and collapse of buildings after the end of the Roman occupation, and
2. the subsequent stone robbing, leveling, and thorough clearance of some areas of the ruins followed by the construction of features that "ignored" Roman alignments.

The *principia* suffered neglect and weathered, resulting in periodic tumbles or collapses of building material. The crosshall flagged floor and occupation material was overlain by a deposit of brown soil, building stones, and mortar, and some collapsed stones were found overlying the *via principalis*. Dark soils were found overlying the collapse of the rear range of the *principia*. The dark soils contained cat and bird bones, which were interpreted to mean that the site was deserted by all but "a few stray animals". Overlying the dark soils was a yellow mortary soil, which may be a leveling deposit.

At some point after the collapse, however, the north wall of the *principia* and the large dressed blocks of the strong room were robbed. Over the fill of the robber trench of the strong room were cemetery soils identified by the soil, ash, and fragments of human bone. Over the north *principia* and *via principalis* was a possible leveling layer of brown soil, mortar, and stones containing human bone. Over this layer was a deliberately spread rubble surface. On this rubble surface were fragmentary remains of a wall of dressed stones situated north of the position of the *principia* north wall (Snape and Bidwell 2002:115–116).

There is no surviving evidence for the disuse/decay of the western *horreum* and the *praetorium*, but it is known that both buildings were demolished and the area cleared prior to the construction of a drain/aqueduct in the post-Roman period (Snape and Bidwell 2002:47).

The latest occupation layer in Building I, the ashy layer, was cut by two large pits and several small pits or postholes. Unfortunately it is unclear whether these features were part of the final occupation or whether they cut through the ruins of the building. A coin of AD 348–350 was found in the collapse/demolition layers of Building III, but this was the only datable object. The Building III collapse was overlain by a loamy soil. The remains of the north wall of Building IV were overlain by disturbed masonry and rubble containing human bone. Running north–south through the whole northeast area was an alignment of postholes that could represent either a fence or timber structure that laid within a slot cutting through the remains of Buildings I, III, and IV. This feature was three meters east of the *via praetoria* and Snape and Bidwell argue that the build-up of debris and soil would have made the remains of Roman walls not visible. They also note that the slot cut a layer of disturbed masonry containing human bone, suggesting the alignment was Anglo-Saxon rather than sub-Roman in date (Snape and Bidwell 2002:117–120).

The stone, northern fort wall was robbed or demolished and replaced with a timber wall, evidenced by three stone-lined postholes that cut the robber trench and wall foundations. There was also evidence that the posts burned *in situ*. Unfortunately, truncation has prevented the determination from what level these postholes were dug. Overlying the wall demolition layers were two phases of rough paving with large stones that were different in comparison to the late 4th century paving in the central range. Overlying the second paving were layers of dark soil, ash, charcoal, and soil with evidence of burning, perhaps related to the burning of the timber post wall. One of the dark soil deposits contains roman coins of Valens, AD 364–378, House of Valentinian, AD 364–378, and Theodosius, AD 388–395. The two phases of pavement were also found in the extra-mural area north of the fort. The second phase of extra-mural pavement was overlain by a deep layer of dark earth. Post-dating this, a ditch terminal was found aligned with a possible counterscarp bank that may belong to the Anglo-Saxon period. The bank was then overlain by a Norman clay rampart. The ditch terminal was positioned to west side of the position of the *via praetoria* as it would have ran out of the north gate of the fort. This evidence has led to the suggestion of a possible Anglo-Saxon earth enclosure, which would have replaced the Roman defences (Snape and Bidwell 2002:120–127).

FINDS

The finds reports have contributed greatly to an understanding of the fort in the Roman period. Overall, Newcastle has a very similar finds profile to the forts at Wallsend and South Shields, suggesting that the supply sources for these forts was similar (Bidwell and Croom 2002; Brickstock 2002). However, there are some differences that should be pointed out. One difference is the higher occurrence of Local Traditional Ware at Newcastle than at other forts in the area. Another difference is the peak of mid 4th century coinage that suggests particularly intensive coin-use on site (Brickstock 2002:182). The distribution of these 4th century coins (35% of the total coin list from the entire site) occurs along the *via praetoria* and *via principia* (see Figs. 6.18 and 6.19). When coins from post-Roman deposits (see Fig. 6.20) are added to this, the distribution along these streets is 61% of the total coin list. The great number of mid 4th century coins and their distribution along the main streets of the *praetentura* has been interpreted as evidence for "money changing hands in some form of market" (Bidwell and Snape 2002:277). It has been suggested that the fort acted as a local market centre, particularly for copper-alloy objects and Local Traditional Ware (or its contents), as there are large amounts of both found in mid-late 4th century levels.

A group of three samples from the eastern *horreum* dated to different 3rd century contexts was also analyzed (Huntley and Daniell 2002). There was evidence for bread and spelt wheat, barley, and oats,

chickweed, elderberry and blackberry, hazel nuts, coriander and fig pips imported from the Mediterranean, radish, and cabbage. Fish bones were also common. The cereal crops dominated the charred remains, with barley as the most abundant grain, and wheat the second most abundant. This is typical for an assemblage from northern England. Oats were clearly present, but the state of preservation could not allow for the determination at to whether the oats were wild or cultivated. The absence of chaff, ear, and stem fragments from the grains suggested that processed grain was being used, though it should be noted that if chaff were present, it probably would not have survived under the conditions of preservation. In general, the grains were from good quality crops. There is a possible shift from preference of wheat to barley throughout the 3rd century, based on evidence from different samples, though this could be biased toward a certain area of the fort, as there are no samples from the west *horreum*. The later samples also had more fragments of heather, which could have been used for roofing, human or animal bedding, and/or as fuel.

DISCUSSION

The fort at Newcastle seems to have remained basically the same from the time of its construction in the late 2nd/early 3rd century until the late 3rd/early 4th century. At that point a number of changes took place that suggest life at the fort was changing for the garrison (Bidwell and Snape 2002:275–280). The construction of a *schola* to the rear of the *principia* may have necessitated widespread replanning and rebuilding in the southern range, the *retentura*, of the fort, and Building II was demolished to be replaced by Buildings III and IV. At the same time, the sub-floor of the east *horreum* was filled in, suggesting a change of function for the building. In the second quarter of the 4th century, the *praetorium* and *principia* were rebuilt/renovated, and this activity was followed by a series of repavements of the *via praetoria* and *via principalis*. Following the renovations to the *principia* and *praetorium*, coin distributions suggest there was considerable market activity taking place in the fort until at least the AD 350s, and possibly later based on five issues dating between AD 364 and 378. At some point after AD 360, based on ceramic evidence, there was an accumulation of loam in central area of the crosshall of the *principia*, interpreted by the authors to mean a period of abandonment for the whole building. However, I would favor a continued period of use with neglected upkeep. Following this, the *principia* crosshall was refloored at some point after AD 388. It is unknown how long the *principia* was in use for before the building was abandoned and collapsed. At some point in the mid-late 4th century, there was also rebuilding in the *praetorium*, extending the building east toward the *principia* and inserting a raised floor. It is tempting to suggest that the rebuilding in the *praetorium* occurred either in the AD 360s when the *principia* cross-hall was refloored, or in the AD 390s/400s when it was again refloored. However, there is no clear dating evidence for this. The late 4th century saw the conversion of the western *horreum* for industrial activity, and Buildings I, III, and IV continued to be used. It is also possible that the northern wall of the fort collapsed or was demolished in the late Roman period and replaced with a timber wall on the basis of coins found in associated paving deposits. However, the different type of paving might suggest that the construction and burning of the timber wall was post-Roman.

The post-Roman activity on site is difficult to characterise in any comprehensive manner. There was clearly building activity on site, which may also suggest occupation. The construction of a drain/aqueduct and tank through the demolished ruins of the west *horreum* and *praetorium* would not be necessary if the site were not occupied. And the few traces of structures seem were built after or in conjunction with the site's mortuary use. Bidwell and Snape suggest that these structures do not respect the Roman organization of space inside the fort, and that this is not surprising as the buildings had probably all partially collapsed by the time these structures were built. However, the remains of the stone wall found on the *via principalis* north of the *principia* and the structure built through the remains of Buildings I, III, and IV followed the basic east–west and north–south alignments of the Roman buildings (see Fig. 6.17). The primary difference, however, is in their position in respect to the *via principalis* and *via praetoria*. It seems more likely that the Roman buildings were in a ruinous state, but not completely collapsed. Upstanding remains were probably demolished and the site leveled before new construction took place.

Bidwell and Snape also note that these structures are built on/above soils that contain fragments of human bone. There seems to be an assumption that these fragments are from Anglo-Saxon burials, but the fort could have functioned as a focus for ritual activity in the post-Roman pre-Anglo-Saxon (sub-Roman) period. There was no indication that any of the bone fragments were radiocarbon dated, so their presence does not clarify the dating, though an anticipated publication of the post-Roman sequence of the fort may provide less ambiguous dating evidence. All that can be said of this post-Roman evidence is that there was probably massive replanning of the interior space of the fort in the post-Roman period. There is no clear evidence for continuity or discontinuity of occupation in the fort. Hopefully, subsequent publication of the Anglo-Saxon cemetery will clarify some of the problems with the data.

Further consideration must also be given to the use of the fort as a market. Bidwell and Snape (2002:280) see the evidence for a market as suggesting the *praetentura* of the fort changed from a ceremonial space to a commercial one, even suggesting that the *principia* no longer fuctioned:

> A fort without a *principia* cannot have held a full unit, which in addition to its administrative requirements needed a shrine to house its standards and a setting suitable for the numerous festivals of the military calendar. Although subject to many alterations in the fourth century, most *principia* in Britain retained their essential form, an indication that their administrative and ceremonial functions continued.

While there is evidence for the fort hosting the site of a market, this does not mean that the *principia* could not have continued to function in its official administrative and ceremonial capacity, and there is no evidence that it did not. Rather, the market activity is over-emphasized and interpreted to preclude all other activity in the fort. A more reasonable suggestion is that the fort hosted a weekly or monthly market, but at all other times resumed the functions typical of a late frontier garrison. Despite these differences in interpretation, however, it is clear that the excavations of the fort at Newcastle have provided important evidence for the late Roman to Early Medieval transition.

CONDERCVM, *Benwell*

The Roman fort at Benwell is cut by the Newcastle-Carlisle road, built in 1751 but today the A69, separating the northern $^{1}/_{3}$ of the fort from the southern $^{2}/_{3}$. North of the road, any archaeological remains were lost when a reservoir was constructed in 1858 by the Newcastle and Gateshead Water Company (Fig. 6.21). South of the road, suburban villas with their gardens were built in about 1862. Intermittent excavations were carried out between 1926 (Petch 1927; 1928) and 1937 (Simpson and Richmond 1941), allowing a plan to be constructed (Fig. 6.22). After 1937, a housing estate was built south of the Newcastle-Carlisle road, destroying much of the archaeology. However, the discovery of a well from the *praetorium* was reported and the material analyzed (Charlesworth 1960), and a watching brief at the fort in 1990 (Holbrook 1991) was able to contribute to an understanding of the *horreum*.

The Roman fort was situated at the summit of Benwell Hill astride Hadrian's Wall. The slope of the hill is gentlest to the north, and the fort has commanding views in all directions (Petch 1927:137–138). The first fort was built in the Hadrianic period and occupied until at least the end of the Roman period. However, there is no detailed settlement or building sequence provided for the site. A number of inscriptions attest to the garrison history (Simpson and Richmond 1941:4), indicating the fort always garrisoned cavalry units.

Evidence from the 4th century and later is limited, but there is enough to indicate a general occupation of the fort probably until AD 410, if not later. The *praetorium* was built to the east of the *principia* and south of the *via principalis*. Petch (1927:152) recovered little stratified dating evidence, but what was found pointed to "the later years of the occupation", at which time the building was reconstructed, and its eastern extent was extended to infringe on the intervallum road. Occupation seems to have remained high status, as there were remains of a hypocaust system overlain by two floors, with the latest floor paved with *opus signinum*. The stone-lined well in the courtyard of the *praetorium* also indicates the building was used until the end of the Roman period, as four pieces of late 4th century coarse ware were found near the top of the deposits (Charlesworth 1960:233).

A large rectangular building south of the *praetorium*, identified by Simpson and Richmond (1941:23) as a *valetudinarium*/hospital, had "late walls" inserted into and subdividing some of the rooms. A fragment from a probable 4th century finger ring was found in the topsoil above the building (Petch 1927:154, 190). West of the hospital were the remains of buildings probably belonging to barracks, but no dating evidence was provided. No dating evidence was discussed in reference to the *principia* or the double *horreum* east of it, but there was evidence that locally procured coal was used in the *fabrica* west of the *horreum*, though again no dating evidence was provided. What is known in reference to the *horreum*, though, is that at some point the northern end was demolished down to the foundations and replaced with a paved surface (Holbrook 1991:43). Simpson and Richmond (1941:8) encountered the southwest angle tower, and found evidence for a possible "oven dome" and Huntcliff-type pottery of the later 4th century.

Unfortunately, there is no evidence regarding the gates, as the northern gate and wall were destroyed during the construction of the reservoir and the primary east and west gates underlay the A69 (Petch 1928:48). The position of the south gate was confirmed, but it was completely robbed of stone, probably in the post-Medieval period. The minor west gate was also discovered, and the Military Way was found to pass through it (Simpson and Richmond 1941:9). The position of the fort astride Hadrian's Wall and the discovery of the ditch north of the Wall to either side of the fort suggests that the double-portal east and west gates were probably blocked, with the minor east and west gates providing access into and out of the fort. On the basis of evidence from other forts, it is also likely that one of the portals in both the northern and southern gates was probably blocked.

A further item of note is a chance find from the area of the south mound of the vallum, south of the fort. An "early Anglian brooch" provides the only evidence of post-Roman activity in the area of the fort (Collingwood 1936:238), though two such brooches are reported in the Tyne and Wear SMR from the site, dated to the 6th and 7th centuries.

VINDOBALA, *Rudchester*

The Roman fort at Rudchester is cut by the Newcastle-Carlisle road, built in 1751 but today the B6318, separating the fort roughly in half. The site was under the plow by 1783, after a period of stone robbing. However, by 1801 the southern half of the site was under grass while the northern half was still being plowed. Archaeological investigations began in 1897 and have continued intermittently to the present day (Fig. 6.23; Haverfield 1898; 1902; Brewis 1925; Bosanquet 1926; Gillam and MacIvor 1954; Gillam *et al.* 1973; Gibson 1988; Moore 1988; Goulty *et al.* 1990; Bowden and Blood 1991).

The fort is situated on the summit of a hill with good visibility in all directions, particularly to the south and east. The fort straddled Hadrian's Wall, with the Wall bisecting the fort south of the main east and west gates. The fort was built in the Hadrianic period and gates and barracks were refurbished in the late 2nd century. It has been claimed that the site was abandoned in the late 3rd century, but the fort was definitely occupied in the late 4th century and it probably remained occupied until the end of the Roman period (Bowden and Blood 1991:25).

As at other forts along Hadrian's Wall, there was gate-blocking activity at Rudchester. The west portal of the south gate was blocked in the late 2nd century, as was the north portal (and possibly the south portal) of the west gate. The east gate may have also been blocked in a similar fashion (Brewis 1925:96, 104–106). It is likely that a portal of the north gate was also blocked, leaving access into the fort through a single portal of the north and south gates and the minor east and west gates.

Evidence from the 4th century and later is scarce and not reported in much detail, but there is enough to demonstrate the fort was occupied until the end of the Roman period. A "late flagged floor" was found the southwest angle turret, but no dating evidence was indicated. South of the *via principalis* and east of the *principia*, the east wall of the *praetorium* was discovered. The outer wall was of "very rough masonry" with large external buttresses, suggesting it was built in the 4th century. Inside the wall, a flagged floor was found approximately 27.6 cm (12 inches) above an *opus signinum* surface. The *opus signinum* seems to have been the floor surface of a hypocaust system, as a brick *pila* was found in the area along with many other stones (Brewis 1925:99, 102–103). The *principia* and a *horreum* west of the *principia* were investigated by Brewis, but there was no dating evidence from the 4th century reported for these structures. A park railing stone was discovered in later excavations in a barrack, and by analogy with Halton Chesters, these types of stones are from the late 4th century (Gillam *et al.* 1973:82–83). No final occupation or destruction layer was observed in the barrack, however. A large quantity of Crambeck and Huntcliff wares were also reported, but these appear to be mostly from unstratified contexts (Brewis 1925:110; Gillam *et al.* 1973:83). This suggests that archaeological traces of late 4th century occupation was not well recognized, if not destroyed by plowing. The latest coin reported is that of Magnentius, AD 350–353, and a samian spindle whorl was found (Brewis 1925:108, 110), which Cool (2000:53) notes as typical to the mid–late 4th century (Cool 2000:53).

Forts South of the Wall

There are a number of other forts in the case study area south of Hadrian's Wall: Concangis/Chester-le-Streeet, Ebchester, and Longovicium/Lanchester. Evidence from all three forts is based on limited-area excavations. The fort at Lanchester has the least amount published, though it has not been built over like Chester-le-Street and Ebchester.

CONCANGIS, CHESTER-LE-STREET

Excavations at the fort of Chester-le-Street have identified the defences of the stone fort and located some internal structures (Rainbird 1971; Evans *et al.* 1991; Bishop 1993). The fort is located on a bluff overlooking the River Wear to the east and the road linking Brough-on-Humber to Newcastle lies immediately to the west of the fort. Knowledge of the development and internal history of the fort is limited, but there is some evidence for late Roman activity (Fig. 6.24).

Open area excavation by Bishop (1993:82) revealed a sequence for a *contubernia* in the northwest corner of the fort. By the mid–late 3rd century, the *contubernia* were demolished with only the stone officer's block retained and refloored after the removal of internal partitions. Ceramic evidence suggests the officer's block was demolished in the late 3rd century, but numismatic evidence suggests occupation until the mid 4th century followed by demolition. East of the fort, the parade ground was not maintained, allowing loam to accumulate through the 4th century. However, a road was constructed over the parade ground in the mid–late 4th century (Evans *et al.* 1991:13). The late 3rd/early 4th century also saw the replacement of the western wall of the fort with a thicker (more monumental?) wall and replacement of the four previous ditches with three new, broader ditches (Evans *et al.* 1991:21). It was noted that these new defences are typical of northern forts but "archaic when compared with the new defensive technology applied to such sites as the Saxon Shore forts in the south."

Inside the west wall and north of the west gate, a large stone building of at least 42m by 38m was constructed at approximately the same time, and this has been identified as the *praetorium*. Previous excavations (Rainbird 1971:101–103) revealed the northern and southern extent of the *praetorium* and later modifications, though not the initial date of construction. Three rooms were uncovered in the northern range, the easternmost and westernmost rooms having hypocausts. These hypocausts were

infilled in the mid 4th century, dated by pottery, and the rooms refloored. At some point, perhaps the late 4th century, there was also evidence for iron-working from slag and crucibles found in a corridor south of the rooms, which was later sealed by a resurfacing with stone slabs (Wilson and Wright 1965:203). A deposit consisting of animal bones and late 4th century pottery was found lying against the outside of the north wall of the westernmost room (Wright 1959:106). The building, on evidence from the easternmost room, seems "simply to have fallen down" rather than meeting "a violent end". In the southern range of the *praetorium*, a number of large square rooms and a bath suite were discovered. The large rooms were later modified, with one of the rooms being subdivided into three small rooms. In one of these a metal-working furnace was found. The bath suite was also extended in the later phase of activity. The changes probably occurred in the later 4th century, but no specific dating was reported (Goodburn *et al.* 1979:285).

A stone *horreum* was revealed in the southeastern corner of the fort, but this also lacked corroborating dating evidence (Gillam and Tait 1968:77; Evans *et al.* 1991:5). Despite the tradition of Early Medieval occupation of Chester-le-Street (Featherstonhaugh 1855; Evans *et al.* 1991:24), there is no post-Roman Early Medieval evidence for occupation in the area. The earliest Medieval evidence seems to date to the 13th century.

EBCHESTER

At the fort of Ebchester, excavations and survey have revealed the extent of the defences and some internal structures (Jarrett 1960; Reed *et al.* 1964; Maxfield and Reed 1975). The fort is located on a terrace overlooking the River Derwent to the north and 183m east of Dere Street. Excavation in 1972 and 1973 in advance of development revealed structures and a road in eastern corner of the fort (Maxfield and Reed 1975).

The latest activity in this area was from two buildings sited between the intervallum road to the southeast and a road to the northwest. The two structures had the appearance of chalet barracks, and the northeastern building had many furnaces associated with metalworking. Ceramics from this phase of activity dated to the late 3rd and early 4th centuries. Above the hearths and the associated floor, a flagged floor was laid with a samian spindle whorl and coarse pottery dating to the late 4th century lying on it and unstratified above the floor. Some of this unstratified pottery included Crambeck ware.

The east angle tower was partially excavated, revealing a late Roman oven immediately below the topsoil, but no specific dating evidence was indicated. Thus occupation in the eastern area of the fort probably lasted until the end of the Roman period, but little specific 4th century activity can be deduced after the phase of metalworking ended in the early 4th century. An apsidal chamber thought to be part of the bath suite of the *praetorium* from its position in the fort was constructed in the 3rd century (Reed *et al.* 1964). East of the apsidal chamber two hypocausted rooms were excavated and found to be constructed of reused material. These rooms were dated to the 4th century, and from their position relative to the inferred *praetorium* bath, these chambers may be part of a large *praetorium* located in the eastern quadrant of the fort.

OTHER FORTS

The south gate of Lanchester was believed to have been converted into living quarters after having been blocked, perhaps in the late 4th century (Steer 1938; Welsby 1982:114).

There are also traditions of there being possible forts at Jarrow and Wearmouth, but there is no evidence to support these claims. The argument for a fort at Jarrow is based on the position of Jarrow at the mouth of the Don and a tradition of a rectangular area of approximately three acres enclosing the church, thus indicating the possible position of the garrison at DANVM mentioned in the *Notitia Dignitatum*. However, excavation of the Early Medieval monastery has not provided any evidence supporting this notion (Daniels 1978:54–55). A similar tradition exists at Wearmouth, where the large foundations of an "ancient building" were found situating a position on the riverbank with a commanding view of both the North Sea and the mouth of the Wear (Robinson 1905:98). Furthermore, a late Roman garrison at DICTVM is attested in the *Notitia Dignitatum*, and the position of DICTVM/DIXIO in the *Ravenna Cosmography* suggests that the fort was somewhere in northeast England between Chester-le-Street and South Shields. However, the claim for a Roman fort at Wearmouth can only be supported by a brief stretch of possible Roman foundations and local tradition, and this claim has never been taken seriously by "the major authorities", according to Bidwell (2001:5–7). On the other hand, Dobson (1968–70:35–36) admits to the possibility of a Roman fort at Wearmouth, as well as at Jarrow and Hartlepool.

Milecastles and Turrets

There is little evidence for the milecastles and turrets in this case study in general, let alone dating to the 4th century and later (Bennett 1998:30–32). This is unsurprising, given the urban and industrial history and expansion of Newcastle. Furthermore, the lack of structures is paralleled at the western end of the Wall, though for different reasons. In both cases, there is a less than 25% recovery rate (Bennett 1998:30). In addition to urban and industrial history and expansion, this is probably also due to post-

Medieval/early modern agricultural improvement in these lowland zones. At the Westgate Road milecastle (probably Milecastle 4), the only milecastle in the case study excavated under modern conditions, the only evidence for post-2nd century occupation from Roman and post-Roman strata was one potsherd of the 3rd–4th centuries, suggesting a short life for the milecastle (Harbottle *et al.* 1988:155). Other milecastles and turrets that have been identified have suffered extensively from robbing and plowing damage. Late Roman evidence from the 4th century is limited to Turret 7a (Denton Hall) and Milecastle 9 (Chapel House).

At Denton Hall, unstratified sherds of Huntcliff type ware were found internally near the doorway of the turret along with Crambeck ware (Birley 1930:149, 152; Spain 1930:531). At Milecastle 9, unambiguous later 4th century evidence was limited to a coin of Valentinian I, AD 364–375, found at the west side of the south gate and an unspecified quantity of unstratified Huntcliff type and Crambeck wares (Birley 1930:159, 163–164; Spain 1930:531–532). The latest internal structures were small patches of masonry on the west side of the milecastle dated to Wall Period III, the very late 3rd/early 4th century, and the south gate was robbed/reduced to its "original level of construction", so late modifications and road resurfacings could not be traced. Outside the south wall of the milecastle, however, three undated burials were found (Birley 1930:154). Halfway between the gate and the southwest angle and parallel to the wall, a young adult skeleton lacking a skull but with its shoulders toward the east was discovered. At the southeast corner of the milecastle a number of bones were found, including skull fragments from an adult male and a young adult female. No associated grave goods were found. While undated, it is possible, perhaps even likely that these burials are from the 4th century or later given their proximity to the milecastle.

Other Sites

The Roman name for Newcastle, PONS AELIUS, suggests the presence of a bridge over the Tyne. Bruce (1885) reportedly observed the remains of a Roman bridge pier, but this has been argued to be Medieval rather than Roman in date (Bidwell and Holbrook 1989:100). However, the discovery of Roman inscriptions from the River Tyne near the position of the known Medieval bridge has confirmed the existence of a Roman bridge. It was probably built in conjunction with Hadrian's Wall at the original terminus, suggesting the bridge may have been monumental in design beyond its need to carry a minor road over the Tyne (Bidwell and Holbrook 1989:102). It is unknown, however, how late a bridge existed in the area. Presumably, even if there was no bridge in place by the end of the Roman period, people could ferry across the Tyne without too much difficulty.

"Native" Farmsteads

Farmsteads in the Late Pre-Roman Iron Age, the Roman period, and the Early Medieval period in northern England tend to take the form of round or rectangular structures in a round or [sub-]rectangular ditched enclosure. These sites are notoriously difficult to date without excavation, but are often assigned to a certain period based on the morphological characteristics visible in aerial photographs. Therefore, the sites can be difficult but they are also the primary site type for a landscape of agricultural production (cf. Jobey 1960; Higham 1980). A number of "native" farmsteads/settlements have been identified and excavated in the case study area (Fig. 6.2; numerous publications by Jobey). Those sites that have been excavated rarely provide any concrete evidence for occupation during the late Roman period. Only the farmstead at Apperley Dene has yielded any 4th century ceramics.

The site at Apperley Dene is located on the summit of a rounded hill approximately 50m west of Dere Street and approximately 6km northwest of Ebchester. Excavations in 1974 and 1975 revealed two distinct phases of occupation of the site (Greene 1978). Phase I consisted of a rectilinear farmstead built in the 2nd century AD. The farmstead was identified by a double-ditched enclosure with a timber gateway through its east bank and a timber roundhouse inside the enclosure. Ceramic finds from ditches and structural activity indicated an occupation entirely within the 2nd century. Phase II saw a new ditch dug inside the large ditch of Phase I, with a probable silting of the outer ditch from Phase I. Internal structures of undressed stone and postholes were present, but no plan was recovered, as the structure(s) seem to have been thoroughly demolished *c.* AD 370. This phase was also dated by ceramic evidence from the ditches and occupational features (see Fig. 6.26). The pottery was from the early to mid–late 4th century, with the latest pottery having fresh breaks. Furthermore, only Phase II occupation used tile. Some glass was present in both phases, and no coins were found. The destruction took the form of the undressed stones found across the site, but particularly in the inner ditch, mixed with freshly broken pottery and with burnt deposits occurring above the scattered stones. The demolition activity, as well as the occupational features, was focused on the east side of the site. The reason for the destruction of the site is unknown, but Green (1978:54) suggests it may have something to do with increasing the security of "an important military road", perhaps related to the barbarian conspiracy of AD 367 and the subsequent recovery of the province. This is highly speculative and the reason(s) for the demolition of this native settlement remain unclear at this time.

2.5.4: CONCLUSION

The Late Roman to Early Medieval Transition

In general, there is very good evidence for activity in the Roman period across the case study area. However, compared to the total distribution of Roman and Early Medieval findspots in the case study, the 4th to 7th/8th centuries is less represented (see Figs. 6.1, 6.3, 6.27 and 6.28; 4th/5th century sites T=15, 5th–7th/8th century sites T=40). There is some overlap in the database so that the totals are not exclusive to each other (e.g. 5th century burials at South Shields). The Early Medieval site and findspots total is primarily individual finds of "Anglo-Saxon" style/date and the settlement distribution is dominated by Northumbrian monasteries and ecclesiastical foundations. Many of these ecclesiastical sites are attested by Bede rather than through the archaeological record. Furthermore, the establishment of ecclesiastical sites occurs in the 7th century at the earliest. This high occurrence of Anglo-Saxon settlement (compared to the Birdoswald and Carlisle case studies) will be considered more fully in the concluding chapter of this dissertation.

The latest Roman evidence, from the 4th and 5th centuries is found concentrated at forts, though not exclusively so. Activity was also evidenced at one milecastle, one turret, and one farmstead, as noted above. This suggests that official military garrisons occupied forts until at least the end of the Roman period. The relationship between garrisons of different forts is unknown, but it is possible that all the forts along the Wall, from South Shields to Rudchester and perhaps further, drew on the same sources for provision of many supplies. It has been noted that the ceramic assemblage at the fort at Newcastle is similar to the assemblages from the forts at Wallsend and South Shields (Bidwell and Croom 2002:166). This could mean that the forts drew on the same supply sources independently or that the forts were part of the same supply network.

The lowland distribution of native farmsteads in relation to the forts (Fig. 6.2) is suggestive of arable production, which could be used for local provisioning of foodstuffs to forts. While it cannot be demonstrated that all the native farmsteads are from the late Roman and Early Medieval periods, the general lack of dating evidence for the sites makes it hard to include or exclude many of the sites. Therefore, a basic assumption of long-term occupation of these sites and their locale was adopted to demonstrate the potential settlement distribution of native farmsteads. Evidence from palaeobotanical samples at South Shields in the 3rd century verifies that spelt wheat at the fort was probably from northeast England. Deposits from Newcastle suggest a shift of increased reliance from wheat to barley over the course of the 3rd century, and the climate of northern England is conducive to the production of barley. While local provision is highly probable, importation is also in evidence at 3rd century South Shields and Newcastle. Samples of bread wheat from southern Britain or further afield were found, along with coriander and figs from the Mediterranean. While both local production and long distance importation of provisions can be demonstrated in the 3rd century, there are no comparable deposits from the 4th century. It is unlikely that local-regional provision did not continue into the 4th century and later, but this still needs to be proven rather than assumed.

Forts also seem to be important centres of trade and exchange. It has been argued that South Shields was an important port and supply base until the late 3rd century. After this point, the significance of its role as a port is unknown, but the garrison likely would have supervised traffic up the Tyne. Coin distribution patterns at Newcastle have been interpreted as evidence of the *via praetoria* and *via principalis* hosting market activity, and a concentration of 4th century coinage at the minor west gate at Wallsend has also been interpreted as market/trading activity. Whether or not the evidence from these forts is indicative of "market activity", it does demonstrate the significance of the forts and their populations as focal points for exchange. This is unsurprising, as forts probably represented the greatest concentration of people living at one settlement, considerably larger than the villages and farmsteads to the north and south of the Wall.

What is unknown, however, is the role of milecastles and turrets in the latest phases of occupation along Hadrian's Wall. Turrets were generally demolished in the 2nd century, so the occasional survival and use of a turret is noteworthy, suggesting that individual turrets still functioned for some military or logistical purpose in certain locales in the late Roman period. Very little can be said in reference to Turret 7a (Denton Hall) as unstratified late 4th century pottery was found near the doorway to the turret, but no other evidence of late activity was reported. It would be acceptable to infer that Turret 7a still served a military purpose in the late 4th century, but a non-military function should not be dismissed either. That is to say, the turret could have functioned as a look-out post or monitoring station for the local garrison, or it could have acted as a shelter for shepherds in the vicinity. At this point, the pottery does not allow us to further distinguish the late activity at the turret.

The differential survival of milecastles in the case study, as well as whether or not the sites were investigated beyond identification of its type and position makes it difficult to say with any confidence the role of milecastles in the 4th century. A tentative suggestion for this case study is that Milecastle 9 (Chapel

House) served as a pedestrian crossing point through the Wall between the crossing points/gates at Benwell and Rudchester. Such a suggestion assumes that the Chapel House milecastle was the only one occupied in the late 4th century – an unproven assumption based on an absence of evidence rather than negative evidence.

At present, the evidence indicates that forts were the likely focus of post-Roman settlement into the Early Medieval period. Post-Roman settlement is only archaeologically known at South Shields, but circumstantial evidence from other forts reinforces this claim. Anglo-Saxon pottery and glass was found at Wallsend, while an Anglo-Saxon cremation urn was found at Newcastle and there are two Anglo-Saxon brooches from Benwell. Furthermore, when the distribution of late Roman and Early Medieval sites is viewed in conjunction (Fig. 6.28), early Anglo-Saxon activity occurs in the same locales as the latest Roman activity – along Roman roads and major river valleys as well as at forts.

Future Research Aims in the Case Study Area

Given the current evidence available to us, much can be done to remedy an understanding of the area in the late Roman to Early Medieval transition. The pollen cores suggest differential change in clearance levels at a regional scale, but all outside the case study. Pollen studies examining local pollen changes would be beneficial closer to Newcastle. In terms of artefactual evidence available for consideration today, a closer examination of the latest Roman pottery, particularly as it relates to late coinage and stratigraphic sequences at South Shields and Newcastle could be very beneficial. Such a study might flag up particularly late diagnostic features of the pottery, as well as establish to what extend ceramic usage continued beyond coin usage, if at all, and if ceramic supplies continued beyond the first decade of the 5th century.

Modern excavation techniques have been well employed at South Shields, Wallsend, and Newcastle. The fort at Benwell has been largely built over, destroying most if not all of the late Roman and Early Medieval evidence. However, excavations at Rudchester, Chester-le-Street, Ebchester, and Lanchester would be beneficial and help relate the Wall region to its southern hinterland. Further investigation should examine, when possible, the internal activity of milecastles, and the confirmed location of many milecastles and turrets still have yet to be accomplished in the case study area. Excavation of farmsteads needs to continue, using modern excavation techniques and numerous forms of scientific dating, when possible. Furthermore, farmstead sites more than any other type of site benefit from open area excavation across the whole site.

The case study has been beneficial in demonstrating that evidence for late Roman to Early Medieval occupation is not as scanty as might be believed. The evidence is heavily concentrated on forts in Tyne and Wear, but the evidence has provided sufficient detail to examine "the end" of Roman Britain and subsequent transformation. Comparison of this case study with others conducted will bear more fruit, particularly once they are integrated in the broader context of the transformation of the late Roman and Early Medieval north.

Appendix 3:
Birdoswald Case Study

The following sections reproduce data from databases constructed in Microsoft Access for the Carlisle Case Study.

APPENDIX 3.1: BIRDOSWALD CS TOTAL DATA

Site Name	Type	Period	Date	X	Y	SMR number	County
Allolee Farmhouse	find	Roman		368750	566740	6062	Northumberland
Aqueduct 1	aqueduct	Roman		370400	566800	6480	Northumberland
Aqueduct 2	aqueduct	Roman		374000	568800	6480	Northumberland
Aqueduct 3	aqueduct	Roman		370760	567340	6480	Northumberland
Banks Burn find 1	find	Roman		356330	564140	306	Cumbria
Barrons Pike	signal station	Roman, Prehistoric		359580	575150	104	Cumbria
Below Kilesyke Hill	find	Roman		350400	563400	274	Cumbria
Bewcastle	fort	Roman	4th c.	356550	574600	2813	Cumbria
Bewcastle Churchyard	cross	Early Medieval	late 7th, early 8th c.	356530	574550	2812	Cumbria
Bewcastle Churchyard find 1	find	Roman		356530	574570	17966	Cumbria
Bewcastle find 1	find	Roman		356980	574100	97	Cumbria
Bewcastle find 2	find	Roman		356530	574560	100	Cumbria
Bewcastle find 3	find	Roman, Prehistoric		356000	575000	2578	Cumbria
Bewcastle find 4	find	Roman, Prehistoric		356000	575000	2579	Cumbria
Bewcastle find 5	find	Roman		356500	574500	16937	Cumbria
Bewcastle find 6	find	Roman		356560	574960	17950	Cumbria
Birdoswald	fort	Roman, Early Medieval	1st - 5th c.	361500	566300	343	Cumbria
Birdoswald Cremation Cemetery	cemetery	Roman	early 4th c.	361200	566200	344	Cumbria
Birdoswald vicus	vicus	Roman		361630	566310	333	Cumbria
Boothby	fort	Roman		354450	562960	285	Cumbria
Brampton Old Church	fort, church	Roman, Early Medieval		350980	561490	286	Cumbria
Burnhead	camp	Roman		370980	566960	6476	Northumberland
Burtholme find 1	find	Roman	hadrianic	353500	564200	269	Cumbria
Burtholme find 2	find	Roman		356380	564650	279	Cumbria
Cambeck Water find 1	find	Roman		351100	563700	4254	Cumbria

Site Name	Type	Period	Date	X	Y	SMR number	County
Carnetley	camp	Roman	hadrianic	358000	561000	4257	Cumbria
Carvoran	fort	Roman	4	366550	565710	6051	Northumberland
Carvoran cemetery	cemetery	Roman		366790	565760	6080	Northumberland
Carvoran find 1	find	Roman		366720	565690	6066	Northumberland
Carvoran find 2	find	Roman		366680	565780	6067	Northumberland
Carvoran find 3	find	Roman		366000	565000	6075	Northumberland
Carvoran find 4	find	Roman		366550	565710	6081	Northumberland
Carvoran find 5	find	Roman		366600	565700	6085	Northumberland
Carvoran find 6	find	Roman		366600	565700	6091	Northumberland
Carvoran find 7	find	Roman		366480	564490	6125	Northumberland
Carvoran vicus	vicus	Roman		366400	565600	6079	Northumberland
Castle Hill	fort	Roman		354000	563000	0	Cumbria
Castlesteads	fort	Roman	4	351200	563500	297	Cumbria
Castlesteads bath house	site	Roman		351330	563700	16691	Cumbria
Castlesteads find 1	find	Roman		351000	563000	3020	Cumbria
Castlesteads find 2	find	Roman		351000	563000	3410	Cumbria
Cawfield Quarry find 1	find	Roman		371400	566600	6487	Northumberland
Cawfields	camp	Roman		371390	56930	6477	Northumberland
Cawfields find 2	find	Roman		372000	566900	6483	Northumberland
Chapel Rigg camp	camp	Roman		364590	565420	6027	Northumberland
Chesters Pike	camp	Roman		370700	567200	6503	Northumberland
Combcrag Wood	quarry	Roman		359080	565020	256	Cumbria
Craggle Hill	?	late/post-Roman	?	355920	564420	316	Cumbria
Crooks camp	camp	Roman		363610	565610	6028	Northumberland
Crookstown Camp	camp	Roman		357370	563750	10020	Cumbria
Dedication slab	find	Roman		364600	566100	6029	Northumberland
East Cawfields find 1	find	Roman		371860	567250	6485	Northumberland
Farmstead 1, Featherstone	farmstead	Roman		370120	562220	6696	Northumberland
Farmstead 2, Featherstone	farmstead	Roman		370650	563260	6775	Northumberland
Farmstead, Brampton	farmstead	Roman		350200	560300	3406	Cumbria
Farmstead, Coanwood	farmstead	Roman		367090	558410	5953	Northumberland
Farmstead, Crouch Hill	farmstead	Roman		350170	562190	5102	Cumbria
Farmstead, Greyhill, Bewcastle	farmstead	Roman, Prehistoric	early 4th c.	356870	576000	3972	Cumbria
Farmstead, Watch Hill	farmstead	Roman, Post-		359470	567530	5388	Cumbria

Site Name	Type	Period	Date	X	Y	SMR number	County
		Medieval					
Farmsteads, Hawkhirst	farmstead	Roman		351220	561200	305	Cumbria
Farmsteads, Old Brampton	farmstead	Roman, Early Medieval	3rd - 4th c.	351740	561320	244	Cumbria
Fell End camp	camp	Roman		368250	565430	6080	Northumberland
Four Laws cemetery	cemetery	Roman		370420	565950	6492	Northumberland
Gap centurial stone	find	Roman		363980	566270	6030	Northumberland
Gelt	quarry	Roman	3rd c.	352620	558730	570	Cumbria
Gillorlees Beacon	signal station	Roman		357960	571780	83	Cumbria
Gilsland find 1	find	Roman		362400	566830	18925	Cumbria
Gilsland Vicarage find 1	find	Roman	hadrianic	363210	566270	342	Cumbria
Gilsland Vicarage find 2	find	Roman	2nd c.	363200	566200	17971	Cumbria
Glenwhelt Leazes	camp	Roman		365600	565600	6052	Northumberland
Great Chesters	fort	Roman	4	370370	566800	6468	Northumberland
Great Chesters cemetery	cemetery	Roman		370190	566500	6494	Northumberland
Great Chesters vicus	vicus	Roman		370450	566710	6506	Northumberland
Great Easby, Brampton	camp	Roman		353968	562854	10001	Cumbria
Greenhead	find	Roman		366000	565400	6063	Northumberland
Greenhead find 1	find	Roman		367200	566200	6077	Northumberland
Greenrigs fort	fort	Roman		365300	561300	6126	Northumberland
Greenside Rigg	field system	uncertain		358000	560000	0	Cumbria
Greentarn Rigg Windfarm	quarry	uncertain		358000	560000	0	Cumbria
Haltwhistle barrow	burial	Roman		370590	565960	12289	Northumberland
Haltwhistle Burn 1	camp	Roman		371450	566290	6470	Northumberland
Haltwhistle Burn 2	camp	Roman	pre-Hadrianic	371440	566150	6472	Northumberland
Haltwhistle Burn 4	camp	Roman		371380	566450	6501	Northumberland
Haltwhistle Burn Head	watermill	Roman	late 3rd	371130	566540	6479	Northumberland
Haltwhistle Burn quarry	quarry	Roman		371390	566130	6481	Northumberland
Haltwhistle camp	camp	Roman		369950	565890	6078	Northumberland
Haltwhistle find 1	find	Roman		371530	566460	6486	Northumberland
Haltwhistle find 2	find	Roman		371401	566600	6488	Northumberland
Haltwhistle find 3	find	Roman		371402	566600	6489	Northumberland
Haltwhistle find 4	find	Roman		371790	566630	6500	Northumberland
Haltwhistle find 5	find	Roman		372430	566930	6519	Northumberland
Harrows Scar	find	Early	8th c.	361800	566400	331	Cumbria

Site Name	Type	Period	Date	X	Y	SMR number	County
		Medieval					
High Holm	find	Roman		351000	563800	273	Cumbria
High Nook Farm	burial	Roman		358720	564440	276	Cumbria
Holmhead Farmhouse	find	Roman		365950	566070	6060	Northumberland
Howgill, Burtholme	find	Roman	4th c.	353920	564270	270	Cumbria
Irthing Valley School	tile works	Roman	pre-Hadrianic	352430	561300	283	Cumbria
Lanercost find 1	find	Roman		355500	563700	4558	Cumbria
Lanercost find 3	find	Roman		355000	564000	19162	Cumbria
Lanercost Priory Green	burial	Roman		355600	563700	299	Cumbria
Lees Hall	camp	Roman		370460	565670	6475	Northumberland
Lodges Quarry	quarry	Roman	hadrianic	359000	563000	4255	Cumbria
Low Birkhurst Farm	find	Roman		357900	564000	272	Cumbria
Mains Rigg	signal station	Roman, Medieval	Hadrianic ?	361310	565180	334	Cumbria
Markham Cottage 1	camp	Roman		370850	566090	6471	Northumberland
Markham Cottage 2	camp	Roman		370890	566250	6473	Northumberland
Melkridge quarry	quarry	Roman		373380	567200	6539	Northumberland
Milecastle 41	milecastle	Roman		373020	567050	6461	Northumberland
Milecastle 42	milecastle	Roman		371570	566700	6464	Northumberland
Milecastle 43	milecastle	Roman		370350	566840	6467	Northumberland
Milecastle 44, Allolee	milecastle	Roman		368880	566950	6042	Northumberland
Milecastle 45, Walltown	milecastle	Roman		367710	566570	6045	Northumberland
Milecastle 46, Carvoran	milecastle	Roman		366460	566020	6048	Northumberland
Milecastle 47, Chapel House	milecastle	Roman		364900	566070	6024	Northumberland
Milecastle 48, Poltross Burn	milecastle	Roman	1st - 4th c.	363400	566190	324	Cumbria
Milecastle 49, Harrow's Scar	milecastle	Roman		362030	566410	329	Cumbria
Milecastle 50, High House	milecastle	Roman		360670	566010	337	Cumbria
Milecastle 50TW	milecastle	Roman		360720	565830	340	Cumbria
Milecastle 51, Wall Bowers	milecastle	Roman	4th c.	359300	565590	281	Cumbria
Milecastle 52, Bankshead	milecastle	Roman	4th c.	357940	564900	313	Cumbria
Milecastle 53, Banks Burn	milecastle	Roman		356480	564610	311	Cumbria
Milecastle 54, Randylands	milecastle	Roman	4th c.	355060	564460	308	Cumbria
Milecastle 55	milecastle	Roman	4th c.	353580	564380	293	Cumbria
Milecastle 56,	milecastle	Roman		352280	564350	291	Cumbria

Site Name	Type	Period	Date	X	Y	SMR number	County
Walton							
Milestone, Carvoran	find	Roman		366000	565000	6061	Northumberland
Milestone, Cawfields find 1	find	Roman	3rd	371770	566620	6482	Northumberland
Milestone, Cockmount Hill	find	Roman		369460	566870	6056	Northumberland
Milestone, Fell End	find	Roman	3rd	367500	565350	6057	Northumberland
Milestone, Lanercost find 2	find	Roman		355000	563000	4564	Cumbria
Money Holes	site	unknown		355000	564000	0	Cumbria
Moss Hill find 1	find	Roman	?	358000	560000	4258	Cumbria
Nether Denton	fort	Roman		359570	564600	314	Cumbria
Nether Denton find 1	find	Roman		359660	564440	271	Cumbria
Nether Denton find 2	find	Roman	?	359500	564600	4261	Cumbria
Nether Denton find 3	find	Roman	1-3rd c.	359600	564500	19217	Cumbria
Nether Denton find 4	find	Roman	1st c.	358340	564350	19496	Cumbria
Nether Denton find 5	find	Roman	1-3rd c.	359600	564600	19497	Cumbria
Nether Denton find 6	find	Roman	?	359470	564600	19677	Cumbria
Nether Denton find 7	find	Roman	trajanic	359570	564600	6171	Cumbria
Oak Stock Coattage find 1	find	Roman	?	357000	574100	95	Cumbria
OxA-2324	C14 date	Early Medieval		361300	566500	0	Cumbria
OxA-2325	C14 date	Prehistoric, Roman		361300	566500	0	Cumbria
Pigeon Clint	quarry	Roman	3rd c. +	353000	557840	571	Cumbria
Pike Hill, Banks Burn	signal station	Roman	late 4th c.	357660	564790	312	Cumbria
Poltross Burn Find	find	Roman	3rd c.	363400	566100	4153	Cumbria
Riggside	find	Roman	prob. late 1st/2nd c.	356980	564570	19221	Cumbria
Signal Station	signal station	Roman	2nd c.	361550	566120	335	Cumbria
St Cuthberts Church	church, temple, find	Roman, Early Medieval, Medieval		361560	565510	4561	Cumbria
Sunny Rigg 1	camp	Roman		369540	565640	6054	Northumberland
Sunny Rigg 2	camp	Roman		369870	565720	6055	Northumberland
Sunny Rigg 3	camp	Roman		370050	565890	6474	Northumberland
Thirlwall find 1	find	Roman		365750	565900	6090	Northumberland
Throp	forlet	Roman	4th c.	363130	565960	323	Cumbria
Townfoot Farm	site	Roman	?	352200	560900	243	Cumbria

Site Name	Type	Period	Date	X	Y	SMR number	County
Settlement							
Townfoot, Brampton	find	Roman		352000	561000	4909	Cumbria
Towsbank Farm	fort	Roman		368700	557200	5969	Northumberland
Turret 40B	turret	Roman		373520	567230	6460	Northumberland
Turret 41A	turret	Roman	early	372550	566880	6462	Northumberland
Turret 41B	turret	Roman		372050	566830	6463	Northumberland
Turret 42A	turret	Roman		371300	566600	6465	Northumberland
Turret 42B	turret	Roman		370830	566820	6466	Northumberland
Turret 43A, Cockmount Hill	turret	Roman		369860	566850	6040	Northumberland
Turret 43B	turret	Roman		369350	566850	6041	Northumberland
Turret 44A	turret	Roman		368420	566850	6043	Northumberland
Turret 44B	turret	Roman	4th c.	368140	566710	6044	Northumberland
Turret 45A	turret	Roman		367400	566350	6046	Northumberland
Turret 45B	turret	Roman		366950	566070	6047	Northumberland
Turret 46A	turret	Roman		365980	566050	6049	Northumberland
Turret 46B	turret	Roman		365450	566030	6050	Northumberland
Turret 47A	turret	Roman		364410	566160	6025	Northumberland
Turret 47B	turret	Roman		363920	566250	6026	Northumberland
Turret 48A	turret	Roman	1st-2nd c.	362960	566290	326	Cumbria
Turret 48B	turret	Roman		362510	566510	327	Cumbria
Turret 49A	turret	Roman		361540	566280	330	Cumbria
Turret 49B, Birdoswald	turret	Roman	4th c.	361130	566200	336	Cumbria
Turret 50A, High House	turret	Roman		360200	565870	338	Cumbria
Turret 50A, TW	turret	Roman		359730	565730	255	Cumbria
Turret 50B, Appletree	turret	Roman	4	359780	565590	281	Cumbria
Turret 51A, Piper Sike	turret	Roman		358870	565300	259	Cumbria
Turret 51B, Lea Hill	turret	Roman	4th c., post-396 hut	358360	565120	258	Cumbria
Turret 52A, Banks East	turret	Roman	post-3rd c. pent-house	357470	564720	4565	Cumbria
Turret 52B	turret	Roman		357000	564570	315	Cumbria
Turret 53A, Hare Hill	turret	Roman		356120	564600	310	Cumbria
Turret 53B	turret	Roman		355530	564540	309	Cumbria
Turret 54A, Garthside	turret	Roman	2nd c.	354570	564390	295	Cumbria
Turret 54B, Howgill	turret	Roman		354070	564390	294	Cumbria
Turret 55A, Dovecote	turret	Roman		353100	564360	292	Cumbria
Turret 55B, Townhead Croft	turret	Roman		352660	564330	300	Cumbria
Underheugh	field system	unknown	?	361800	566100	5796	Cumbria

Site Name	Type	Period	Date	X	Y	SMR number	County
Underheugh Farm	find	Roman		361830	566250	332	Cumbria
Upper Denton find 1	find	Roman		362730	566300	4555	Cumbria
Upper Denton find 2	find	Roman	235-238	362500	566500	5836	Cumbria
Upper Denton find 3	find	Roman	307-312?	363400	566040	18939	Cumbria
Wall Mill cemetery	cemetery	Roman		370200	566300	6507	Northumberland
Walltown Crags find 1	find	Roman		367100	566200	6059	Northumberland
Walltown Crags find 2	find	Roman		367300	566300	6064	Northumberland
Walltown Crags find 3	find	Roman		367250	566280	6064	Northumberland
Walltown Quarry find 1	find	Roman		366980	566080	6058	Northumberland
Walltown Quarry find 2	find	Roman		367500	566400	6065	Northumberland
Walton	camp	Roman	?	351960	564540	288	Cumbria
Walton find 1	find	Early Medieval	8th?	352180	564480	268	Cumbria
Waterhead Find 1	find	Roman	hadrianic?	361900	566400	4551	Cumbria
Waterhead find 10	find	Roman		361655	566375	5794	Cumbria
Waterhead find 11	find	Roman		361605	566370	5795	Cumbria
Waterhead find 12	find	Roman		361655	566377	5800	Cumbria
Waterhead find 13	find	Roman		361715	566380	5801	Cumbria
Waterhead find 14	find	Roman		361725	566380	5802	Cumbria
Waterhead find 15	find	Roman		361735	566380	5803	Cumbria
Waterhead find 16	find	Roman		361760	566385	5804	Cumbria
Waterhead find 17	find	Roman		361768	566388	5805	Cumbria
Waterhead find 18	find	Roman		361805	566393	5806	Cumbria
Waterhead find 19	find	Roman		361800	566300	5807	Cumbria
Waterhead find 2	find	Roman		361210	566210	4552	Cumbria
Waterhead find 20	find	Roman		361945	566405	5809	Cumbria
Waterhead find 21	find	Roman		361925	566405	5810	Cumbria
Waterhead find 22	find	Roman		361545	566395	5811	Cumbria
Waterhead find 23	find	Roman		361000	566000	5812	Cumbria
Waterhead find	find	Roman		361855	566395	5813	Cumbria

Site Name	Type	Period	Date	X	Y	SMR number	County
24							
Waterhead find 25	find	Roman	262-266	357940	564900	5814	Cumbria
Waterhead find 3	find	Roman		362610	566460	4553	Cumbria
Waterhead find 4	find	Roman	hadrianic	360770	566150	4554	Cumbria
Waterhead find 5	find	Roman		360390	565550	4556	Cumbria
Waterhead find 6	find	Roman		361700	566400	0	Cumbria
Waterhead find 7	find	Roman		362560	566490	5791	Cumbria
Waterhead find 8	find	Roman		362740	566410	5792	Cumbria
Waterhead find 9	find	Roman		362750	566400	5793	Cumbria
Whin Sill	site	Early Medieval		368220	566680	6070	Northumberland
White Flat Farmhouse	well	Roman		350000	563000	5055	Cumbria
William Howard School	structure	Roman	undated	352000	561000	0	Cumbria
Willowford Bridge	bridge	Roman	1st - 4th	362120	566440	328	Cumbria
Willowford find	find	Roman		362500	566490	4559	Cumbria
Willowford find 1	find	Roman		362250	566475	5787	Cumbria
Willowford find 2	find	Roman		362360	566500	5788	Cumbria
Willowford find 3	find	Roman		362340	566500	5789	Cumbria
Willowford find 4	find	Roman		362290	566490	5790	Cumbria

APPENDIX 3.2: BIRDOSWALD CS FARMSTEAD DATA

Site Name	Type	Date	X	Y	SMR #	County	Other
Bewcastle	fort	4	356550	574600	2813	Cumbria	crambeck ware
Birdoswald	fort	4, 5, 6?	361500	566300	343	Cumbria	
Brampton	farmstead		350200	560300	3406	Cumbria	
Carvoran	fort	4	366550	565710	6051	Northumberland	javelin head
Castlesteads	fort	4	351200	563500	297	Cumbria	4th c. coins, unstratified
Coanwood	farmstead		367090	558410	5953	Northumberland	AP of rampart and ditch
Crouch Hill	farmstead		350170	562190	5102	Cumbria	cropmark
Featherstone 1	farmstead		370120	562220	6696	Northumberland	
Featherstone 2	farmstead		370650	563260	6775	Northumberland	unenclosed
Great Chesters	fort	4	370370	566800	6468	Northumberland	chalet, lean-to buildings, 'late' masonry, coin of Constans
Hawkhirst	farmstead	4	351220	561200	305	Cumbria	4 farmsteads from cropmarks
Old Brampton	farmstead	4, 5?	351740	561320	244	Cumbria	2 farmsteads
Watch Hill	farmstead		359470	567530	5388	Cumbria	
Whin Sill	site		368220	566680	6070	Northumberland	remains of buildings or enclosures making use of wall stones

APPENDIX 3.3: BIRDOSWALD CS LATE ROMAN DATA

Site	Type	Date	X	Y	SMR#	County
Bewcastle	fort	4	356550	574600	2813	Cumbria
Birdoswald	fort	4, 5, 6?	361500	566300	343	Cumbria
Carvoran	fort	4	366550	565710	6051	Northumberland
Castlesteads	fort	4	351200	563500	297	Cumbria
Farmsteads, Hawkhirst	farmstead	4	351220	561200	305	Cumbria
Farmsteads, Old Brampton	farmstead	4, 5?	351740	561320	244	Cumbria
Great Chesters	fort	4	370370	566800	6468	Northumberland
Milecastle 48, Poltross Burn	milecastle	4	363400	566190	324	Cumbria
Milecastle 51, Wall Bowers	milecastle	4	359300	565590	281	Cumbria
Milecastle 52, Bankshead	milecastle	4	357940	564900	313	Cumbria
Milecastle 54, Randylands	milecastle	4	355060	564460	308	Cumbria
Milecastle 55	milecastle	4	353580	564380	293	Cumbria
Pike Hill, Banks Burn	signal station	4	357660	564790	312	Cumbria
Turret 44B	turret	4	368140	566710	6044	Northumberland
Turret 49B, Birdoswald	turret	4	361130	566200	336	Cumbria
Turret 50B, Appletree	turret	4	359780	565590	281	Cumbria
Turret 51B	turret	4	358360	565120	258	Cumbria
Turret 52A	turret	4?	357470	564720	4565	Cumbria

APPENDIX 3.4: BIRDOSWALD CS EARLY MEDIEVAL DATA

Site	Type	Date	X	Y	SMR number	County	Other
Bewcastle Churchyard	cross	late 7/early 8 c.	356530	574550	2812	Cumbria	standing monument
Birdoswald	fort	4, 5, 6?	361500	566300	343	Cumbria	
Harrows Scar	find	8 c.	361800	566400	331	Cumbria	brooch
St Cuthberts Church	church		361560	565510	4561	Cumbria	roman arch and stonework (reused?), placename
Turret 51B	turret	4, 5 c.	358360	565120	258	Cumbria	doorway blocked and hut built post-396
Walton find 1	find	8 c.	352180	564480	268	Cumbria	cross-head find
Whin Sill	site		368220	566680	6070	Northumberland	remains of buildings or enclosures using Wall stones

APPENDIX 3.5: BIRDOSWALD CASE STUDY TEXT

3.5.1: INTRODUCTION

Case Study 2 is centreed on the site of Birdoswald in modern Cumbria (Fig. 5.10). The majority of the case study falls within the modern county of Cumbria, but the eastern extent of the case study also includes areas of the county of Northumberland. The Birdoswald case study has a 10km radius, and the current landscape is almost entirely rural. The lack of extensive or intensive urban development has allowed for a greater survival a Roman material throughout the landscape, and the Wall in this sector is well studied archaeologically. While most of the excavations took place over fifty years ago, and the primary research emphasis was generally to establish a chronology for different types of construction of the frontier, a good synthesis of activity at these sites can be constructed.

The chapter begins with an overview of the case study area. This overview includes both archaeological and palynological information to establish an impression of the case study in brief. The remainder of the chapter is devoted to an examination of important sites in the case study. Following this, significant finds and patterns from the case study are considered and the implications that these have on the late Roman to Early Medieval transition are noted. The chapter concludes with suggestions for future research in the case study area.

3.5.2: CASE STUDY OVERVIEW

The Birdoswald case study is characterized by predominance of Hadrian's Wall and other Roman archaeological sites and findspots (T=235; Appendix 3.1). As Figure 7.1 demonstrates, the sites and findspots are found concentrated along the line of Hadrian's Wall. Much of the landscape in the case study can be considered upland, even though the Wall runs through the Tyne Gap. There were very few native farmsteads in the case study area, probably due to the upland nature of the countryside (Fig. 7.2). Where these occurred, they were situated in more lowland positions. It is very notable that the only cluster of farmsteads occurs at the western extremity of the case study, an area that can be considered the eastern edge of the Solway plain. There is a high number of archaeologically confirmed locations of milecastles and turrets. This too is probably due to the upland character of the case study. Stone was readily available and post-Roman settlement was sparse, so the Wall and its structures were not entirely robbed of stone.

All the farmsteads occur in close proximity to a stream or river, and all forts are situated on a road. The Stanegate is the primary east–west road that runs through the case study, but the Military Way also ran immediately to the south of the Wall. The primary north–south road was the Maiden Way, which ran north through the Pennines to the fort at Carvoran, followed the course of the Wall or the Stanegate, and then ran northwest from Birdoswald to Bewcastle.

The palynological evidence for the Birdoswald region is provided by three pollen sites: Midgeholme Moss, Fellend Moss, and Walton Moss (located in Figs. 5.6–5.9). All three sites present regional pictures of the vegetation history that can be used for the case study area as a whole rather than providing specific information only for local sites. Unfortunately, there are no pollen sites that present a localized picture for the relevant period of this case study in the Birdoswald sector.

Midgeholme Moss lies within a kilometer from Birdoswald. The cores were taken from a mire basin north placed below the cliffs immediately north of the fort. Two studies have examined cores from the site: Innes (1988) and Lewis (1993). Both studies record the change from an open postglacial landscape to one of mixed deciduous woodland, in which herbaceous, peat-forming communities were established by the late Iron Age. During the Roman period, the landscape was predominantly cleared, but it was hardly treeless, as arboreal pollen accounts for approximately 30% of the pollen (Wiltshire 1997:37). The maximum clearance, however, was achieved during the Roman period. The area remained largely cleared, as there was no increase in woodland indicator taxa, though there was a spread of *Salix* (willow) across the site (not the region) during the period between AD 440–780, determined by a calibrated radiocarbon date (Wiltshire 1997:35).

At Fellend Moss, east of Birdoswald by only a few kilometers, Davies and Turner (1979) argue for continued and maintained levels of clearance up to *c.* AD 620, justified through numerous uncalibrated radiocarbon dates. Maximum forest clearance was achieved under the Romans. Anthropogenic indicators for the 4th–7th centuries included some evidence of cereal cultivation, but most agricultural indicators suggest pastoral activity. After *c.* AD 620, there was an increase in woodland coverage.

Clearance activity leveled out at Walton Moss by the 4th century and those levels of clearance were maintained, until a further increase in clearance occurred in "monastic times" (Dumayne and Barber 1994). More importantly, studies at Walton Moss have revealed wet shifts extrapolated from calibrated radiocarbon dating and sediment accumulation rates. These wet shifts occurred at *c.* AD 200, AD 490, and AD 650 (Hughes et al. 2000).

The overall pattern emerging from the regional pollen studies suggests roughly continued levels of clearance from the Roman period until at least the early 7th century, if not later. The only evidence for cereal cultivation comes from Fellend Moss, but we must remember Huntley's (2000:68) warning that "cereal pollen is notorious at being underrepresented at traditional pollen sites" such as those studied in northern Britain. So the pollen sites cannot answer questions about local practises effectively, but the demonstration that there is not rapid forest regeneration at a regional scale in the sub-Roman period is at least suggestive of maintained levels of agricultural practise.

3.5.3: SITE OVERVIEW

The following section provides an overview of the relevant sites in the case study area. Relevant in this case means that only sites with evidence for activity from the 4th to 7th centuries were examined in detail and included in the following discussion (Fig. 7.3). The sites have been separated into a number of general categories for discussion in the following order: forts, milecastles and turrets, other sites, and "native" farmsteads. The majority of information comes from military structures. Forts are presented in

no particular geographical order. The fort at Birdoswald is discussed first as it has the most evidence relating to the period of the study.

Forts

BANNA, *Birdoswald*

There have been numerous archaeological investigations at Birdoswald for more than a century with late Roman evidence important to an understanding of the fort as a whole for this study (Wilmott 1997:3–14; see Figure 7.4). Birley (1961:198) reports 19th century finds from Birdoswald and Turret 49b dating to the 4th century, which included crossbow brooches. Most of the other evidence, however, is structural and stratigraphic. The most recent excavations were undertaken by Wilmott (1997), and he has attempted to correlate past excavations with his own.

Built on a high spur contained by steeply sloping ground to the north and a broad meander of the River Irthing to the south, the Roman fort of Birdoswald was strategically placed on a local high point with a commanding view of the area. The occupation of the fort first occurred in the early 2nd century with the establishment of forts along the line of Hadrian's Wall. This first fort was of turf and timber construction and was built behind the turf wall and replaced Milecastle 49TW. This first fort may have been briefly occupied before a stone fort was built over the original, projecting in front of the turf wall like many of the other original Hadrianic stone forts. Yet later in the Hadrianic period, when the turf wall was replaced with stone, the fort ceased to project in front of the wall as the line of the stone Wall moved slightly north. The entire sequence seems to have taken place within 18 years, between AD 122–140. From that point, the position of the fort in relation to the Wall remained fixed, but over the following decades and centuries of Roman occupation, the internal arrangement of the fort changed to meet the needs of the time (Wilmott 1997:401–409). The periods of occupation relevant to this thesis begin with the early 4th century and are discussed in detail below. Not only do these archaeological levels demonstrate continuity of occupation from the 4th century into the 5th, but also indicate the changing use of space in the fort, and also the changing role of the fort's occupants in the surrounding landscape.

Given the number of excavations that have taken place at Birdoswald, the easiest way to discuss the great quantity of structural evidence available is to separate it into two broad categories: the gates and curtain defences, and the internal features separated by site period. Following a discussion of the structural remains, the artefactual, faunal, and palaeobotantical evidence is reviewed. Wilmott's (1997) periodisation and phasing conventions have been followed (Table 7.1) whenever possible.

THE GATES AND CURTAIN DEFENCES

The minor east and west gates, the *portae quitana*, were blocked in "Theodosian" times. The south gate, the *porta decumana*, had a more complicated history. The east portal was blocked at some earlier phase of the fort's occupation. The west portal was blocked in "Theodosian" times, and the area around the gate was used differently. This is evidenced by the oven found in the west guardroom and the kiln in the rampart bank west of the gate (Birley 1961:199). The 13th edition of the *Handbook to the Roman Wall* (Daniels 1978:201) also notes that the east guardroom contained two late Roman ovens, when the west guardroom was in ruins. The east wall of the west guardroom was reconstructed in large, irregular masonry following the complete demolition of the wall and this was attributed to a late Roman date; the kiln west of this was given a post-Roman date. Birley (1961:202) notes four ovens east of the south gate, though he does not mention any ovens specifically in the east guardroom. The relationship between the ovens and the dating is unaccounted for, but the oven in the west guardroom must date from the later 4th century since the construction of the wall there would otherwise have disturbed the oven.

The east wall of the fort is also reported to have been reconstructed in the 4th century (Daniels 1978:201). There is an ambiguous "late pent-house" noted against the front of the southeast angle-tower, where there is deep stratigraphy, and the east gate was narrowed in the 3rd century with the blockage of the north portal and perhaps completely blocked later, as dated by an inscribed stone (Birley 1961:202). Wilmott (1997:188–189), however, suggests that the "late pent-house" structure is contemporary with the use of the SE angle tower, and the cobbled surface around the pent-house was associated with Antonine pottery.

Wilmott (1997:191–193) has attempted to integrate the findings of the earlier excavations with his own periodisation of the site. The *portae principalis dextra* and *sinistra* (east and west gates, respectively) each had one portal blocked in the early 3rd century. The *porta decumana* (south gate) also had one portal blocked, probably contemporary with the *portae principales*. The industrial work evident in the two *portae principales* is dated to the 3rd century, with tentative rebuilding of the *porta principalis dextra* and *porta decumana* occurring in the early 4th century. At some point in the 4th century, the remaining portal of the *porta decumana* was blocked up and the ditch was recut in front of it. It is important to note that Wilmott does not mention the blocking up of the remaining portal of the *porta principalis dextra*, though there is a note that the arch may have collapsed, which would have probably blocked the gate. Further evidence is found for the provision of ovens in the angle and interval towers and gate towers, though

dating these is not always possible. Only the northwest angle tower can be dated, and that is from an episode of walling up the doorway in the mid 3rd century.

Another change in the fort, tentatively dated to the late or sub-Roman periods relates to the curtain defences. At some point, the curtain defences in the east wall collapsed and were replaced, at some places with narrower construction (Simpson and Richmond 1933:261; Wilmott 1997:194). This is evidenced by the discovery of a large section of the original curtain wall laying intact on the ground, surmounted by a narrower curtain wall. A final phase of reconstruction consisted of an earthen rampart revetted by a narrow wall on the outer side, found in the southeast and southwest corners of the fort. The earthen rampart was constructed over the collapse of the previous walls. Therefore, in its final phase, portions of (if not the entirety of) the defences of the fort curtain were comprised of an earthen bank revetted by a narrow wall, which is assumed to be from the sub-Roman period. Unfortunately, there is no dating evidence available to corroborate the changes to the curtain with internal changes, discussed below.

PERIOD 4b, PHASE 8

Period 4b was a refurbishment and reconstruction phase dated to *c.* AD 290 to AD 350, following a possible phase of desertion at the end of Period 4a. There was an overall reduction of barrack size with the construction of an officer's house replacing a barrack block in the eastern *praetentura* (Fig. 7.5, Level III; Richmond and Birley 1930; Wilmott 1997:13). There were traces of barrack refurbishment south of the *via quintana*, and the remains of a wall south of the *principia* from the early 4th century were recorded (Richmond 1931). Unfortunately, little detail was provided in reference to the fragment of wall south of the *principia* or the barrack refurbishment. The *porta principalis sinistra* south portal was blocked and divided into three discrete areas, two of which were industrial in function, as hammer-scale was present. Road surfaces were laid, dated by a sealed coin of AD 321–322, and Building 4401 was rebuilt. Previously, this building was a *fabrica*, or workshop, but its latest function was unknown. It is also likely that the main administrative buildings were reconstructed or refurbished, as suggested by inscriptional evidence.

In the western *praetentura*, the basilica (Building 807) seems to have continued in use. Post-Medieval truncation due to the construction of the farmhouse affected the interpretation of the structures north of the basilica. One of these structures seems to have been an apsidal-ended building, but there was no clear evidence as to its function or when it ceased to be used. There were also traces of chalet-style barracks, though again no end date could be associated with the structures (Fig. 7.6; Wilmott 1999:154).

Those changes noted, the defences were maintained, the ditch was recut, and the basilica and *horrea* were maintained and used. In other words, the fort continued on much as before in terms of space and construction techniques – though perhaps with a smaller garrison, as much of the rest of the site continued in use, was maintained and kept clean (Wilmott 1997:201–202).

PERIOD 5

In Period 5, the mid to late 4th century, significant changes in the use of the fort are evident. Buildings 197 and 198 (the two *horrea* west of the *principia*, with 198 being the more northern one situated on the *via principalis*, see Figures 7.6 and 7.7) underwent many changes. In preparation for perhaps some change in use, Building 197 had its sub-floor backfilled and a new stone floor was laid. Ceramics and coins in the backfill were clearly part of a sealed deposit from a single dumping event that dates the backfill, mostly through numismatic evidence. This included 23 coins, five of which were from before AD 235, and the rest from between AD 270–348. There were no later coins, nor were there any *Fel Temp Reparatio* issues. Thus, 197 was re-floored *c.* AD 350 (Wilmott 1997:203; 2000:13).

At approximately the same time as the reflooring of 197, there were two phases of roof collapse in 198, which sealed a coin of AD 350–353. Following the collapse of the roof, the building was robbed out. Wilmott (1997:219) believes that the stone from the *horreum* was likely used in the level IV structure in the southeast *praetentura* (northwest of the *porta principalis dextra*) that was excavated in 1929 by Simpson and Richmond (see below). The subfloor of 198 was used for refuse, with piecemeal backfilling and silting. In this backfill, 12 coins were found, including four *Fel Temp Reparatio* issues (AD 348–364) and four Valentinianic issues (AD 364–375). These coins are described as complementary to those of 197, beginning about the same time as the issues from 197's subfloor ends, thus illustrating the continuity of the deposition from one *horrea* to another (Wilmott 2000:13). A second phase of roof collapse was stratigraphically identified by Wilmott (1997:205–206). The second phase of roof collapse was at the western end of the *horreum*, perhaps due to an internal wall that stopped the original collapse from taking the entire roof. It was this second phase of collapse where an unrobbed section of floor was found which sealed the coin of AD 350–353, providing a TPQ for the second phase of collapse.

The excavations of Simpson and Richmond in the 1920s and 1930s revealed what they identified as a barrack structure and identified a level IV, or "Theodosian" restoration of semi-timber construction in the eastern *praetentura* (Richmond and Birley 1930; Birley 1961:201). The floor of this structure was dated on the basis of a coin of Valentinian (AD 364–375) sealed beneath the floor, and Kent (1951:9) dated the latest coin from above the floor to after AD 389.

There were also remains of two structures on the *via quintana* (Richmond 1931:125, 128). A trench cut across the road 56 feet west of the outer face of the east wall of the stone fort revealed two walls of the "Theodosian" period sitting on a flagged surface laid north of an early 4th century wall, presumably of a barrack building. This flagged surface stretched across the *via quintana* and north of it. The late 4th century walls were situated in the southern extent of the flagging.

Further west, at the intersection of the *via quintana* and *via decumana* another late 4th century structure was encountered. The southeast corner of the building sat on the northeast corner of a probable barrack immediately south of the *via quintana* and west of the *via decumana* that was last refurbished in the early 4th century. From its southeast corner, the west wall of the structure extended approximately 50 feet north-northeast across the former *via quintana* and the area formerly occupied by a building south of the *principia*. A wall ran east-southeast from both the northwestern and southeastern corners of the building for approximately 10 feet. This structure was situated at the junction of the *via decumana* with the *via quintana*, though the latter road may not have been in use from the 3rd century on (Richmond 128). The walls were built on flagged footings and the inside had "a heavy flagged floor" with Huntcliff type wares associated with it (Richmond 1930:125).

It is unknown how long 197 was maintained and the floor kept clean, but eventually dark lenses of material accumulated. Building 197 had evidence of backfilling of the subfloor and multiple refloorings. Within this sequence, two successive arrangements of stone were interpreted as hearths at the western end of the building. Around the hearths were "elite" artefacts, including a glass finger ring of 4th century date, a gold and glass earring also of 4th century date, and a worn Theodosian coin (AD 388–395). Evidence for the roof collapsing sealed the Theodosian coin, providing a TPQ of at least AD 388. It is likely that 197 and the Level IV buildings in the east *praetentura* and on the *via quintana* were contemporary in their latest phases of usage.

PERIOD 6

The 5th century, and possibly later activity is indicated in Period 6. The period is characterized by significant changes in the function and organization of built space and separated into two phases. In Period 6, Site Phase 11 (hereafter shortened to 6a), Building 199 is constructed over the remains of Building 198, directly on the footings and used as a foundation, as well as stretching west onto the *via sagularis* (Fig. 7.7). It was a major timber building consisting of 19 postholes and stone flooring (Wilmott 1997:212). The floor of 199 was laid over the roof collapse of 198, further sealing dumps from the ruinous phase of the *horreum*. The TPQ for the construction of 199 is provided by the latest coins from the dumps in 198, dating to AD 367–378 (Wilmott 1997:217). Finds from inside 199 included a Valentinianic coin and a Fowler type D7 penannular brooch, a type which Snape (1992) has argued may actually date to the sub-Roman period based on stratigraphic evidence and its associations with late Roman coinage at sites along Hadrian's Wall. Building 199 was also associated with a post-built lean-to structure (Wilmott 2000:14). Building 4426 was constructed, situated against the west wall of the fort from the southern tower of the *porta principalis sinistra* to just south of the tower. Its east and south walls were indicated by the position of four postholes.

Period 6, Site Phase 12 (hereafter shortened to 6b) saw the replacement of Building 199 with another timber-built structure. Building 200 was a timber post building striding the area formerly occupied by 198 and the *via principalis* (Fig. 7.7). It seems to have been built in relation to the entryway of the *porta principalis sinistra.* It was evidenced by two rows of post-pads creating 5 pairs and partially metalled flooring (Wilmott 1997:214). The eastern, southern, and western walls also contained evidence for slots with some suggestion of attempted leveling of these slots. The use of post-pads and slots suggests not simply a timber structure, but perhaps timber framing. Two further structures were associated with Building 200. Buildings 4298 and 4299 were built along the west wall and gate. Building 4298 is approximately 14+ by 7.3m, while 4299 measures 11.13 by 5.10m. A surface contemporary with 4298 (the more northerly building) was found to the north outside of the structure. The surface inside the building does not suggest its use as living accommodation, and their relation to Building 200 and the curtain wall suggests to Wilmott that they functioned as service structures (Wilmott 1997:216, 221). Six residual coins were found in surfaces associated with 6b. Four of these coins date from between AD 330–348. The earliest coin was from AD 235–238, and the latest dated to AD 364–378. A gold earring fragment was also dated to this phase.

During this same period, the *porta principalis sinistra* also underwent changes (Fig. 7.8). There were two phases of paired timber postholes. Wilmott (1997:216) is quick to point out, however, that these phases are only notionally contemporary with 5th century (or later) construction due to the use of timber but could still be part of the later 4th century changes. There is no direct evidence, stratigraphic or otherwise, for its association with Period 6 beyond the use of timber posts. Therefore, it could be from Period 5. What is clear from the stratigraphy, however, is that it is not related to the Medieval settlement of Period 7 as there is a clear stratigraphic separation from that of Period 7.

FINDS

In terms of the artefacts, the early 4th century is marked by a variety of pottery industries, though East Yorkshire wares dominated. Yorkshire calcite-gritted wares were the most important with mortaria predominated by Mancetter-Harshill manufacture and a few vessels from the Lower Nene Valley. The later 4th century ceramic supplies were almost exclusively of Huntcliff types (61%) and Crambeck (21%) manufacture, demonstrating the dominance of East Yorkshire products (Wilmott 2000:13). The other artefacts varied from the mundane (e.g. spindle whorls) to some high status goods (e.g. gold earring; see Table 7.2). It is worth noting the presence of two of Fowler's type D7 brooches that Snape (1992) has suggested may be a sub-Roman brooch type in the north based on stratigraphic relationship to dated deposits and association with late Roman coinage. Unfortunately, there is not another database of sufficient quality on the Wall or at another military site with which to compare the assemblage. So the finds assemblage cannot be described as typical or atypical because there is no other published assemblage for comparison. The finds from Period 6 are considerably fewer in number (Table 7.3), and there is a general suggestion of a decreased range of available pottery.

There are two Anglian artefacts associated with the site. A 6th century small-long brooch probably came from Birdoswald (Wilmott 1997:28; L. Allason-Jones, pers. comm.), and an 8th century disc headed pin of gilded bronze was found in the vicinity of the fort (Wilmott 1997:414). Neither artefact, however, was found stratified or associated with any structural activity.

Birdoswald fits King's (1984) model of a Roman military diet predominated by cattle (Izard 1997:363–370). Faunal remains in later periods are not as numerous as remains from earlier periods, but a few conclusions can be reached. For example, the latest ditch layers differ from the filling of the sub-floors of Buildings 197 and 198, indicating perhaps a passage of time. This would make the ditch layers from the late Roman period, possibly sub-Roman, but no confirmed post-Roman refuse deposits were found (Stallibrass 2000:77). The later remains from the buildings demonstrate 14% had butchery marks, and there was a lower ratio of caprine metapodials to humeri and tibiae. This may indicate the removal of bones in the skinning process. However, there was no discernible pattern of selective disposal of specific parts, though there seemed to be few larger cattle bones, which may have been disposed of elsewhere.

The relative proportion of bones of identified age has led to the interpretation that mature/older cattle were brought to the site and slaughtered. There is also evidence that the cattle were a local breed due to the high incidence of a reduced talonid on the third molar at a 25% frequency, compared to the normal 10–20% frequency of most Roman assemblages (Izard 1997:369). This suggests either a restricted or a local supply of the fort, with the military possibly lacking the authority to choose mature animals carrying the optimum quantity of meat. It could also be the case that the contribution of prime cattle to local dairy production was more important to the military than the consumption of cattle at the optimum age for butchering. Furthermore, the low proportion of pigs and chicken, considered high-status food in Italy, may reflect their consumption by higher-status individuals at the fort, the officers, who would have been fewer in number relative to enlisted soldiers (Izard 1997:369).

The plant macrofossil evidence comes primarily from the sub-floor fillings of buildings 197 and 198. The deposits from 197 seem to be more secure and indicative of the plant diet and use of the *horreum* in Period 5 (Huntley 1997:142–144). Most of the charred seeds were from cereal and associated weeds. Wheat was the most frequently recovered cereal from the site as a whole, making up 34.4% of cereal grains. Identifiable bread wheat only consisted of 3.9% while hexaploid wheat consisted of 27.4% and a further 68.7% was unidentifiable. The source of this wheat is unknown, however. It seems rather unlikely that it was grown in the immediate area given the altitude and high rainfall of the area. It is also possible that it is being brought in from a supply fort, such as South Shields.

After wheat, barley was the next most common cereal at 29.1%. Barley would be more suitable for local growth given the climatic conditions it favors. The presence of large amounts of barley chaff reinforces a notion of local production, though it could simply mean it was being processed in the fort rather than grown locally. This last point is significant, though. If the barley is being processed at the fort, then it means the army must use its own labour to process the crop rather than demand it in a processed form. One might argue from this that the military could not or did not exercise authority on its suppliers. However, it should also be considered that barley might be used in different forms, such as food for draft animals, in which case a processed crop would not be desired.

The only other seeds worth noting are the grassland species, which may indicate the cutting of hay for animals at the fort. As the evidence comes from a late Roman context, the amounts indicated by the samples could potentially reflect changing amounts or arrangements for the provisioning of the fort. Unfortunately, there are no samples from earlier periods in the fort to compare with.

DISCUSSION

The overall interpretation offered by Wilmott (1997:218–224) runs as follows (see also Figs. 7.9–7.10 and 7.7). Approximately around AD 350, there is a reduction in the storage needs of the fort, perhaps due to a reduction in garrison size. It is during this period that there is the new construction of barrack north of the *via praetoria*, a large building is constructed at the junction of the *via quintana* and *via*

decumana, and Building 197, formerly a *horreum*, is possibly used for social and/or religious gatherings, as suggested by the "high status" finds. At approximately the same time as this changed use of 197, the roof of Building 198 collapsed and its subfloor was filled piecemeal. The evidence from 197 may be suggestive of a "proto-hall". Wilmott believes Period 5, in which building 197 was utilized for social/religious purposes, likely lasted until after AD 410. The immediate post-Roman phase (Period 6, Site Phase 11, called 6a above) saw a shift in the use and construction of space as evidenced by Buildings 199 and 4426. Building 199 may have used stone foundations, but the superstructure was timber-built. It also was related to a post-built structure and encroached on the *via sagularis*. This suggests that the strategic significance of maintaining a clear intervallum road is not enforced, and as such can be seen as a "relaxed" commander at best, if not an authority that is not even military. The sub-Roman phase (Period 6, Site Phase 12, noted above as 6b) was an episode of rebuilding. There was a continued influence of Roman building techniques seen in the dwarf walls and timber framing, yet a loss of traditional Roman military influence in the alignment and use of space. Building 200 was constructed in relation to the gate, serving as a visual central focus as one entered the fort, and presumably acted as a social central focus if the structure is interpreted as a Dark Age hall. The realignment of space to focus on Buildings 199 and 200 assumes the *porta principalis sinistra* was the primary gate into the fort, though this cannot be proven.

Dating the timber structures is problematic. The first timber structure post-dates AD 367–378, which is the date of the latest coin from sealed deposits in Building 198. However, the southern *horreum*, 197, was used continuously from *c.* AD 350 to at least AD 388–395, the date of the latest coin found in 197. If Building 199 is seen as a replacement for 197, then it was not constructed until AD 388–395 at the earliest (Wilmott 2000:14). It should be noted that the Theodosian coin that dates the collapse of 197 was worn, and such coins are often thought to have been used in the sub-Roman period. So it is quite possible that 197 did not collapse until sometime in the first half of the 5th century, when Building 199 was constructed as a replacement. Wilmott (2000:14) provides two chronologies for the use-life of the timber buildings to the end of use of 200, fully acknowledging the limitations of "this sort of dead reckoning". Allowing for a 25 year phase per timber building, a terminal date of *c.* AD 445 is calculated. Allowing a century per building sets a terminal date of *c.* AD 620. Wilmott prefers an average of 50 years per timber phase, allowing for a terminal date around AD 520. At this point it is impossible to date the duration for any of the buildings, but a longer use-life is physically feasible for the building itself, though the politics of the time will have more influence on the life of the building than its sturdiness of construction necessarily will. Wilmott's overall interpretation of the sequence of buildings seems quite likely and easily fits into a number of late and sub-Roman scenarios.

An alternative interpretation for Birdoswald has been offered by Dark (2000:198–199). Based on the disparity of finds between Periods 5 and 6 and a reconsideration of building construction, Dark has suggested different groups of people occupied the site. This is reinforced by the different building traditions seen over the *horrea* between the two periods. The redefence of the site, however, depends on the existence of an organising authority capable of commanding the resources for such reoccupation, tying back into Dark's (1992) hypothesis of a sub-Roman form of the *dux Britanniarum* command. While Dark's interpretation of the Birdoswald sequence is plausible, the change in building location, styles, and functions seems to fit into a gradual development scheme and the changes are overemphasized by Dark. For example, as noted above, there is still a Roman influence on construction techniques. There is also no conclusive evidence relating the curtain defences to the internal features. The stone revetted earthen rampart that is found as the final phase of curtain "refurbishment" is assumed rather than proven to be sub-Roman. The evidence supports a transition and transformation model rather than an abandonment/reoccupation model, not to mention Wilmott's (2000:14) underscoring of the point that there is no evidence for a phase of abandonment, as was noted in earlier periods of the fort's occupation.

Birdoswald has a unique archaeological sequence demonstrating occupational continuity from the late Roman period into the 5th, and perhaps the 6th century. The nature of this occupation seems to have changed during the 4th century, though. Comparison of later levels of the fort with earlier levels suggest significant changes in the internal planning and use of space. During the late Roman period, the faunal and botanical evidence suggests reliance upon local provision. One interpretation of these two forms of evidence could see a lack of control on their provisions by the military, in terms of getting the optimum quantity and quality product that would also require minimal labour on the part of the garrison. However, I would argue that the butchering of mature and older cattle and possible processing of barley on site is indicative of the garrison maintaining their own best interests, perhaps by acknowledging the provisioning limitations of the local landscape. In the case of the cattle, this could be for more dairy production, as the milk produced by a cow over the course of a year will stretch further than its flesh will, particularly if used for cheese. As noted with barley, a processed form may actually limit the available uses of the plant and therefore the garrison would require unprocessed barley.

The storage needs of the occupants seemed to change in the late Roman period, likely in conjunction with a reduction of the garrison, as suggested by chalet barracks. The *horrea* west of the *principia* no longer were used in a storage capacity. Rather, they were replaced serially by structures (Buildings 197, 199, and 200) that seemed to provide a social function, as indicated by the artefacts found

and the hearths. Unfortunately, none of the other buildings of the central range have been excavated to any extent. Excavation of the *praetorium*, in particular, would provide an interesting comparison to the interpretation of the *horrea* sequence as a sub-Roman hall.

AESICA, *Great Chesters*

Great Chesters is the eastern-most fort considered in this case study. In contrast to Birdoswald, the long axis of this fort ran parallel to the Wall. There have been no recent excavations, so information must be surmised from older sources and interpretations. Despite the lack of recent excavations, however, it is the most understood fort in the case study area after Birdoswald. Nearly all the information comes from excavations conducted in 1894, 1895, and 1897 (Gibson 1903). A plan is provided in Figure 7.11.

Lean-to buildings were set against the inner face of the west rampart north of the west gate at a "late date" (Gibson 1903:33; Daniels 1978:179). The northwest angle tower had been rebuilt at some point after AD 342, as there was a coin of Constans from the Trier mint (AD 342–348) found in the mortar of the tower (Daniels 1978:181). The southwest interior of the fort saw a change in barrack style from contubernia to chalet (Daniels 1978:182; Gibson 1903:22; Haverfield 1894:196). Allason-Jones (1996) also notes the possibility of 4th century brooches, but two of these have could have been produced at any time from the 2nd to the 4th centuries.

These few facts are the most reliable conclusions that can be drawn for 4th century data, but there may be more that can be inferred from Gibson (1903). Like Birdoswald, there is evidence for the blocking up of the *porta decumana*, or the west gate at Great Chesters. The later stonework is of a rougher quality and not as precisely laid with additional strengthening of the inner side of the northern portal at a later date, with "rubble work of different character from any found during the excavations" (Gibson 1903:31). More lean-to buildings were found against the west rampart south of the west gate (Gibson 1903:22) and along the south wall, east of the southwest angle tower (Haverfield 1894:196). These latter lean-tos were made of the "rudest masonry" and a roughly flagged floor. Unfortunately, there were found in association with three coins of Trajan and Faustina, four bronze fragments and some iron fragments on the floor flags, indicating the structures probably belonging to the initial construction of the fort in the 2nd century. Personal ornaments were found in "other buildings" around the *porta decumana*, suggesting a use as dwellings (Gibson 1903:34). These artefacts are not described and not dated, but the comment of "other buildings" suggests something not recognisable in function without the artefacts, and thus, not a known Roman military building type in 1903. Gibson may be referring to chalet barracks, however, which were not widely recognized or identified at the time of his writing.

Additional buildings constructed of "poor masonry" made up of re-used materials were identified by Gibson (1903:37) as being from the later part of the Roman occupation in the northwest section of the fort. There is also a building of "very late work" which was evidenced by "hypocausts" constructed from different shaped stones, probably robbed from other hypocaust systems in and around the fort. Rather than a hypocaust system, it is possible that the evidence indicates a simple raised floor instead. Whatever the case, the *pilae* rested on a beaten clay floor and supported a course of flagstones which was coated with *opus signinum* (Gibson 1903:52). Could this be a reconstruction of centurion's quarter in the mid to late 4th century? Yet another late Roman structure, evidenced by the "miscellaneous character of the materials used in its construction" was found "abutting against the south-west corner of the *praetorium*" (Gibson 1903:56).

All together, the evidence suggests a restoration or reordering of the internal buildings of the fort in the late Roman period. As at Birdoswald, the gate is blocked and reused in another capacity. A change to chalet style barracks would indicate a smaller garrison, and the buildings of less uniform construction are found in numerous places in the western half of the fort. A 4th century reordering of the fort, perhaps because of the different needs of a smaller garrison or a different type of unit, can be inferred. What we lack at Great Chesters are the benefits of a modern excavation that would provide more detailed accounts of stratigraphy and finds. Still, the amount of late Roman activity at the site is encouraging, given the limitations of the information available.

Other Forts

There are two additional forts with evidence for 4th century activity: Carvoran and Bewcastle. Neither of these forts has the quantity of detail available to say much about later 4th century occupation, but they will be reviewed in brief. Carvoran, a Stanegate fort, has been the target of very little excavation. The only later Roman period activity is found in artefacts from a well in the fort, where antlers, and an iron javelin head used by "German tribes" were found (Daniels 1978:189). Recently, excavations have examined the preservation of the defences and discovered that the site was heavily robbed of stone in the post-Medieval period (Burnham 2003:311). The defences were robbed of nearly all their stones, leaving no more than two courses. The only remains of the south gate were the rubble core of its wall. The interior was not examined, and very little evidence for activity post-dating the construction of the defences was found. Excavations in 1973 revealed secondary blocking of the west portal of the north gate, but no date was associated with this (Breeze 2006:281).

Situated on a small hill north of Hadrian's Wall on the Maiden Way, direct from Birdoswald, Bewcastle was an advance fort of the linear frontier. Fourth century remains at this fort are different in nature than those along the Wall. The numismatic evidence indicates changes may have begun in the late 3rd/early 4th century (Austen 1991:48). The fourth period of the fort's history sees a reduction in size and function, probably in the early 4th century (Austen 1991:50). Some of the curtain defences on the southwest side of the fort were moved to a place formerly inside the fort, and structural changes were found inside the fort. The bathhouse was converted into a barrack, and the *principia* was replaced with a different building. Most of the later pottery found outside the fort was unstratified, suggesting the area was used as a dumping ground, and the later deposits inside the fort have fewer, if any, later finds. The total lack of later 4th century artefacts, however, means that it does not require much further consideration at present. An additional note to consider, though, is the occurrence of an Anglo-Saxon cross-shaft, dated by art historians to the late 7th/early 8th century. Though there is no intervening evidence for occupation known at present, Bewcastle was still a military installation in the early 4th century and an endowed religious site of the late 7th or early 8th century. Thus, the nature of the occupation at the site between the 4th and 7th centuries seems to have changed drastically.

The fort at Castlesteads was probably occupied until the end of the Roman period, but nothing is known of its internal plan and only the run of the southern half of the defences has been established (Bidwell 1999:162). Unfortunately, the site was landscaped as a park in the 19th century and this activity may have destroyed much of the late Roman evidence.

Milecastles and Turrets

The evidence for late Roman occupation at milecastles and turrets is varied and reliant almost entirely upon excavations from the first half of the 20th century. The degree of detail reported on the excavation can at times be exceptional, though usually the earliest phases of occupation are accounted for with such scrutiny. At milecastles, the latest phases are often not reported in detail.

At sites such as Milecastle 48 (Poltross Burn) and Milecastle 55, the evidence for later 4th century activity is vague. At Poltross Burn, for example, the excavators concluded from numismatic evidence that the site was abandoned by the AD 330s, though some of the Level III pottery may be a Huntcliff type ware from Yorkshire (Gibson and Simpson 1911). The pottery is not identified as such, but the fabric description is reminiscent of Yorkshire calcite-gritted ware. If this is the case, then occupation lasted many decades beyond the authors' final date. Judging from later writings by Simpson in regards to comments on Poltross Burn, this was the case, though it is not always clear what date the internal structures and gate changes are assigned to. At Milecastle 55 the 4th century evidence takes the form of pottery, though the exact ware is unspecified (Daniels 1978:226).

Simpson (1913:317,322) relates most of the stratigraphic sequences from Milecastle 50 (High House) as being similar to Milecastle 48 (Poltross Burn). Unfortunately, the latest levels reinterpreted as later Roman occupation at Milecastle 48 were missing at Milecastle 50. Later pottery fabrics, such as Huntcliff type or Crambeck wares were not found, but Simpson attributes this to the removal of the later levels in more recent times.

Yet another vague description of late 4th century activity is found at Milecastle 51 (Wall Bowers). According to Daniels (1978:217), the south gate was reconstructed in the 4th century. The source of this claim, however, lies in the excavations of Simpson and Richmond (1935:255), who claim that the southern gate of the milecastle was refurbished with the removal of previous levels and replacement with a road of "Theodosian" date. Two milecastle excavations have, however, provided slightly more detailed evidence for 4th century activity.

Milecastle 52, Bankshead

At the time of its excavation, Milecastle 52 was the largest known milecastle on Hadrian's Wall (Simpson and Richmond 1935:248; Simpson and Richmond 1936a). The suggested reason for its greater size was the need for a larger garrison to man the Pike Hill signal station which lies nearby. A post-medieval farmhouse occupies most of the internal space of the milecastle today, the construction of which probably destroyed the archaeological layers in the area. Therefore, little evidence remained of internal structures. The two gates, however, provided some evidence for the later Roman period. The passage of the north gate was reduced to allow only pedestrian activity during Period II. In Period IV, considered the Theodosian restoration, the gate was blocked up completely. The construction was described as "rough wall lavishly mortared" (Simpson and Richmond 1935, 252). The south gate also saw some 4th century activity. A large wooden threshold installed in the late 3rd/early 4th century was removed, and a Theodosian road was constructed through the gate, over the place the threshold used to occupy (Simpson and Richmond 1935:255). This example was less striking than that seen at Milecastle 51, apparently.

Milecastle 54, Randylands

Simpson and Richmond (1935:238) had little to say about the site other than the fact that 4th century artefacts were recovered from a structure evidenced by a flagged floor. Allason-Jones *et al.* (1984)

examined the artefacts from the 1933 and 1934 excavations, all of which were from the occupational phases of the stone milecastle. Three spearheads were found in a very corroded condition and are likely to be from the 4th century. The pottery consisted of four groups, A through D. Some of this pottery, from the later 4th century, was associated with the stone-flagged floor of the internal building. The bulk of the pottery from groups B, C, and D dates from the mid to late 4th century. The ceramics themselves indicate squalid or intensive occupation at this time. The "finer" calcite-gritted wares and Huntcliff type wares suggest occupation spanning the middle years of the 4th century and extending towards the end of the Roman period (Allason-Jones *et al.* 1984:235).

Turrets

Evidence from turrets in the Late Antique period tends to be exceptional, given the demonstration on the part of Allason-Jones (1988) that finds support the notion of a late 2nd century abandonment of turrets. Surprisingly, a number of turrets have provided some evidence for Late Antique activity, though it tends to be scant in quantity and quality.

At Turret 44b (Mucklebank), three stratified levels of the 2nd century, an unstratified coin of Valens (AD 364–378), and a centurial stone were found in the turret, though no other 4th century evidence is available (Daniels 1978:185). All the other finds suggest 1st and 2nd century use (Allason-Jones 1988:210). .

All evidence from Turret 49b comes from ceramic finds. Unfortunately, the walls of the turret were removed to ground level, and the subsequent landscaping seems to have destroyed later archaeological levels. However, outside of the turret some worn sherds of calcite-gritted ware from the later half of the 4th century were found (Simpson 1913:306).

It was argued by the excavator (Simpson 1913:351) that there probably was firm evidence for 4th century use at Turret 50b (Appletree). The construction of a road, however, removed the highest archaeological levels where this evidence where this would have been contained, though a single piece of calcite-gritted ware was found from an unstratified context (Simpson 1913:356).

At some point after the late 3rd century, the Turret 52a was used for a pent-house (Daniels 1978:221). No more information is given, but clearly the function of the turret has changed. Whether this structure was used by the military or by civilians cannot be said at the moment. It is unlikely that civilians would be allowed to use the shell of a turret in such a fashion during the Roman period, though perhaps it could have been used by a member of the military community. Therefore, the pent-house may have been used in the late Roman period, but a post-Roman use should also be considered.

Activity during the second half of the 4th century at Pike Hill signal tower is dated from two sherds of Huntcliff type ware (Daniels 1978:221). While not strictly classified as a turret, it is included here as the signal tower was probably manned and treated in a similar fashion by the local garrison as a turret. The ceramic evidence suggests that signaling systems were perhaps still employed along the Wall in the later 4th century.

TURRET 51b

This site is interesting, especially given the contrast with the original function of the turret. Daniels (1978:219) note that a "rough hut" was constructed in the ruins of the turret after AD 396, though no indication is given for the reason of such a specific date and there is no evidence of a coin find. The *JRS* (1959:187) reports that this hut structure was represented by "footings of a rough wall" and a "roughly flagged floor". The structure was dated by a pot (Gillam type 164) found in association with this floor, which is dated to the period of AD 380–400.

The most detailed account of this hut is from Woodfield (1965). The doorway of the turret was blocked and the centre internal area was scooped out and occupied. The footings for a wall were set in a pale sand, which he interpreted as likely to be disintegrated mortar. The dimensions of this hut were 6'6" by 16'6". Internal to the hut, the floor surface was laid with large flags and in part with clay (Woodfield 1965:175). The finds, he argues, indicate domestic occupation, not military. The most important finds to note are the ceramics. These included a narrow mouthed jar in light orange fabric with a quartz grit from the 4th century, a cooking pot in a heavy black sandy fabric, and a small rim sherd of a beaker in Black-burnished fabric, as well as a half-dozen sherds of undatable cooking pots (Woodfield 1965:178). All of the identified ceramics would be common during later Roman military occupation. The other finds associated with the hut floor were an ornamental brass fitting (actually dating to the late 2nd century, cf. Allason-Jones 1988:213–215), 2 nails, and stone lid or pot cover (Woodfield 1965:181). Outside the hut in the ruin were additional artefacts: a bone weaving plaque, a portion of an iron blade, 10 nails, an iron scabbard chape, and a sliver of bone (Woodfield 1965:181–182).

The critical issue with this turret is that the finds suggest a domestic hut built in the remains of a military turret, yet the pottery seems to be from the later 4th century. In other words, a simple contrast between domestic (therefore civilian) occupation and military occupation (which would find a refurbished turret preferential to a hut) suggests the hut was built after the collapse of a unified military command along the frontier. The presumptive and simplistic notions of civilian and military aside, at the very least

the function of the turret has changed from its original inception as a symbol of fortification. The question is who used the hut in the turret ruins? Was it a member of the military community or someone independent of the units on the Wall? That said, the late dates provided by the pottery and the domestic range of artefacts could very well support post-Roman occupation, making the question of the user's relationship to the military pointless.

Other Sites

The sites that follow have been put in the category of "other sites". As has been stated before, the relationship between the military and the civilian populations is complex. However, the sites below have been included as the original intent to build such structures was probably for the benefit of the military, as well as having controlled access by the military. This may not have been the case in later times, but this has been the reasoning for the inclusion of the sites in this category.

East of Great Chesters fort at Haltwhistle Burn Head, many pieces of large millstones were found. However, they were too heavy for hand milling and would have necessitated a power mill to grind. Eight hand mills were also found. The excavators dated the water mill's construction to after AD 250 from *mortaria* found, but they argued that the "good quality of the masonry indicates" a date not later than the end of the 3rd century (Anon. 1910:167). It is included here as a possible site for the production of flour for Great Chesters, perhaps into the 4th century, even though there is no direct evidence for use in that period.

There is no direct evidence from the Roman bridge built at Willowford over the Irthing River that the structure was used in the 4th century. There was a sequence of three bridges built during the course of the Roman period, with the final structure, Bridge 3, constructed in the early 3rd century (Bidwell and Holbrook 1989:91). This bridge was built with an elabourate superstructure that was designed to carry the military way across the river. There is no evidence for how long the bridge was maintained. The Stanegate and Military Way, however, were maintained and used until at least the early 4th century. The sites of Birdoswald and Milecastle 48 (Poltross Burn) were occupied in the later 4th century, and from this it can be argued that the bridge was probably maintained to sustain communications between the two sites, and to the east in general (Bidwell and Holbrook 1989:95). By the Medieval period, however, the main crossing of the Irthing was at Lanercost Priory.

"Native" Farmsteads

There are very few farmsteads in the case study area, and only two sites have been excavated and can be reviewed in any detail. However, both the farmsteads at Hawkhirst and Old Brampton are exceptional not only for their 4th century material, but also the quantity of material found.

Hawkhirst

Aerial photography has revealed cropmarks for four distinct enclosures at Hawkhirst. There are 2 distinct rectangular enclosures that overlap slightly and therefore are of different dates. East of this, the western half of a 3rd rectangular farmstead is visible. The eastern half of this enclosure, and a 4th enclosure lying to the east were discovered by archaeological means. The westernmost enclosure is the largest and probably the earliest one (SMR 305 Cumbria).

The 3rd enclosure was investigated by Simpson and Richmond (1936b). The siting of the farmstead is described as typical, on a conspicuous open slope where crops are well drained and open to the sunlight. The farmstead, all four of them actually, lie on a broad ridge south of Old Church. Previous investigations (Haverfield 1899) produced Huntcliff type ware, dating the site to the late 4th century and located a steep ditch *c.* 3m wide by 1.3m deep. This was also the investigation that found the fourth farmstead, enclosed in a similar fashion with an entrance at the southeast corner. These two farmsteads were cleared of stones in the early nineteenth century, at which time they had "defensive ramparts" of cobbles laid on a flagstone foundation. A 3rd century coin hoard was also found at this time (Haverfield 1899:359; SMR 305 Cumbria). Bronze artefacts have been found at the east end of the ridge, including a lamp, a statuette (possibly of Mercury), an ornament inscribed with IOVIS, and a late 4th century crossbow brooch, as well as pottery and querns (Haverfield 1899:359; Simpson and Richmond 1936b:181). Simpson and Richmond's excavation found structural evidence in the form of ashlar, flagging and paving stones, and a series of small brick arches, interpreted as evidence for the presence of a hypocaust. There was also a drain made of tiles that led down to a brook south of the ridge.

The significance of these farmsteads is the presence of late 4th century artefacts. The likelihood of a hypocaust system further suggests a wealthy, perhaps "romanized" farmstead. Might this be the home of a local Roman government official or someone with a good relationship with the local garrisons, like a trader or merchant?

Old Brampton

Another intriguing site is that at Old Brampton. There are actually two sites at Old Brampton that are "native" farmsteads, but only the westerly one has been excavated. Blake's (1960:4) excavation

revealed a farmstead surrounded by a sub-rectangular ditch *c.* 2.7m wide with a shallow curve to 1.2m depth. A 1.5m berm separated the ditch from a shallow trench that provided evidence for a palisade. There was a clear imprint of the palisade, and the depth of the trench suggests that a stable palisade could not be more than 1.5m in height. The entrance to the farmstead was reached by walking over planks of wood supported by the natural clay that was not dug out from the ditch. This was determined by the marks of the planks that were still visible in the clay. Interestingly, the entry through the enclosure seems to be to the northwest of the structure. Typically, entrances are to the south or east (Higham 1980).

The main structure was nearly square with walls *c.* 24m in length (see Figs. 7.12 and 7.13). These walls were untrimmed cobbles packed with smaller stones, and probably weather-proofed with turf. The decayed turf created a distinct colouration to the soil, allowing for the recognition of the lines of walls where the stones had been plowed away. These stone walls would have been 0.6m tall at most and probably supported a timber superstructure. Evidence for the remains of the roof came in the form of carbonized remains of branches and twigs (Blake 1960:5). The interior is described as nine roughly equal chambers each *c.* 3.2m square within the square shape of the structure. The central square was perhaps a central courtyard. The three chambers against the north wall were paved with small cobbles "trodden rather than set" and most of the pottery was found here (Blake 1960:5). In an adjacent chamber, 4 blocks of trimmed stone from the nearby fort were found with two quern fragments incorporated into a paved floor. It was interpreted that the northern rooms were used for human occupation, assuming that the structure housed both humans and animals. There are assumed outhouses associated with the main structure, as determined from fragments of walls and floors. There was also a stone hearth and "crude" native pottery associated with these outhouses (Blake 1960:5). The stone drain and its branches were added in some later phase of occupation as they intrude. The drain itself was well built, but does not seem to have been adequately leveled in the excavator's opinion. While there is no evidence that the drains are not contemporary with the occupation of the site, it is possible that some of the drains were added at some period subsequently as a precursor to the modern drains found in the field.

The Roman pottery was dated to the late 3rd and early 4th centuries, coming from the North, the Dales, and Derbyshire, as well as three samian sherds. The above-mentioned "native" pottery does not seem to resemble any Roman forms, but was of a coarse fabric. A flint lathe chisel and small iron knife were found in the outhouses, as well as fragments of a spindle whorl (Blake 1960:6).

Considered in reference to the plan, the structure has a rectilinear shape, with a possibility for three "external" walls. The fourth "external" wall, however, only seems to be marked by a few stones or postholes (they are not clearly differentiated in the original plan), and is indicated only by the thin, dashed line retained from the original plan. Presumably, the line of this fourth wall was determined by colourisation of the soil from decomposed turf. There do seem to be "internal" walls, though. The paved area perhaps indicates an entrance or path into the structure. I would also suggest that internal rooms may actually be cellular structures incorporated into the main enclosure wall, so that the overall appearance is more consistent with a stone-built "native" settlement found in some of the Cumbrian and Northumbrian uplands. It is also worth noting that there may be more outbuildings or enclosures associated with the structure, but the limited area of excavation obscures a full understanding of this site. An examination of the aerial photograph indicates there are two rectangular structures inside the western enclosure. The westernmost structure was excavated, so we cannot determine the relationship it has to the second rectangular structure. A linear feature seems to connect the two structures. Also, we must not preclude the possibility of faint traces of phasing on the site that the excavator did not recognize.

The varieties of Roman pottery at the site suggest that the occupants used their surplus in ways different than the average farmer (Jobey 1960; Higham 1980). First, there seems to be a broad range (relative to a "native" farmstead) of pottery on the site from various manufacturers. Secondly, the inhabitants had access to the goods carried in those pots or the ceramics themselves. This begs the question about our traditional understanding of native farmsteads and the paucity of Roman material generally found.

3.5.4: CONCLUSION

The Late Roman to Early Medieval Transition

There is generally very good evidence for activity in the Roman period across the case study. However, compared to the total distribution of Roman and Early Medieval sites and findspots in the case study, the 4th to 7th/8th centuries is less represented (see Figs. 7.1, 7.3, and 7.14; 4th/5th century sites T=18, 5th–7th/8th century sites T=7). The only site that is found in both Figs. 7.3 and 7.14 is Birdoswald, though the Early Medieval sites and findspots are still near the Wall or a Roman site, as at Bewcastle. Birdoswald may be a focus of Early Medieval activity in the case study. An 8th century brooch was found less than a kilometer east of the fort at Harrow's Scar, and an 8th century pin and a 6th century small-long brooch were found in the vicinity of the fort. Other than the occupation of Birdoswald in the 5th century and possibly later, the most significant Early Medieval activity are two religious sites associated with the Northumbrian church: the Bewcastle Cross, and St. Cuthbert's Church. However, there is very little evidence for widespread Early Medieval activity in the case study.

The late Roman evidence is found not only at forts in the case study, but also at milecastles and turrets and two farmsteads. This suggests that forts were occupied until at least the end of the Roman period, and that milecastles and turrets still had a role to play in the later 4th century. What this role is cannot be stated with any confidence at this time. The relationship between the different garrisons and milecastles is unknown, but there are clusters visible in Fig. 7.3. These clusters may be related more to the survival of late Roman evidence than indicative of a real pattern. If the pattern is an accurate reflection of past reality, however, it is worth noting that most of the military structures with 4th century occupational evidence are in the proximity of Birdoswald rather than another fort. Turrets 51b and 52a are exceptions to the inclusion of military structures, as by the 4th century they seem to have been used for domestic or pastoral purposes rather than for something purely "military". The continued occupation of Milecastle 52 may have been important for the continued functioning of the signal station at Pike Hill, perhaps integrated with an entire system of signaling.

Farmsteads, where observed, occur in river valleys but are otherwise generally absent from the study area. It may be that further examples are hidden beneath modern farms, which favor the same good ground as that available in Antiquity. Yet their paucity must also be seen in relation to military provisioning. The 4th century faunal and palaeobotanical evidence from Birdoswald suggests local supply mechanisms and land near the Wall may have been retained for this by inclusion in the fort's *territorium*. If so, any grazing here of the garrison's livestock or working by the fort's non-military personnel would necessariliy have restricted "normal" farmstead development.

The watermill, and probably the aqueduct near Great Chesters are also both assumed to have remained working until the end of the 4th century. It is reasonable to infer that they would be kept in working order to support the garrison at the fort. The aqueduct would have been most useful for the continued use of the extra-mural bathhouse at Great Chesters, though numismatic evidence may indicate that it was destroyed in the late 3rd century (Gibson 1903:51). Willowford Bridge is also likely to have been in a useable condition past the end of the 4th century, particularly given the evidence for late occupation at Birdoswald and late 4th century occupation at Milecastle 48 (Poltross Burn) and the likely need for communication between these sites.

Birdoswald provides the clearest evidence for post-Roman excavation, but this is due to the excavation of sizable areas of the fort using modern excavation techniques. It is tempting to argue that had Great Chesters and the milecastles been excavated using modern methods, more evidence would be available for the final phases of occupation of the sites, which may have extended into the sub-Roman period.

The pollen evidence in the case study indicates that the clearance levels of the area remained basically the same through the 4th and 5th centuries, though it is possible that land use regimes changed. In the late 4th century, paleobotanical evidence suggests there may have been local growth and provisioning of barley to Birdoswald, and cattle provisioning also seems to be from a local source. It is also likely that the garrison at Birdoswald was responsible for manning any turrets and milecastles in the area. The development of an Early Medieval hall at Birdoswald is significant and intriguing. The hall structure does not fit with traditional interpretations of the Roman military, and its construction has important implications not only on issues of storage at the fort, but changing social relationships. The changing nature of military sites can also be seen in the use of Turret 52a as a pent-house and 51b for a domestic hut.

Future Research Aims in the Case Study Area

Given the limitations of the current evidence available to us, much can be done to remedy an understanding of the area in the late Roman to Early Medieval transition. The pollen cores suggest little change in clearance levels at a regional scale, but pollen studies examining local pollen changes would be beneficial along some of the sites with evidence for 4th century activity and near farmsteads. In terms of artefactual evidence, there are no large assemblages in the case study that warrant special attention. However, ceramic evidence from the latest strata at Birdoswald might yield more information on late Roman and sub-Roman ceramic sources, particularly if compared to assemblages from other forts on the Wall.

Of course, excavation of additional sites in the study area, using modern techniques would be beneficial. The farmsteads at Old Brampton and Hawkhirst would be likely yield valuable information upon further excavation, and more farmsteads need to be excavated in conjunction with numerous forms of scientific dating. All the forts in the case study should also be revisited. Geophysical surveys have been conducted at Castlesteads, Birdoswald, and Carvoran, but such surveys are limited in what they can reveal about 4th century garrisons. A firmer chronology is needed at Great Chesters, and this could be achieved by reassessing archives and supplemented with focused excavation. Any information from the internal areas of Carvoran and Castlesteads would be welcome. Even Birdoswald, with its modern excavations, would benefit from further investigation. The *praetorium* is a significant area of the fort that needs to be investigated, particularly as the hall structures over the *horrea* are indicative of social relationships different to those of a late Roman military garrison.

The case study has been beneficial in demonstrating that evidence for late Roman to Early Medieval occupation is not as scanty as might be believed. Birdoswald has been excavated carefully enough to provide sufficient detail to examine the transition in a continuous manner, but a number of other sites demonstrate activity in the 4th century along the Wall. This suggests that milecastles and turrets were still useful to the military, and the occupation of the farmsteads at Old Brampton and Hawkhirst demonstrate the presence of settlements outside of the military communities. More can be done in future research to contribute to this body of evidence. Comparison of this case study with others conducted will bear more fruit, particularly once they are integrated in the broader context of the transformation of the late Roman and Early Medieval north.

Appendix 4:
Carlisle Case Study

The following sections reproduce data from databases constructed in Microsoft Access for the Newcastle Case Study.

APPENDIX 4.1: CARLISLE CS TOTAL DATA

Site Name	Type	Period	Date	X	Y	SMR #	County
Aglionby find 1	find	roman		343800	556400	12983	Cumbria
Aglionby find 2	find	roman		344000	556000	40369	Cumbria
Aglionby find 3	find	roman		344000	556000	13983	Cumbria
Amberfield find 1	find	early medieval	likely 8-13th c.	332800	558900	19533	Cumbria
Bassenbeck Bridge find 1	find	roman		339850	544380	704	Cumbria
Beatarn find 1	find	roman		346600	561000	235	Cumbria
Beaumont	settlement	roman, prehistoric		333300	560400	0	Cumbria
Beaumont camp	camp	roman		334000	559000	425	Cumbria
Beaumont cemetery	cemetery	roman	mid 2nd c.	335190	556420	435	Cumbria
Beaumont find 1	find	roman		335500	560000	203	Cumbria
Beaumont find 2	find	roman		334500	561800	205	Cumbria
Beaumont find 3	find	roman	AD 253-60	334700	559300	455	Cumbria
Beaumont find 4	find	roman		334800	559240	457	Cumbria
Beaumont find 5	find	roman		337000	557000	458	Cumbria
Beaumont find 6	find	roman		335320	557330	561	Cumbria
Beaumont find 7	find	roman		335280	556600	17698	Cumbria
Beech Grove	settlement	roman, prehistoric	Iron Age, Hadrianic	340290	557900	40442	Cumbria
Blackhall Wood	enclosure	roman, prehistoric		339100	551300	0	Cumbria
Boomby Land	camp	roman		336800	557400	16573	Cumbria
Boomby Lane camp	camp	roman		336800	557300	441	Cumbria
Boustead Hill	fort	roman		329200	558950	16524	Cumbria
Bowstead Hill	enclosure	roman, prehistoric		330200	558100	3386	Cumbria
Brealees find 1	find	roman		335240	558810	477	Cumbria
Burgh by Sands bath house	bath house	roman		332910	559070	414	Cumbria
Burgh by Sands church	church	roman, medieval		332860	559100	3769	Cumbria
Burgh by Sands find 1	find	early medieval, medieval		334000	555850	423	Cumbria
Burgh by Sands find 10	find	roman		332000	559000	19320	Cumbria
Burgh by Sands find 11	find	roman		332000	559000	19321	Cumbria
Burgh by Sands find 12	find	roman		333000	559000	19428	Cumbria
Burgh by Sands find 2	find	roman, prehistoric		332000	559000	429	Cumbria
Burgh by Sands find 3	find	roman,		332000	559000	4627	Cumbria

Site Name	Type	Period	Date	X	Y	SMR #	County
		prehistoric					
Burgh by Sands find 4	find	roman, prehistoric		332000	559000	6283	Cumbria
Burgh by Sands find 5	find	roman	1-2nd c.	332920	559170	13660	Cumbria
Burgh by Sands find 6	find	roman		332730	559130	15198	Cumbria
Burgh by Sands find 7	find	roman		332860	559090	17964	Cumbria
Burgh by Sands find 8	find	roman		332000	558000	19317	Cumbria
Burgh by Sands find 9	find	roman		332000	559000	19319	Cumbria
Burgh by Sands fort 1	fort	roman	early 2nd c.	332350	558250	4395	Cumbria
Burgh by Sands fort 2, Aballava	fort	roman	mid 2 - mid/late 4th c.	332800	559100	415	Cumbria
Burgh by Sands fort 3	fort	roman	early 2nd c.	331700	558800	6486	Cumbria
Burgh by Sands forthified house	structure	early medieval, medieval	12th c.	333090	559090	412	Cumbria
Burgh by Sands settlement	settlement	roman, prehistoric	1st-4th c.	332720	559340	0	Cumbria
Burgh by Sands vicus	vicus	roman	3rd c. and later?	333000	559000	428	Cumbria
Burgh by Sands vicus 2	vicus	roman	2-? c.	332780	558950	415	Cumbria
Burgh Marsh find 1	find	roman		332800	561000	19683	Cumbria
Caldewbank find 1	find	roman		339230	553170	17968	Cumbria
Cardewless find 1	find	roman		334450	551630	481	Cumbria
Carleton	camp	roman		343400	552800	3814	Cumbria
Carlisle enclosure	enclosure	roman, prehistoric		342820	555160	18979	Cumbria
Carlisle find 1	find	roman	31 BC	340300	557200	15500	Cumbria
Carlisle find 10	find	roman	AD 72-73	339000	557400	18946	Cumbria
Carlisle find 11	find	roman, prehistoric		342100	555490	18980	Cumbria
Carlisle find 12	find	roman	AD 64-67, 141+	340300	556700	19164	Cumbria
Carlisle find 13	find	roman		341700	556600	19218	Cumbria
Carlisle find 14	find	roman		344400	550700	19476	Cumbria
Carlisle find 15	find	roman	2nd c. +	340800	556700	19498	Cumbria
Carlisle find 16	find	roman	AD 64-67	340200	556700	19512	Cumbria
Carlisle find 17	find	roman	AD 141+	340100	556530	19513	Cumbria
Carlisle find 18	find	roman	3rd c. +	339845	556660	19523	Cumbria
Carlisle find 2	find	roman		339730	556680	17951	Cumbria
Carlisle find 20	find	roman		340700	556900	19655	Cumbria
Carlisle find 21	find	roman		339000	557000	19669	Cumbria
Carlisle find 22	find	roman, medieval		339860	555960	19678	Cumbria
Carlisle find 3	find	roman	1-3rd c.	341000	557000	17952	Cumbria
Carlisle find 4	find	roman	1-2nd c.	339900	556890	17953	Cumbria
Carlisle find 5	find	roman	2nd c.	340100	556500	17960	Cumbria
Carlisle find 6	find	roman	AD 324	340000	556430	18934	Cumbria
Carlisle find 7	find	roman	AD 94	339960	555700	18938	Cumbria
Carlisle find 8	find	roman	87 BC, AD 96-98	340130	556657	18944	Cumbria
Carlisle find 9	find	roman	AD 96-98, 69-96	340500	556800	18945	Cumbria
Carlisle fort	fort	roman, e med	4-5th c.	339850	556170	0	

Site Name	Type	Period	Date	X	Y	SMR #	County
Carlisle RAF find 1	find	roman	AD 98-117	338450	560500	18935	Cumbria
Carlisle town	town	roman		340000	556000	0	Cumbria
Carlisle, Annetwell St. find 1	find	roman		339730	556070	15485	Cumbria
Carlisle, Annetwell St. find 2	find	roman		339730	556070	17949	Cumbria
Carlisle, Annetwell St. find 3	find	roman	mid 2nd c. +	338700	556070	18924	Cumbria
Carlisle, Bank St. find 1	find	roman, medieval	mostly 2nd c.	340185	555865	19692	Cumbria
Carlisle, Botchergate find 1	find	roman		340360	555540	19222	Cumbria
Carlisle, Castle St. find 1	find	roman		340000	555960	17956	Cumbria
Carlisle, English St. find 2	find	roman	AD 130-180	340120	555820	19223	Cumbria
Carlisle, English St. find 3	find	roman		340010	555929	19693	Cumbria
Carlisle, Fisher St. find 1	find	roman		340000	556060	19167	Cumbria
Carlisle, Fisher St. find 2	find	roman	early 2nd c	340030	556000	19665	Cumbria
Carlisle, Greystone Rd. find 1	find	roman	AD 364-375	341310	555630	18932	Cumbria
Carlisle, London Rd. find 1	find	roman	AD 211-217	341750	554170	18931	Cumbria
Carlisle, Scotch St. find 1	find	roman		340110	556030	17955	Cumbria
Carlisle, St. Cuthbert's Lane find 1	find	roman		340000	555850	17967	Cumbria
Carlisle, St. Nicholas St. cemetery	burial	roman	3-4th c.	340680	555040	40361	Cumbria
Carlisle, St. Nicholas St. farmstead	settlement	roman	2-3rd c.	340680	555040	40361	Cumbria
Carlisle, St. Nicholas St. find 1	find	roman	2nd c.	340700	555150	17957	Cumbria
Causeway House	settlement	roman, prehistoric		345800	548300	0	Cumbria
Cocklakes	settlement	roman, prehistoric		345426	551029	19777	Cumbria
Copt Hill	settlement	roman, prehistoric		333500	558600	2968	Cumbria
Crosby	enclosure	roman?, early medieval		346500	559100	6022	Cumbria
Crosby Lodge	fortlet	roman	Hadrianic	345160	559620	507	Cumbria
Crosby-on-Eden find 1	find	roman		345000	559000	19220	Cumbria
Crouch Hill	settlement	roman, prehistoric		350170	562190	5102	Cumbria
Cumberland Infirmary	settlement	roman, prehistoric	1-2/3rd c.	333900	555600	0	Cumbria
Cummersdale	enclosure	roman, prehistoric		339000	553000	0	Cumbria
Cummersdale find 1	find	roman	Republic	339000	553000	19160	Cumbria
Cummersdale find 2	find	roman	81 BC	339000	553000	19510	Cumbria
Cumrenton find 1	find	roman		348130	561710	231	Cumbria
Cumrenton find 2	find	roman		348130	561710	232	Cumbria
Cunningarth	camp	roman		335600	547700	688	Cumbria
Dalston	fort	roman	early 2nd c.	338900	553000	0	Cumbria
Dalston find group	find	roman, prehistoric		338650	552310	409	Cumbria
Dalston, Caldew Road	settlement	roman	late 4th c.	338910	553000	0	Cumbria
Drawdykes Castle	find	roman, med		341900	558550	3807	Cumbria

Site Name	Type	Period	Date	X	Y	SMR #	County
Drawdykes find 1	find	roman	AD 112-114	342150	558500	19517	Cumbria
Dykesfield find 1	find	roman		330700	559100	453	Cumbria
Dykesfield find 2	find	roman		330000	559000	19202	Cumbria
Flat	enclosure	roman, prehistoric		331300	555000	0	Cumbria
Foldsteads	settlement	roman, prehistoric		330500	555200	0	Cumbria
Great Orton enclosure	enclosure	roman, prehistoric		334500	554800	406	Cumbria
Greathill Beck	settlement	roman, prehistoric		334500	556100	0	Cumbria
Greymoor Hill	find	early medieval		339500	559800	465	Cumbria
Grinsdale	camp	roman		337500	558500	399	Cumbria
Grinsdale Church	church	early medieval		337240	558040	3774	Cumbria
Hallstones Bridge find 1	find	roman		333200	559000	459	Cumbria
Harraby find 1	find	roman	AD 138-161	342200	554200	18940	Cumbria
High Crosby	fort	roman	late 1-early 2nd c.	345510	559830	2907	Cumbria
Highfield Moor	enclosure	roman		346050	561290	209	Cumbria
Hurtleton find 1	find	roman		349040	561890	229	Cumbria
Irthington find 1	find	roman, early medieval, medieval		344740	563120	19724	Cumbria
Irthington milestone	find	roman		348000	561700	230	Cumbria
Irthington quarry	quarry	roman		346550	561170	219	Cumbria
Irthington Settlement	settlement	roman		348800	563200	226	Cumbria
Jacob's Gill	enclosure	roman, prehistoric		331600	547900	0	Cumbria
Kiln Garth find 1	find	roman		332720	559120	454	Cumbria
Kirkandrews	turret	roman		334400	558400	15237	Cumbria
Kirkbampton	settlement	roman, prehistoric		330900	556400	0	Cumbria
Kirkbampton II	settlement	roman, prehistoric		330400	555800	0	Cumbria
Kirksteads find 1	find	roman	early 4th c. +	334900	556500	456	Cumbria
Kirksteads find 2	find	roman		335200	556400	19650	Cumbria
Kirskstead find 2	find	early medieval	8-12th c.	335000	556000	466	Cumbria
Knells	settlement	roman, prehistoric		341100	561400	0	Cumbria
Linstock Castle	find	roman, medieval		342870	558490	3809	Cumbria
Long Sowerby find 1	find	roman	AD 112-114	336500	552100	450	Cumbria
Longburgh	find	roman		332800	559200	560	Cumbria
Longsowerby find 1	find	roman	AD 321	339000	554700	18941	Cumbria
Longton find 1	find	roman		336400	566000	19795	Cumbria
Longtown find 1	find	roman	4th c.	337000	568000	19099	Cumbria
Mealhouse Beck	enclosure	roman, prehistoric		332100	551400	0	Cumbria
Milecastle 57, Cambeck Hill	milecastle	roman		350800	563700	290	Cumbria

Site Name	Type	Period	Date	X	Y	SMR #	County
Milecastle 58, Newtown	milecastle	roman		349790	562580	222	Cumbria
Milecastle 59, Old Wall	milecastle	roman		348540	561750	221	Cumbria
Milecastle 60, High Stand	milecastle	roman		347190	561400	220	Cumbria
Milecastle 61, Wallhead	milecastle	roman		345600	560870	218	Cumbria
Milecastle 62, Walby East	milecastle	roman		344310	560500	215	Cumbria
Milecastle 63, Walby West	milecastle	roman		343150	559740	492	Cumbria
Milecastle 64, Drawdikes	milecastle	roman		341850	558800	491	Cumbria
Milecastle 65, Tarraby	milecastle	roman		340900	558000	498	Cumbria
Milecastle 66, Stanwix Bank	milecastle	roman		0	0	0	Cumbria
Milecastle 67, Stainton	milecastle	roman		0	0	0	Cumbria
Milecastle 68, Boomby Gill	milecastle	roman		337110	557150	439	Cumbria
Milecastle 71, Wormanby	milecastle	roman, prehistoric		333790	559200	418	Cumbria
Milecastle 72, Fauld Farm	milecastle	roman		332420	559100	416	Cumbria
Milecastle 73, Dykesfield	milecastle	roman		331200	559370	422	Cumbria
Monkhill camp	camp	roman		334300	558300	426	Cumbria
Moorhouse	settlement	roman		333200	557600	3771	Cumbria
Moss Side 1 and 2	camp	roman		345670	560340	208	Cumbria
Newbiggin Hall	settlement	roman, prehistoric		342800	550900	0	Cumbria
Newtown find 1	find	roman		349900	562690	233	Cumbria
Nowtler Hill 1	camp	roman		336270	557000	400	Cumbria
Nowtler Hill 2	camp	roman		336000	556750	401	Cumbria
Old Wall find 1	find	roman		348100	561700	236	Cumbria
Orton Cross	cross	early medieval		332800	554200	444	Cumbria
Park House	fort	roman		344190	549620	725	Cumbria
Plumpton find 1	find	roman		343000	553000	5799	Cumbria
Plumpton Head find 1	find	roman		335000	550000	2629	Cumbria
Powburgh Beck	settlement	roman		333300	558300	3394	Cumbria
Powburgh Beck Culvert	culvert	roman		333370	559080	413	Cumbria
Priesthill	settlement	roman, prehistoric		335200	560800	0	Cumbria
Rickerby find 1	find	roman	AD 74, 114-117	341400	556870	17702	Cumbria
Ridding Sough	settlement	roman, prehistoric		329400	558300	3379	Cumbria
Rockcliffe Cross	cross	early medieval	10th c.	335890	561620	195	Cumbria
Sandy Brow	settlement	roman, prehistoric		330800	547500	0	Cumbria
Scaleby find 1	find	roman	AD 41-54, 64-68	344970	563190	18936	Cumbria
Scalesceugh	kiln	roman	2nd c.	344900	549500	714	Cumbria
Scalesceugh find 1	find	roman	AD 64-68	344000	549000	19108	Cumbria
Sceughmire enclosures	enclosure	roman, prehistoric		335100	554560	407	Cumbria
Solway Moss find 1	find	early medieval	cal. AD 773-946	334500	569500	16788	Cumbria
Solway Moss find 2	find	early medieval	undated, but see above	334500	569500	16789	Cumbria
St. Constantines Cells quarry	quarry	roman		346670	553500	514	Cumbria

Site Name	Type	Period	Date	X	Y	SMR #	County
St. Constantines Cells, Wetheral Caves	site	roman, medieval		346680	553530	411	Cumbria
St. Cuthbert Without	fort	roman		344170	551780	510	Cumbria
St. Cuthbert Without find 1	find	roman	AD 238-244	344830	549630	646	Cumbria
St. Cuthbert Without find 2	find	roman		341840	549680	717	Cumbria
St. Cuthbert Without find 3	find	roman	AD 268-270	343600	548940	19672	Cumbria
St. Kentigerns Church	church	roman, early medieval	medieval	349870	561630	4572	Cumbria
Stanwix find 1	find	roman	10th c.	340100	55700	501	Cumbria
Stanwix find 10	find	roman	3rd c.	340000	557000	19111	Cumbria
Stanwix find 11	find	roman		341500	558000	19508	Cumbria
Stanwix find 12	find	roman		341500	558000	19509	Cumbria
Stanwix find 13	find	roman	1-3rd c.	339975	556980	19524	Cumbria
Stanwix find 14	find	roman		341000	558000	19547	Cumbria
Stanwix find 15	find	roman		338880	557700	19732	Cumbria
Stanwix find 2	find	roman		340910	558110	519	Cumbria
Stanwix find 3	find	roman	1st/2nd c.	340070	556640	533	Cumbria
Stanwix find 5	find	roman		340000	550000	4907	Cumbria
Stanwix find 6	find	roman	2nd and 4th c.	340100	557120	16777	Cumbria
Stanwix find 7	find	roman		340000	555000	16946	Cumbria
Stanwix find 8	find	roman	AD 152-153, 238-241	339950	556950	17703	Cumbria
Stanwix find 9	find	roman	AD 196-197	340220	557610	18937	Cumbria
Stanwix fort	fort	roman	2-4th c.	340200	557100	0	Cumbria
Stockdalewath	settlement	roman, prehistoric	2nd c.	339240	545060	698	Cumbria
Tarraby find 1	find	roman	mid 2nd c.	340900	558100	19521	Cumbria
Tarraby find 2	find	roman	late Roman?	340940	558000	19658	Cumbria
Thursby	enclosure	roman, prehistoric		330800	550500	0	Cumbria
Thursby East	enclosure	roman, prehistoric		333700	549300	0	Cumbria
Thurstonfield	fort	roman		331900	557600	3391	Cumbria
Turret 57a	turret	roman		350440	563330	298	Cumbria
Turret 70a	turret	roman		334800	559290	427	Cumbria
Turret 71a	turret	roman		333340	559140	417	Cumbria
Turret 71b, unconfirmed	turret	roman	2nd c.	332890	559140	0	Cumbria
Turret 72a	turret	roman		331920	559080	420	Cumbria
Turret 72b	turret	roman		331440	559220	421	Cumbria
Watch Hill	settlement	roman, prehistoric		331400	559700	0	Cumbria
Watchclose	camp	roman		347570	560190	216	Cumbria
Wetheral	fortlet	roman, medieval		346150	553760	12793	Cumbria
Wetheral find 1	find	early medieval	9th c.	346930	554030	17972	Cumbria
Wetheral find 2	find	roman	2nd c.	346000	554000	19107	Cumbria

Site Name	Type	Period	Date	X	Y	SMR #	County
White Flat Farmhouse	well	roman		350000	563000	5055	Cumbria
Whitestones	enclosure	roman		338300	544800	678	Cumbria
Willowholme find 1	find	roman		338850	556450	17963	Cumbria
Woodhead find 1	find	roman		346000	562000	4913	Cumbria
Wormanby	settlement	roman, prehistoric		333500	558500	0	Cumbria
Wragmire	burial	roman		346000	549000	4918	Cumbria

APPENDIX 4.2: CARLISLE CS FARMSTEAD DATA

Site	Type	Period	Date	X	Y	SMR #	County	Other
Beaumont	settlement	roman, prehistoric		333300	560400	0	Cumbria	nucleus
Beech Grove	settlement	roman, prehistoric	Iron Age, Hadrianic	340290	557900	40442	Cumbria	
Blackhall Wood	enclosure	roman, prehistoric		339100	551300	0	Cumbria	sub-rectangular enclosure
Bowstead Hill	enclosure	roman, prehistoric		330200	558100	3386	Cumbria	cropmark
Burgh by Sands fort 2, Aballava	Fort	roman	mid 2 - mid/late 4th c.	332800	559100	415	Cumbria	fort, finds
Burgh by Sands settlement	settlement	roman, prehistoric	1-4th c.	332720	559340	0	Cumbria	late Roman pottery in road ditches, from Britannia
Carlisle fort	Fort	roman, early med	2-5th c.	339850	556170	0		timber buildings over latest roads
Carlisle town	Town	roman		340000	556000	0	Cumbria	lots of stuff
Carlisle, St. Nicholas St. farmstead	settlement	roman	2-3rd c.	340680	555040	40361	Cumbria	ditches and pottery
Causeway House	settlement	roman, prehistoric		345800	548300	0	Cumbria	site
Cocklakes	settlement	roman, prehistoric		345426	551029	19777	Cumbria	find, field system
Copt Hill	settlement	roman, prehistoric		333500	558600	2968	Cumbria	cropmark
Crosby	enclosure	roman?, early medieval		346500	559100	6022	Cumbria	cropmark, field system
Crouch Hill	settlement	roman, prehistoric		350170	562190	5102	Cumbria	cropmark
Cumberland Infirmary	settlement	roman, prehistoric	1-2/3rd c.	333900	555600	0	Cumbria	ditched enclosed settlement with rectilinear buildings
Cummersdale	enclosure	roman, prehistoric		339000	553000	0	Cumbria	sub-rectangular cropmark
Dalston, Caldew Road	settlement	roman	late 4th c.	338910	553000	0	Cumbria	rectangular farmstead with stone buildings

Site	Type	Period	Date	X	Y	SMR #	County	Other
								and huntcliff ware
Flat	enclosure	roman, prehistoric		331300	555000	0	Cumbria	univallate settlement
Foldsteads	settlement	roman, prehistoric		330500	555200	0	Cumbria	known site nucleus
Great Orton enclosure	enclosure	roman, prehistoric		334500	554800	406	Cumbria	cropmark
Greathill Beck	settlement	roman, prehistoric		334500	556100	0	Cumbria	site parching
Highfield Moor	enclosure	roman		346050	561290	209	Cumbria	subrectangular cropmark
Irthington Settlement	settlement	roman		348800	563200	226	Cumbria	cropmark
Jacob's Gill	enclosure	roman, prehistoric		331600	547900	0	Cumbria	small oval enclosure
Kirkbampton	settlement	roman, prehistoric		330900	556400	0	Cumbria	hut circles
Kirkbampton II	settlement	roman, prehistoric		330400	555800	0	Cumbria	univallate, circular settlement with internal huts
Knells	settlement	roman, prehistoric		341100	561400	0	Cumbria	cropmarks of field system and settlement
Mealhouse Beck	enclosure	roman, prehistoric		332100	551400	0	Cumbria	elongated univallate site
Moorhouse	settlement	roman		333200	557600	3771	Cumbria	cropmark, field system
Newbiggin Hall	settlement	roman, prehistoric		342800	550900	0	Cumbria	site in parkland
Park House	settlement	roman, prehistoric		344300	549600	0	Cumbria	farmstead
Powburgh Beck	settlement	roman		333300	558300	3394	Cumbria	cropmark
Priesthill	settlement	roman, prehistoric		335200	560800	0	Cumbria	probable nucleus
Ridding Sough	settlement	roman, prehistoric		329400	558300	3379	Cumbria	cropmark
Sandy Brow	settlement	roman, prehistoric		330800	547500	0	Cumbria	sub-rectangular and oval enclosures, approach track and field system
Stanwix fort	Fort	roman		340200	557100	0	Cumbria	timber buildings over latest roads
Thursby	enclosure	roman, prehistoric		330800	550500	0	Cumbria	sub-rectangular enclosures
Thursby East	enclosure	roman, prehistoric		333700	549300	0	Cumbria	sub-rectangular site with associated fields and trackway
Watch Hill	settlement	roman, prehistoric		331400	559700	0	Cumbria	site nucleus
Whitestones	enclosure	roman		338300	544800	678	Cumbria	
Wormanby	settlement	roman, prehistoric		333500	558500	0	Cumbria	site nucleus indicated parching

APPENDIX 4.3: CARLISLE CS LATE ROMAN DATA

Site	Type	Period	Date	X	Y	SMR #	County	Other
Burgh by Sands fort 2, Aballava	Fort	roman	mid 2 - mid/late 4th c.	332800	559100	415	Cumbria	fort, finds
Burgh by Sands settlement	settlement	roman, prehistoric	1-4th c.	332720	559340	0	Cumbria	late Roman pottery in road ditches
Carlisle find 6	Find	roman	AD 324	340000	556430	18934	Cumbria	coin of Constantius
Carlisle fort	Fort	roman, early med	4-5th c.	339850	556170	0		timber buildings over latest roads
Carlisle town	Town	roman		340000	556000	0	Cumbria	lots of stuff
Carlisle, Greystone Rd. find 1	Find	roman	AD 364-375	341310	555630	18932	Cumbria	coin of Valens
Carlisle, St. Nicholas St. cemetery	burial	roman	3-4th c.	340680	555040	40361	Cumbria	skeletons, pottery, ditches, inhumation, cremation
Crosby	enclosure	roman?, early medieval		346500	559100	6022	Cumbria	cropmark, field system
Dalston, Caldew Road	settlement	roman	late 4th c.	338910	553000	0	Cumbria	rectangular farmstead with stone buildings and huntcliff ware
Kirksteads find 1	Find	roman	early 4th c. +	334900	556500	456	Cumbria	coin hoard, Constantine and Diocletian or later
Longsowerby find 1	Find	roman	AD 321	339000	554700	18941	Cumbria	coin of Constantine II
Longtown find 1	Find	roman	4th c.	337000	568000	19099	Cumbria	AE of Constantius
Stanwix find 6	Find	roman	2 and 4th c.	340100	557120	16777	Cumbria	pottery
Stanwix fort	Fort	roman		340200	557100	0	Cumbria	timber buildings over latest roads
Tarraby find 2	Find	roman	late Roman?	340940	558000	19658	Cumbria	harness ring

APPENDIX 4.4: CARLISLE CS EARLY MEDIEVAL DATA

Site Name	Type	Period	Date	X	Y	SMR #	County	Other
Amberfield find 1	Find	early medieval	prob 8-13th c.	332800	558900	19533	Cumbria	figurine
Burgh by Sands church	church	roman, medieval		332860	559100	3769	Cumbria	find
Burgh by Sands find 1	Find	early medieval, medieval		334000	555850	423	Cumbria	carved stone
Burgh by Sands fort 2, Aballava	Fort	roman	mid 2 - mid/late 4th	332800	559100	415	Cumbria	fort, finds

Site Name	Type	Period	Date	X	Y	SMR #	County	Other
			c.					
Carlisle fort	Fort	roman, early med	5th c.	339850	556170	0		
Carlisle town	Town	roman		340000	556000	0	Cumbria	
Crosby	enclosure	roman?, early medieval		346500	559100	6022	Cumbria	cropmark, field system
Greymoor Hill	Find	early medieval		339500	559800	465	Cumbria	gold finger ring
Grinsdale Church	church	early medieval		337240	558040	3774	Cumbria	
Irthington find 1	Find	roman, early medieval, medieval		344740	563120	19724	Cumbria	scabbard chape?
Kirkstead find 2	Find	early medieval	8-12th c.	335000	556000	466	Cumbria	coffin
Orton Cross	cross	early medieval		332800	554200	444	Cumbria	
Rockcliffe Cross	cross	early medieval	10th c.	335890	561620	195	Cumbria	
Solway Moss find 1	Find	early medieval	cal. AD 773-946	334500	569500	16788	Cumbria	faunal
Solway Moss find 2	Find	early medieval	undated, but see above	334500	569500	16789	Cumbria	faunal
St. Kentigerns Church	church	roman, early medieval	10th c.	349870	561630	4572	Cumbria	
Wetheral find 1	Find	early medieval	9th c.	346930	554030	17972	Cumbria	strap end

APPENDIX 4.5: TEXT FOR CARLISLE CASE STUDY

4.5.1: INTRODUCTION

Case Study 3 is centreed on the town of Carlisle in modern Cumbria (see Fig. 5.10). All of the case study falls within the modern county of Cumbria and is adjacent to the Birdoswald case study immediately to the east. The case study has a 10km radius, and the majority of the modern landscape is rural. The city of Carlisle and its suburbs is an exception to this, but it should be noted that the Carlisle case study does not suffer from urban sprawl. In fact, the development of Carlisle has contributed to excellent preservation of many archaeological deposits.

The chapter begins with an overview of the case study area. This overview includes both archaeological and palynological information to establish an impression of the case study in brief. The remainder of the chapter is devoted to an examination of important sites in the case study. Following this, significant finds and patterns from the case study are considered and the implications that these have on the late Roman to Early Medieval transition are noted. The chapter concludes with suggestions for future research in the case study area.

4.5.2: CASE STUDY OVERVIEW

The Carlisle case study is characterized by the many sites and findspots dating to the Roman and Early Medieval periods up to the 10th century (T=228; Appendix 4.1). As Figure 8.1 demonstrates, the sites and findspots are found throughout the case study area, but a number of patterns are evident. The eastern half of the case study is dominated by Hadrian's Wall, with few sites or findspots occurring any distance away from the Wall. An exception to this are the sites and findspots southeast of Carlisle that are found in the proximity of Roman roads and river valleys. The line of the Wall does not again become clear until the western end of the case study in the area of Burgh-by-Sands.

The differential preservation of the curtain of Hadrian's Wall and milecastles and turrets is probably related to two significant factors. The western end of the case study is good agricultural land, but it does not have much readily available building stone. Thus, the Wall and its structures would functioned as a valuable source of worked stone, notably in the Medieval and post-Medieval periods for Carlisle and other settlements. Another factor is that the west end of the Wall, from the eastern limit of the case study until the fort at Bowness-on-Solway, were built in a soft red sandstone that is vulnerable to weathering.

Carlisle castle is built of the same stone, and many of the most exposed faces bear considerable pitting. So stone that was not robbed was likely worn over the course of 1,500+ years.

There are many native farmsteads in the case study, approximately 80% of which are found south of the Wall (Fig. 8.2). This is surprising as there is no ecological or geological reason for this. It suggests that the erection of Hadrian's Wall impacted on agricultural development. The only other explanation is unrecognized settlements and sites that were not visible via aerial photography, but the completion of the Hadrian's Wall National Mapping Project may revise the proportion of farmsteads north and south of the Wall. There is a high concentration of these farmsteads south of the Solway. The remaining farmsteads are found in river valleys and near Roman roads.

Carlisle was a hub in the Roman transportation network of northwestern England (see Fig. 8.3). Roads leading in every cardinal direction, and toward every major Roman area of occupation could be found in Carlisle. It also was positioned on the Eden, 8km upstream from the present day tidal limits of the Solway Firth. Carlisle may or may not have been navigable to sea-going vessels or barges, but it is noteworthy that Netherby (approximately 16.67km due north of Carlisle) is 7km upstream from the present day tidal limits of the River Esk and had a port in the Roman period. So a port at Carlisle is feasible, if not archaeologically demonstrable (McCarthy 2002:69–70).

Carlisle has a clear cluster of numerous findspots centreed on the town and forts in Figure 8.1. The town itself has provided excellent archaeological evidence for the Roman period in Britain. Much of this evidence is from the late Roman period, though the bulk of published information primarily discusses the 2nd and 3rd centuries. Modern Carlisle contains three distinct Roman settlements, though in truth each settlement was probably not as discrete as modern categorisation would suggest. Initially, the Romans built a fort in Carlisle, called *Luguvalium*. A town grew up outside the fort, and the name was extended to the town. Another fort was built in conjunction with the construction of Hadrian's Wall across the River Eden at Stanwix. This fort was called *Uxelodunum*, but came to be known by the name of the unit posted there, *Petriana*.

The palynological evidence for the Carlisle sector of Hadrian's Wall is provided by four sites: Bolton Fell Moss, Burnfoothill Moss, Glasson Moss, and Walton Moss (located in Figs. 5.6–5.9). All present a regional picture of the vegetation history of the region, except where specifically noted that some pollen presents a local picture, for example "*Cannabis* type" and grain pollens which have very local dispersal. As all the sites are regional in scale, they can only be used to present a regional picture and cannot provide specific detail for locales within the case study area. It should also be noted that the pollen sites all fall outside of the 10km radius centreed on Carlisle used to determine the case study area. Unfortunately, these sites are the closest to the case study and must be used for general information.

The sequence from Bolton Fell Moss is regional in its pollen catchment, with some more local pollen indicators. In general, woodland regeneration occurred at Bolton Fell Moss by cal. AD 550–670. This was observed through the increase of birch, oak, and alder pollens, while there was a decline of grasses (Barber et al. 1994; Dumayne-Peaty and Barber 1998; Dark 1996:146). However, agricultural activity seemed to continue nearby, suggested by the presence of rye pollen and that of "*Cannabis* type", usually thought to be hemp.

Burnfoothill Moss provided a regional catchment area and generally suggests forest regeneration from *c.* AD 300 associated with agricultural decline due to the notable absence of anthropogenic indicator taxa. At approximately AD 600, however, there is renewed woodland clearance (Tipping 1995). Wet-shifts occurred *c.* BC 100 and *c.* AD 750, while dry conditions peaked from AD 350–450.

Regional in its catchment, the Glasson Moss pollen site indicates woodland regeneration beginning in the 4th century AD with widespread clearance occurring next in "monastic times" (Dumayne and Barber 1994). Dark (1996) further suggests an abandonment of agricultural land through increases of hazel and heather and a decline of grass pollens. At *c.* cal AD 600, oat/wheat and "*Cannabis* type" (probably hemp) pollens occur, suggesting renewed agricultural activity relatively near to Glasson Moss.

Clearance activity leveled out at Walton Moss by the 4th century and those levels of clearance were maintained, until a further increase in clearance occurred in "monastic times" (Dumayne and Barber 1994). Additional studies at Walton Moss have revealed wet shifts extrapolated from calibrated radiocarbon dating and sediment accumulation rates. These wet shifts occurred at *c.* AD 200, 490, and 650 (Hughes *et al.* 2000) and would have impacted upon agricultural practises.

The overall pattern as suggested by these four pollen sites is that there was a mixture of maintained clearance levels and woodland regeneration around the Solway basin. At Burnfoothhill and Glasson Mosses, woodland regeneration began in the 4th century AD, before the traditional "end" date of Roman Britain, and it should be noted that there is no reason to think that the woodland regeneration is rapid. Woodland regeneration at Bolton Fell Moss did not begin until at least the later 6th century, suggesting maintained levels of clearance, an occurrence also seen at Walton Moss. Bolton Fell and Glasson Mosses provided evidence for cereal cultivation and agricultural activity relatively close to the sites. While this does not demonstrate cereal cultivation within the case study area, it does indicate agriculture continuing to be practised locally. In other words, land was not just abandoned with the collapse of Roman authority in Britain. A likely inference from these four sites is that agricultural

activities continued to use the same amount of land, but these activities were perhaps not as intense or entirely different agricultural regimes. Furthermore, some of these changes began before the collapse of the Roman administration, as at Burnfoothill Moss and Walton Moss.

4.5.3: SITE OVERVIEW

The following section is a brief overview of the relevant sites in the case study area. Relevant in this case means that only sites with evidence for activity from the 4th to 7th centuries were examined in detail and included in the following discussion (Fig. 8.4). The sites have been separated into a number of general categories for discussion in the following order: forts, other sites, and "native" farmsteads. The majority of information comes from sites in the vicinity of Carlisle, both military and non-military.

Forts

LVGVVALIUM, *Carlisle: the fort*

The fort at Carlisle has been excavated in a piecemeal process because the fort lies under the medieval castle and the northern section of the historic and modern city centre. The excavations that have been conducted to date, however, have revealed some very interesting data. All the information relates to the southern half of the fort, definitively identified as the *praetentura* and *latera praetorii*, or the front and middle ranges of the fort interior from the 3rd century on. There is no evidence for the north half of the fort, as yet.

The first fort at Carlisle was constructed on a bluff overlooking the confluence of the rivers Eden and Caldew in AD 72 or 73, as dated by dendrochronology. This fort was systematically demolished and followed by a burning of unwanted rubbish on bonfires in the early second century. When Hadrian's Wall was built, the Wall crossed the Eden north of the point where the Caldew flows into it (slightly south of the present-day confluence point), leaving the fort at Carlisle detached from the Wall. Repair and rebuilding occurred over the course of the 2nd century in the fort, and by the 3rd century the fort defences and most buildings were built in stone (see Fig. 8.5). Occupation evidence has been found in the fort up to "the end" of the Roman period, and perhaps later (McCarthy 1999:169–170; McCarthy 2002).

Excavations on Annetwell Street, Castle Street, and in the area of Tullie House museum revealed the southern area of the fort, in this case the *praetentura*. Late Roman activity on Annetwell Street is found in the abandonment of stone barrack buildings at some point in the 4th century, after which only the west end of the barrack building was reoccupied, though no secure dating evidence for this reoccupation is given (McCarthy 1984:72). The roof collapse of the barracks was sealed by "dark earth". There is also evidence for the "decay" of the southern defences of the fort, associated with pottery and coinage from the AD 370s (McCarthy 2002:135). Excavations in Castle Street have not revealed much evidence of late 4th century activity, but three Valentinianic coins were recovered from post-Roman contexts (McCarthy 1991:6, 48).

A limited area of the central range of the fort was revealed in excavations between 1998 and 2001 (Zant 2004b). These excavations revealed the southeast corner of the *principia* and the central stretch of the *via principalis*. There was a continuous sequence from the stone fort from the early 3rd century to the 4th century, with the 4th century sequences being quite complex. A substantial phase of road surfacing with rough sandstone was laid in the second half of the 4th century on the *via principalis* and also in the space east of the *principia*. Thereafter, localized patching and repairs occurred throughout the late 4th century. The road surfacing and subsequent repair/patching was associated with coinage dating from the reigns of Constantine the Great to Valentinianic and Theodosian issues. There are also a number of layers stratigraphically later than the latest Roman coinage, and likely to be many minor sub-phases. Set into road surfaces sealing Valentinianic coins were postholes and other features suggestive of timber lean-to structures. A late hypocausted room was inserted into the *principia*, and a portico was reconstructed in the southern section of the *principia* in the second half of the 4th century along the *via principalis*, as indicated by the discovery of "park railing stones" that are generally dated to AD 360+ (as determined by the sequence at Halton Chesters). This dating was strengthened by the associated coinage. Postholes and timber slots were also found cutting through late 4th century deposits in the *principia*. Buildings fronting the south side of the *via principalis* have similar activity associated with the latest Roman deposits, suggesting that this area of the fort, and perhaps these buildings may have been used continuously from the Roman to the immediate post-Roman period. These latest sequences were succeeded by indications of demolition and abandonment of the central area of the fort. Deposits of "dark earth" sealed the latest Roman and possible sub-Roman layers and there was no further clear archaeological activity until the Norman period.

Radiocarbon dating was completed on some of the animal bone from late Roman and "dark earth" deposits. One bone from a cobbled deposit associated with a lean-to structure on the east wall of the *principia* produced a date of cal. AD 210–440 at two sigma (90% confidence). A coin of AD 388–402 came out of this cobbled deposit, dating the cobbling to AD 388–440. The lean-to structure was overlain

by a later phase of coarse sandstone rubble surfacing, which was in turn cut by a number of shallow pits and other minor features prior to the build-up of "dark earth" (Zant, pers. comm.). It is very likely that this sequence runs into the 5th century, though no final dating has been established.

Specialist reports concerning the excavations in the central range are just being finished, and there are some interesting trends. Approximately 60% of the total coins recovered dated to the 4th century, the vast majority of which were found outside the *principia*, often set within and/or sealed by late road repairs/patching (Shotter 2004). This has been interpreted as demonstrating cash exchange and trading within the fort, perhaps even indicating a "flea market" similar to that at Newcastle. Personal ornaments, suchs as brooches, pins, and rings, were found concentrated in the late road surfaces and patchings (Zant, pers. comm.). These objects were not found in great numbers, but their distribution was distinctly different when compared to the spatial and chronological distribution of such objects across the whole site. Another possible interpretation suggested that the central area of the fort served as a focus for the garrison not simply as an exchange point, but also for socialising and roadside gambling. Evidence for this was found in the early timber forts of the late 1st and 2nd century when a number of gaming pieces were recovered in the same area (Howard-Davis 2004). Interestingly, the Valentinianic coinage was moderately worn-to-fresh in general terms of wear, while the post-Valentinianic coinage (namely Theodosian) was very worn, suggesting a much longer use-life (Shotter 2004).

There was generally a high occurrence of Yorkshire calcite-gritted ware, but no quantification has been completed as yet to compare CG wares to other late Roman wares, or stratigraphically to the latest coinage (Swan 2004). Freshly broken amphorae sherds from the Akko region of Palestine and North Africa have been found in the late Roman or sub-Roman strata. Swan (pers. comm.) has noted that these sherds would "best belong in at least the mid 5th century", but she cannot be more confident of the dating at present. Bidwell (pers. comm.) commented that the North African sherds typologically could belong from the mid 4th century through the 5th century. The production date of these amphorae aside, it seems clear that there was trade in Mediterranean goods up the west coast of Britain in the late 4th century or later, which Bidwell suggests could be a possible precursor of the post-Roman trade in East Mediterranean goods/ceramics.

There is very good faunal evidence for the garrison, suggesting that cattle, sheep, and pigs were all brought to the fort on the hoof in the late Roman and sub-Roman periods (Evans 2004). There was a size-peak in the 4th century for both cattle and sheep, with a minor loss of size in Early Medieval samples. The cattle remains have provided the most evidence for interpretation. The majority of the cattle were slaughtered as adults, and the frequency and regularity of certain bone "cuts" indicate the typically specialized butchery associated with the military in the Roman period. Osteological patterning suggests that most of the cows were used primarily for traction before conversion to meat. There are also indications different from "typical" bovine remains, such as a cusp on the 3rd molar and holes in the back of the skull that suggest local herds were provisioning the larders of the fort in the late Roman period. Similar evidence is found at Birdoswald.

The fort at Carlisle provides excellent evidence for occupation of the fort into the late 4th century, and almost certainly into the 5th century. Sufficient artefacts were recovered to give some indication of economic activity at the fort. The distribution of 4th century coinage suggests the fort may have hosted a market, and the faunal remains are suggestive of local provisioning of livestock for slaughter at the fort. Diagnostic features on cattle bones provide evidence of a source distinct to the region, also seen on cattle bones from Birdoswald. The amphora sherd from Akko indicates long distance exchange at the west end of Hadrian's Wall in the later 4th century at the earliest, and perhaps may date to the 5th century. Further evidence for 5th century occupation of the site is provided by stratagraphic sequences, in which strata with few or no finds succeed the latest datable Roman deposits. Examples of this are seen at the *principia*, where timber structures replaced stone construction.

PETRIANA/VXELDVNVM, *Stanwix*

Excavations at Stanwix have revealed little compared to the evidence from across the River Eden in Carlisle despite the fact that the fort at Stanwix was the largest on Hadrian's Wall. This lack of evidence is due to a number of factors. First, there have been very few excavations under modern conditions. Second, modern expansion and development of Carlisle has probably destroyed much of the archaeological evidence, since the depth from the surface to the natural subsoil can be as little as 20cm (McCarthy pers. comm.). The few excavations that have taken place at Stanwix have revealed some of the evidence for late Roman occupation, however.

The fort at Stanwix was first constructed in turf and timber in conjunction with the building of Hadrian's Wall. It was built on a bluff on the north bank of the Eden, north-northeast of the fort in Carlisle and only a short walk away. The turf fort was enlarged and the defences rebuilt in stone in the AD 160s, making it the largest fort on or in the region of Hadrian's Wall at 9.32 acres (3.78 hectares) (see Fig. 8.6). Over the course of the 2nd, 3rd, and 4th centuries, the internal buildings were rebuilt in stone. The latest building sequences, however, revert to timber construction and date to "the end" of the Roman period (McCarthy 1999:163; McCarthy 2002).

Excavations in the 1930s revealed the northern wall of the fort, which was the Wall itself, and a series of five walls that belonged to two buildings, later interpreted to be barracks or stables. The foundations of these buildings were associated with pottery dating to the early–mid 4th century (Simpson and Hogg 1935; see Dacre 1985 noting the absence of 3rd and 4th century pottery in reference to the northeastern wall, rampart, and ditch of the fort). Traces of metalled surfaces also indicated the remains of roads or yards, one road which probably led to the large *horreum* to the east (Simpson and Richmond 1940:130). Clay floors and the remains of timber buildings sealed the latest stone building and metalled surface deposits in both the area of the *horreum* and the barracks/stables (Esmonde Cleary 1998:383). Subsequently, it was determined that there were numerous phases of timber buildings, with the latest phases associated with late 4th century coinage and pottery, and in some cases sealing late 4th century ceramics and coins (Burnham 2000:392; McCarthy 2002:136). These timber buildings were substantial, to judge by the postholes, which were stone packed and measured *c.* 1m in diameter. All traces of late and sub-Roman timber buildings occur in the western quadrant of the fort. Unfortunately, there is no plan available to demonstrate the distribution of these postholes and floors and their relationship to the previous stone buildings in the fort. Excavation in the southeastern quadrant of the fort, west of the corner tower, revealed two phases of activity in the form of buildings and surfaces. Associated pottery and coins dated to the 4th century (Esmonde Cleary 1994:263).

ABALLAVA, *Burgh-By-Sands II*

Three forts are found in the vicinity of Burgh-by-Sands (see Fig. 8.7). Forts I and III were built south of the position of Hadrian's Wall and have provided evidence for late 1st and 2nd century occupation. Burgh II was constructed in the 3rd century, a late addition to the Wall (Austen and McCarthy 1999:177–179). Collingwood's (1923) excavations demonstrated that the fort originally lay astride the Wall, in a fashion similar to the fort at Chesters, but excavations by the Carlisle Archaeological Unit in 1992 revealed subsequent realignment of the Wall so that the fort lay entirely to the south of it, paralleling the change at Birdoswald (Austen and McCarthy 1999:178).

There are few indications of Roman activity in the fort. It is known there was late occupation at Burgh II from finds and hints of stratigraphy reported by Collingwood (1923:9, 10). For example, the north guard chamber of the east gate, the *porta principalis dextra*, was found to have a "late floor" two feet below the contemporary ground surface. Finds of 4th century coins and calcite-gritted ware were also reported, though it was noted that there was not a great amount of pottery from the late 4th century. Few modern excavations have taken place in the fort, and any archaeological evidence is likely to have been damaged or destroyed by stone robbing of the fort and the construction of the village above the modern fort, though it was noted that much of the area of the *praetentura* lies beneath "unencumbered ground" (Collingwood 1923:12). This, however, was indicated as heavily disturbed by the CAU excavators in 1992 (Austen and McCarthy 1999:178). Excavations have also been conducted in the *vicus* to the south and east of the fort (Masser 2004). The latest finds in the southern part were from the early 3rd century, but there was evidence in the section east of the fort that occupation continued until the 4th century, though how long into the 4th century is unspecified. Unfortunately, the existing evidence could not determine the economy of the fort in any detail.

Milecastles and Turrets

There was no evidence of 4th century occupation or activity in any of the milecastles or turrets in the case study area. This may be due to the poor archaeological survival of these sites.

Other Sites

LVGVVALIVM, *Carlisle*

Numerous excavations in the modern town of Carlisle have revealed traces of the Roman settlement. The majority of these excavations have taken place over the last 35 years and the evidence for late and post-Roman occupation varies from street to street. For that reason, the evidence for late to sub-Roman Carlisle has been presented here street-by-street (see Fig. 8.8 for the location of these sites in Carlisle). This late Roman evidence should be contrasted with the archaeological material from the 2nd and 3rd centuries, which is much more widespread and less "patchy" than the 4th century material.

The Roman town of Carlisle developed outside the defences of the fort situated on the bluff south of the confluence of the Eden and Caldew rivers. The development of the town seems to have occurred in two main phases (McCarthy 2002:69–92). The first phase seems to begin with the construction of the fort in the early AD 70s and lasted until the later 2nd century. Development in this first phase was strongly influenced by the roads leading to the fort at Carlisle: the modern A6, Botchergate, and Blackfriars Street leading from the south; modern Scotland Street, a bridge over the Eden, Peter Street and Market Street from the north; and modern Crown and Anchor Lane from the east. Building and settlement during this

first phase seems to have been unplanned and opportunistic. The second phase, from the late 2nd century to the end of the Roman period, suggests more formal planning and regulation of properties and building. There is evidence from this phase of significant investment in building and engineering projects, and it is probably also about this time in the late 2nd/early 3rd century that Carlisle became the *civitas Carvetiorum*. The sites with 4th century and later evidence are reviewed below, starting with the sites that have the most data for the late Roman to Early Medieval transition.

BLACKFRIARS STREET

Blackfriars Street was excavated from July 1978 to July 1979 in advance of the construction of a car park. The site provided evidence of buildings throughout the entire Roman period on two different properties. These properties faced east, with their fronts on a Roman road heading northwest toward the south gate of the fort in Carlisle. The road dominated the alignments of the buildings. Structures were first built in the late 1st century, but their function could not be determined. These structures seem to have been replaced in the early 2nd century by open ground and a tree/large bush. The Hadrianic period saw new timber buildings constructed that are believed to have been built for storage purposes. By the mid 2nd century, the storage structures were demolished and the area saw a large leveling episode. Intermittent building followed this, but the purpose of the structures could not be determined, though craft or industrial activity has been suggested. In the 3rd century, domestic structures (Buildings 1, 2, 2/3, and 3) were constructed that occupied the site until the late, and perhaps post-Roman period.

The late Roman period was indicated by Periods 9–12, and Periods 13 and 14 were attributed to the Anglo-Saxon period. The dating of the later phases of Period 9 and Periods 10–12 can only be dated "very crudely" (McCarthy 1990:369). Ceramics associated with the late Roman sequences (Periods 9r–y, 10–12) included calcite-gritted (including Huntcliff type) ware and Crambeck types, with the CG wares outnumbering the Crambeck 5:1. Furthermore, many sherds were found "residually" in Early Medieval contexts, and they were not included for any "quantitative assessment" (Taylor 1990:207, 276–278, 297–298). Ceramics from Periods 13–14 were assigned to the Anglian period, but were generally found with "residual" late 4th century CG sherds and were largely similar to Roman and Middle Saxon pottery (Taylor 1990:303). This means that calcite-gritted wares were used into Early Medieval period if not actually produced later than the early 5th century, and that the Anglian period pottery was influenced by Roman ceramics. Coins provided limited dating resolution for the late Roman period. A coin of Gratian (AD 378–383) was the latest stratified coin in Building 1, but there were many Valentinianic and Theodosian issues (including an Honourian coin of AD 394–395) found in later strata in "residual contexts" (McCarthy 1990:369).

In Building 1 (see Fig. 8.9), there is some evidence for at least one, if not two rebuildings in the latest Roman phases (r–x = late 4th century) of Period 9, which was preceded by a fire across much of the site. The building had clay and cobble foundations, and rebuilding was characterized by the removal of internal partitions and the relaying of floors (McCarthy 1990:52). Several reflorings occurred in the latest phases, with the latest floor composed of crushed sandstone and cobbles laid unevenly. A gap in the wall was also closed using high quality sandstone blocks that may have come from a public building elsewhere in Carlisle. At the end of Period 9, the southern boundary of the property, indicated by post pits, was replaced by a road running east-west along the southern boundary. Period 10 saw the reconstruction of Building 1 using timber uprights or sill beams as foundations set just inside the foundations of Period 9 (McCarthy 1990:53).

The site of Buildings 2, 2/3, and 3 were abandoned and the site reverted to open land in Period 9. During this abandonment, there was an accumulation of soils, identified as phases a–d. Phase d also provided sparse evidence for some building activity in the form of ovens and the clay and cobble foundations of a wall running north-south. This activity is probably from the 3rd century, though there was very little dating evidence other than the stratigraphic relationship of the soil accumulations to the preceding and subsequent deposits (McCarthy 1990:63). A new arrangement of structures was laid across the soil deposits of Period 9 during Period 10 (see Fig. 8.10). Building 2 was separated from Building 1 by the 3m wide road running east-west. This road was initially made of massive, worn sandstone blocks and was subsequently resurfaced several times with small cobbles and gravel. Building 2 was erected at the same time as the road was laid and its rectangular shape was defined on all four sides by clay and cobble foundations. There was little internal evidence, as 75% of the interior space was destroyed by medieval pit- and foundation-digging. However, a likely internal partition was recognized, and some traces of floor surfaces were found, made of gravel surfaces or a thick clay matrix on closely packed cobbles (McCarthy 1990:65). An oven or kiln was built across the northwest corner of Building 2 in Period 11, suggesting that the Period 10 building was no longer standing by Period 11 (see Fig. 8.11). Unfortunately, there was not sufficient evidence to elucidate the function of the oven (McCarthy 1990:65–67). Period 12 saw the construction of another building, roughly following the shape of the building in Period 10 (see Fig. 8.12). This structure, however, did not use clay and cobble foundations, but timber posts. A large posthole also occupied the fill of the Period 11 oven. There is some indication from postholes that there was an internal wall, as well (McCarthy 1990:67).

In Period 13, new structures were erected across the area of Buildings 1 and 2 on a slightly different alignment (see Fig. 8.13). This different alignment together with dendrochronological dates from the 7th–9th centuries and associated metalwork and glass suggested the Period 13 structure to be Anglian in date (McCarthy 1990:70). It should be noted that while the alignment has changed between the structures of Period 12 and Period 13, this alignment change is not radical and probably indicated fewer constraints on the builders of Period 13.

Period 10 sees considerable reorganization of the site. A new path/road is laid, distinctly separating the building plots. Building 1 is built in timber, with no stone or cobble foundations. This did not occur in Building 2 until Period 12. These timber-framed buildings were of a fair size, roughly 6m by 16m. Significantly, there is no period of abandonment indicated between Period 12 and 13. This suggests a continuous sequence from the Roman to the Early Medieval occupation of the site. The "Anglian" building of Period 13 spans the Roman property boundary and is aligned slightly differently, but is not otherwise notably different from the late/sub-Roman buildings. The difficulty of interpreting this site, however, is that Periods 10, 11, and 12 are all attributed to the late 4th/early 5th century by the ceramic assemblages. It is likely that Periods 10, 11, and 12 represent the 5th and perhaps even the 6th centuries. The alternative to this extended interpretation is that there was a flurry of building activity on the site in the late 4th/early 5th century followed rapidly by "Anglian" occupation of the site, which is unlikely given the dendrochronological dates associated with the Period 13 and 14 structures. Whatever changes occurred in post-Roman Carlisle, the Blackfriars Street area seems to have remained an occupational zone, probably due to the road.

CATHEDRAL PRECINCT

Excavations in 1988 at the west end of the cathedral in advance of the construction of the Dean and Chapter Treasury revealed a complex stratigraphic sequence that contained material from the Roman period through to post-Medieval deposition (Keevill 1989; McCarthy 2002:138). All the excavations in 1988 occurred in Trenches G and H (see Fig. 8.14). The least amount of disturbance to archaeological deposits was found in the southern $^1/_3$ of Trench G. The rest of Trenches G and H were heavily disturbed by the construction of the Norman cathedral and by Medieval and post-Medieval burials (Keevil 1989:29). Thus, the majority of the information comes from a limited area of Trench G. Roman remains (Phase I, sub-phases a–i) dated from the 2nd to the 4th century. The Roman period deposits were followed by an undated building sequence (Phase II) that was followed by the accumulation of a dark earth deposit (Phase III), which was followed by burial activity dated to the 8th–10th centuries (Phase IV). The construction of the Norman cathedral as well as Medieval and post-Medieval burial activity (Phases V+) truncated deposits from the 4th century and later, complicating the interpretation of late Roman and Early Medieval deposits.

Phases Ia–If contained a Roman road surface that ran southeast by northwest and established the alignment of properties built to either side of the road (see Fig. 8.15). Structures A and B were built south of the road, and the slight remains of Structure C were found north of the road, in the northern portion of Trench G. These structures were sealed by dumping deposits containing mixed quantities of amphorae, pottery, and glass, which dated the dumping to the early 3rd century at the earliest (Keevill 1989).

Deposits containing Constantinian coins overlaid the dumping sequence and were labeled Phase Ig. Three stakeholes and a stone-packed posthole were found cutting through Phase Ig deposits into Phase If soils. Fills in the stake- and postholes suggest the timber building was dismantled, though traces of the structure were scant and limited to the four stake/postholes (Keevill 1989:40). Another building, Structure D, was identified in the layers sealing the timber building and identified by two large sandstone blocks and additional smaller sandstone blocks used as foundations (Phase Ih). There were no floor deposits, so it was impossible to accurately determine the date and function of the building. It postdates the coin of Constantine II (AD 330–335) found in the previous sub-phase, but a more precise date could not be determined. Structure D was sealed by a deposit of sandstone rubble and fragments of hard white mortar in a fine silty matrix. Most of the rubble appeared to be rough building stone, suggesting the deposit may be an episode of wall collapse. Three sandy clay layers, Phase Ii, overlaid the rubble deposit, one of which contained a shale pin dated to the mid 4th century. While Structure D was allowed to decay/collapse, the road seems to have been kept clear and remained in use, as few deposits encroached upon the road surface and the latest pavement was described as "considerably worn" (Keevill 1989:41–43). The sandy clay layers above Structure D were attributed to the very end of the Roman period or shortly thereafter, but there was no direct dating evidence available to validate this assessment.

Period II was characterized by two timber-post structures. Four groups of postholes, *c.* 0.5–0.72m in diameter, cut through the layers overlying Structure D, and the position of these postholes enabled the excavators to reconstruct the northwestern corner of two building plans, Structures E and F (Keevill 1989:44–46; see Fig. 8.16). The postholes indicate buildings rectangular in shape aligned east–west, cutting across the Roman building alignments. The easternmost posthole groups cut into the latest road surface, suggesting to the excavators that the Roman road was not in use at this point, though this interpretation is debatable. Structure E was at least 5.7m east–west by 3m north–south, and the survival of

packing and postpipes suggests the timber posts rotted *in situ*. The postholes of Structure F were just outside those of Structure E, suggesting similar dimensions. The lack of packing and postpipes suggests that Structure F was dismantled at some point before Period III. Unfortunately, there was no clear dating evidence for Phase II, but an undated Early Medieval glass sherd was found in silty clay layer 177, which sealed the latest Roman phases and the Phase II postholes.

Period III saw the development of dark earth deposits up to 0.53m thick, sealing the Phase II postholes and layer 177 (Keevill 1989:47). There was no evidence suggesting the dark earth was redeposited in small quantities from another site, and the homogenous character of the undisturbed portions of soil suggests that the layer "built-up" on the site while the land lay fallow. The Phase III dark earth deposit was heavily disturbed by Phase IV burial activity, as well as Phase V building and burial activity. Finds from the dark earth included pottery from the 2nd to 4th centuries, and coinage from Hadrian up to the reigns of Valentinian I and Valens. There was also a sword hilt typical of late Roman/Early Medieval types, a 4th/5th century spur, and a penannular brooch (Fowler type H2) typically dated to the 5th–7th centuries (Keevill 1989:133–135). The excavators believe that much of the Roman artefacts in the dark earth were redeposited from disturbed Roman layers due to Phase IV burial activity. The penannular brooch was also from a highly disturbed context near a burial and the excavators argued that it may date from the 8th century on the basis that the brooch was repaired with an iron pin, rather than a more typical copper-alloy pins of Roman and British manufacture.

Evidence for the Roman period is limited to traces of post-built structures fronting a road. These were succeeded by two timber-post structures that could date from the late 4th to 8th century (the date of the earliest Phase IV burials). Their function and exact date is unclear, but they cut into the road surface. The excavators interpreted the timber structures, primarily on the basis of the east–west alignments, as likely belonging to a Northumbrian monastic settlement. There is no supporting evidence for this interpretation. While the east–west alignment does not respect the previous Roman layout of the area, such a change in alignment could also relate to a lack of municipal authority overseeing new construction projects just as much as a Christian religious complex, which would also account for construction infringing on road space.

SCOTCH STREET

A large Roman building (structure 221), perhaps a townhouse, was discovered in excavations in advance of development at 66–68 Scotch Street (Keevill *et al.* 1989:254–255). All of the evidence comes from Phase I (Fig. 8.17), dated to the late and immediate post-Roman periods, and Phase II, datable only through stratigraphic association. The depth limit of the excavation prevented the recovery of any data from earlier than the 4th century, but the superstructure of the building was already in place by this time (Keevill 1988). The building incorporated an east and west range of structures to either side of a central area. The wall separating the east range from the courtyard ran north–south and was associated with an internal floor made of clay. Subsequently the wall was replaced by a clay and cobble foundation and features were inserted into the clay floor of the east range. One of these features was a posthole with a coin of Magnentius (AD 350–353) in the fill. Another feature was probably the slot for a timber. This is the latest dating evidence available for the east range, and it is impossible to say how much longer activity in the east range continued past the mid 4th century.

The central area has been interpreted as a courtyard. The earliest Roman layer was a red-brown silty sand with several features cutting or overlaying this. This was replaced by a layer of red-brown extremely compact sand that sealed and replaced the previous layers. This space was likely left open, as there were no features cutting into this layer that were related to the building.

The west range is the area with the most evidence for late and sub-Roman activity. The north wall of the structure and the east wall of the west range were found. Both were constructed with facing stones bonded to a rubble and mortar core. These two walls defined the area of the sub-floor of a hypocausted room, the base of which was identified by a layer of clay with occasional sandstone flags embedded in it (see Fig. 8.18). An irregular pattern of sandstone dwarf walls and *pilae* was set on top of the clay floor. Resting on the dwarf walls and *pilae* was a floor made of a double-thickness of sandstone slabs that measured between 0.04–0.08m thick individually for an average total thickness of 0.12m. All the slabs were charred on their undersides and the floor itself was broken into many pieces. Sealed between the slabs were two coins, dating from AD 341–346 and AD 364–375, providing a TPQ for the setting of the slab floor, if not the initial construction of the hypocaust room itself. The hypocaust channels were filled with waterlogged clay, presumably through the broken slabs. This waterlogged clay contained many 4th century coins, but the most prominent and late coin was a gold *solidus* of Valentinian II (AD 388–392). The broken slab floor was then sealed by a 0.13m thick layer of *opus signinum* whose surface was found intact upon excavation, sealing the gold *solidus* that provides a TPQ for the floor surface. Over the *opus signinum* were two more floor surfaces. The first was a 0.03m thick layer of dark brown silty clay that was unevenly worn across the room. The second and final occupation surface was made of hard-packed yellow-brown sandy mortar with a number of flat sandstone slabs approximately

0.02m thick embedded in it. This final floor was overlain on the north side by an area of sandstone rubble adjacent to the north wall and was similar to the core and facing stones used in the wall.

Phase II sealed the Phase I layers in the east range and central area. A linear alignment of postholes suggested a fence cutting north–south across the site. Each posthole was charcoal-rich but there was not enough material for sampling. There was no dating material associated with Phase II, but the fence-line respects Roman alignments and it is possible that Phase II was contemporary with the latest activity in the Phase I west range.

Very few finds were associated with the latest occupation layers. Most of the finds were coins, though there was some calcite-gritted ware present. Unfortunately, this was not quantified. A glass bead of Guido type 5A was found, though its context and date were not specified. Despite the small number of artefacts, the structural sequence indicates that this building was the dwelling of someone of wealth and status, a conclusion which is verified by the find of a *solidus*. Unfortunately, there is no terminal date for occupation of the structure or site, but the TPQ provided by the *solidus* and subsequent refloorings makes it certain the building was occupied well into the 5th century.

RICKERGATE

Excavations on Rickergate have revealed sequences of varying quality from nine separate and widely scattered trenches (Zant 2002:15). Consequently, there was no direct stratigraphic relationship established between the different trenches, though the trenches generally present a similar picture and some inter-trench concordance can be reached, allowing Period labels to be applied across the whole site. At Rickergate, Period 5 indicates late Roman activity and Period 6 was attributed to post-Roman soil deposits.

At RIC B Trench 1, the clay and cobble foundations of a rectilinear timber building were found (Zant 2002:20). The north wall foundations were aligned east–west up to 0.91m wide and extended at least 9m back from the modern street frontage. South of the foundations, a patchy layer of orange-brown clay – a likely floor – and a pair of large cobble-packed postholes were discovered. The postholes were interpreted as forming part of a longitudinal row of large posts within the building.

At RIC C Trench 5, a pair of parallel, east–west aligned gullies/ditches/slots set 3.8m apart were found to the rear of the modern street frontage (Zant 2002:20–21). The ditches were 0.7–0.8m wide and 0.7–1m deep with a steep-side U-shaped profile. Both were infilled with dark grey-brown soils. The significance of the ditches is unclear, but it was suggested that they marked the boundaries of properties or plots of land running back from Roman Rickergate, as one of the ditches was aligned precisely with the building foundation from RIC B Trench 1 that was 13m to the west of the ditch. Between the ditches and roughly perpendicular to them was a linear alignment of large, unbonded cobbles *ca.* 0.6m in width. This feature was interpreted as a basic foundation for a light timber wall. There was also an earth-filled pit 1.6m in diameter and greater than 1m in depth located 2m to the south of the northern ditch.

These features in both trenches are from Period 5. There is no clear date for the beginning of Period 5, but it was not before the late 3rd century, and is probably considerably later based on the presence of calcite-gritted and Crambeck wares, mostly found in the fills of the ditches from RIC C Trench 5. Other trenches were severely truncated or lacked clear stratigraphic sequences to separate the different Periods with any conviction. It should be noted, however, that a metalled lane running east–west was discovered in RIC F Trench 9. This corresponds with findings from excavations at the Lanes (due south of the site), where such lanes ran east off the main north–south Roman road that lies beneath modern Scotch Street/Rickergate.

Period 6 was indicated in all the Rickergate trenches by a blanketing of dark soils that sealed the latest Roman strata, in some places up to 0.7m thick (Zant 2002:23–24). The only datable material from the dark soils were late Roman pottery sherds, including Crambeck ware from the later 4th century. The excavators dated this to the post-Roman period, though this could relate to late Roman activity. Still, the artefacts and features indicate that this area of Carlisle was occupied in the later 4th century, even is structural plans could not be recovered.

THE LANES

A series of small lanes running east off of Scotch Street were excavated in advance of development (see Fig. 8.19). The Lanes area is roughly bisected by Crown and Anchor Lane, which was the main road east out of Roman Carlisle, and separates the northern and southern Lanes. The northern Lanes have yet to be published fully, but the southern Lanes have (McCarthy 2000). The southern Lanes seem to have been used for residential purposes throughout the Roman period, with property alignments dominated by the Roman roads that generally followed the present course of Scotch Street and Crown and Anchor Lane. According to the excavation report, in the southern Lanes the late Roman period was only attested in two trenches, and there was a general lack of 4th century coins and ceramics, making the late and post-Roman levels difficult to distinguish. However, the end of the Roman period was marked by a substantial soil deposit blanketing the site (McCarthy 2000:15). This paucity of evidence is believed by

the excavators to be due to rubbish disposal practises eradicating what 4th century activity may have been present, though they do not specify what these practises are.

The northern Lanes, however, have provided much more evidence for late Roman, and likely sub-Roman occupation. Three "properties" were investigated in the area of Keay's Lane and Law's Lane (McCarthy *et al.* 1982; Zant 1999; see Fig. 8.20 for location of the excavation trenches). The central property was the most thoroughly revealed but a property to the north and south of the central one were also investigated, though less completely. The construction of a complex of large timber structures at least 28m in length was discovered on the central property (McCarthy 2002:87–88; cf. Zant 1999 for phase by phase description of property development). This complex included a northern, southern, and eastern range erected around a metalled yard. After a number of phases, the northern and southern ranges were demolished, and the east range was reconstructed in stone (Building KLA C 2000). Over the course of the 3rd and 4th centuries, the stone structure was expanded so that it ended up 17m in length by 15m in width. The property included one hypocausted room, timber outbuildings, a stone-lined well and drains, and was separated from neighboring properties by fences and metalled lanes. McCarthy (2002:87–88) suggests that the property was occupied until the early 5th century at least, though no evidence is provided for this "late" occupation. The final phase of "Roman" occupation was archaeologically visible in changes external to the main structure (Zant 1999:40). There was the partial robbing of stone from the drains and the possible filling of the stone-lined well with silty soils. In conjunction with this activity, new yard surfaces were laid out, extending the area associated with the property in previous phases, including metalling east of the main structure and patchy spreads of coarse sandstone rubble to the west of the main building. Possible postholes were found cutting through the coarse metalling. A timber structure was also built in the northern portion of the central property, as indicated by a number of postholes.

The northern property contained a complex of timber buildings. This complex also included a stone-built well and ancillary structure, but the main building was built from timber. The final phases of the northern property saw changes to the external spaces (Zant 1999:40). These included the burial of a dog, the resurfacing of the yards and the robbing of stone from drains. A long-standing structure on the property (Building LAL D 1568) was demolished and replaced by a timber-framed building with a compacted orange-pink clay floor covering an area in excess of 7.4m east–west by 3.9+m north–south (Building LAL D 1570). No occupation soils or demolition debris was found in association with the structural remains of this building, and it is possible it was dismantled. A coin of Valentinian I was associated with the latest surface on this property (McCarthy *et al.* 1982:82). The leveled remains of the building were cut by three shallow pits filled with dark yellow-brown or red-brown sandy clay loams while the rest of the property was sealed by a build-up of dark grey-brown or black loam (Zant 1999:41).

While there is little evidence for late Roman activity in the Southern Lanes, the Northern Lanes seems to have been an area of well-to-do occupation. This is evidenced by large winged structures on the properties, whether built in stone or timber, and the presence of wells on the properties themselves.

53–64 BOTCHERGATE

Fourth century evidence at Botchergate is slim compared to the evidence from previous centuries, which indicates an area of industrial activity controlled by the military (Miller 2002:13). All the evidence for 4th century activity comes from disparate features. The most prominent feature was a beam slot with packing material that included Crambeck ware cut into a cobble foundation trench. Only two coins were found in association with the 4th century features, and both dated to *c.* AD 330–335 (Shotter 2002:22) while there was only a limited amount of pottery from the 3rd and 4th centuries (McPhillips and Hird 2002:18). In general, there were no "new" buildings constructed in the 4th century and no evidence to suggest any structural activity in the area until the 12th century, suggesting to the author that was "no great demand for building space" (Miller 2002:13–14). Miller also noted that the paucity of late Roman material was real and not the result of truncation, suggesting Botchergate was not an area of domestic occupation through the 4th century. Above the latest Roman deposits were thick, dark soil horizons.

BRIDGES

There is evidence for two bridges spanning the River Eden, connecting the communities of Stanwix and Carlisle (Bidwell and Holbrook 1989:107–110; see Fig. 8.3). The more northerly bridge was built at the same time as Hadrian's Wall downstream of the confluence of the Eden and Caldew, replacing an earlier bridge that spanned the Eden. Over the subsequent post-Roman centuries, the Caldew has drifted northwest, so that the modern point of convergence is some 200m further north. Blocks remaining from this bridge are characterized by the use of dovetail clamps. The Wall bridge presumably carried the Military Way across the river, so the accessibility of this bridge to "non-military" people is debatable. However, a second bridge seems to have crossed the Eden on the same alignment as Scotch Street in Carlisle and Scotland Road in Stanwix, characterized by blocks found using bar clamps and band anathurosis. This bridge then follows the same lines as the main road that ran north out of Carlisle, and was probably built in relation to the reorganization and building during the late 2nd/early 3rd century.

Arguably, this bridge was the most frequently used by the people of Carlisle, so the bridges could feasibly indicate a division between the "military" and "civilian" populations of the area.

"Native" Farmsteads

Outside of Carlisle, a number of "native" farmsteads have been identified. These sites are notoriously difficult to date without excavation, and few of these sites have been excavated. Those that have rarely provide any concrete evidence for occupation during the late Roman period. However, there are two sites that have yielded evidence of late Roman occupation, though neither site has been reported in much detail.

To the east of the recently discovered fort at Dalston, aerial photography identified a site with a number of features on Caldew Road (Esmonde Cleary 1997:415). Excavations demonstrated the presence of a radiating ditch overlain by a sub-rectangular farmstead delimited by a bank and ditch. There were traces of a stone-founded internal building, and Huntcliff type ware was found on site.

At Burgh-by-Sands, a multi-phase settlement was found north of Hadrian's Wall (Esmonde Cleary 1999:333). This settlement was defined by palisade slots, postholes, wells or latrine pits and a drove-road drained by ditches. The earliest features have been attributed to the late Iron Age, but the road ditches contained pottery of mid to late Roman date and are aligned on the causeway that crosses the Wall ditch.

4.5.4: CONCLUSION

The Late Roman to Early Medieval Transition

There is generally very good evidence for activity in the Roman period across the case study. However, compared to the total distribution of Roman and Early Medieval sites and findspots in the case study, the 4th to 7th/8th centuries is less represented (see Figs. 8.1, 8.3, and 8.21; 4th/5th century sites T=15, 5th–7th/8th century sites T=*c.* 17). The fort and town Carlisle are the only sites to be included in both Figs. 8.4 and 8.21. With the exception of Carlisle, Early Medieval material is dispersed across the case study. There is no concentration, and four of the sites are churches or stone cross fragments while the rest represent chance losses of objects. The crosses and churches can probably be associated with the Northumbrian church. The best Early Medieval evidence is found in Carlisle, and that is mostly limited to burials in the Cathedral precinct and structural activity at Blackfriars Street.

Interestingly, most of the findspots in Figure 8.4 are in the vicinity of Carlisle. This could be a real pattern, particularly as most of the 4th century activity is found in the Carlisle area. There is also no evidence for late Roman activity at any turrets or milecastles in the case study area. In all probability, this is due to an absence of evidence. The majority of literature regarding the structures from Milecastle 57 (Cambeck Hill) to Milecastle 74 (Burgh Marsh) is primarily occupied with the accurate location of these sites (e.g. Simpson *et al.* 1953; Biggins *et al.* 2004). At Milecastle 57 (Cambeck Hill), the milecastle lies underneath a modern farm, and so cannot be archaeologically examined (Charlesworth 1969). Where sites have been excavated, there has been no evidence of 4th century or later activity recovered, as at Milecastle 72 and Milecastle 71 (Bartle 1961), and Milecastle 64 (Button and Caruana 1984; Caruana and Fane Gladwin 1980). Therefore, no evidence from milecastles or turrets has contributed to the understanding of the 4th to 7th century transition in this case study, as the robbing of stone from the Wall, milecastles, and turrets has probably destroyed much evidence, as has the construction of modern farms above milecastles. While the lack of destruction would probably reveal late Roman activity at some milecastles, and perhaps a few turrets, this would not change the fact that the vast majority of late Roman and all the Early Medieval evidence comes from the centre of the case study, in Stanwix and Carlisle. This is not necessarily surprising, given the fact that Carlisle-Stanwix area probably represented the largest population concentration in northwest England in the Roman period. This allows us to concentrate our discussion of the late Roman to Early Medieval transition on that locality. Table 8.1 summarizes the evidence for very late Roman activity at the sites from Carlisle described above, and for the three forts in the case study area.

All three forts in the case study have provided evidence for activity from the second half of the 4th century that is significantly different in form from the preceding centuries. The latest building sequences at both the forts at Carlisle and Stanwix are timber-post or timber-framed buildings. In both cases, these structures were associated with the latest Roman coins and pottery, and also occurred in strata that sealed the latest Roman coins and pot. This suggests continued occupation of these forts, though the degree to which the function/use of the forts changed cannot yet be determined. Burgh-by-Sands fort II does not fit this pattern of timber buildings, but Burgh II has not been intensively examined archaeologically.

The "non-military" sites in Carlisle also reveal some interesting trends. It is likely that the Roman roads continued to strongly influence post-Roman construction and settlement (Fig. 8.22). At every site where there is clear evidence of very late Roman occupation, timber buildings are also attested, the exception being at Scotch Street. These timber buildings are hardly a surprise, however, as timber was the most easily obtained material for building and probably more affordable than stone.

Scotch Street seems to have been an exception in that it was likely the stone house of a wealthier individual, indicated by the hypocaust system and the *opus signinum* floor. Occupation at the Northern Lanes was also of higher status than that observed at other sites, though not as high status as the Scotch Street house. This marks the area to either side of modern Scotch Street as a wealthy enclave positioned in the centre of Roman Carlisle, just off one of the main city roads. The least amount of occupational evidence was seen at Botchergate, but this is furthest in distance from the geographical centre of Roman Carlisle. Thus it can be said that by the 4th century, Roman Carlisle was most concentrated in its settlement within one kilometer of the fort. While the town cannot be called large by comparison with settlements further south, it does represent a considerable concentration of population. Additionally, some of the residents were wealthy. The highest status building outside of a military context is at Scotch Street. Furthermore, the sites occupied in the late 4th century were occupied at least into the 5th century and probably later, as demonstrated by continuous stratigraphic sequences in which the latest layers occurred immediately after and sealed the latest Roman coins and ceramics.

It seems certain that late and sub-Roman Carlisle was an important settlement. The proximity of Carlisle to Stanwix also allows the area to be seen as one entity, though there may have been conflicting social, political, and economic interests between the people of Carlisle and the garrison at Stanwix that could have affected the post-Roman development of the area. Little can be said about the details of the end of Roman imperial administration in the case study, but the impact would have been significant. Carlisle was the largest town in the frontier zone, and Stanwix was the largest fort (though whether there can be a correlation between fort size and garrison size in the late 4th century is debatable). As such, both populations would have required a regular importation of supplies from the surrounding countryside, and perhaps from further afield to support the activities of these populations. The fact that there is evidence for continuity in the area, archaeologically, and that the pollen sites do not suggest rapid environmental change suggests that the leaders of the Carlisle-Stanwix communities managed to supply their people with regular supplies, though perhaps at a diminished scale. It is intriguing that goods from the Mediterranean may have been imported in the 5th century, as indicated by amphorae sherds found in the fort in Carlisle.

The positioning of Carlisle and Stanwix on a major conjunction of Roman roads, and in a position that is likely open to water transport is very important for the transport of supplies and trade goods into the area. It is also likely that much military supply passed through the Carlisle-Stanwix area, and that those supplies would then have been redirected to other garrisons along Hadrian's Wall, or north or south along the roads to other garrisons.

A final consideration for Early Medieval Carlisle comes from the anonymous *Vita St. Cuthberti* (Chapter 8; Colgrave 1940) and Bede's *Vita St. Cuthberti* (Chapter 27), which both cite the story of Cuthbert visiting Carlisle with Queen Iurimburg of Northumbria in AD 685, where they examined a *fons* (generally believed to be a well or fountain) and the city walls (Colgrave 1940). It was here that Cuthbert had a vision of the King Ecgfrith of Northumbria falling in battle at Nectansmere. The importance of the two passages should not be overstated, but they do indicate an awareness of the part of the population of 7th century Carlisle of the Roman origins of the place, that Roman structures were still visible on the ground, perhaps that there was a certain amount of pride regarding their town and its past, and that Carlisle was still an important settlement in the 7th century (cf. McCarthy 2002:152–153 for discussion of the Cuthbert passages).

Future Research Aims in the Case Study Area

Given the limitations of the current evidence available to us, much can be done to remedy an understanding of the area in the late Roman to Early Medieval transition. The pollen cores suggest differential change in clearance levels at a regional scale. Pollen studies examining local pollen changes closer to Carlisle would be beneficial. The Carlisle Millenium excavations have yet to be published, but when the results of this important excavation are available, it will be interesting to compare the latest occurrences of Roman pottery with the latest occurrences of Roman coins. Ideally, a confident date will also be provided for the amphorae sherds from the Mediterranean.

Excavation of additional sites in the study area, using modern techniques would be beneficial. Farmsteads and the forts at Stanwix and Burgh-by-Sands II should be targeted. It seems unlikely that much information would be yielded by modern excavation at a milecastle or turret. The most useful endeavor, however, would be to publish all the unpublished material from various excavations in Carlisle. Oxford Archaeology North is currently assessing the archive of these excavations, and hopefully publications will follow sometime thereafter.

The case study has been beneficial in demonstrating that there is plentiful evidence for late Roman to Early Medieval occupation. The evidence is heavily concentrated on Carlisle, but the evidence has provided sufficient detail to examine "the end" of Roman Britain and subsequent transformation. Comparison of this case study with others conducted will bear more fruit, particularly once they are integrated in the broader context of the transformation of the late Roman and early medieval north.

Appendix 5:
A Summary of Forts in the 4th Century in Northern England

Appendix 5 describes archaeological sequences from the 4th century and later at forts throughout northern England. This text forms the basis for the further quantification of traits first observed in the case studies and discussed in Chapter 9.

APPENDIX 5.1: FORTS ON HADRIAN'S WALL

VERCOVICIVM, *Housesteads*

At Housesteads, a number of changes occurred in the defences and gates in the 4th century, and perhaps later. The natural slope required the northern and southern ramparts to be refurbished throughout the fort's history. The northern rampart was refurbished with a large earth bank in the late 4th century than took up more space than previous refurbishments, reducing the size of the north intervallum road. Furthermore, a stone interval tower was replaced with a timber one. The southeastern and southwestern angle towers were rebuilt independent of the stone curtain, suggesting that the southern defences were also replaced with an earth bank (Crow 2004:109, 110). At the east gate, a timber lintel was inserted. The north and west gates were blocked, and the south and east gates were reduced so that only one portal was in use (Crow 2004:105).

A number of changes were observed in the internal buildings, as well. At the *praetorium*, an oven in the kitchen was rebuilt through the 4th century, the hypocaust in the dining room was filled in later in the 4th century, and walls were demolished and replaced, affecting the access and arrangement of rooms 6 and 7, in the northwest corner of the *praetorium* (Crow 2004:91).

In the *principia*, a staircase was inserted into the office space south of the *aedes*, providing access to a second story. Deposits from this space suggest the offices were converted to domestic occupation. The offices north of the *aedes* were converted for use for metalworking and storage (Crow 2004:96). These changes have been dated to the late 4th century.

North of the *principia*, the double *horreum* also underwent changes. The northern half was left in a ruinous condition and allowed to collapse in the 4th century. The southern *horreum* was divided into two halves. The western half saw the removal of the underfloor stone piers and a flagged floor was laid. A door was inserted into the south wall to provide access, and artefacts from this area suggest the space was used for domestic occupation. The east half continued to function as a *horreum*, but the stone piers were replaced by sleeper walls (Crow 2004:95). East of the *principia* on the *via praetoria*, a new building, built at some point the late 3rd century, seemed to have been used from the time of its construction through the 4th century as another *horreum*. In the late 4th century, though, a bath suite was inserted in the east end of this building (Crow 2004:92, 111).

The chalet barracks continued to be refurbished through the 4th century, and there is a possibility that the building identified as the hospital was converted to domestic occupation in the 4th century, as a similar assemblage to that from the converted *horreum* was found on a late floor (Crow 2004:95). Two further buildings are worth noting. Floor flagging from a late/sub-Roman building was found on road space near the northeast rampart, between two barrack buildings (Crow 2004:110), and a building near the north rampart with an apse at its west end was recorded. The size and shape, as well as the nearby cist suggest that this building may be a church, though there is no further evidence to confirm this interpretation (Crow 2004:112).

VINDOLANDA, *Chesterholm*

Vindolanda exhibits all of the same traits seen at Housesteads. The defences seemed to have been refurbished in the 4th century, *c.* AD 370, as stonework and mortar of a different character was observed in the northeast and northwest defences (Birley 1931:185; Bidwell 1985:42). In the late 4th century at the earliest, the ramparts were encased in earth banks (Bidwell 1985:46). Fourth century rampart buildings of stone were observed in the east rampart (Birley 1931:195), east of the northwest angle tower and elsewhere in the north rampart (Bidwell 1985:45, 46). A latrine built in the rampart near the northeast corner was in use until at least *c.* AD 370, as Huntcliff type pottery had blocked the drains (Birley 1977:95). It was then demolished and replaced with another stone building that left fragmentary evidence of stone walls and flagging. A possible tower was added to the west defences in the late 4th century, and it is also possible that a tower was built at the same time in the northeast corner (Bidwell 1985:40, 45). Partial blocking was observed at the south gate (Birley 1970:102), and the east gate was refurbished in the 4th century (Birley 1931:199). There was a late 4th century reflooring of the west guard chamber of the north gate and a likely

refurbishment of the gate at the same time (Birley 1931:198). A mid 4th century coin hoard was found in one of the guard chambers of the west gate, and earlier excavations found remains of buildings contiguous to one of the west gate towers (Bidwell 1985:37). These structures cannot be located on any plans, and they may be rampart buildings, but they could also be similar to the structures observed at Birdoswald that were contiguous with the west gate dated to the 5th century.

Excavations at the *praetorium* revealed that the building was extensively reconstructed *c.* AD 300. Around AD 370, a bath suite was built and extended to the north. In the late 4th century or later, the east wing was demolished, and a church-like apsidal structure was erected in the courtyard. Interpretation that this building was a church was reinforced by artefacts with chi-rhos etched on them, and a small, portable chi-rho altar stylistically dated to AD 500-550 was found reused in a sub-Roman structure south of the fort (Birley 1999:135; Burnham 2000:390).

The construction of the *principia* was originally dated to the early 4th century (Birley *et al.* 1936), but subsequent examination of the pottery demonstrates it was built in the early 3rd century (Bidwell 1985:47). Therefore, some of the "Theodosian" alterations may belong to the early or mid 4th century. The verandah fronting the *principia* was converted into two storage rooms flanking the entrance. The courtyard was repaved, and the rooms around the courtyard had sleeper walls and new flag floors added. In the crosshall, a new earth floor was laid, and large stone bases were placed to suggest that central supports were added to reinforce the roof, or perhaps a loft or second story. As at Housesteads, the rear-range rooms to either side of the *sacellum/aedes* at Vindolanda were converted to living quarters. The doorways to these chambers were blocked and access was solely through the *sacellum*.

West of the *principia*, an excavation trench across a *horreum* indicated that it had been converted in the late 4th century for occupation rather than storage (Bidwell 1985:50). Investigation of barracks in the northeast quadrant of the fort revealed they were built in the chalet style from the mid 3rd century and refurbished through the 4th century (Bidwell 1985:66-75). There was a complete rebuilding of the barracks in stone *c.* AD 370. The barracks were demolished in the early 5th century at the earliest and replaced with a building with stone foundations and a flagstone floor. Remains were fragmentary due to disturbance from Medieval plowing.

Late 4th century activity was demonstrated at a *fabrica* east of the *via praetoria* (Bidwell 1985:50). Other buildings include a "late" structure built on the road south of the *praetorium* (Birley 2000:135), and a number of structures thought to be sub-Roman in date (Burnham 2000:390). Two such structures were "crudely built" of stone on the rampart mound to either side of the south gate. Two more structures with rough stone floors were built over the silted up ditch near the southwest corner of the fort, and more "crude stone structures" were built on the intervallum road. A penannular brooch dated to the 6th/7th centuries was found at the south gate, and the Brigomaglos stone, a Class I inscribed stone of the 5th/6th centuries was also found at the fort (Bidwell 1985:76).

Other Wall Forts

Fourth century construction and partial gate blocking saw the narrowing of the *via praetoria* narrowed at Halton Chesters (Jarrett 1959; Simpson and Richmond 1937). The *praetorium* at Halton Chesters was the first site where park-railing stones were encountered, found in association with Crambeck and Huntcliff type wares from the late 4th century. It is possible that when park-railing stones are found, these indicate a greater use of timber rather than stone in refurbishment (Welsby 1982:109). Barracks or stables seemed to have been refurbished in the 4th century, though little detail was supplied. A sherd from a Crambeck mortarium was sealed by the fragmentary remains of a "crudely built" wall of a rampart building (Jarrett 1959:183).

Richmond and Birley (1940:101-102) discovered that late alterations were made to the headquarters building/*principia* through the 4th century at Corbridge. This was seen with the incorporation of domestic quarters dated to post AD 364 by a coin of Valentinian I. Other coins found at Corbridge date to AD 395 at the latest, with the Valentinianic and Theodosian coinage very worn, suggesting long use lives (Casey 1988:158; Hedley 1937). Unfortunately, much of the 3rd and 4th century evidence at the site was removed by earlier excavations, reducing the information available to modern excavations (Bishop and Dore 1988). Furthermore, a late 5th/6th century cruciform fibulae and Anglo-Saxon urn were also found in Corbridge (Hedley 1937:102).

At Chesters, gate blocking and 4th century construction also seems to have infringed on road space (Harper 1961). Late pottery was found in the infilling of hypocausts in the *praetorium* in the fort. Two undated *horrea* were built in the *retentura*, but they are thought to be late.

Excavations at Carrawburgh revealed reconstruction and occupation through the 4th century (Breeze 1972). Barracks in the *praetentura* were occupied in the 4th century, based on ceramic evidence. Furthermore, a pit interpreted as a latrine pit also had a sherd of pottery of late 3rd/early 4th century date. On the basis of comparison with Wallsend, we can confidently assign this barrack to a cavalry unit, with this perhaps being the latest dated cavalry barrack on the Wall. South of the northernmost barrack block, other barracks were demolished and a new building was constructed on a slightly different alignment in the

mid 4th century or later. Unfortunately, very little detailed information from the 4th century was obtained due to stone robbing in the *praetentura*. The *principia* also underwent significant alterations. In general, the building retained its original plan, but the rear office internal walls were substantially rebuilt from the foundations at an unknown post-early 3rd century date. The stonework is comparable to 4th century rebuilding in the courtyard, and it can be confidently speculated that the *principia* was substantially refurbished in the 4th century, perhaps even the later 4th century. Contemporary or later than this refurbishment, channeled hypocausts were inserted in two of the rear offices. In the courtyard, a phase of infill raised the level of the entire forecourt area. The verandah then had walls inserted, sub-dividing the space and implying a change of space. A well was also inserted in the northwest of the courtyard. The south gate also seems to have been blocked in the 4th century.

At Bowness-on-Solway, a timber post building was constructed in the northeast part of the fort. It was approximately 5m wide, and there is the possibility of another building in the area that may be contemporary with it (Potter 1979:330-332). Wooden structures were added to the east end of a barrack block in the area of the west gate. The postholes were stone-packed and cut through the intervallum road, and the similarity with the other post-built structure suggests a late date although very little late 4th century material was found.

APPENDIX 5.2: NORTHERN FORTS SOUTH OF THE WALL

The traits observed at the forts in the case studies along Hadrian's Wall are also seen in other forts in northern England. As with the forts in the case studies, no one site exhibits all the traits noted on the Wall. However, a small number of sites have well published examples that illustrate that the changes occurring along Hadrian's Wall in the 4th century also occurred in other areas of the frontier. The sequence at Binchester is complicated enough that it bear singling out, while the remaining forts are discussed in brief or more thematically. Other forts indicate only one or two traits or as many as seven. Unfortunately, details of the excavations at many of these northern forts do not provide sufficient detail for the 4th century sequences.

VINOVIA, *Binchester*

The Roman fort at Binchester, sited at the intersection of Dere Street and the River Wear, has revealed an important archaeological sequence from the bath suite of the *praetorium* in the fort (Ferris and Jones 2000). The *praetorium*, a large courtyard house, was built in the central section of the fort. It was built in the 4th century; a House of Constantine coin dated to AD 335 was found sealed by a primary concrete floor. It has been suggested that the fort was reorganized to accommodate the size of the *praetorium*, 45 by 65m. The *praetorium* underwent many alterations and additions from the time of its construction until it was abandoned and collapsed.

The house was built at the beginning of site Phase 8A, but the primary focus of the sequence is the large bath suite added in Phase 8B. The construction of the bath suite is dated by a securely stratified coin of Magnentius (AD 350-360). At approximately the same time, or slightly later, alterations were made to the residential ranges of the *praetorium* in Phase 8C. These changes mainly took the form of inserting walls to subdivide some of the larger rooms. At some point later, in Phase 8D, the bathhouse was enlarged to create more lavish bathing facilities. The latest coin associated with this enlargement is another coin of Magnentius, but the evidence for use of the bath suite makes it likely that some considerable time had passed between the initial construction of the bath suite and its expansion. During this phase, further repairs and redecoration were made to the house.

During Phase 8E, the latest construction work occurred. This consisted of unmortared walls of sandstone rubble used to subdivide rooms in the house. The bath suite continued to be used, and the northern *praefurnium*/furnace was cleaned and repaired regularly. Eventually, the flue of the furnace was filled with ash deposits, making it unusable. The main *praefurnium* continued to be used, however. After a succession of small ovens were constructed, the furnace room was purposefully demolished with the removal of roof tiles and robbing of walls down to ground level. It is believed the western *praefurnium* was also demolished, and it was probably at this time that metal piping and fittings were removed from the baths.

Phase 9 saw the continuing use of the bathhouse and residential ranges. A room in the rear range of the *praetorium* was converted into a metalworking area, and a neighboring room was converted to use as a slaughterhouse. Cattle bones from this area were radiocarbon dated to centre on AD 440 (Jones, pers. comm.). Further middens found on site produced more animal bone, and large quantities of pottery, coins, and waste material from bone and jet working. Interestingly, the coins from these Phase 9 middens had a mid 4th century peak, and the pottery was mostly late 4th century Crambeck and calcite-gritted wares of the Huntcliff type (Jones, pers. comm.). The midden deposits were subsequently leveled, and above the leveled midden over the northern *praefurnium*, flagstones were laid which probably formed the "floor surface of an ephemeral wooden structure" (Ferris and Jones 2000:3). Antler fragments lying directly on the flags attest to the use of the structure as a workshop.

At some point later, the bathhouse began to decay. The west side of the bathhouse collapsed and resulted in a spread of sandstone rubble and tufa blocks from the vault. After some time, a grave was cut into the collapsed masonry. The skeleton of a young female was mostly intact, and her accompanying grave goods – a pottery vessel, a glass and amber necklace, antler objects, and a copper alloy brooch with bird's head terminals – dated the burial to the mid 6th century. This is the latest activity in the area of the *praetorium*, but an extensive inhumantion cemetery dated to the Middle Saxon period was located in the central area of the fort. There was also substantial robbing of major architectural features from the bath suite ruins. The robbing is undated, but Ferris and Jones (2000:3) suggest that these stones were taken for the construction of the Saxon church as Escomb.

Other Forts

At Malton (Corder 1930), the northeast gate was rebuilt in the first half of the 4th century, probably as part of a comprehensive rebuild of the fort. Subsequently, the gate was partially blocked. In the later 4th century, the northeast gate may have been completely rebuilt, as there was an overall reduction in wall thickness. In the north corner of the fort, a "poorly executed rebuilding" of a structure, probably a barrack was observed, and a broad ditch was dug along the northeast side of the fort. There was no recognisable building remains found in the early 5th century, though late cobbled and roughly metalled surfaces were observed. A rutted road was seen to "oversail" the debris of the northeast gate. Two rectangular trenches approximately two meters wide were seen to cut across the causeway leading to the northeast gate, suggesting that the gate was isolated at some point in the 5th century. The lack of recognized structures could be due to the fact that stone buildings were replaced with timber and these remains were not identified.

In the late 3rd/early 4th century, the fort at Ilkley was rebuilt (Hartley 1987; Woodward 1925). This phase of rebuilding saw the narrowing of the north gate. The earth rampart was removed from behind the circuit wall, and buildings were added close to the defences, encroaching on the space of the intervallum road. A timber-framed building on a stone sill dated to the early 4th century was built in the northeast quadrant of the fort, thought to be a stable. A new *praetorium* was built five meters south of the north wall of the fort encroaching on the intervallum road, and a *horreum* was built in between the *praetorium* and the *principia*. Colonnades were added to the front of the *horreum* and the *praetorium* along the *via principalis*. A post-built, wattle-and-daub *fabrica* was constructed in the northwest corner at the same time. In the late 4th century the central range was extensively modified. The south range of the *praetorium* was demolished and replaced by a second colonnaded *horreum*, but the *praetorium* was extended to the west with the construction of a bath suite. The *principia* was refurbished, with Woodward (1925:193) noting that the rear offices were reduced in size from previous phases. Fragmentary remains of stone structures and poor quality paving were found west of the central range, but the function of the structures was undetermined. In the northeast quadrant, a late stone building overlaid the former stables on a markedly different alignment. Approximately 45cm of dark humic earth sealed the Roman deposits.

Excavations at Ribchester demonstrate occupation in the 4th century, but it is unclear when Roman activity came to an end. Partial demolition and total blocking of the west gate was probably accompanied by the creation of a new, broad, flat-bottomed ditch in the early 4th century (Edwards *et al.* 1985:26). The north guardchamber of the gate was demolished and replaced with an oven. Barracks south of the *via decumana* and east of the west gate also seem to have been demolished by the early 4th century and the area was left open, though a large pit dated to *ca.* 360-400 by ceramics cut through all the phases (Edward *et al.* 1985:37). The *via decumana* was resurfaced in the 4th century, however. Further traces of the timber post-built barracks were found in the southwest corner of the fort (Witherington 1978). The western edge of the barracks may be indicated by two postholes cut through the intervallum road. Excavators dated the last phase of construction to the late 3rd/early 4th century and suggested the buildings were out of use by the mid-late 4th century. The final phase of occupation was overlain by a spread of black soil containing late 4th century calcite-gritted and Dales wares. Probable barracks in the northeast quadrant of the fort had late 4th century pottery associated with late phases, and a possible late Roman wall and pits overlaid destruction and abandonment deposits in the area of the *praetorium*, suggesting possible late refurbishment of the building (Burnham 2000:398; Burnham 2001:346). Outside of the fort, only the bathhouse demonstrated any late Roman activity (Buxton and Howard-Davis 2000:421).

At Bainbridge, the *principia* was demolished in the later 4th century, dated by a coin of Valens found in the rubble. The area was then overlaid by a complicated sequence of "wooden sheds" and "working floors". There was evidence for lime-working pits as well as iron and bronze working in the area (Hartley 1969). A stone building was constructed over a timber building in the northwest *retentura* in the late 4th century, and three north-south aligned, stone-built structures were found in the southeast *praetentura* (Welsby 1982:122). The buildings were well constructed, but no internal partitions were found. During a later period, however, mortar-bonded walls were inserted in one of the buildings over a flagged floor. This suggests the buildings may have been barracks.

At Old Penrith, the fort ditches underwent a major revision (Austen 1991:94). The two outer ditches were infilled and built over by *vicus* buildings, and the two inner ditches were replaced by a single, substantial V-shaped ditch. Fills of this ditch included Huntcliff type jars and pots as well as Crambeck ware. This ditch ran across the path leading to the south gate of the fort, but it was probably crossed by a wooden bridge, as a posthole was found just south of the ditch. A drain running through the south gate was filled with late 4th century ceramics and associated with two road resurfacings, but no further investigation or information from the fort was available from these excavations.

At Maryport, the rampart bank was enlarged, spreading over the outer intervallum road, which was then shifted inward (Jarrett and Birley 1976). Stone-packed postholes provided evidence for a timber-post building in the later 4th century, though no plan could be recovered of the structure. Valentinianic and Theodosian coins as well as Huntcliff and Crambeck wares attest to occupation of the site until at least the end of the Roman period.

Ravenglass saw a number of changes in the 4th century (Potter 1979). The ditch north of the fort was infilled between AD 335 and AD 370, and piecemeal repair was made to the latest surface of the intervallum road. Several phases of timber-post and timber-framed buildings were found in the interior dated to the 3rd and early 4th centuries. After *c.* AD 350, stone-packed postholes attested to timber-post barrack, though the layout remained the same from previous phases. Evidence for smithing was found in the northernmost barrack. The barracks may have been purposefully demolished and the Roman layers were sealed by a layer of dark soil with residual ceramics and finds that had been plowed in the Medieval period.

Excavations at Watercrook demonstrated the partial block of the northeast gate (Potter 1979). A new gate was inserted at the same time, attested by postholes found in the centre of the reduced passageway and at the southwest corner of the adjacent guardchamber. Late 4th century pottery was found in the centurion's quarters in the south corner of the fort. Despite the considerable quantity of 4th century pottery found on the site, there have been sparse finds of late 4th century coins.

Late 4th century occupation is also attested at other forts in northern England, although specific details relating to the late structural and occupational details is lacking. Examples of quantities of late 4th century pottery are found at Old Carlisle (Birley 1931b:39), Burrow Walls (Gillam 1955), Low Burrow Bridge (Hildyard and Gillam 1951), and in association with a broad ditch from the fort at Brougham (Birley 1932:134, 138). Fourth century repair/refurbishment was noted in a barrack block and in the *praetorium* at Papcastle (Charlesworth 1965). Evidence for metalworking was also found in the *principia* at Ambleside, and the west gate at Ambleside was blocked (Collingwood 1915); further late occupation at Ambleside was suggested by a coin of Valens (AD 364-378) and Huntcliff ware. The west portal of the south gate at Burrow in Lonsdale was blocked and a building inserted in its place in the 4th century (Hildyard 1955). Very late repairs were made to the curtain wall at Bowes, as it subsided into a layer that contained quantities of Huntcliff ware (Welsby 1982:114). The large fort at Piercebridge also seems to be a late establishment, *c.* AD 300 (Keeney 1937; 1954). Crambeck ware attests to late occupation at this fort.

A summary of the Yorkshire coastal fortlets is found in Chapter 2. The legionary fortress at York is described in the text of Chapter 6.

Appendix 6:
4th Century Trends in the Northern Frontier

An examination of the forts in the case studies on Hadrian's Wall reveals changing conditions in late Roman forts. A number of trends were identified in the 4th century and later deposits, and similar trends were looked for in other forts of the northern frontier. These trends are listed below, presented hierarchically, starting with traits of structural/architectural significance and leading into traits related to the changed use of space. Within this latter category, the more monumental the trait, the lower down the list it appears. Table 6.2 summarizes the observation of traits at all the forts in the Hadrian's Wall corridor, and Table 6.3 summarizes the traits observed at other northern English forts.

Barrack Repair/Refurbishment: During the 4th century, if it had not already occurred, the regular, standardized barracks of the 2nd century were replaced with less regular chalet-style barracks, and these barracks were repaired/refurbished as necessary (e.g. South Shields, possibly Wallsend, Newcastle, Rudchester, Halton Chesters, Carrawburgh, Housesteads, Vindolanda, Great Chesters, Birdoswald, possibly Ebchester, York, possibly Malton, Ilkley, possibly Ribchester, Ravenglass, Papcastle, possibly Bainbridge).

***Praetoria* Repair/Refurbishment:** Refurbishment of *praetoria* occurs in the 4th century (e.g. South Shields, Newcastle, Benwell, probably Rudchester, Halton Chesters, Chesters, Housesteads, Vindolanda, probably Great Chesters, Birdoswald by inscription, Chester-le-Street, possibly Ebchester, Binchester, Ilkley, possibly Ribchester, Papcastle).

***Principia* Repair/Refurbishment:** Refurbishment of *principia* occurs through the 4th century (e.g. South Shields, Newcastle, Corbridge, Carrawburgh, Housesteads, Vindolanda, Carlisle, possibly Ebchester, York, possibly Ilkley, possibly Ambleside).

Increased Use of Timber: New construction/renovation of buildings in the late 4th century increasingly uses timber framing or timber posts rather than stone (e.g. South Shields, possibly Halton Chesters, Housesteads, Birdoswald, Stanwix, Carlisle, Bowness, possibly Malton, Ilkley, Ribchester, possibly Watercrook, Ravenglass, Maryport).

Decreasing Road Quality: Through the course of the 4th century, road pavement quality decreases or is inconsistent (e.g. South Shields, Wallsend, Newcastle, Birdoswald, Carlisle, York, Malton, possibly Ilkley, Ravenglass).

Infringement on Road Space: Construction or refurbishment in the late 4th century infringes on major/primary road space (e.g. South Shields, Wallsend, Benwell, possibly Rudchester, Halton Chesters, possibly Chesters, Housesteads, Vindolanda, Birdoswald, possibly Stanwix, possibly Carlisle, York, Ilkley, possibly Ribchester, Maryport).

Gate blocking: Gate blocking at forts began in the late 2nd/early 3rd century, but another "later phase" occurred in the 4th century. Not all the gates at any given fort were blocked, but where gates have been investigated, some were narrowed or blocked while others remained open (e.g. South Shields, Wallsend, probably Benwell, Rudchester, Halton Chesters, Chesters, Carrawburgh, Housteads, Vindolanda, Great Chesters, Carvoran, Birdoswald, Lanchester, Malton, Ilkley, Ribchester, Burrow in Lonsdale, Watercrook, Ambleside).

Changed Use of Gate Space: In cases where there was gate blocking, the use of space sometimes changed to metal working or domestic occupation (e.g. South Shields, Birdoswald, Lanchester, possibly Malton, Ribchester, Burrow in Lonsdale,).

Accommodation Expanded into Formerly Specialized Buildings/Spaces: Accommodation at forts in the 4th century was not restricted to barracks. In many cases, various structures in the forts were converted for domestic occupation in the 4th century. At Corbridge, Vindolanda, and Housesteads, the offices in the *principia* were converted for occupation, as was the northeast gate at South Shields and Lanchester. *Horrea* were also converted, as at Housesteads, Vindolanda, arguably Birdoswald with its timber halls, and possibly at Stanwix. The *horrea* at South Shields are not included in this trend as they were reused from the fort's phase as a supply base. At Housesteads, domestic occupation was also discovered in the hospital building.

Metalworking was No Longer Restricted to Purpose-Built *Fabricae*: At Housesteads, metalworking debris was found in the *principia*, while at South Shields evidence for metalworking was found in barracks. Similar evidence was also found in the *praetoria* at South Shields. The west *horreum* at Newcastle was converted for this purpose, and evidence for metalworking was also found in the west gate at Birdoswald. Similar examples can also be found south of the Wall at Chester-le-Street, York, Ravenglass, Ambleside, and Bainbridge. The use of these spaces for metalworking through the 4th century cannot be demonstrated at any of the sites to be concurrent with similar activity in a *fabrica*, though establishing such a relationship is important. It is also possible that the majority of metalwork for the garrison was done outside the fort, in the *vicus* or another site altogether. This cannot be proven, of course, but this may explain the reason for 4th century metalworking at Sewingshields milecastle (Haigh and Savage 1984).

Barrack Demolition/Conversion: In the later 4th century, there was a conversion of barrack space, for example for use as metal working areas, or demolition of barrack buildings (e.g. South Shields, possibly Carrawburgh, Birdoswald, Stanwix, Carlisle, Chester-le-Street, possibly York, Ilkley, possibly Ribchester, Ravenglass).

Subdivision of Rooms: Rooms are subdivided into smaller units in the late 4th century (e.g. South Shields, Benwell, Carrawburgh, Chester-le-Street, Binchester).

Extension/Addition of Bath Suites: In the late 4th century, bath suites are extended/added, as in the case of the *praetoria* at Vindolanda, Chester-le-Street, Binchester, and Ilkley and building 15 at Housesteads. Interestingly, at South Shields, the bath suite of the *praetorium* was reduced in size, leaving only the hot and warm pools and rooms.

***Horrea* Demolition/Conversion:** In the late 4th century, *horrea* are sometimes demolished or converted to some other function than acting as a granary/foodstuffs warehouse (e.g. South Shields, Newcastle, Benwell, Birdoswald, possibly Stanwix). This is generally indicated by the infilling of the subfloor, and palaeoenvironmental deposits from South Shields indicate that the use of the *horreum* was different once the subfloor was infilled. At Birdoswald, occupation deposits and postholes were found in addition to infilled subfloors. It is possible that the infilled subfloor of a *horreum* does not mean the building was no longer used for storage purposes, but the building is no longer a standard raised-floor *horreum*, architecturally speaking.

Changed Use of *Principia* Space: There were changes in the use of space in the *principia* in the later 4th century, for example the hundreds of arrowheads found in a chamber in the forecourt of the *principia* at Housesteads indicating the position of an armoury (e.g. South Shields, Newcastle, possibly Carrawburgh, Housesteads, possibly Carlisle, York, Ambleside, Bainbridge).

Patterned Coin Loss: Significant distributions and large numbers of mid to late 4th century coinage have been found within a presumably controlled or designated area of the fort (e.g. Wallsend, Newcastle, Carlisle).

Refurbishment of Defences in Earth Banks & Timber/Stone Revetment: Decay of stone defences in the late 4th century or later sometimes sees them replaced with an earth bank and/or timber or simple stone walling/revetment (e.g. South Shields, Wallsend, Newcastle, Birdoswald, possibly Carlisle, possibly Malton, possibly Bowes).

It should be noted that differing levels in excavation and detail in reporting have resulted in differential patterning. This is clearly observed by noting which forts have the highest frequency of observed traits. At South Shields, 16 of the 17 traits were observed, and at Birdoswald 12 traits were observed. On the other hand, Carrawburgh, Carvoran, Castlesteads, Burgh-by-Sands, and Drumburgh did not have any traits observed. The number of traits observed is related to the extent of excavation under modern conditions and the level to which those excavations are reported.

Not all the traits are contemporaneous with each other. In many cases, gate blocking or narrowing occurred in the 3rd century, as did the change to chalet style barracks. Structural repair/refurbishment of many buildings occurred throughout the Roman period. Even in cases where a trait is dated to earlier than the 4th century, as in gate blocking, this activity still had important consequences and a bearing on the settlement through the 4th and 5th centuries. These exceptions noted, however, all the other traits occurred in the mid and late 4th century, if not later and all suggest significant spatial changes occurring in forts in the 2nd half of the 4th century.

The traits indicate a trend for the internal reorganization of space in forts, and a changed ability or preference to execute repairs/refurbishment in a similar fashion to previous repairs and refurbishments.

These traits may be related to changed demands on the space of a fort from increased or decreased fort garrisons/populations or perhaps due to changing relationships between fort garrisons and the military hierarchy. What is clear is that considerable material changes were occurring at the forts along Hadrian's Wall in the mid–late 4th century. But are these traits seen across the whole of the frontier? If they are, it is unlikely that these changes to/in the military occurred only along Hadrian's Wall. As part of a frontier system, the changes seen on the Wall should be seen at other installations of the British frontier.

Appendix 7:
Occupational Community Theory and the *Limitanei*

Conceptualizing the Occupational Community

An occupational community is defined as "people who are members of the same occupation or who work together [that] have some sort of common life together and are, to some extent, separate from the rest of society" (Salaman 1974:19 n.4). Occupational communities represent the relationship between a person's work and their life outside of work, in which the nature and conditions of the occupation permeates social relationships, interests, and values. The key defining components are threefold (Salaman 1974:21):

1. [M]embers of occupational communities see themselves in terms of their occupational role: their self-image is centred on their occupational role in such a way that they see themselves as ... people with specific qualities, interests and abilities.
2. [M]embers of occupational communities share a reference group composed of members of the occupational community.
3. [M]embers of occupational communities associate with, and make friends of, other members of their occupation in preference to having friends who are outsiders, and they carry work activities and interests into their non-work lives.

In terms of self-image, a member of an occupational community does not see himself solely in this role, as an individual's identity is composed of multiple roles determined through various social relationships (Goffman 1969). However, the member places a higher emphasis on his occupational identity (including the qualities and abilities needed for that occupation) that dominates much of his life outside of work. Such membership involves the internalisation of a value system that becomes relevant not only to the sphere of work, but also to aspects of life outside of work (Salaman 1974:24). It is this feature that strengthens the relationships with work colleagues, as they also share the same value system and have similar attitudes. Thus, co-workers become people that the member can relate to and interact with. Co-workers become the primary reference group. The reference group is particularly important, as its members can exercise powerful social sanctions that strongly influence the behavior of the member.

> Members of occupational communities do not attempt to separate their work and non-work lives: their work influences their non-work activities and interests. Members of such communities manifest a strong convergence of work and non-work life generally, and the most important feature of this is that they prefer to be friends with people who do the same work. This does not simply mean that members of occupational communities are friendly with their work-mates while at work . . . For members of occupational communities, colleague relationships permeate out-of-work life. Colleague relationships imply more than just a shared work situation . . . Colleagueship involves a trust, a confident mutuality. It means sharing the same work-based stock of knowledge and meanings, symbols and . . . language [Salaman 1979:25-26].

Once an occupational community is identified, membership in such a community can be determined by three factors: physical and/or emotional involvement in work tasks; having a defined status, whether high or low; and the inclusivity of the work or organizational situation (Gerstl 1961; Salaman 1974:27). These three determining factors, as well as the three forms of inclusivity (discussed below) determine the type of occupational community that is formed. So it is necessary to discuss each determinant and kind of inclusivity in brief, as the type of occupational community is relevant to a theoretical understanding of the late Roman military.

Involvement in work is always to some extent a result of external factors (e.g. familial obligations, physical limitations), but certain situations generate a greater sense of involvement. These include potential danger, a sense of responsibility, and a high level of expertise or training. The ***status*** of the job relative to other occupations, particularly if it is high status when compared to other local jobs, will generate increased involvement just as marginal status relative to other occupations will also increase involvement (Salaman 1974:28). Once membership in an occupation is attained, or in some cases granted, certain features of the job will affect non-work activities and interests, which in turn restrict opportunities to establish and maintain relationships with work colleagues and people outside the occupation. These features are classified as kinds of ***inclusivity***, and there are three primary types: pervasiveness; organizational embrace; and restrictions (otherwise known as restrictive factors; Salaman 1974:33–36).

Pervasiveness, the number of activities in or outside the organization for which the organization sets norms, varies between occupations (cf. Etzioni 1961). For example, a modern Western army set norms and rules that apply to many aspects of its member's life, both in work and outside of it. "The

military profession is more than an occupation: it is a complete style of life" (Janowitz 1960:175). When a person is subject to a high degree of organizational pervasiveness, often through a value system established by their occupation, then non-work life will converge with work life through various activities, interests, and relationships (Salaman 1974:34).

Organizational embrace, the second type of inclusivity, identifies the extent to which an organization will attempt to control the activities of its members (Etzioni 1961). Control can be accomplished through regulation of sleeping, eating, and recreation activities by supplying the facilities or materials needed for such activity (Salaman 1974:34). Embrace is most successfully achieved when the only supply of facilities and materials for non-work activities is through the organization (best exemplified in modern scenarios by asylums but also found amongst soldiers and police officers). Occurrence of high levels of organizational embrace strongly influences and restricts a member's non-work life and opportunities to establish and maintain relationships with people outside the organization.

The final type of inclusivity is the restrictions that affect non-work lives. Restrictions differ from embrace in that embrace is a deliberate policy of an organization, while restrictions are the result of the way that the work is organized and of certain exigencies of the job itself (Salaman 1974:35). Examples of restrictions include the need to travel and the time of day at which the work is carried out. Both of these examples limit the social interaction with people outside the occupation.

Of the three types of inclusivity, organizational pervasiveness is the most important. This is because pervasiveness affects occupational self-identity, the prime component of an occupational community. It is pervasiveness that facilitates the internalisation of a value system that allows a person to identify with work colleagues. Organizational embrace and restrictive factors are related to the first two components of occupational communities through their effect on people's friendship and associational patterns, but this is only indirectly related (Salaman 1974:36–37).

"[T]here are no known cases of occupational communities where members are not strongly involved in their work skills and tasks" (Salaman 1974:37). However, while involvement is necessary, it alone is not sufficient enough a causal factor. At least two determinants are required, with the second determinant being either status-based or due to inclusivity.

The determinants are important because the situation that conditions the occupation will determine whether the occupational community can be identified as cosmopolitan or local (Salaman 1974:38–41; following Gouldner 1957; Merton 1957; Reissman 1949). Cosmopolitan occupational communities are based on the occupation as a whole and are composed, potentially, of all members of the occupation. Members of this type are oriented toward the world outside and with respect to the role of their occupation as a whole. Members of cosmopolitan communities perceive their occupation in the context of broader society, and they are likely to identify with any colleagues from that occupation. Thus, cosmopolitan communities are not geographically restricted. Anderson's (1991) notion of imagined community is essentially similar, but it draws on national or civic identity as its unifying factor rather than occupational identity. Local occupational communities, on the other hand, are composed of members who share a specific work situation, creating a geographic correlation. Furthermore, members of this type will not identify as strongly with others in the same occupation outside their own work situation.

The type of occupational community, local or cosmopolitan, is related to the requisite second determinant that establishes the occupational community in conjunction with involvement (Salaman 1974:41). In the case of local occupational communities, there are likely to be certain features of the work situation that prevents the member from establishing or maintaining relationships with colleagues outside their situation, be it restrictions, organizational embrace, or pervasiveness. For cosmopolitan communities, the second determinant is a feature of the occupation as a whole, for example pervasiveness or status, both of which limit the associational choices of member so that they have the most in common with peers within the occupation. The formation and identification of both types of occupational community is critical to understanding the Roman military through the 4th and 5th centuries.

The Limitanei – *An Ancient Occupational Community*

This overview of the concept of occupational communities provides a theoretical understanding of the late Roman military and will be useful when considering the *limitanei*. A brief examination of the late Roman military indicates that its members can be identified as an occupational community. First, soldiers had an important notion of identity that encouraged separation from other social groups. A high degree of ***involvement*** was achieved through physical (and presumably mental) conditioning a recruit received during training. Considered as a period of institutional education, the training inculcated martial ideologies and laid the foundation of soldierly identity. This does not include the fact that a number of recruits would be the sons of serving soldiers or veterans, whose upbringing and education prior to recruitment would have introduced them to aspects of military life. After an initial training period, a soldier's feeling of involvement could still be appealed to through sense of duty, whether to the Empire and emperor, to his commander, or to his post. Shared responsibility amongst soldiers, experienced on the battlefield or through an undesirable but necessary duty (e.g. collecting/escorting provisions) also kept men

drawn into their job. Further involvement was reproduced through regular military routines such as practice drills and membership in a *contubernia*.

Soldiers enjoyed an exclusive ***status***. The legal freedom to publicly bear arms was an important manner by which the soldier (or veteran) could distinguish himself in public, not to mention other visual and material signals and symbols of status (e.g. uniform, badges of office, etc.). Furthermore, special privileges regarding tax exemptions, property control and inheritance, and separate trial in military courts legally identified soldiers as a favored class (James 1999:15).

A number of factors reinforced the ***inclusivity*** of soldiers. At the most fundamental level, training of recruits indoctrinated soldiers to value certain traits, for example physical strength, stamina, and courage among others. The very willingness to kill or commit other forms of violence is essential to the successful soldier. Thus, the ability of military training to set norms and affect the values of recruits and soldiers is an indication of high pervasiveness. After initial training, various controls could enhance the embrace of the military. Examples include regulated scheduling of activities (e.g. sleeping, eating, and appointed military duties), supplies/provisioning (of equipment, accommodation, and food), observing official holidays and religious rituals, and the threat of severe disciplinary measures if rules/orders were broken. Additionally, certain military duties would have associated restrictions due to the need to travel or carry out such duties at a particular time of day.

Military practice, backed by legislation, allowed for the creation of a formidable occupational identity for Roman soldiers. Such an identity construct enabled soldiers across the Empire to recognize and relate to each other, superseding (when need be) the divergent relationships cultivated by units long-garrisoned in one locality, as was typical in the later Empire. This was equally true for auxiliaries as it was for legionaries in the early Empire (Haynes 1999b), and would be the same for *limitanei* and *comitatenses* in the later Empire. However, it should also be noted that factors that reinforced inclusivity among soldiers could, and probably did vary.

The *praepositus* of a garrison was a significant influence in the maintenance of occupational identity and thus needs to be considered in somewhat greater detail than other members of the military hierarchy. Officially, the authority of the *praepositus* was invested by the emperor and the *magistri militum*, and his authority was directly over his staff, his unit, and the *territorium* of his unit garrison. The social authority of the *praepositus* also indirectly included his staff's and soldiers' dependents that lived near or in the garrison. This authority, based on imperial recognition identifies commanding officers as dependency elites (Paynter 1985:175). However, the *praepositus*' status and power was enhanced beyond that of his office, helped by the autonomy he required to successfully fulfill his official duties. By acting as a patron for his staff, officers, soldiers, servants, and slaves, the commanding officer supplemented his military authority through personal relationships. Furthermore, the (official and personal) social networks of the *praepositus* as well as his authority over unit finances provided increased influence through access to elite goods, services, and surplus by which he could enhance his role as a patron.

Extension of personal relationships and patronage outside of the military community made the *praepositus* important to everyone in the frontier, whether they were directly involved with the military or not. The ability to command soldiers to employ violence to further his goals was also a decided favor for the *praepositus* in the expansion and exercising of power in the frontier. Thus, while initially dependant on the political legitimacy provided by the Roman Empire, a *praepositus* could reinforce his social power so that it was recognized independent of his actual rank in the Roman military.

The *praepositus* was not the only strong influence on the soldiers, however. Junior and non-commissioned officers from the level of centurion and higher also influenced soldiers' daily lives, in many ways more directly than the *praepositus*. This was particularly true of detachments and groups of soldiers that were physically removed from the unit's home base. Despite the fact that the *praepositus* cannot be said to be the only influential person of authority in the military community, he was still the most significant, as junior officers and NCOs answered directly to him.

This focus of social power in the office of one person provided the *praepositus* with considerable influence in his soldiers' lives, in some cases directly and in other cases indirectly through junior officers and NCOs. His personal choice and ability to carry out orders, restore/maintain discipline, exercise his role as a judge and punisher, and command respect or fear each affected the ***involvement*** and ***inclusivity*** of soldiers' military identity. For example, a commanding officer that was lax in discipline or punishing transgressors created a situation in which individual soldiers were not reminded of their place in the unit and military. Thus, the perception and understanding of what it means to be a soldier would change, and other aspects of social identity could become more dominant.

A Model for Occupational Community Transformation

The advantage of identifying the late Roman military as an occupational community is that it allows a theoretical link between individual garrisons and the state. It also provides a framework by which we can understand the collapse or transformation of the *limitanei* garrisons. Previous attempts to systematically explain the collapse of the frontiers of the Western Roman Empire have been few and not

explicitly theoretical (Whittaker 1993a; 1993b). Starting with the premise that the Roman military was a cosmopolitan occupational community that incorporated members from across the Empire, change can hypothetically be charted. The late Roman imperial military, as a cohesive social formation, ceased to exist when the Roman military ceased to be a cosmopolitan occupational community. This transformation from a cosmopolitan occupational community to a number of local occupational communities provides a theoretical conceptualisation for changes on Hadrian's Wall through the later 4th century and after.

Initially, the loss of a trans–Empire military identity was not disastrous. The various armies of the Empire still constituted occupational communities. However, they were now regionally based, "local" types of occupational communities, specific to each frontier or regional field army. Even then, the imperial state could continue to exist, but the change from an Empire-wide to a regionally based identity indicates a fragmentation of the social solidarity that existed among soldiers through the Empire. The formalisation in the Roman Empire between the *limitanei* and the *comitatenses* contributed to the eventual disparity between the state and its military. While the *comitatenses* provided a mobile military force, the *limitanei* were fixed to frontiers, reinforcing local social and economic connections between soldiers and their region of posting. Over time, regional differences in practice would further reinforce the notion of a regional occupational community. This fragmentation could continue, in principle, to the level of each fort/garrison, so that the occupational community truly was local.

When fragmentation reaches the level of each garrison, then the occupational community can no longer be considered that of a Roman frontier garrison. A soldierly occupational community could still remain, as long as a distinct identity existed alongside a trained profession of being a soldier. Reduction of the scale of an occupational community does not necessarily affect the organization of military command structures or units. Community identity reinforces social solidarity and acts as "social glue". In military contexts, social cohesiveness amongst soldiers can facilitate the deployment and direction of units, or it can enable soldiers to challenge their commanders. As communities failed to relate to other military communities through the Empire, the effectiveness of command structures undoubtedly decreased. Thus, the "local-ness" of the occupational community is reinforced.

Inclusivity can be identified as the critical factor in the maintenance of occupational identity, and a change in a member's sense of inclusiveness will affect a member's relationship to the occupational community as well as the scale of the community. The transformation of one cosmopolitan community to a number of local communities would be the result of decreasing levels of pervasiveness (which establishes norms), embrace (which controls the activities of members), and/or restrictions (which affect non-work activities).

These changes in the levels of inclusivity would be consistent with the fragmentation of imperial power in the later Western Empire. A key group for the understanding of inclusivity of frontier garrisons would be the officer corps of the *limitanei* – the military elite of the frontier. To what extent were they locally raised, recruited, and trained? How often, if at all, were they transferred between different garrisons? How socially mobile were they? These questions are important because it is the officer corps that represents the interests of the state on the ground and keeps the frontier in line with imperial interests. Unfortunately, our knowledge of this group of officers, compared to those of the *comitatenses*, is slight and answering these questions is difficult. As noted in Chapter II, the officer corps of the Roman military in the 4th century was trained in the *protectores* and *domestici*, but the extent to which officers from the *limitanei* were posted back to the frontier where they previously served is unknown, as is the typical length of service of a unit commander. Despite this lack of historical evidence, this group can be examined archaeologically through investigation of material culture and the use of space. For example, *praetoria* or other officers' quarters and the use and distribution of high status goods can provide information that can be contrasted to the "average" soldier. Where there is no explicit archaeological evidence for elite occupation, the presence of authority can still be detected. Evidence for the military elite is not necessary for the overall argument forwarded in this thesis, but each *praepositus* represents a known social authority that links a garrison into the command structure and goals of the Roman military.

Archaeological Recognition of Occupational Communities

The concept of an occupational community is archaeologically visible, particularly if the focus is not on individual identity, but on the identity of the community. Artefactual studies can contribute to a community profile by noting the frequency of certain classes and types of artefacts, as well as any important changes in frequency and type. However, artefacts can be problematic as a basis for understanding individual identity. The very portability of the objects and the difficulty of discerning the associated meaning of an artefact by a particular person in the past, limits the contribution artifacts can make to archaeologically understanding identity. As Gardner (1999:413) has demonstrated at Caerleon, "fourth century material does not support either a 'civilian' or 'military' interpretation with any certainty" for the occupants of the fortress. Artefactual studies highlight that military communities are distinct from urban and rural farming communities in the frontier, but for the long-established frontier garrison, it is difficult to distinguish soldier from non-soldier.

Ecofactual evidence, particularly as it relates to diet, can also be of some service for archaeologically distinguishing identity. King (1984; 1999) has established a northern European military diet profile from the Roman Empire that includes a predominance of beef (as opposed to pork or lamb/mutton) in the diet. Unfortunately, the construction of a diet profile requires zooarchaeological, palaeobotanical, and coprolitic evidence that are not always found.

Structural changes and use of space, and artifacts within these spatial contexts are more helpful, particularly as these aspects can be more clearly related to material manifestations of pervasiveness, embrace, and restrictions. The fort itself can be taken as an important symbol of the military community. The outer defenses can be a form of restriction for those inhabitants within the fort and those outside it. Inside the fort, the provision of certain facilities (accommodation, food storage facilities, bathing facilities, etc.) is evidence for embrace, and the standardisation in the form of these structures is a manifestation of pervasiveness. Thus, we can compare the internal layout of a fort and the form of the buildings and defenses themselves with other forts in the region or even elsewhere in the Empire. Any changes that deviate from the "standard" military architecture of the time suggest a rejection of regularized, institutional military practices imposed from above. When there are changes, what does this reveal about the garrison? Furthermore, it is necessary to look beyond the walls of the fort, as the Roman military operated throughout the frontier. Expanding our area of examination also allows for a comparison between military communities and non-military/civilian communities.

The Transformation of the Soldierly Occupational Community in Northern England

A model was proposed above that postulated that the *limitanei* of northern England formed a regionally distinct local-type occupational community through the 4th century. The soldierly identity of this community continued to transform in the sub-Roman period into smaller clusters of local occupational communities until the notion of a professional soldier disintegrated. At that point, soldierly occupational communities were succeeded by sub-Roman communities formed around an elite and his warband.

The identification of 17 trends found at forts throughout later 4th century northern England demonstrates that these garrisons can probably be considered as a cohesive group. This is not surprising, as the majority of these forts are known to have been under the command of the *dux Britanniarum*, but the trends demonstrate this archaeologically. Forts that display no trends or only a small number can be explained through a lack of excavation or publication of any excavations. Any future fieldwork would likely reveal the presence of such trends.

It now remains to relate these trends to changes in ***involvement***, ***status***, and ***inclusivity***, the three factors that contributed to a soldierly occupational identity (Table A7.1). It is difficult to provide direct evidence of ***involvement*** archaeologically, as this is a psychological and emotional state rather than a physical one, though physical action does contribute to involvement. However, indirect evidence can be provided. Any task that would have required considerable labor, like the repair/refurbishment of the *principia* or defensive refurbishment, would have contributed to a soldier's sense of involvement with his unit as this task requires teamwork and cooperation. The personal impact of the investment of labour should not be forgotten either. The effort taken by each soldier to refurbish an important garrison building or fort defences confers a sense of communal and personal ownership; for example, "That is *our principia*" or "*I* helped to build this fort."

Status can be more clearly demonstrated. At the individual level, the construction, repair, and habitation of a chalet style barrack with soldiers of the same *contubernium* created and maintained a small-scale social unit. The next wrung up the social scale was the century, composed of numerous *contubernia* arranged linearly. So the spatial arrangement of living accommodation told a soldier who his closest colleagues (and probably friends) were, from *contubernium* to century.

Praetoria could be considered as monumental residences of commanding officers. As such, a *praetorium* reinforced the status of the commanding officer and the social position of his soldiers, and the repair/refurbishment of this building, presumably using soldiers' labour, further reinforced this status differential.

Conceptually uniting the centuries together was the notion of the military unit. Unit standards and emblems are clear symbols of the unit, but these rarely survive archaeologically. However, they were housed in the unit shrine in the *principia*. Thus, the *principia* was symbolically linked with regimental identity and status, so the repair/refurbishment of *principia* reinforced this status.

Ideally, artefactual studies can determine whether certain personal ornaments were restricted to or favored by soldiers, though Gardner's (1999) results from Caerleon suggest otherwise. The optimum scenario would see weapons, armor, and particular brooches or other objects found in barracks and generally limited to residential areas of the fort.

Thus far, artefactual markers of soldierly identity have not been identified, but the construction and maintenance of a central base for the unit is a clear indicator of soldierly settlement and identity. The maintenance or refurbishment of fort defences serves as a designator of military status. The fact that defences were refurbished in the late and/or sub-Roman period suggests that the defences still served a

functional purpose, but the social importance of monumental defences must not be forgotten. Fort defences signaled a certain type of community, making the residents of the fort distinct from undefended villages and farmsteads in the area. Perhaps living in proximity to the fort could confer status to an individual, let alone anyone who could access its internal space. The issue of access into the fort and the status this confers thus makes gateways particularly symbolic.

Inclusivity is the most archaeologically visible factor, particularly when broken into its three components of pervasiveness, embrace, and restrictions. Fort defences physically restrict and identify the military garrison, separating soldiers from non-soldiers and enemies and restricting access to those inside a fort. In the same way, gate blocking provides enhanced control over access to the inside of the fort. The provision of facilities is indicative of embrace, so the continued presence of barracks, a *principia*, a *praetorium*, and baths, as well as paved roads/paths and defenses through the 4th century is indicative of a continued institutional military practice. The demolition/conversion of *horrea* is an indication of a decrease in embrace, as the removal of centralized storage facilities for the garrison clearly had an impact on fort life. Presumably, alternative arrangements were made for the storage of goods. The demolition/conversion of barracks is another indication of a decrease in embrace.

The greatest change through the 4th century and into the 5th century can be observed in the physical manifestation of pervasiveness. There is a clear decrease in institutional pervasiveness through the 4th century. The changed form of barracks, from standard Hadrianic *contubernia* under one roof to irregular detached or semidetached chalet style *contubernia* is one example. While the chalets are similar for the most part, they lack the standardized regularity found in Hadrianic barrack-blocks, and neighbouring chalets can vary in size and layout. The implication is that each *contubernia* is responsible for each chalet, and this suggests that each *contubernia* had more independence than in previous centuries in regards to its own quarters.

The changed use of *principia* space is another example of a decrease in institutional pervasiveness. The fact that *principia* were no longer limited to official ceremonial and social functions associated with the garrison suggests that *praepositii* could authorize the re-use of what could be called the sacred and official seat of the unit. In some cases, for example at Housesteads and Vindolanda, the offices seem to have been converted for domestic use. It may be that the clerks that normally used the offices were allocated that space for domestic use. There is also evidence for industrial activity, both metalworking and butchery, as at York. In other cases, the space was used for a market forum, as seems likely at Newcastle, or was converted for use as a Christian church, as at South Shields. That lack of standard conversion of *principia* space suggests that this was not imposed on each garrison from central headquarters. Rather, the *principia* remains an important space, which is particularly evident when used for a church or marketplace. However, while still important, the *principia* perhaps lost the prestige once associated with it.

The varying quality of road pavement, the infringement of new or expanded buildings onto road space, the changed use of gate space, the demolition/conversion of *horrea*, the subdivision of rooms, and varying quality of new construction (whatever material is used, though generally timber) all indicate a loss of standardisation that is characteristic of institutional pervasiveness. This is also true of the expansion of both accommodation and metalworking to non-specialized buildings.

In fact, the variability of how fort space was used in later 4th century northern England indicates an overall loss of pervasiveness under the command of the *dux Britanniarum*. Yet this has to be measured against factors that demonstrate the continued institutional practises of the late Roman military (Table 9.10). While there does seem to be a loss of pervasiveness, trends also point toward continued embrace and restrictions as well as maintained status and involvement. This is a clear case for the decreasing geographic scale of the military occupational community. The fact that these trends are seen throughout the frontier suggests a regional scale for the occupational community, yet the differences between each fort hint at a lack of pervasive institutionalisation even at the regional level. Thus, a regional military occupational community existed until at least the end of the Roman period in the frontier, but how long this regional military occupational community survived after the political break with continental imperial authorities is difficult to say, due to the problems of dating the 5th and 6th centuries archaeologically.

There are not enough specific trends from the sub-Roman period to definitively demonstrate the presence of a military occupational community, though it certainly would have transformed. The only complete sub-Roman building plans available from a Roman fort are at Birdoswald, and these timber halls are closely associated with Early Medieval social formations of a leader and warband rather than professional soldiers. Hall structures have yet to be discovered at other late or sub-Roman forts, but if they were, this would be an indication of geographically widespread transformation of frontier garrisons. There is not enough evidence yet to assign a significance of the Birdoswald halls beyond that of the site's history. However, halls are structures that should be anticipated at forts occupied in the late Roman period. I expect that evidence for halls at other forts was unrecognized and has been lost from previous excavations, but perhaps future excavations will reveal other halls. Symbolically, halls are a fusion of Roman *principia*, *praetoria*, and barracks, and reinforce personal rather than institutional relationships (see Alcock

2003:252–254 for symbolism of the hall). As such, these structures fit well in the transformation of a regionally-based soldierly community to a local warband.

The refurbishment of defences and construction of possible churches are consistent with institutional practises. As noted above, defensive refurbishment is related to the status of the leader of the settlement and the settlement itself as much as any actual defensive requirements of the settlement. Accepting that a sub-Roman date can be assigned, then I would argue that defensive refurbishment signals a sub-Roman community with military potential, whether this potential was from professionally paid soldiers or from warriors personally bound to their leader.

The construction of possible churches in Roman forts would have a significant impact on the identity of the garrison community. These structures are dated to the late 4th century or after, with the churches at South Shields and Vindolanda more probably dating to the 5th century. The placement of a church in the *principia* suggests Christianity replaced regimental and imperial shrines, and this central situation could reflect the perceived importance of the church for the military community. The placement of a church in or succeeding a *praetorium* could be interpreted as a status enhancement. Constantine's conversion in the early 4th century provided political incentive for the conversion to Christianity, and the provision of a church by the *praepositus* could enhance his status amongst his superiors as well as generate a sense of gratefulness and religious cohesion on the part of any Christian elements of his garrison. The practise of Christianity (or any religion) would have strongly contributed to the construction of identity, and church attendance could be used to include or exclude people inside or outside of the community. Christianity could also act as a marker and enhancer of status. After the political break with the continent, Christianity could also serve as an ideological link to a political and fiscal imperial past that no longer existed. In other words, Christians were the successors of the "Romans".

Defensive refurbishment with earth banks and stone/timber revetments and the construction of churches in the sub-Roman period hint at a continued sense of shared identity along Hadrian's Wall in the sub-Roman period. These features respectively monumentally delineate a settlement and provide an ideological focus for the population. As such, defensive refurbishment and church construction are not part of a military identity in the sub-Roman period, even if these practises were inherited from a military past. Rather, these features signal sub-Roman settlements, whose populations can no longer be considered as members of a military occupational community.

Summary

The case studies have provided important detailed evidence for the 4th century frontier that has been lacking in Roman studies. It has been archaeologically demonstrated that the garrisons of Hadrian's Wall and northern England were materially similar and under the same command. It has also become clear that the late Roman military community was changing, particularly in the later half of the 4th century. At the beginning of the 4th century, the frontier garrisons of northern England were still integrated with an empire-wide soldierly occupational community, though there were indicators of increasing regional identity formations as evidenced by the construction of chalet type barracks at early as the 3rd century. From the mid 4th century until the end of the Roman period, the frontier units became a more distinct regional occupational community, as demonstrated by material changes at forts. The 17 trends that were identified indicate that there was a maintained sense of involvement and status for the soldier through the 4th century. However, the sense of inclusivity changed for the soldier in the later 4th century. While the military still provided most of the facilities in a soldier's life, the Roman military was no longer as socially pervasive an institution as it had been in the past. Despite this, the *limitanei* were still soldiers of the state, fulfilling their duties. While institutional ties between a soldier and the Roman military weakened, personal relationships within the unit may have strengthened. Garrison commanders stood in a good position to enhance their personal status at the expense of the state. While there is no direct evidence for increased social power of the *praepositii*, the decrease of central authority would have resulted in increased local autonomy (as discussed in Chapter 3). With the *praepositii* extending their role as a patron and guardian in their appointed sectors, garrisons would have become even more integrated with their hinterlands. Unfortunately, no precise date can be provided for when this regional occupational community ceased to exist. However, this would have happened over the course of time. By the mid 5th century, if not earlier, it should have been apparent to the garrisons on the Wall that they were no longer soldiers in the employ of the Roman Empire. Rather, they were warriors of the North, living in defended settlements and worshipping in churches.

ABBREVIATIONS

Amm.	Ammianus Marcellinus
BAR	British Archaeological Reports
Cod. Th.	*Codex Theodosianus*: Pharr, C. (trans.) 1969. *The Theodosian Code and Novels and the Sirmondian Constitutions*, New York: Greenwood Press
Nov. Th.	*Novellae of Theodosius II*, in Pharr 1969
RIB	*Roman Inscriptions of Britain*, Collingwood, R. G. and Wright, R. 1965. Oxford: Clarendon

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Decline, Collapse, or Transformation?

Hadrian's Wall in the 4th – 5th Centuries AD

Two Volumes

Volume II: Figures and Tables

Robert Michael Collins, BA, MA

A thesis submitted in fulfillment of the requirements for the degree of Doctor of Philosophy

The University of York

Department of Archaeology

July 2007

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Volume II

LIST OF FIGURES

Chapter 1: Figures and Tables

Table 1.1: Physical and Conceptual types of continuity, based on Rippon 2000.

PHYSICAL	Natural environment – landform, drainage systems, etc.
	Settlements – where people lived and worked
	Agriculture – fields, pasture, and woodland used for subsistence
	Non-agricultural resources – raw materials and "industries"
	Communications networks – roads, rivers, and those physical aspects connecting communities
	Population – physical characteristics and traits based on mortuary evidence (incl. genetics)
CONCEPTUAL	Demography – projected population characteristics and traits
	Ritual foci – places of religious practice and burial
	Social structures – organizational aspects of society, e.g. kinship groups
	Territorial structures – economic and tenurial units in which social structures were articulated

Figure 1.1: A graphic demonstration of the relationship between transformation (in terms of complexity) and time.

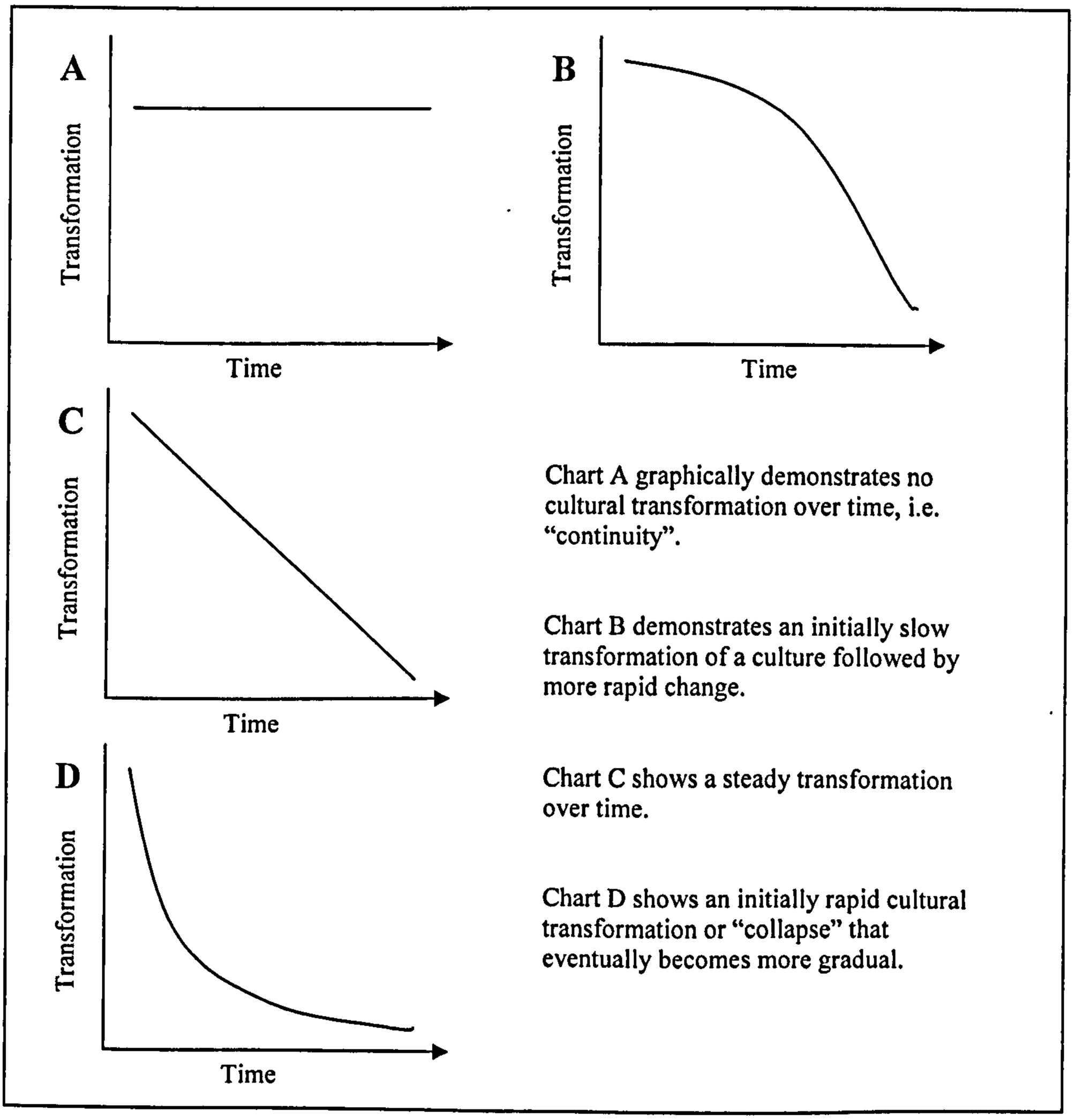


Chart A graphically demonstrates no cultural transformation over time, i.e. "continuity".

Chart B demonstrates an initially slow transformation of a culture followed by more rapid change.

Chart C shows a steady transformation over time.

Chart D shows an initially rapid cultural transformation or "collapse" that eventually becomes more gradual.

Chapter 4: Figures and Tables

Figure 4.1: Late pre-Roman Iron Age tribes of Britain.

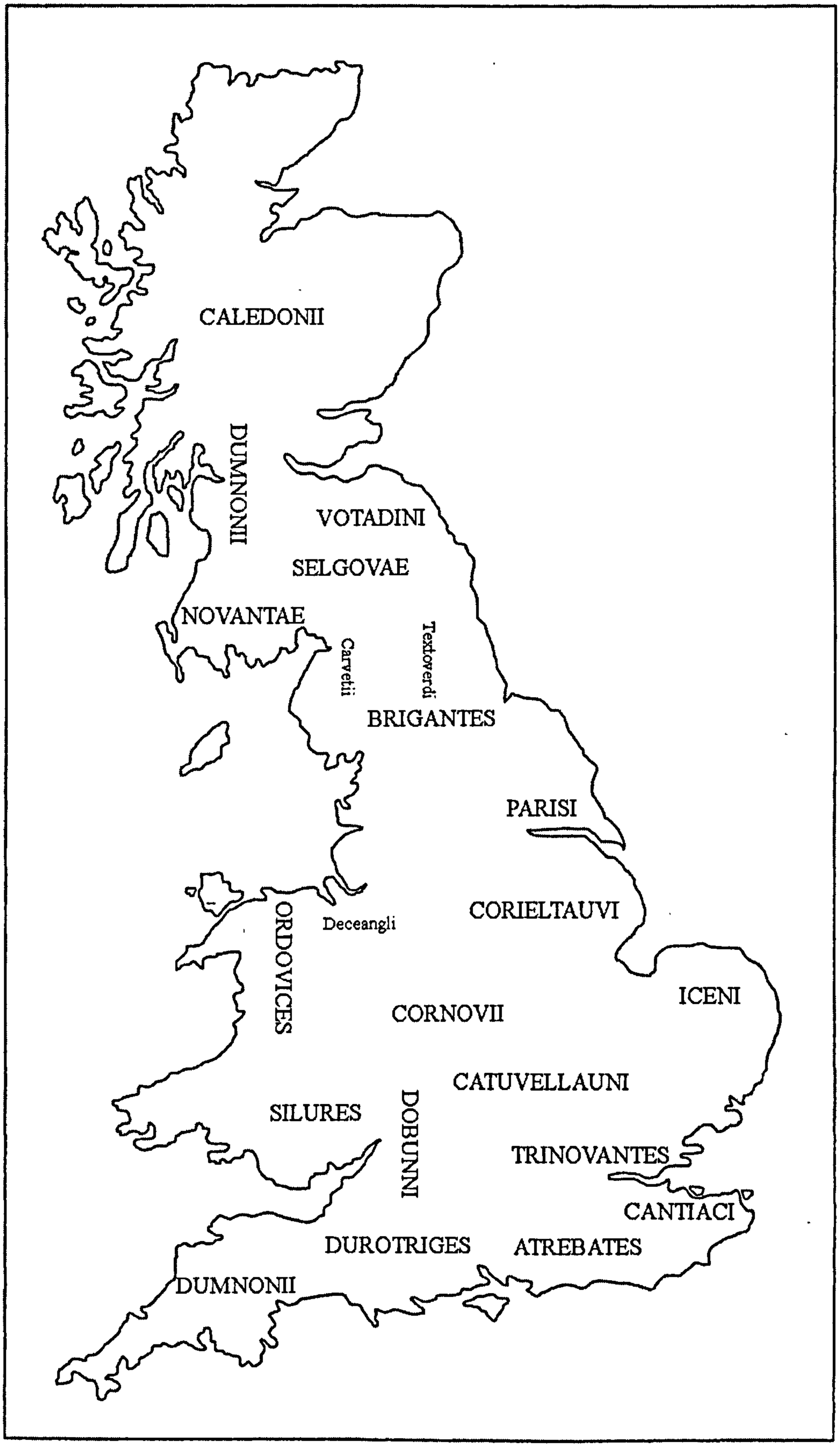


Figure 4.2: The Stanegate system (from Breeze and Dobson 2000).

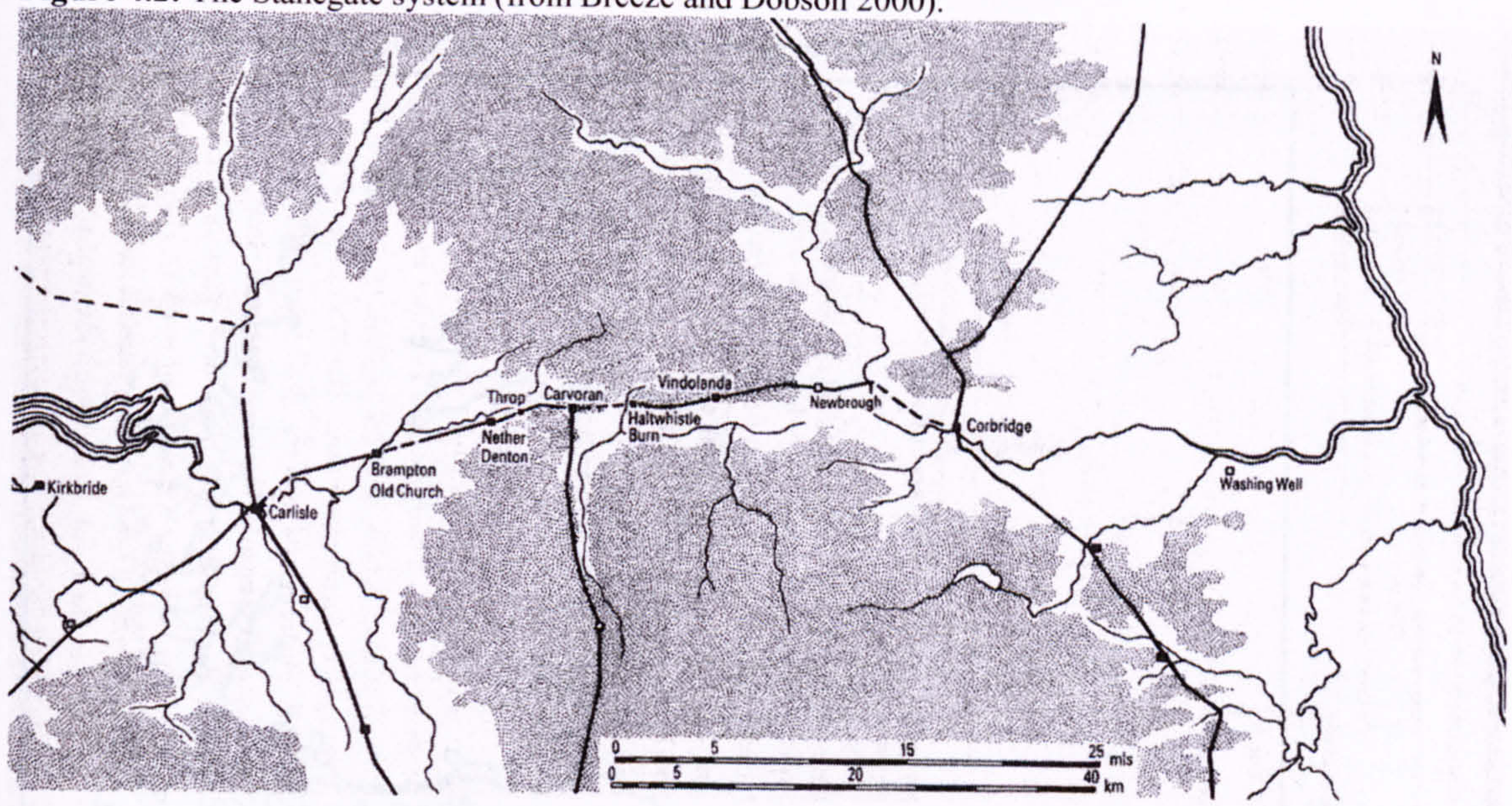


Figure 4.3: The Antonine Wall (from Breeze 2004).

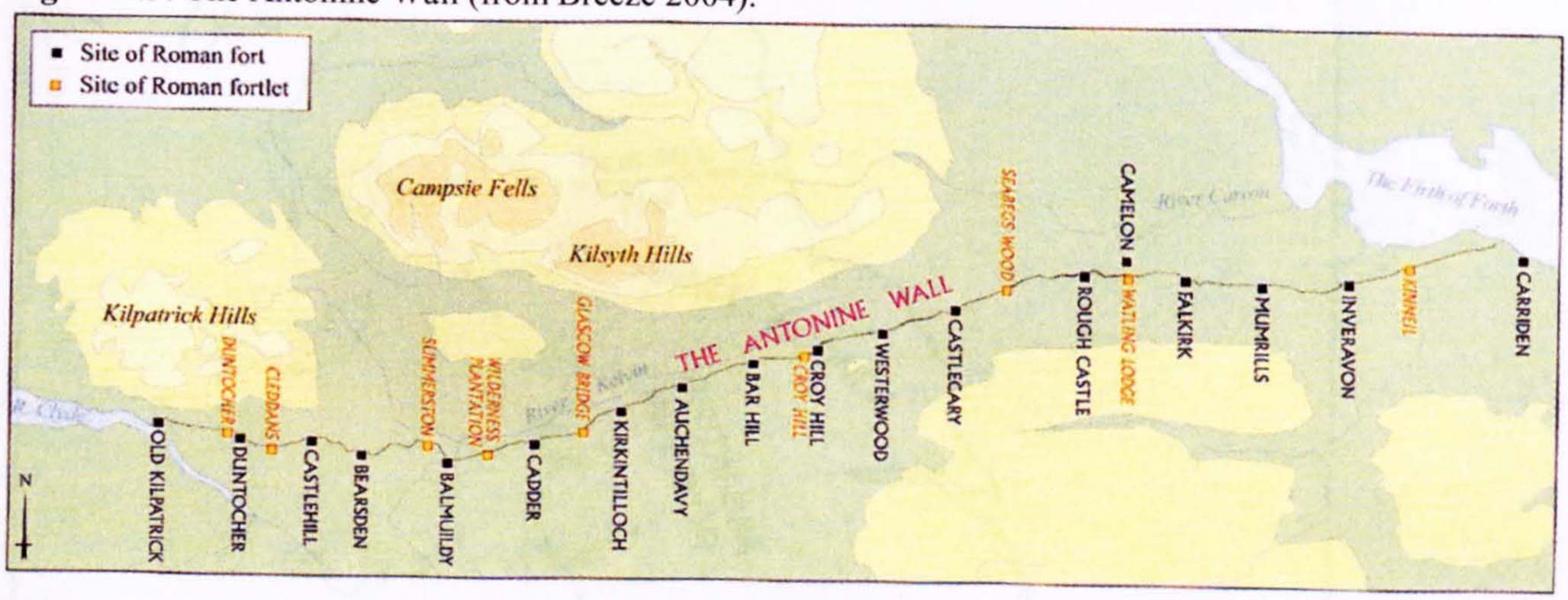


Figure 4.4: The provinces of Roman Britain (from Ireland 1996).

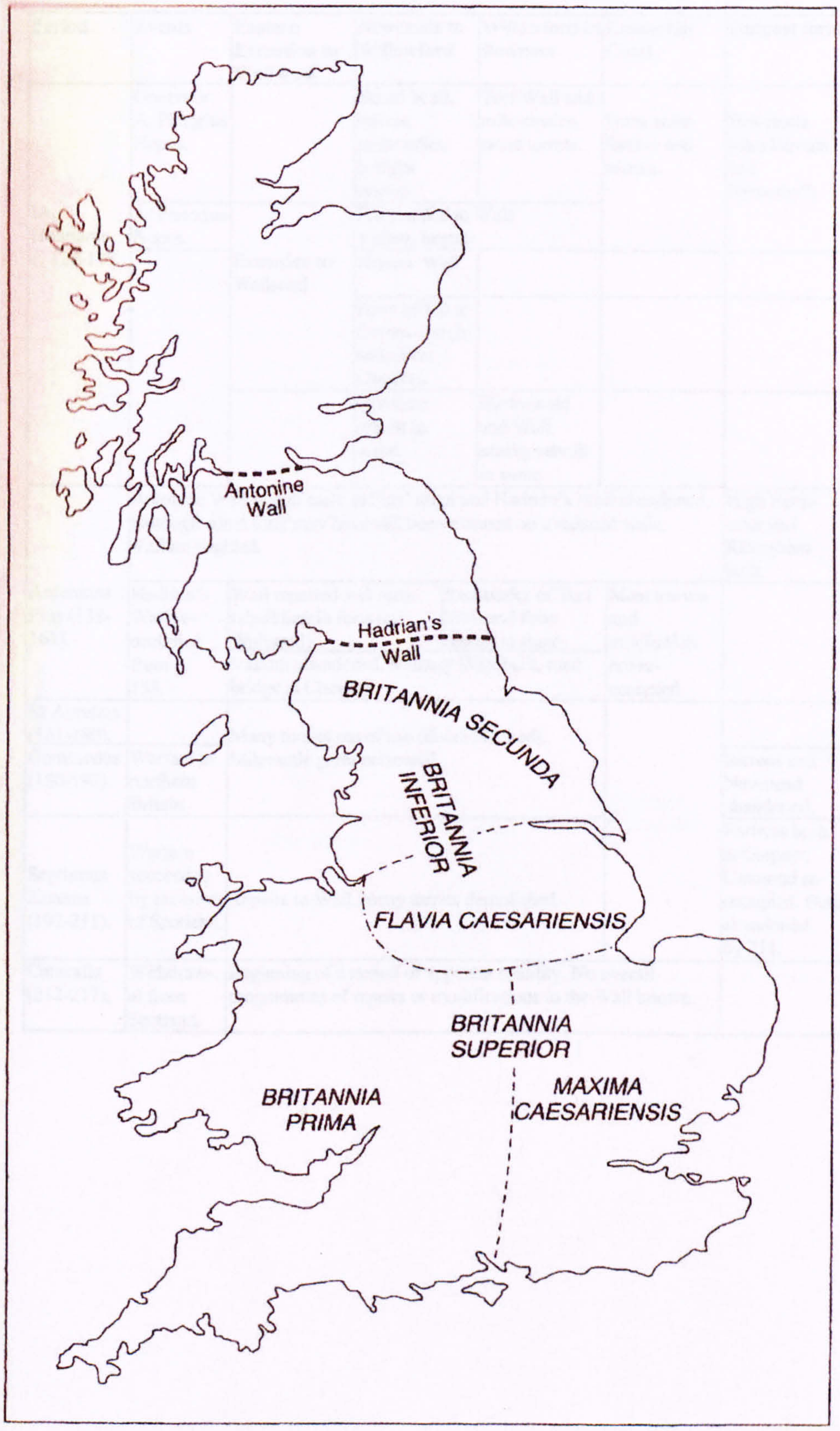


Figure 4.5: A chart of the structural history of Hadrian's Wall (from Bidwell 1999).

<table>
<tr><th>Period</th><th>Events</th><th>Eastern Extension to Wallsend</th><th>Newcastle to Willowford</th><th>Willowford to Bowness</th><th>Cumbrian Coast</th><th>Outpost forts</th><th>Hinterland forts</th></tr>
<tr><td rowspan="5">IA, Hadrianic, c. 122-138.</td><td>Governor, A. Platorius Nepos.</td><td></td><td>Broad Wall, turrets, milecastles, bridges started.</td><td>Turf Wall and mile-castles, stone turrets.</td><td rowspan="5">Forts, mile-fortlets and towers.</td><td rowspan="5">Bewcastle (also Birrens and Netherby?).</td><td>Vindolanda (?) and Corbridge rebuilt.</td></tr>
<tr><td rowspan="4">A. Platorius Nepos.</td><td rowspan="4">Extension to Wallsend.</td><td colspan="2">Forts added to Wall. Vallum begun.</td><td rowspan="4">Hardknott built (or earlier in Hadrian's reign?).</td></tr>
<tr><td>Narrow Wall.</td><td></td></tr>
<tr><td>Forts added at Carraw-burgh and Great Chesters.</td><td></td></tr>
<tr><td></td><td>Carvoran rebuilt in stone.</td><td>Birdoswald and Wall nearby rebuilt in stone.</td><td>Hardknott replaced by Raven-glass.</td></tr>
<tr><td rowspan="2">Antoninus Pius (138-161).</td><td colspan="5">Antonine Wall begun early in Pius' reign and Hadrian's Wall abandoned, although some forts may have still been manned on a reduced scale. Vallum slighted.</td><td>High Roch-ester and Risingham built.</td><td>Corbridge rebuilt.</td></tr>
<tr><td>Hadrian's Wall re-occupied from c. 158.</td><td colspan="2">Wall repaired and some rebuilding in forts (eg Wallsend).</td><td>Remainder of Turf Wall and forts rebuilt in stone.</td><td>Most towers and milefortlets not re-occupied.</td><td></td><td>S. Shields rebuilt on new site. New forts at Lanchester, Chester-le-St.</td></tr>
<tr><td>M Aurelius (161-180).</td><td></td><td colspan="3" rowspan="2">Many turrets out of use (doors blocked). Milecastle gates narrowed.</td><td rowspan="3"></td><td></td><td rowspan="2"></td></tr>
<tr><td>Commodus (180-192).</td><td>Warfare in northern Britain.</td><td>Birrens and Newstead abandoned.</td></tr>
<tr><td>Septimius Severus (193-211).</td><td>Warfare succeeded by invasion of Scotland.</td><td colspan="3">Repairs to Wall, many turrets demolished.</td><td>Fortress built at Carpow; Cramond re-occupied. Both abandoned by 211.</td><td>S. Shields rebuilt as supply base; legionaries at Corbridge (and Carlisle?).</td></tr>
<tr><td>Caracalla (212-217),</td><td>Withdraw-al from Scotland.</td><td colspan="5">Beginning of a period of apparent stability. No overall programmes of repairs or modifications to the Wall known.</td><td></td></tr>
</table>

Figure 4.6: Forts occupied *c.* AD 280 in black. Half-filled squares indicate forts probably occupied, open squares indicate possible occupation, and squares with a line through them indicate forts probably abandoned in the previous 40 years (from Breeze and Dobson 2000).

Figure 4.7: Forts occupied *c.* AD 370. See Fig. 4.6 for values of squares (from Breeze and Dobson 2000).

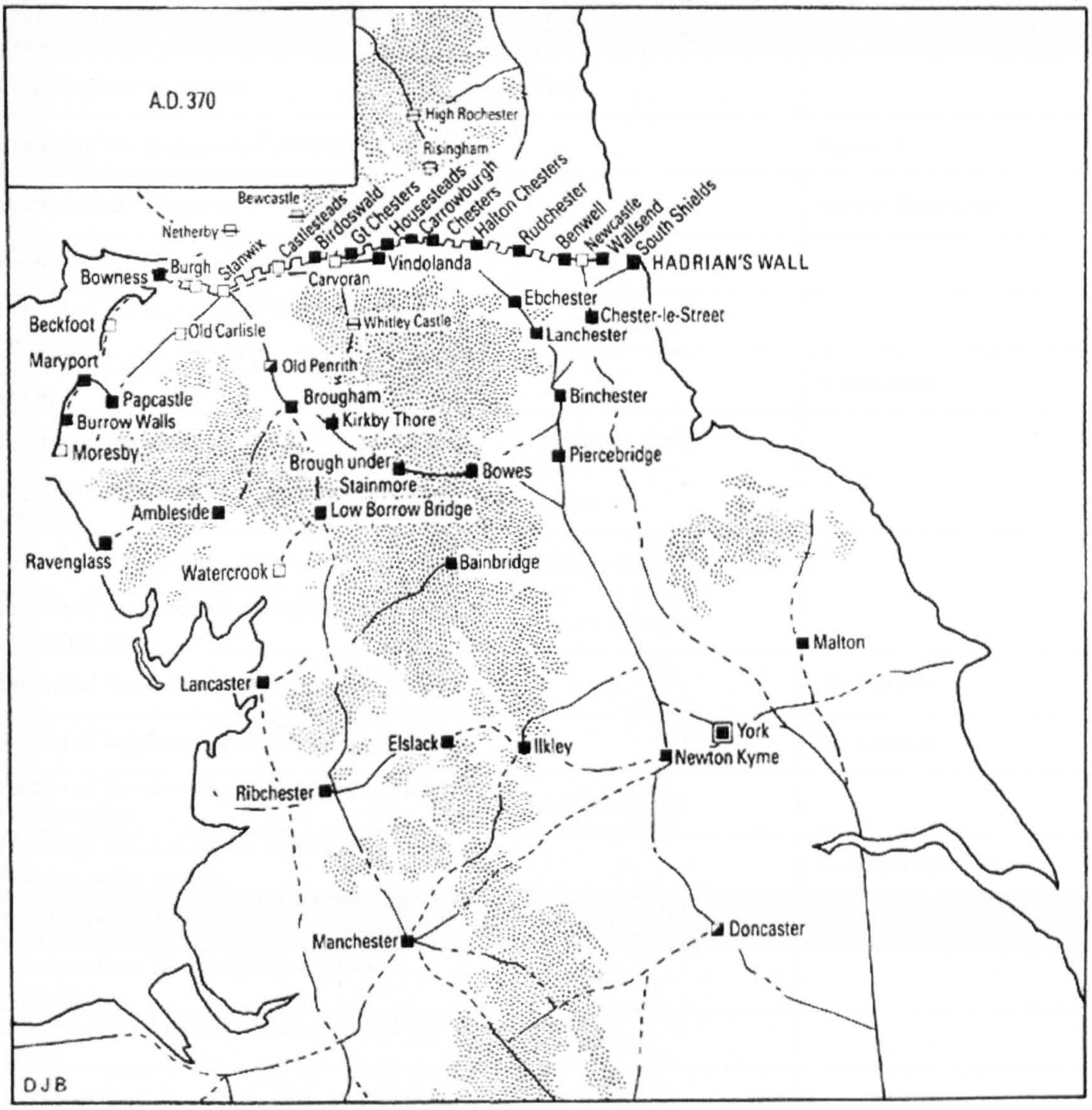


Table 4.1: Chapter 40, the *dux Britanniarum*, from the *Notitia Dignitatum* with certain and possible identification of unit locations.

Under the control of the *vir specatbilis*, the *dux Britanniarum*	Certain Identification	Possible Identification
Prefect of the VI Legion	York	
Prefect of the Dalmation Cavalry, at Praesidium		Papcastle
Prefect of the Crispian Cavalry, at Danum		Jarrow, Doncaster
Prefect of the Catafract Cavalry, at Morbium		
Prefect of the *numerus* of Tigris Boatmen, at Arbeia	South Shields	
Prefect of the *numerus* of Nervii of Dictum, at Dictum		Wearmouth
Prefect of the *numerus* of *Vigiles*, at Congangis	Chester-le-Street	
Prefect of the *numerus* of *Exploratores*, at Lavatris	Bowes	
Prefect of the *numerus* of *Directores*, at Veteris	Brough-under-Stainmore	
Prefect of the *numerus* of *Defensores*, at Bravoniacum	Kirkby Thore	
Prefect of the *numerus* of *Solenses*, at Maglo		Old Carlisle
Prefect of the *numerus* of *Pacenses*, at Magis		Old Carlisle
Prefect of the *numerus* of *Longovicani*, at Longovicium	Lanchester	
Prefect of the *numerus* of *Supervenientes* of Petuara, at Derventio		Malton, Papcastle
Per lineam valli		
Tribune of the IV cohort of Lingones, at Segedunum	Wallsend	
Tribune of the I cohort of Cornovii, at Pons Aelius	Newcastle	
Prefect of the I ala of Asturians, at Condercum	Benwell	
Tribune of the I cohort of Frisiavones, at Vindobala	Rudchester	
Prefect of the ala Sabiniana, at Hunnum	Halton Chesters	
Prefect of the II ala Asturians, at Cilurnum	Chesters	
Tribune of the I cohort of Batavians, at Procolitia	Carrawburgh	
Tribune of the I cohort of Tungrians, at Borcovicium	Housesteads	
Tribune of the IV cohort of Gauls, at Vindolanda	Chesterholm/Vindolanda	
Tribune of the [*lacuna*] II cohort of Asturians, at Aesica	Great Chesters	
Tribune of the II cohort of Dalmatians, at Magnis	Carvoran	
Tribune of the I cohort of Hadrian's Dacians, at [*lacuna*] Banna	Birdoswald	
[*lacuna*] Tribune of the II cohort of Tungrians, at Camboglanna	Castlesteads	
Prefect of the ala Petriana, at Petriana	Stanwix	

Tribune of the *numerus* of Aurelian Moors, at Aballaba	Burgh-by-Sands	
Tribune of the II cohort of Lingones, at Congavata	Drumburgh	
End *per lineam valli* (not noted in text)		
Tribune of the I cohort of Spaniards, at Axelodunum		Netherby, Maryport, Burrow Walls
Tribune of the II cohort of Thracians, at Gabrosentum		Moresby
Tribune of the I cohort Aelia Classica, at Tunnocelum	Ravenglass	
Tribune of the I cohort of Morini, at Glannibanta		Ambleside
Tribune of the III cohort of Nervii, at Alione		Maryport, Watercrook
Cuneus of Sarmatians, at Bremetennacum	Ribchester	
Prefect of the I ala Herculea, at Olenacum		Elslack
Tribune of the VI cohort of Nervii, at Virosidum	Bainbridge	

Table 4.2: Tabulated summary of Chapter 40 of the *Notitia Dignitatum*.

Category	Number
Identified locations	26
Unidentified locations	12
Infantry units (*cohortes*, *numeri*, and *legiones*)	29
Cavalry units (*alae*, *cunei*, and *equites*)	9
"New" style units (*cunei*, *numeri*, and *equites*)	15
"Old" style units (*cohortes*, *alae*, and *legiones*)	23
Units under Prefect	19
Units under Tribune	18
Units with no designated officer	1

Table 4.3: Unlocated units from Chapter 40 of the *Notitia Dignitatum* as identified by unit type.

Infantry 7 units	"Old" Style 4 units	AXELODVNVM, Tribune of the I cohort of Spaniards
		ALIONE, Tribune of the III cohort of Nervii
		GABROSENTVM, Tribune of the II cohort of Thracians
		GLANNIBANTA, Tribune of the I cohort of Morinia
	"New" Style 3 units	DICTVM, Prefect of the *numerus* of Nervii
		MAGIS, Prefect of the *numerus* of Pacenses
		MAGLONA, Prefect of the *numerus* of Solenses
Cavalry 4 units	"Old" Style 1 unit	OLENACVM, Prefect of the I ala Herculea
	"New" Style 3 units	DANVM, Prefect of the Crispian cavalry
		MORBIVM, Prefect of the Catafract cavalry
		PREAESIDIVM, Prefect of the Dalmatian cavalry

TEXT BOUND INTO THE SPINE

Figure 4.8: The Notitia Dignitatum, Chapter 40 mapped. White squares indicate unknown garrison or unattested in the Notitia. Grey squares with black centres indicate "old" style infantry units. Black squares indicate "new" style infantry units. Half-grey, half-black circles indicate "old" style cavalry units. A solid black cirle indicates a "new" style cavalry unit.

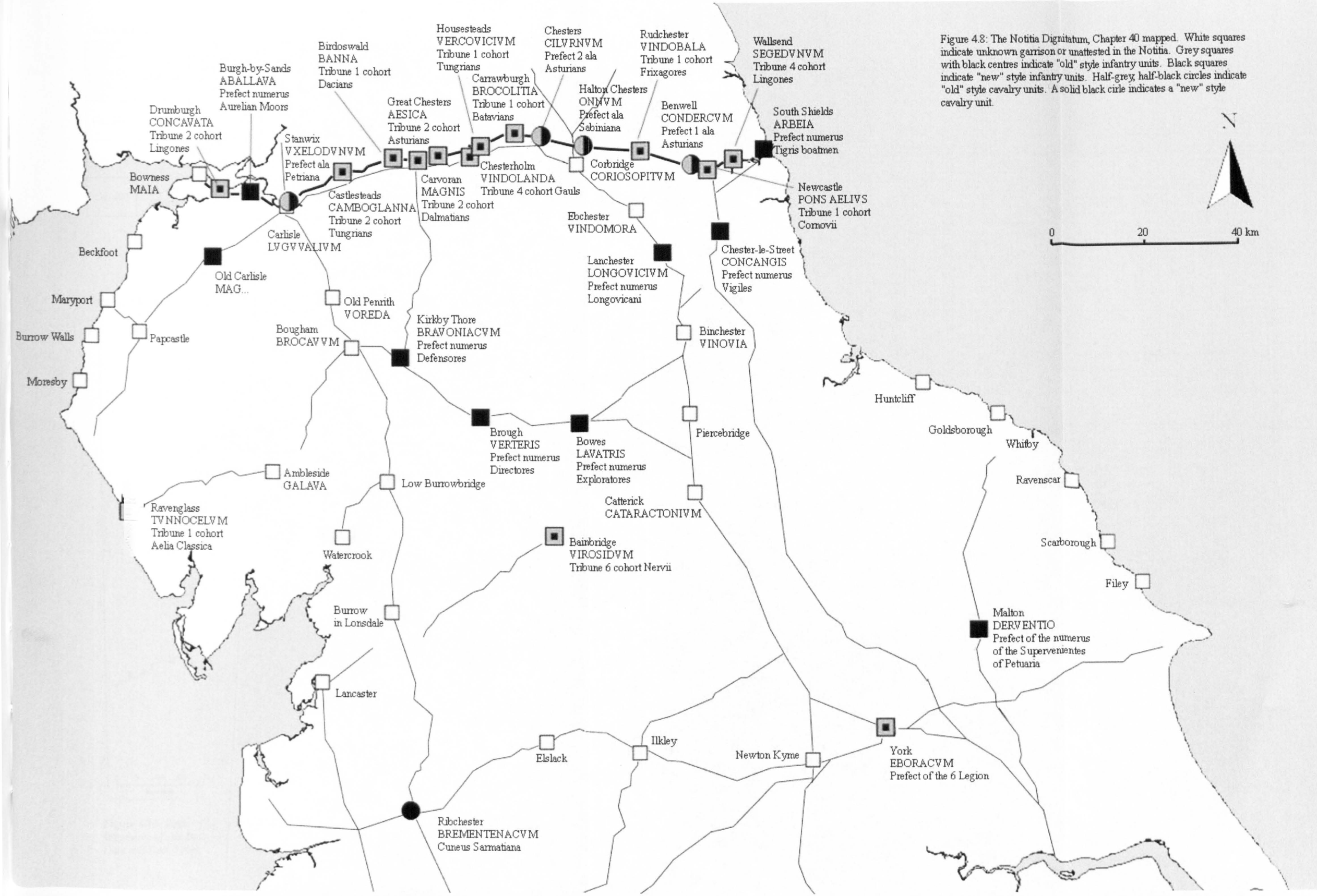


Table 4.4: Calculations of the size of the military forces in northern England.

Date	Number of Forts	Jones		James		Collins	
		Size of Unit	Total	Size of Unit	Total	Size of Unit	Total
Ca. 280	43	Legion: 3,000 *Limitanei*: 500	24,000	Legion: 1,000 *Limitanei*: 100	5,200	Legion: 1,000 *Limitanei*: 250	11,500
Ca. 370	48	Legion: 3,000 *Limitanei*: 500	26,500	Legion: 1,000 *Limitanei*: 100	5,700	Legion: 1,000 *Limitanei*: 250	12,750
Ca. 400	38, per *Notitia*	Legion: 3,000 *Limitanei*: 500	21,500	Legion: 1,000 *Limitanei*: 100	4,700	Legion: 1,000 *Limitanei*: 250	10,250

Figure 4.9: Barbarian threats to Britain in the 4th century (from Jones and Mattingly 1990).

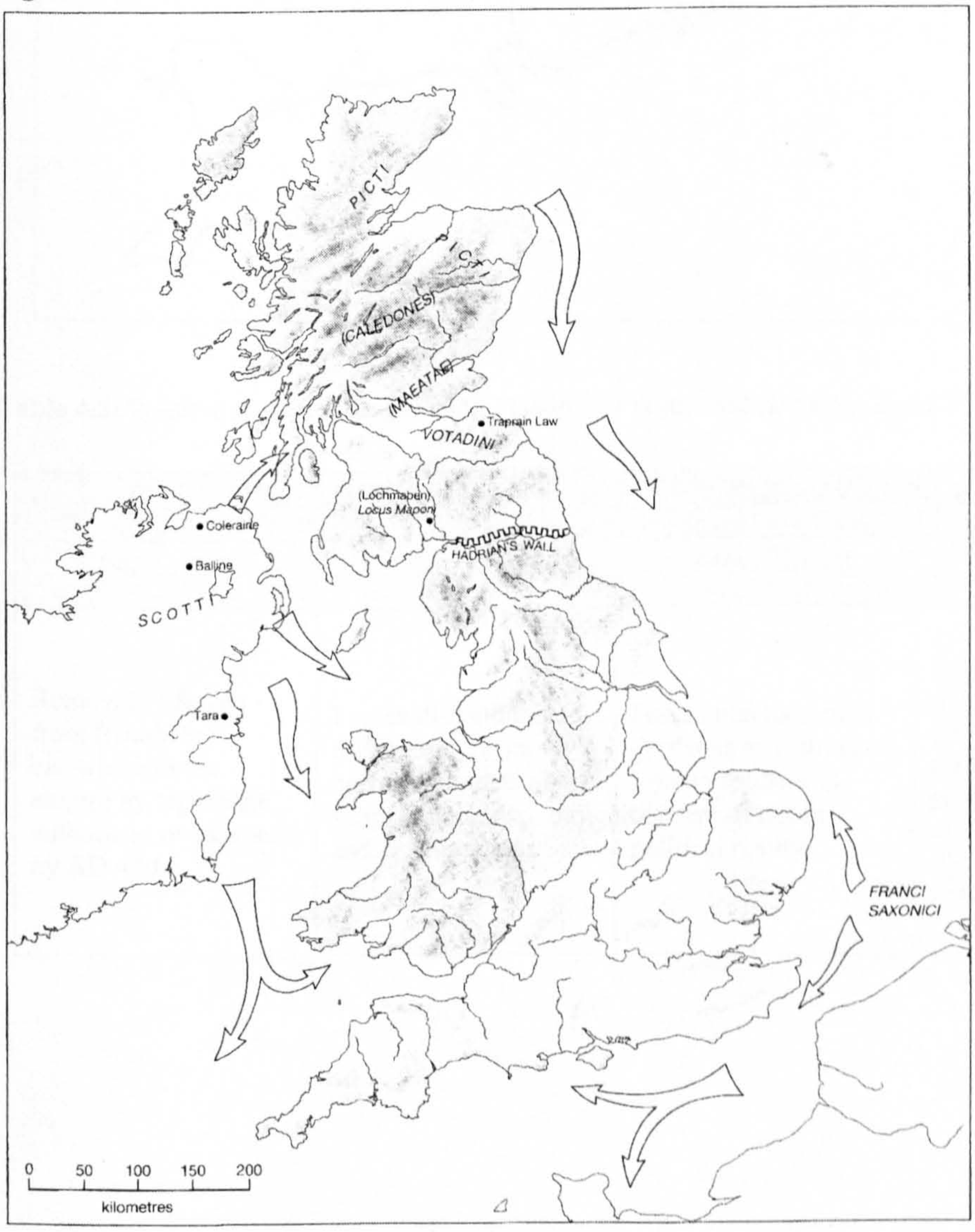


Figure 4.10: Dark's map of sub-Roman occupation. Sites with solid shapes indicated have evidence suggestive of sub-Roman occupation. Hollow shapes are Roman sites with no sub-Roman evidence (from Dark and Dark 1996).

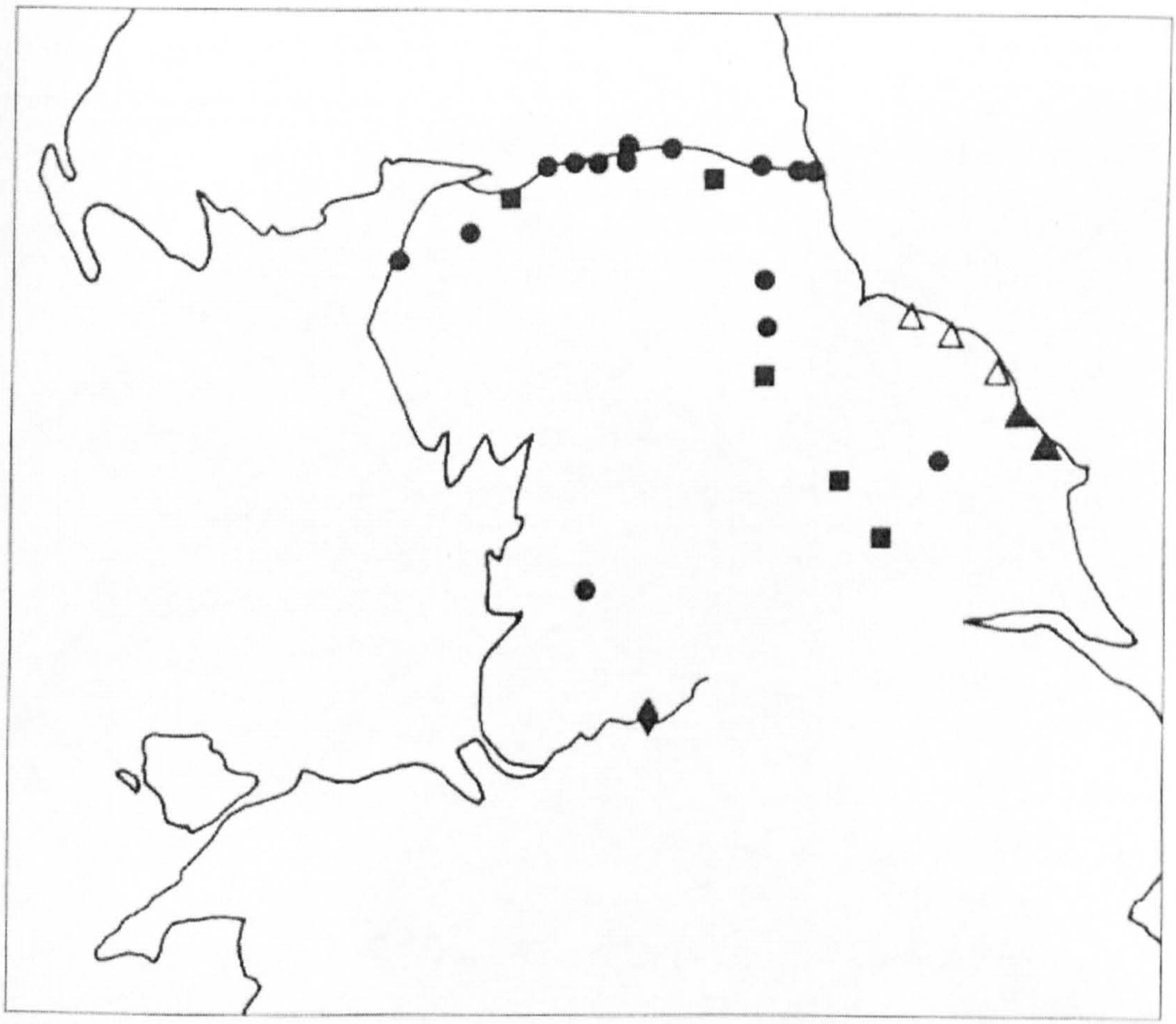


Table 4.5: Possible scenarios for the end of Hadrian's Wall, modified from Jones 1996.

COLLAPSE SCENARIOS		SURVIVAL SCENARIOS	
EVACUATION	*DISBAND*	*MAINTAINED*	*MUTATION*
Removal of forces from Britain to elsewhere in the empire by legitimate authorities or usurpers by AD 410	Forces disband due to the severing from normal channels of supply, command, pay, and replacements	Forces maintain their garrisons as continued Roman soldiers in concept, if not in political reality	Forces change, adapting to new circumstances by creating alternative provisioning mechanisms, troop distributions, and command structures

Chapter 5: Figures and Tables

Figure 5.1: The solid geology of north Britain (from Higham 1993).

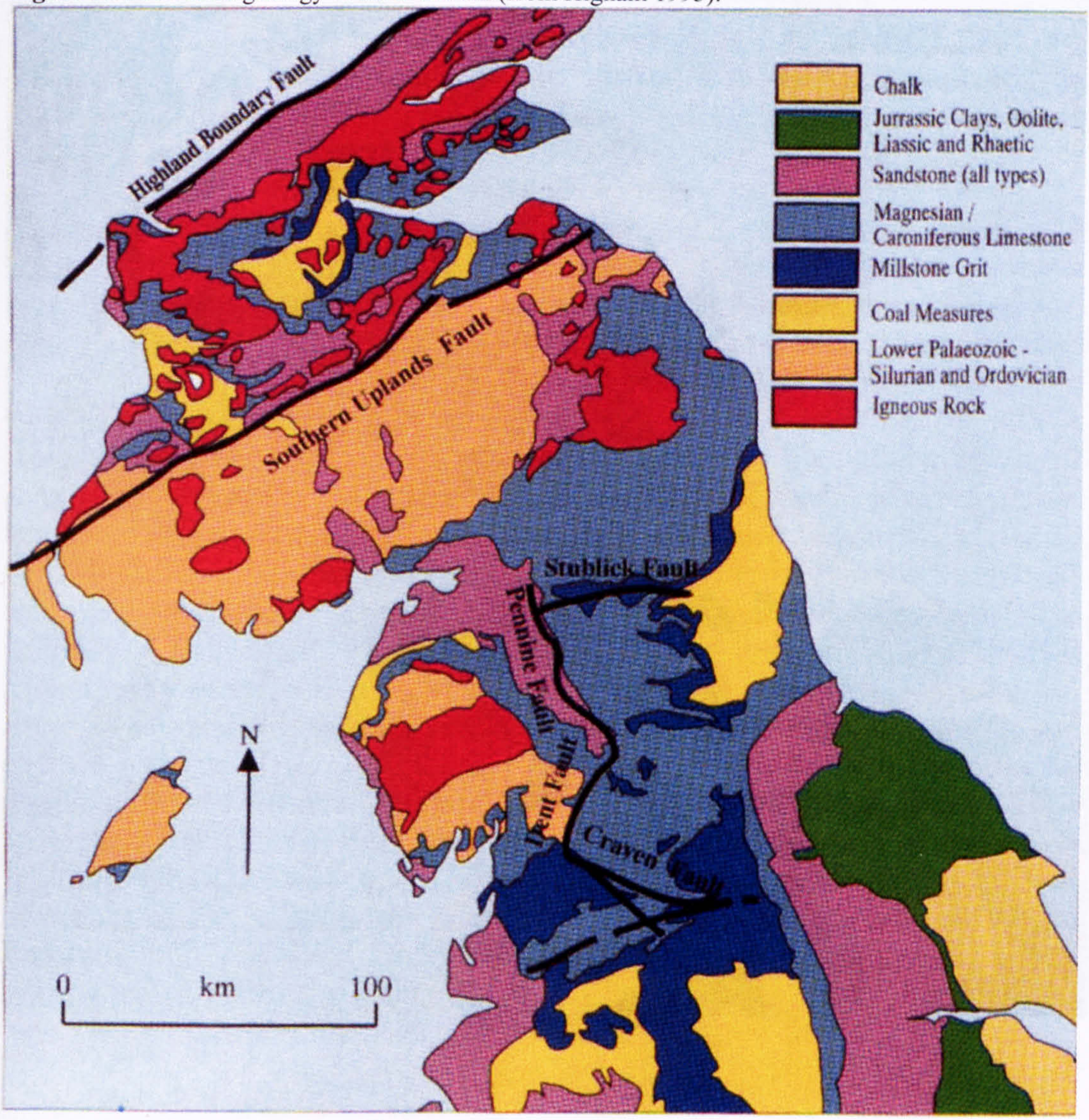


Figure 5.2: Soil distributions of north Britain (from Higham 1993).

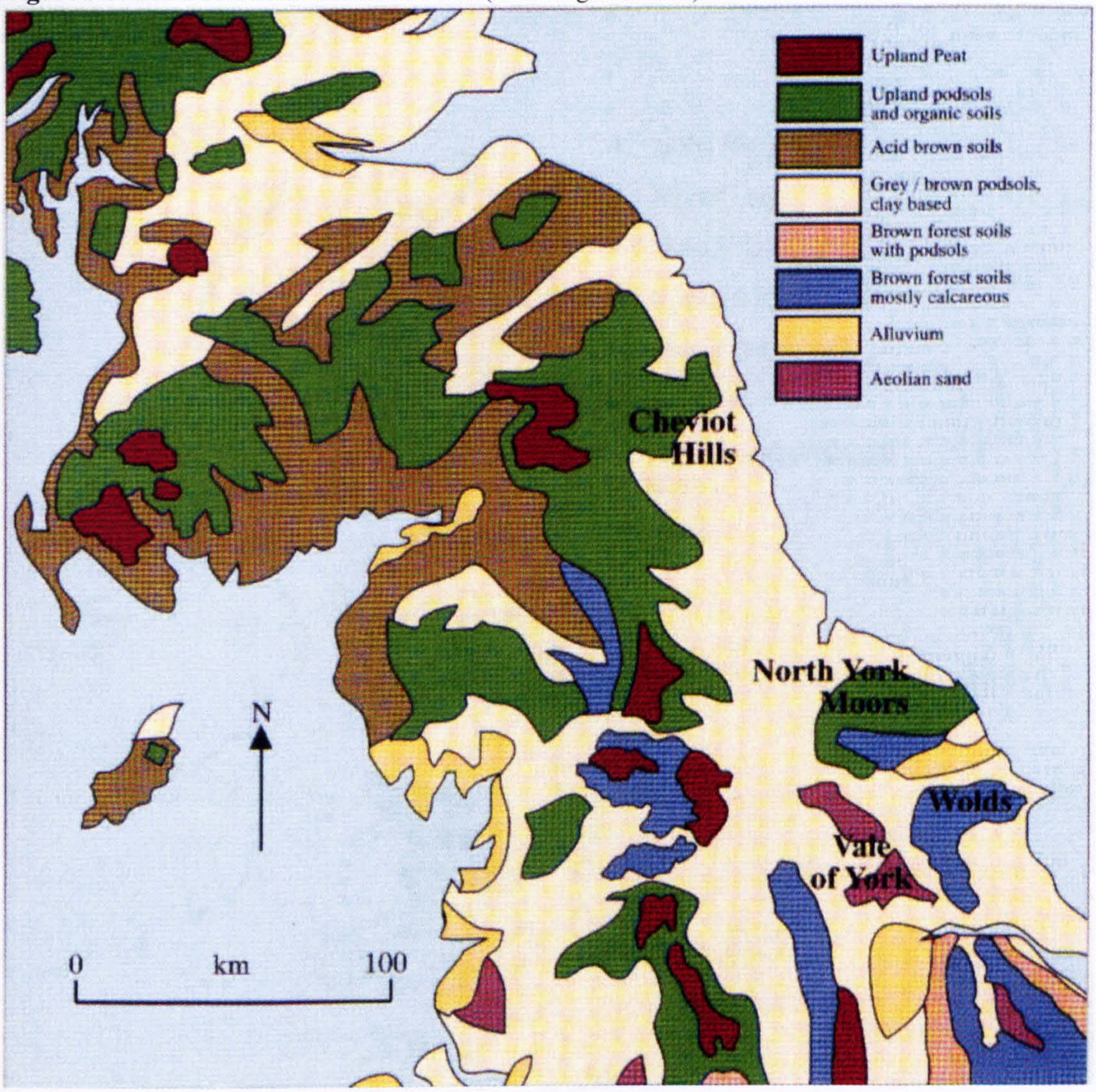


Figure 5.3: Location of natural resources in Britain exploited during the Roman period (from Jones and Mattingly 1990).

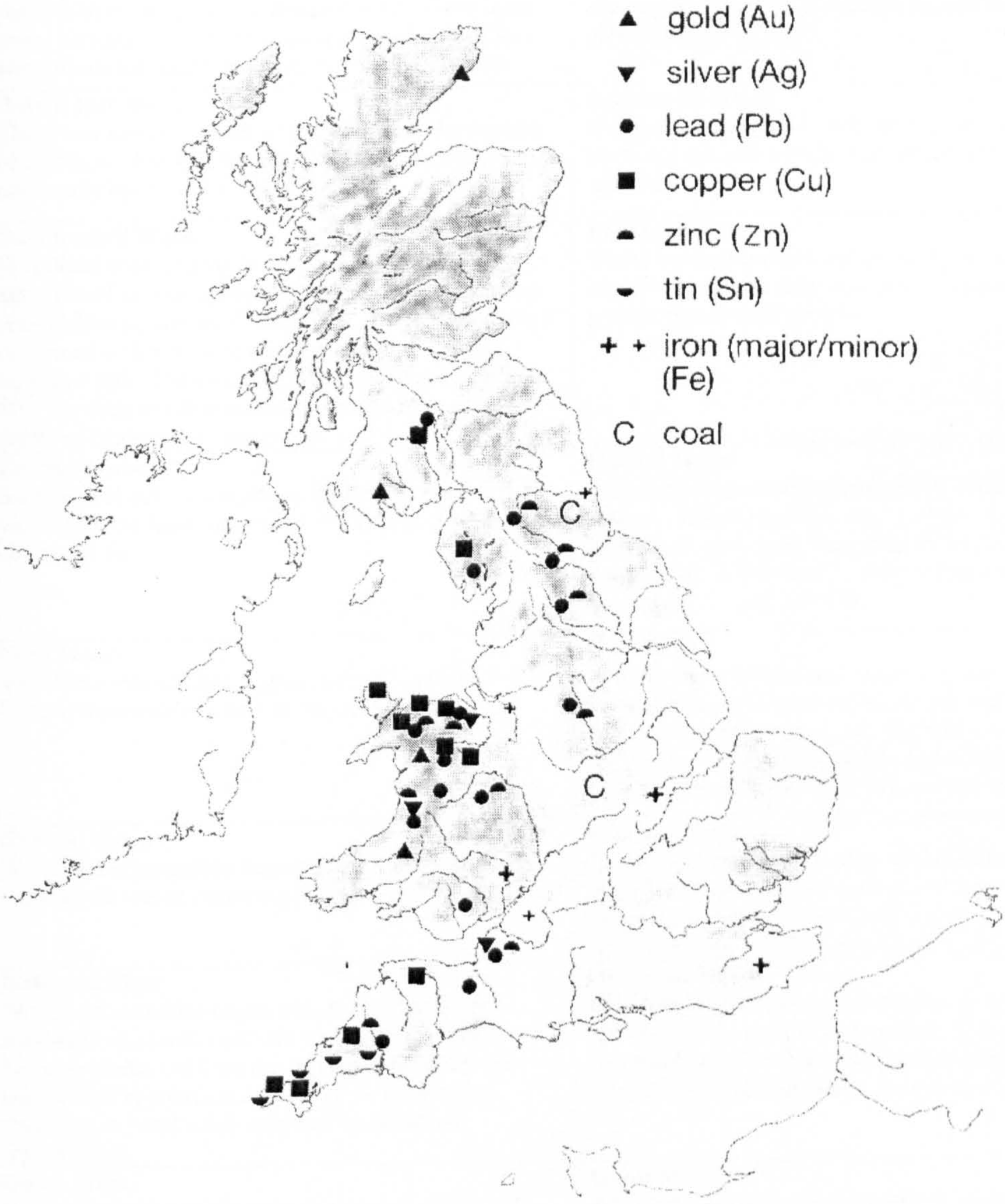


Table 5.1: A comparison of interpretation of pollen sequences between the original authors and P. Dark.

Interpretation of Original Authors	Interpretation of P. Dark
Bollihope Bog: There is a sharp tree pollen decrease between 200 BC and AD 300. Clearance continued for more than 1000 years with no stratigraphic disagreement. There were trees, perhaps galleries of woodland present. The area was known for boar hunting in the medieval period.	**Bollihope Bog:** Late Roman or early post-Roman expansion of open land indicated by an increase of heather, grasses and plantain, followed by woodland regeneration, predominantly of hazel.
Bolton Fell Moss: There was minor woodland regeneration at the expense of arable, c. AD 465, but the landscape remained essentially open until c. cal. AD 835.	**Bolton Fell Moss:** Woodland regeneration indicated by an increase of birch and ash and a decline of ribwort plantain, sorrel and bracken.
Burnfoothill Moss: Woodland regeneration begins c. AD 300 with agricultural decline continuing until c. 400, correlating with a climatic wet shift. After that, forest regeneration continues with a notable absence of anthropogenic indicator taxa. Renewed woodland clearance begins c. 600, but does not demonstrate a change from previous forms of landscape management.	**Burnfoothill Moss:** Woodland regeneration indicated by an increase of birch, followed by alder and oak, and a decline of grasses and ribwort plantain.
Fellend Moss: Some cereal cultivation after a Roman clearance of woodland, but land was mainly used for pasture to about AD 620.	**Fellend Moss:** Woodland regeneration indicated by a decline of grasses, ribwort plantain, and bracken. A possible later increase of open land, suggested by increasing grass frequencies, is followed by further regeneration at the level dated . . . cal. AD 675.
Fozy Moss: Woodland regeneration begins in the 4th century. Renewed clearance occurs in "monastic" times.	**Fozy Moss:** Abandonment of land and woodland regeneration indicated by an increase of hazel, oak and heather, and a decline of grasses, at *c.* cal. AD 400, but at *c.* cal. 600 the trend is reversed and arable agriculture seems to have increased, as pollen of rye and oat/wheat appear.
Glasson Moss: Woodland regeneration begins in the 4th century, with renewed clearance occurring in "monastic" times.	**Glasson Moss:** Increases of hazel and heather and a decline of grasses suggest abandonment of agricultural land. It is interpolated that oat/wheat and "*Cannabis* type" (probably hemp) pollen occur from c. cal. 600.
Hallowell Moss: Woodland clearance began with the Romans, but maximum clearance occurred well after AD 410. Farming continued from the Roman to post-Roman period until approximately 600, when there was a reversion to hazel scrub followed by woodland regeneration.	**Hallowell Moss:** Woodland regeneration indicated by an increase of trees and shrubs and a decline of grasses, ribwort plantain, and bracken. Cereal pollen ceases to occur. Precise chronology uncertain due to inversion of dates.
Quick Moss: Clearance continues from the Roman period to c. AD 532 +/- 195 when forest regeneration begins.	**Quick Moss:** Woodland regeneration indicated by an increase of hazel and decline of plantain, grasses, heather and bracken.
Steng Moss: Forest clearance began c. 20 BC and lasted until c. AD 500. There was an increase in cereal and herbaceous taxa (arable and pastoral) in the later half of the Roman period. Forest regeneration began c. 500 until renewed clearance began c. 865.	**Steng Moss:** Woodland regernation indicated by an increase of trees and shrubs and decline of grasses, ribwort plantain, heather and bracken. Cereal pollen ceases to occur.
Stewart Shield Meadow: Woodland clearance began in the late Iron Age or Roman period and continued for at least 1000 years.	**Stewart Shield Meadow:** Woodland regeneration indicated by an increase of hazel, willow and oak, and decline of ribwort plantain and heather. There is some uncertainty over the chronology as the dates have large error terms and the pollen samples are widely spaced.
Walton Moss: There was a decrease in clearance in the 4th century, but not associated with woodland regeneration, suggesting maintained (but changed) land use. Renewed clearance begins in "monastic" times.	**Walton Moss:** Woodland regeneration indicated by an increase of alder and hazel, and decline of grasses. "*Cannabis* type" pollen, probably from hemp, occurs sporadically for the first time.

Table 5.2: Total list of pollen sites in the frontier of potential use.

SITE		
Akeld Steads	Dogden Moss	Nunstainton Carrs
Appletree	Drowning Flow	Pow Hill
Birdoswald	Ellergower Moss	Quick Moss
Bishop Middleham	Fairsnape Fell	Roung Loch of Glenhead
Black Carts	Fellend Moss	Rusland Moss
Blackpool Moss	Fen Bogs	Sells Burn
Bloak Moss	Fenton Cottage	Snabdaugh Farm
Bloody Moss	Flanders Moss	Sourhope
Bollihope Bog	Fotherley Moss	Steng Moss
Bolton Fell Moss	Fozy Moss	Stewart Sheild Meadow
Bradford Kaims, Bamburgh	Glasson Moss	Swindon Hill
Broad Moss	Hallowell Moss	Talla Moss
Brownchesters Farm	Hutton Henry	Tarraby Lane
Burnfoothill Moss	Lamp Shield	Thorpe Bulmer
Burnhope Burn	Linhope Burn	Valley Bog
Callaly Moor	Linton Loch	Vindolanda
Camp Hill Moss	Longlee Moor	Wallhouses
Carsegowan Moss	The Lough, Lindisfarne	Walton Moss
Caudhole Moss	Midgeholme Moss	Wheeldale Gill
Coom Rigg Moss	Mordan Carr	White Moss
Denton Bank	Muckle Moss	Willow Garth
Din Moss	Neasham Fen	Wooler Water
The Dod	Newcastle Milecastle	Yetholm Loch

Table 5.3: Total list of pollen sites used in the analysis.

SITE		
Bloak Moss	Fen Bogs	Snabdaugh Farm
Bloody Moss	Fenton Cottage	Sourhope
Bollihope Bog	Fozy Moss	Steng Moss
Bolton Fell Moss	Glasson Moss	Stewart Shield Meadow
Brownchesters Farm	Hallowell Moss	Swindon Hill
Burnfoothill Moss	Hutton Henry	Talla Moss
Carsegowan Moss	The Lough, Lindisfarne	Thorpe Bulmer
Dogden Moss	Midgeholme Moss	Walton Moss
Drowning Flow	Neasham Fen	Wheeldale Gill
Ellergower Moss	Quick Moss	White Moss
Fairsnape Fell	Round Loch of Glenhead	Willow Garth
Fellend Moss	Rusland Moss	Yetholm Loch

Figure 5.4: Map locating the pollen sites used in the analysis.

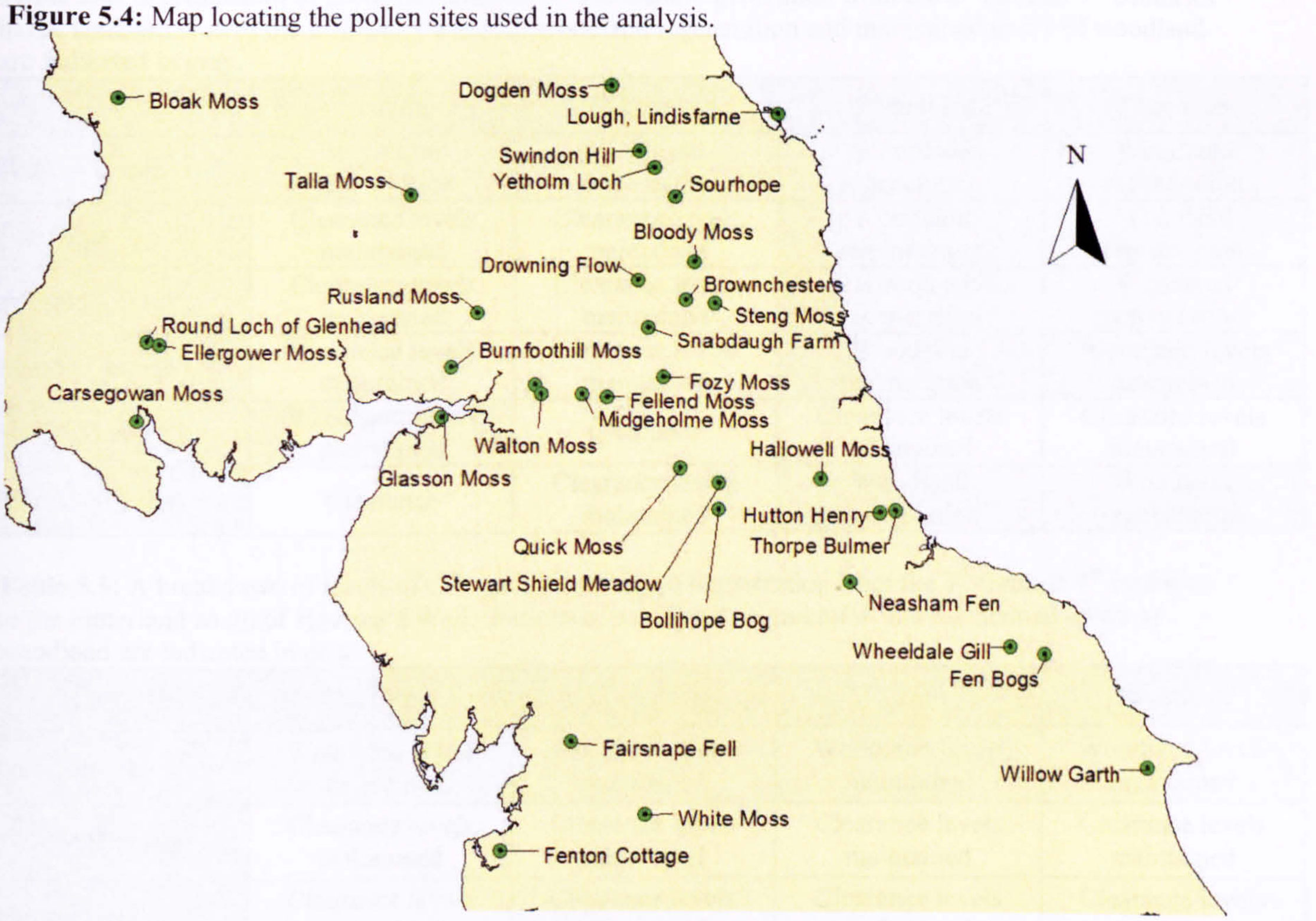


Figure 5.5: Map identifying the catchment areas of the pollen sites.

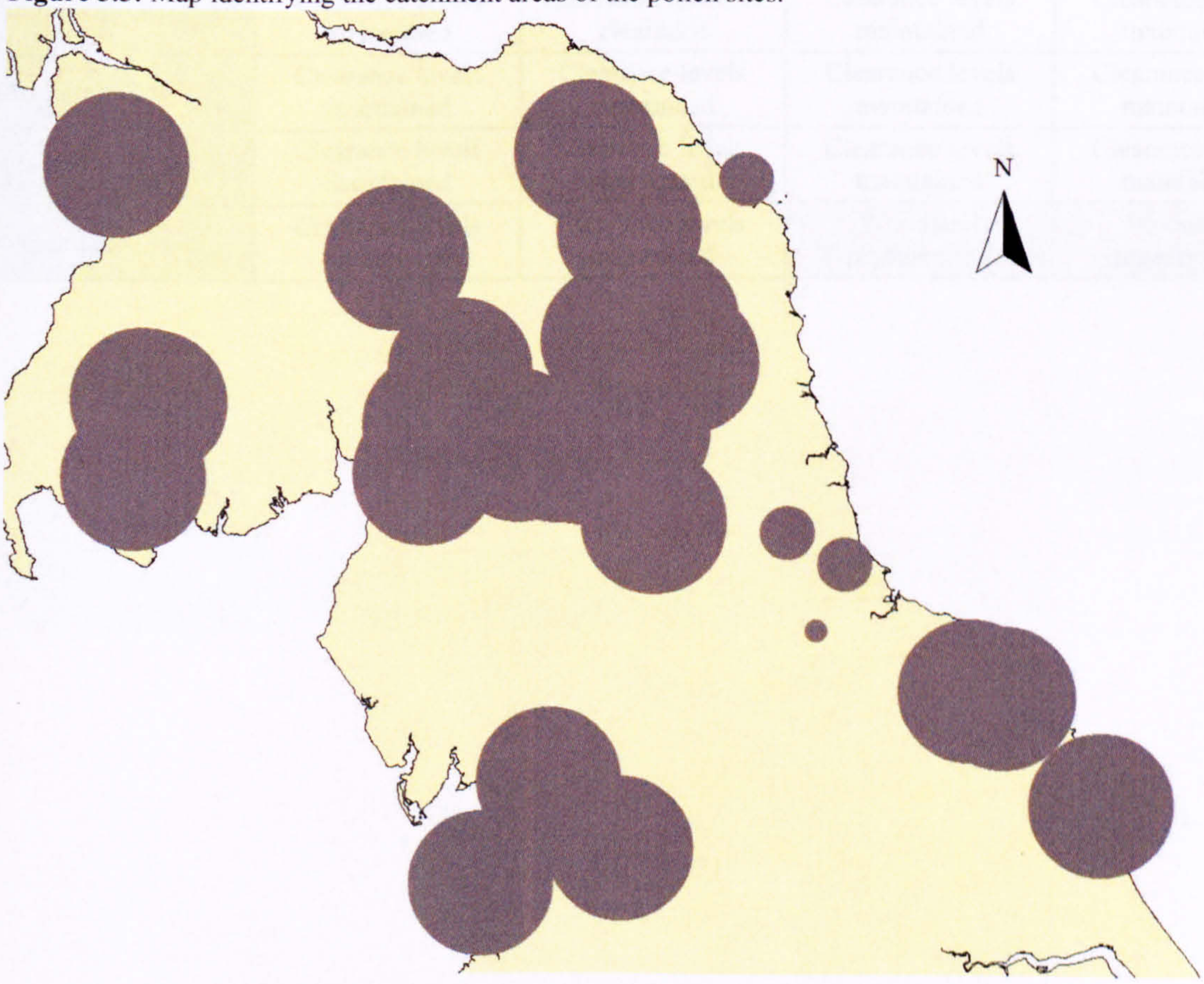


Table 5.4: A breakdown of levels of clearance v. woodland regeneration from the 4th through 7th centuries in the southern area of the frontier. Periods of woodland regeneration and maintained levels of woodland are indicated in gray.

	4th century	5th century	6th century	7th century
Willow Garth	Woodland regeneration	Woodland regeneration	Woodland regeneration	Woodland regeneration
Fen Bogs	Clearance levels maintained	Clearance levels maintained	Woodland regeneration	Woodland regeneration
Wheeldale Gill	Clearance levels maintained	Clearance levels maintained	Woodland regeneration	Woodland regeneration
Fenton Cottage	Clearance levels maintained	Clearance levels maintained	Woodland regeneration	Woodland levels maintained
White Moss	Woodland levels maintained	Clearance	Clearance levels maintained	Clearance levels maintained
Fairsnape Fell	Clearance	Clearance levels maintained	Woodland regeneration	Woodland regeneration

Table 5.5: A breakdown of levels of clearance v. woodland regeneration from the 4th through 7th centuries in the hinterland south of Hadrian's Wall. Periods of woodland regeneration and maintained levels of woodland are indicated in gray.

	4th century	5th century	6th century	7th century
Neasham Fen	Woodland levels maintained	Woodland levels maintained	Woodland levels maintained	Woodland levels maintained
Thorpe Bulmer	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained
Hutton Henry	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained
Hallowell Moss	Clearance levels maintained	**Increased** levels of clearance	Clearance levels maintained	Clearance levels maintained
Bollihope Bog	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained
Stewart Shield	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained
Quick Moss	Clearance levels maintained	Clearance levels maintained	Woodland regeneration	Woodland regeneration

Table 5.6: A breakdown of levels of clearance v. woodland regeneration from the 4th through 7th centuries in the vicinity of Hadrian's Wall. Periods of woodland regeneration and maintained levels of woodland are indicated in gray.

	4th century	5th century	6th century	7th century
Fozy Moss	Woodland regeneration	Woodland levels maintained	Woodland levels maintained	Woodland levels maintained
Fellend Moss	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained
Midgeholme Moss	Clearance levels maintained	Clearance levels maintained	Woodland regeneration	Woodland regeneration
Walton Moss	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained	Woodland regeneration
Bolton Fell Moss	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained
Burnfoothill Moss	Woodland regeneration	Woodland regeneration	Woodland regeneration	Woodland regeneration
Glasson Moss	Woodland regeneration	Woodland levels maintained	Woodland levels maintained	Woodland levels maintained

Table 5.7: A breakdown of levels of clearance v. woodland regeneration from the 4th through 7th centuries in the hinterland north of Hadrian's Wall. Periods of woodland regeneration and maintained levels of woodland are indicated in gray.

	4th century	5th century	6th century	7th century
Steng Moss	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained	Woodland regeneration
Snabdaugh Farm	Clearance levels maintained	Clearance levels maintained	Woodland regeneration	Woodland regeneration
Brownchesters	Woodland regeneration	Woodland regeneration	Woodland levels maintained	Woodland levels maintained
Drowning Flow	Clearance levels maintained	Clearance levels maintained	Woodland regeneration	Clearance
Bloody Moss	Clearance levels maintained	Clearance levels maintained	Woodland regeneration	Woodland levels maintained
Rusland Moss	Clearance levels maintained	Clearance levels maintained	Woodland regeneration	Woodland regeneration
Ellergower Moss	Woodland regeneration	Woodland regeneration	Woodland regeneration	Woodland regeneration
Round Loch	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained
Carsegowan Moss	Woodland regeneration	Woodland regeneration	Woodland regeneration	Clearance

Table 5.8: A breakdown of levels of clearance v. woodland regeneration from the 4th through 7th centuries in the northern area of the frontier. Periods of woodland regeneration and maintained levels of woodland are indicated in gray.

	4th century	5th century	6th century	7th century
The Lough, Lindisfarne	?	?	Clearance	**Increased** levels of clearance
Sourhope	Clearance levels maintained	Clearance levels maintained	**Increased** levels of clearance	Clearance levels maintained
Yetholm Loch	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained	Clearance levels maintained
Swindon Hill	Woodland levels maintained	Woodland levels maintained	Clearance	Clearance levels maintained
Dogden Moss	Woodland regeneration	Woodland regeneration	Clearance	**Increased** levels of clearance
Talla Moss	Woodland regeneration	Woodland regeneration	Woodland levels maintained	Clearance
Bloak Moss	Woodland levels maintained	Woodland levels maintained	Clearance	Clearance levels maintained

Figure 5.6: Vegetational history of pollen sites in the 4th century frontier. White indicates a clearance of woodland; red indicates that clearance levels were maintained; green indicates woodland regeneration; and blue indicates that woodland levels were maintained.

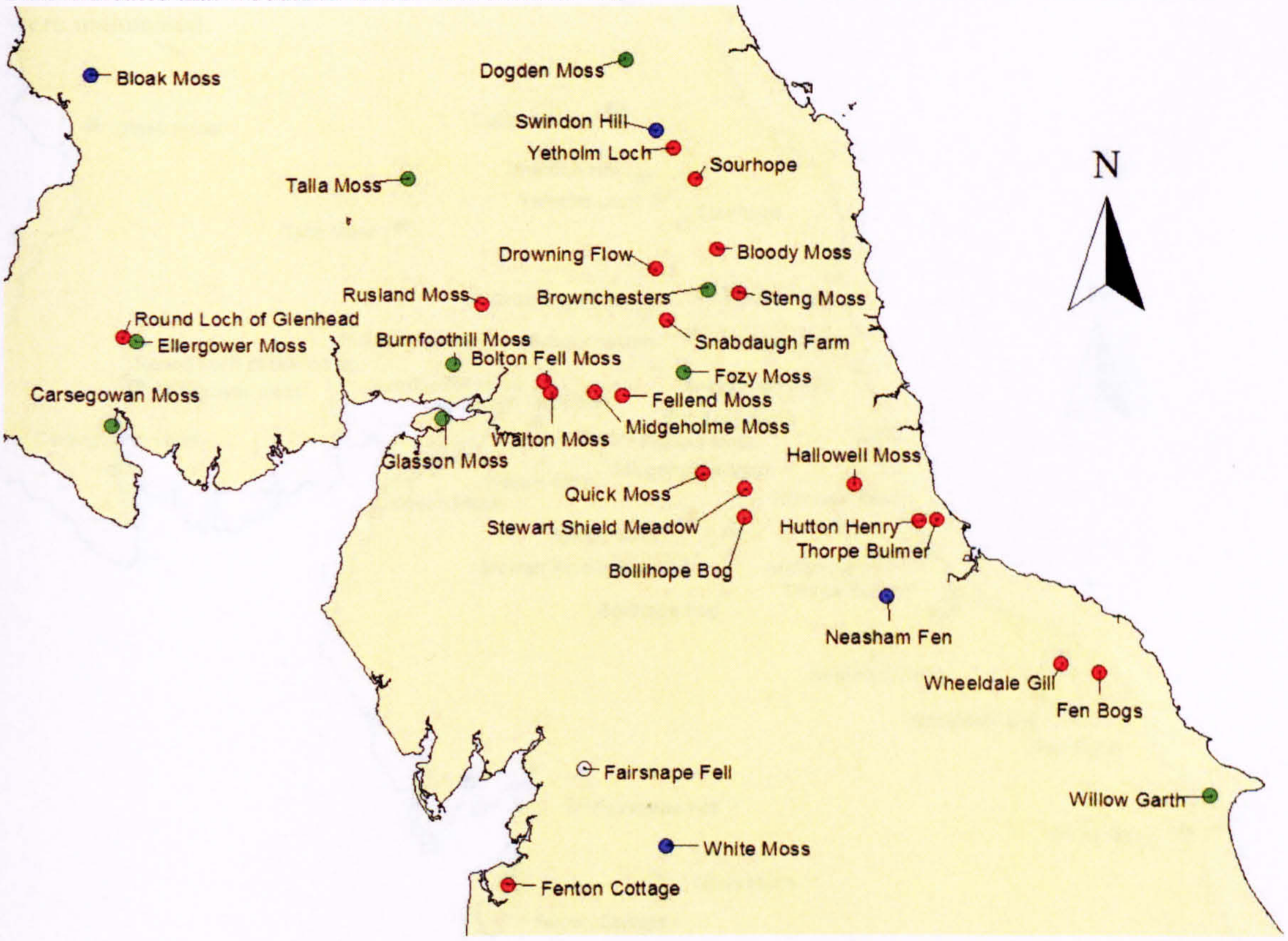


Figure 5.7: Vegetational history of pollen sites in the 5th century frontier. White indicates a clearance of woodland; white with a black dot in the center indicates increased clearance; red indicates that clearance levels were maintained; green indicates woodland regeneration; and blue indicates that woodland levels were maintained.

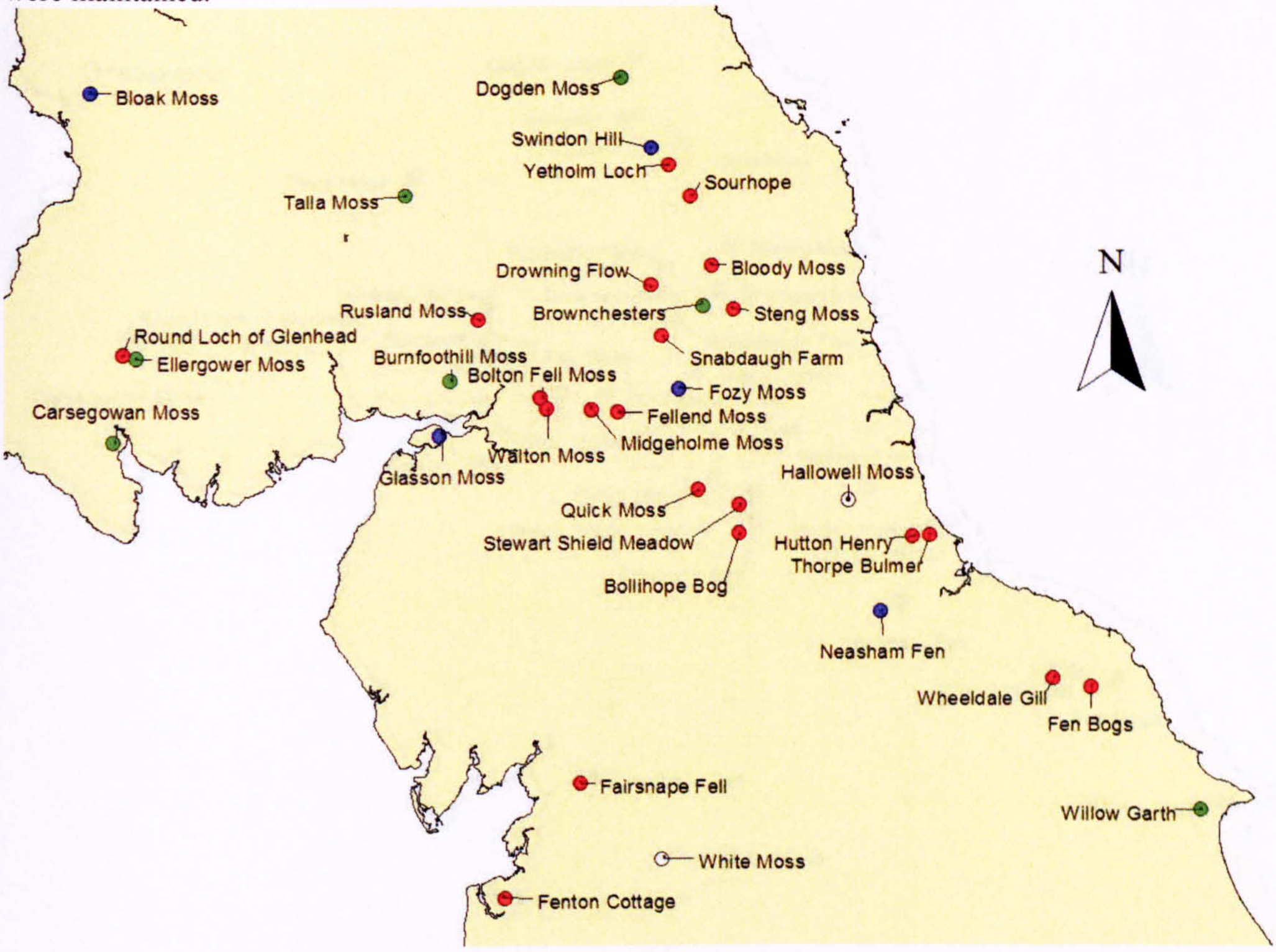


Figure 5.8: Vegetational history of pollen sites in the 6th century frontier. White indicates a clearance of woodland; red indicates that clearance levels were maintained; green indicates woodland regeneration; and blue indicates that woodland levels were maintained.

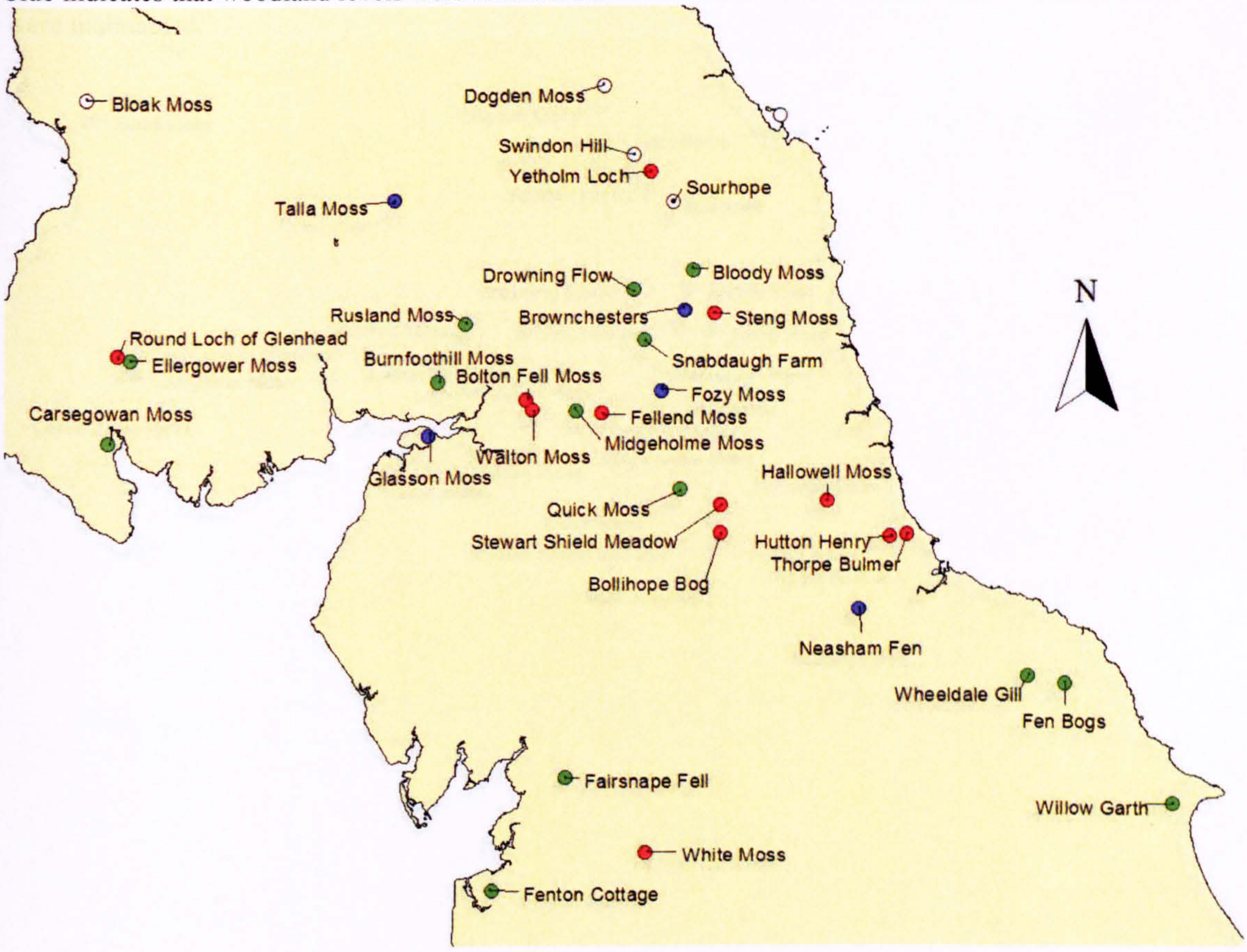


Figure 5.9: Vegetational history of pollen sites in the 7th century frontier. White indicates a clearance of woodland; white with a black dot in the center indicates increased clearance; red indicates that clearance levels were maintained; green indicates woodland regeneration; and blue indicates that woodland levels were maintained.

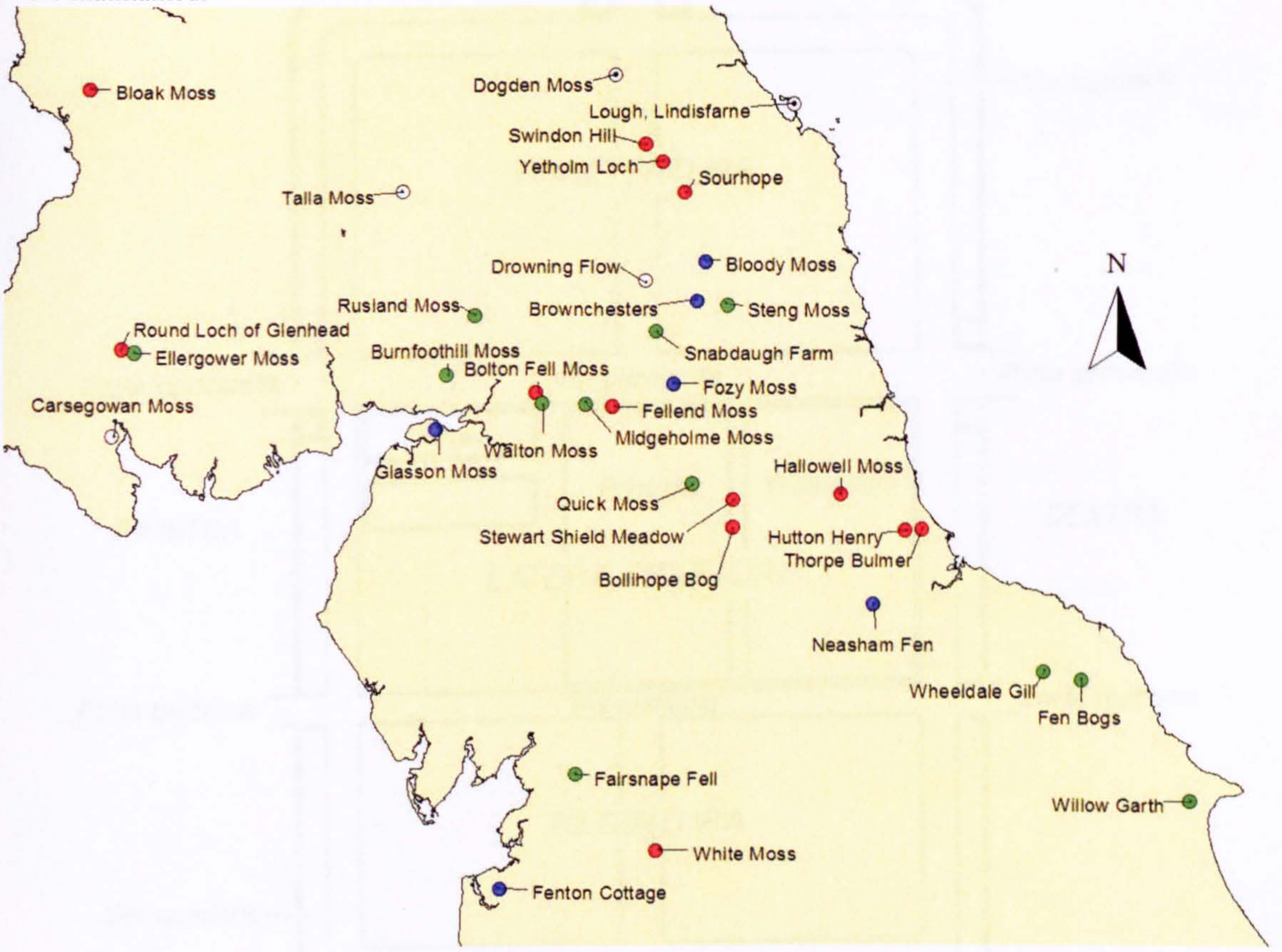


Figure 5.10: The location and size of the case study areas.

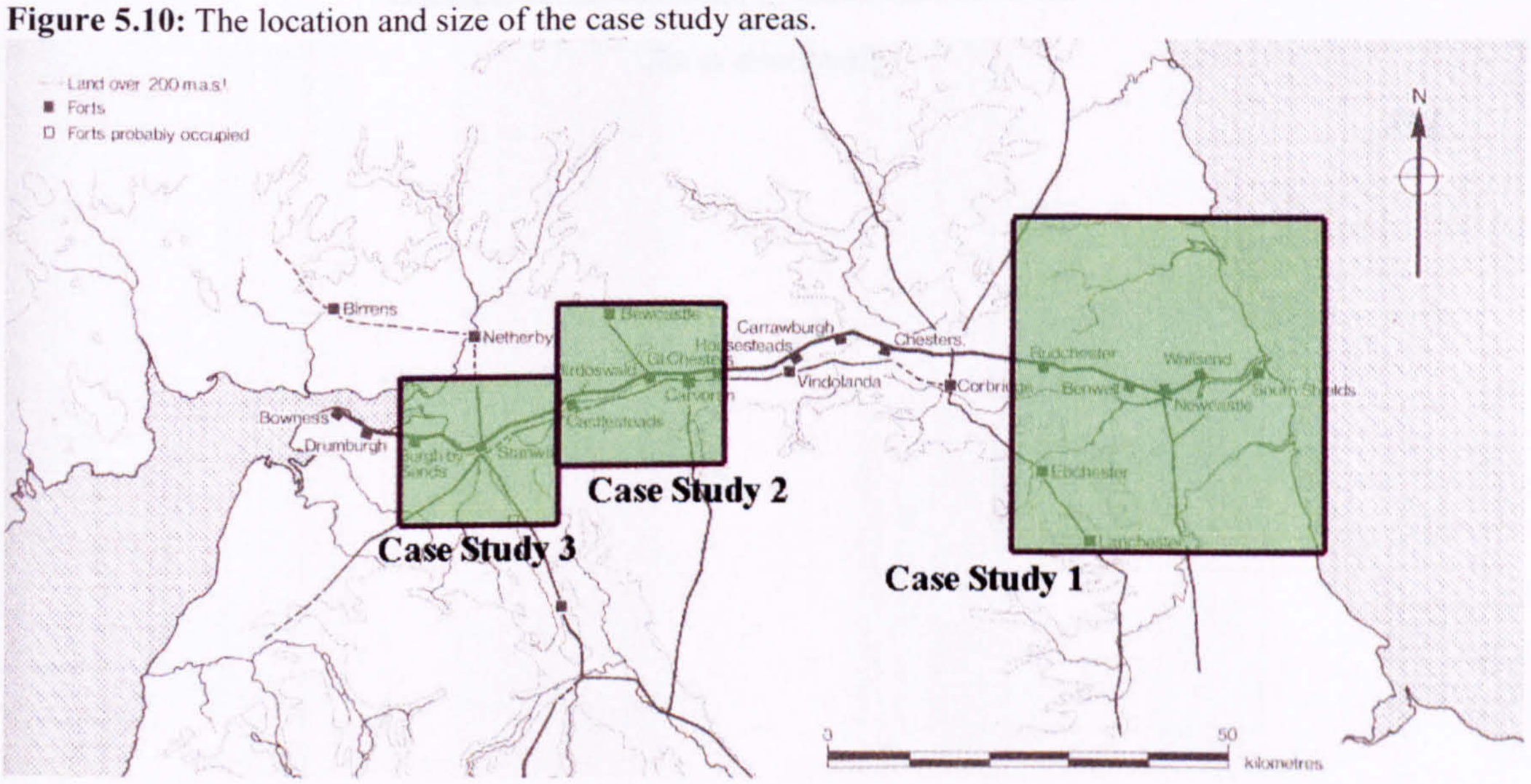
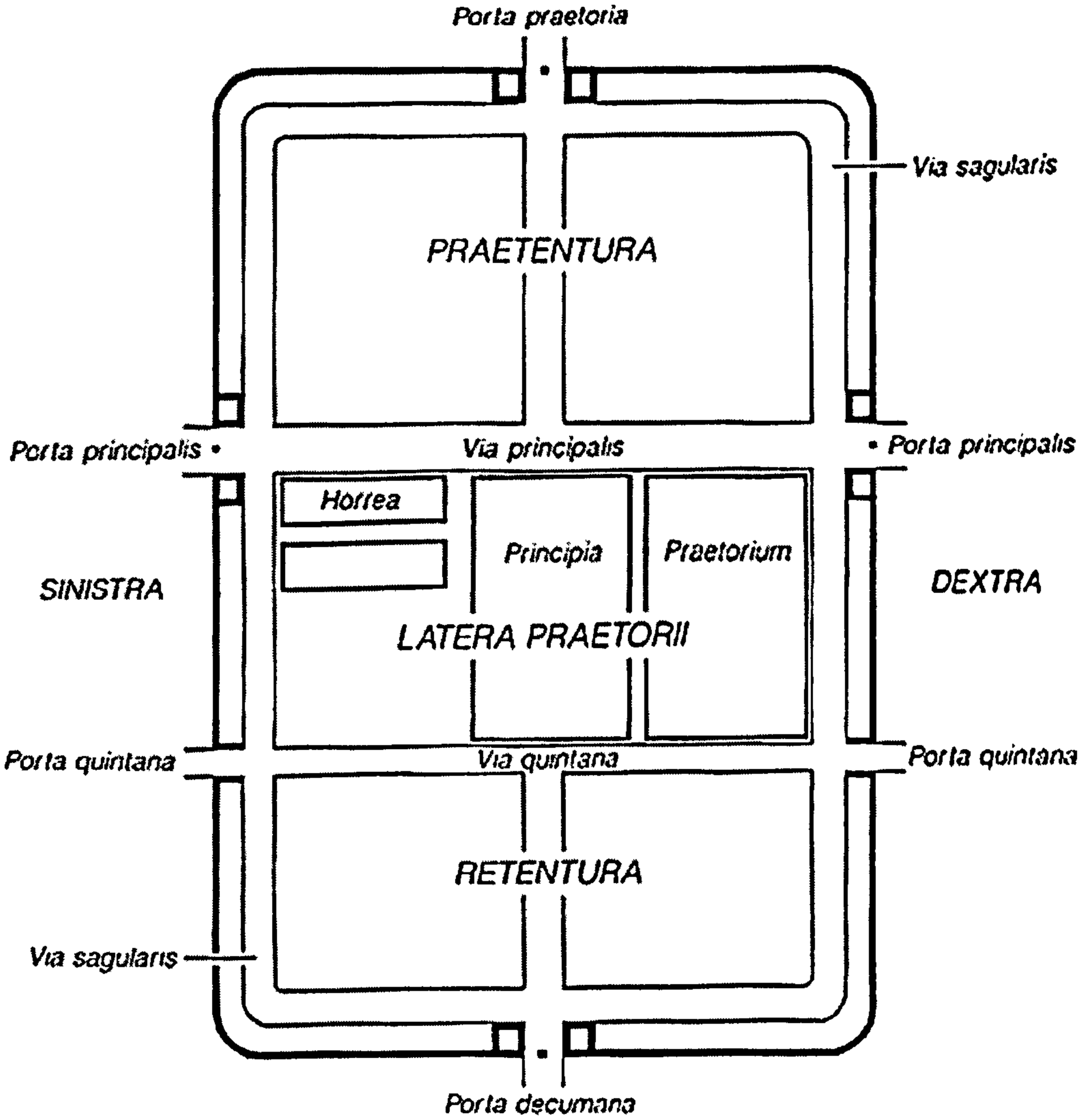


Figure 5.11: Latin terms associated with features of Roman forts (from Wilmott 1997).



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Chapter 6: Figures and Tables

Table 6.1: A numerical summary of the case studies separated by category.

	Newcastle	Birdoswald	Carlisle	Totals
Total sites and findspots	444	235	228	907
Late Roman	15 (3.38%)	18 (7.66%)	15 (6.58%)	48
Farmsteads/Agricultural	81 (18.24%)	9 (3.83%)	38 (16.67%)	128
Early Medieval	40 (9.01%)	3 (1.28%)	3 (1.31%)	46

Figure 6.1: The total distribution of sites and findspots from all three case studies. Farmsteads are in green squares while all other Roman sites are in black squares and findspots are shown with a black X.

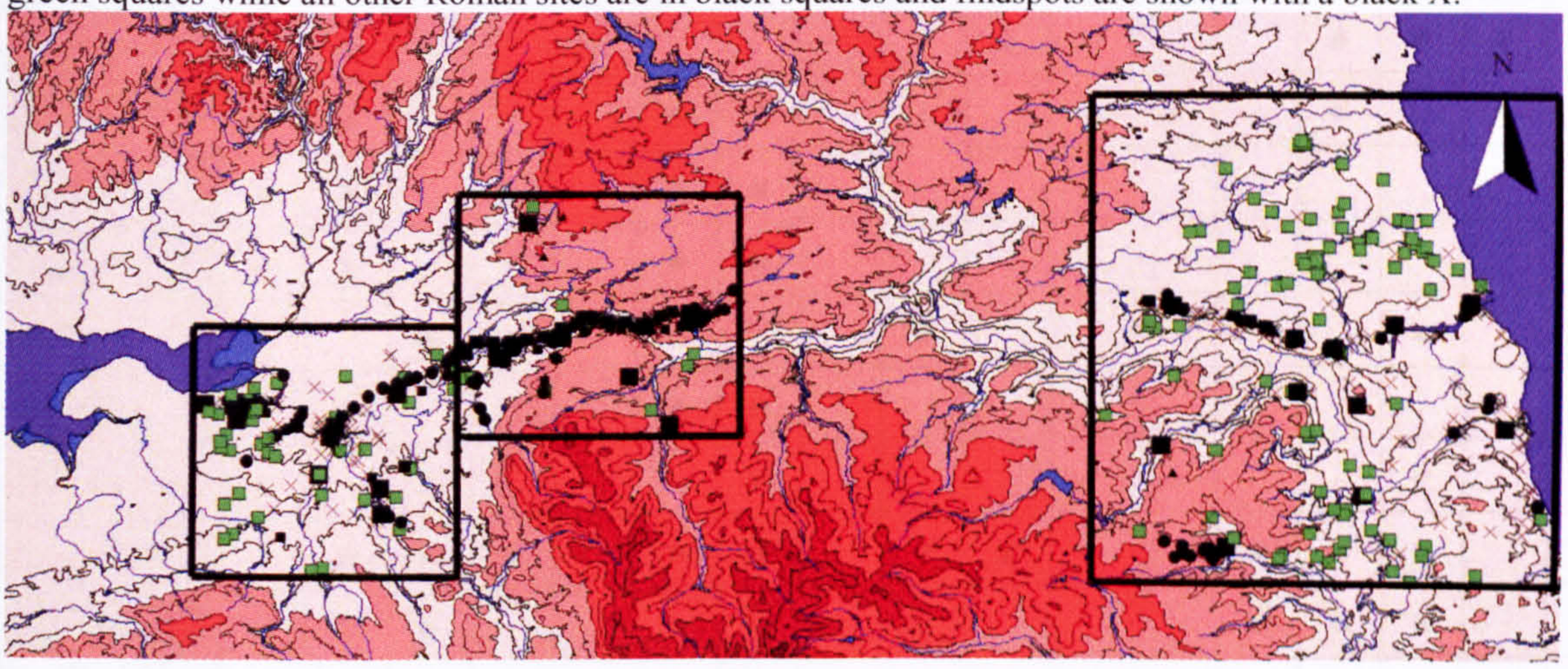


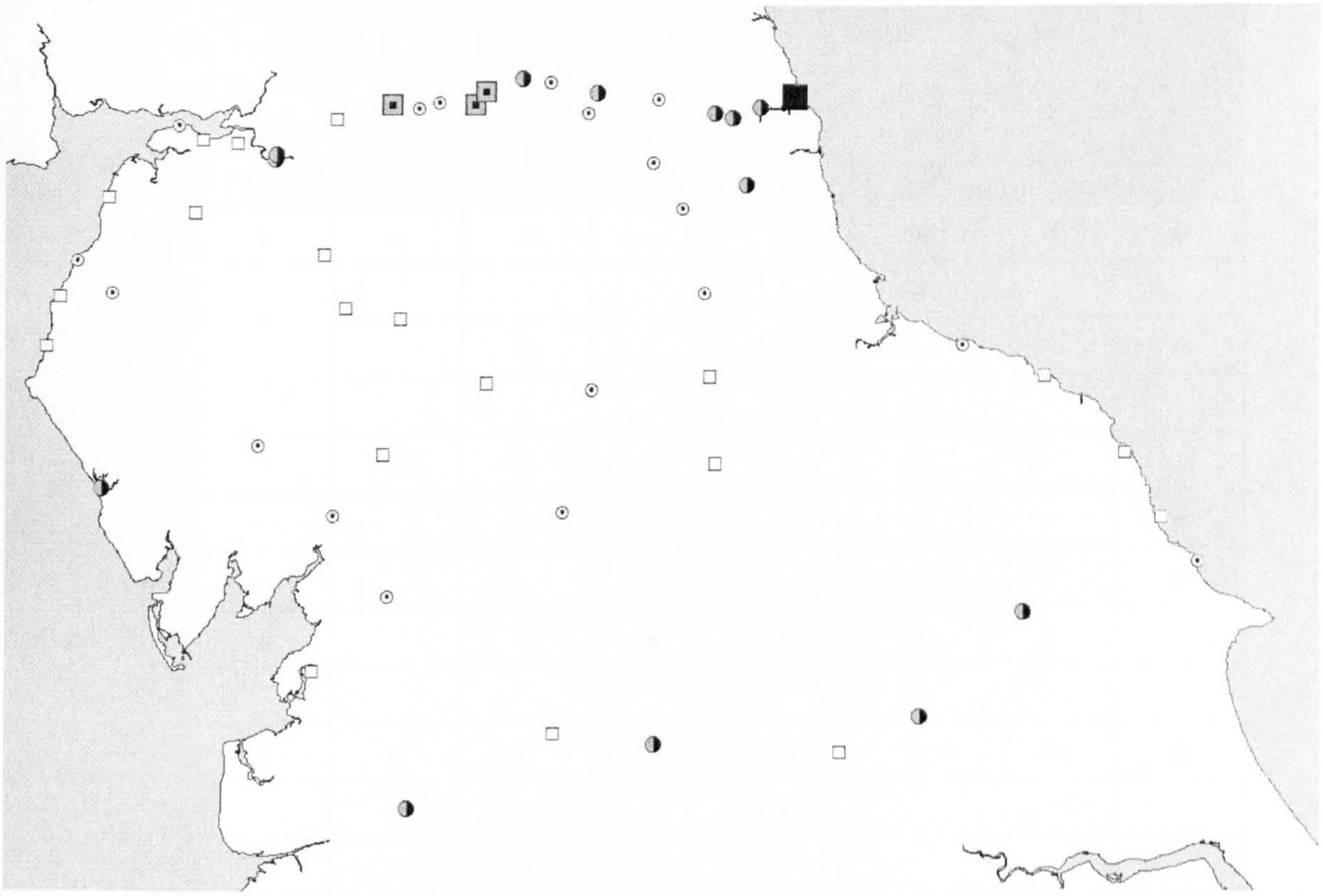
Table 6.2: Fourth century and later traits at forts on Hadrian's Wall, confirmed indicated by a square, probable/possible indicated by a circle.

	Barrack repair/refurbishment	*Praetoria* repair/refurbishment	*Principia* repair/refurbishment	Increase use of timber	Decreasing road quality	Infringement on road space	Gate blocking	Changed use of gate space	Accommodation expanded into formerly specialized space	Metalworking no longer restricted to purpose built *fabricae*	Barrack demolition/conversion	Subdivision of rooms	Extension/addition of bath suites	*Horrea* demolition/conversion	Changed use of *principia* space	Patterned coin loss	Refurbishment of defenses in earth banks & timber/stone revetment
South Shields	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■
Wallsend	●				■	■	■									■	■
Newcastle		■	■		■					■				■	■	■	■
Benwell		■				■	●					■		■			
Rudchester	■	●				●	■										
Halton Chesters	■	■		●		■	■										
Corbridge			■						■						■		
Chesters		■				●	■										
Carrawburgh	■		■				■				●	■			●		
Housesteads	■	■	■	■		■	■		■	■			■	■	■		■
Vindolanda	■	■	■			■	■		■				■	■	■		■
Great Chesters	■	●					■										
Carvoran							■										
Birdoswald	■	●		■	■	■	■	■	■	■	■			■			■
Castlesteads																	
Stanwix	●			■		●			●		●			●			
Carlisle	●		■	■	■	●					●				●	■	●
Burgh-by-Sands																	
Drumburgh																	
Bowness-on-Solway				■		■											

Table 6.3: Fourth century and later traits at forts between the Humber estuary and Hadrian's Wall, not in the case studies. Confirmed traits are indicated by a square, probable/possible indicated by a circle.

	Barrack repair/refurbishment	*Praetoria* repair/refurbishment	*Principia* repair/refurbishment	Increased use of timber	Decreasing road quality	Infringement on road space	Gate blocking	Changed use of gate space	Accommodation expanded into formerly specialized space	Metalworking no longer restricted to purpose built *fabricae*	Barrack demolition/conversion	Subdivision of Rooms	Extension/addition of bath suites	*Horrea* demolition/conversion	Changed use of *principia* space	Patterned coin loss	Refurbishment of defenses in earth banks & timber/stone revetment
Chester-le-Street		■								■	■	■	■				
Ebchester	●	●	●														
Lanchester							■	■	■								
Binchester		■										■	■				
Piercebridge																	
Catterick																	
York	■		■		■	■				■	●				■		
Malton	●			●	■		■	●									●
Newton Kyme																	
Ilkley	■	■	●	■	●	■	■				■		■				
Elslack																	
Ribchester	●	●		■		●	■	■			●						
Lancaster																	
Burrow in Lonsdale							■	■									
Watercrook				●			■										
Ravenglass	■			■	■					■	■						
Moresby																	
Burrow Walls																	
Maryport				■		■											
Beckfoot																	
Papcastle	■	■															
Old Carlisle																	
Old Penrith																	
Brougham																	
Ambleside			●				■			■					■		
Low Burrow Bridge																	
Bainbridge	●									■					■		
Kirkby Thore																	
Brough-at-Stainmore																	
Bowes																	●
Huntcliff					■												
Goldsborough																	
Ravenscar																	
Scarborough																	
Filey				■	■												■

Figure 6.2: The distribution of the frequency of trends observed at Roman military installations in northern England. Open squares indicate 0 trends observed, while a circle with a central dot indicates between 1–4 trends observed. Half-grey, half-black circles represent sites with 5–9 trends observed, and grey squares with a central square indicate 10–12 trends. A solid black square indicates 13–17 trends observed.



Chapter 7: Figures and Tables

Table 7.1: Archaeological evidence for sub-Roman occupation of Hadrian's Wall and sites south of the Wall, after Casey 1993a, Dark 1992, Dark and Dark 1996, and Wilmott 2000.

Hadrian's Wall	Earthen Defenses	Timber Gate Inserted	Structural Evidence or Occupation	Class I Inscribed Stone	"British" Artifacts	"Anglo-Saxon" Artifacts	Possible Church	Long Cist or Other Burials
South Shields	■	■	■		■	■	■	■
Wallsend						■		
Newcastle			■					■
Benwell						■		
Corbridge						■		
Chesters						■		■
Housesteads	■					■	■	■
Vindolanda	■		■	■	■	■	■	
Carvoran						■		
Birdoswald	■	■	■		■	■	■	■
Castlesteads				■	■			
Stanwix			■					
Carlisle	■		■					
South of Hadrian's Wall								
Old Carlisle				■				
Brougham				■				
Maryport				■				
Binchester			■		■	■		■
Catterick			■		■	■		■
Malton	■							
York			■					■

Appendix 2: Figures and Tables

Figure A2.1: The distribution of all Roman and Early Medieval period sites and findspots in the Newcastle case study.

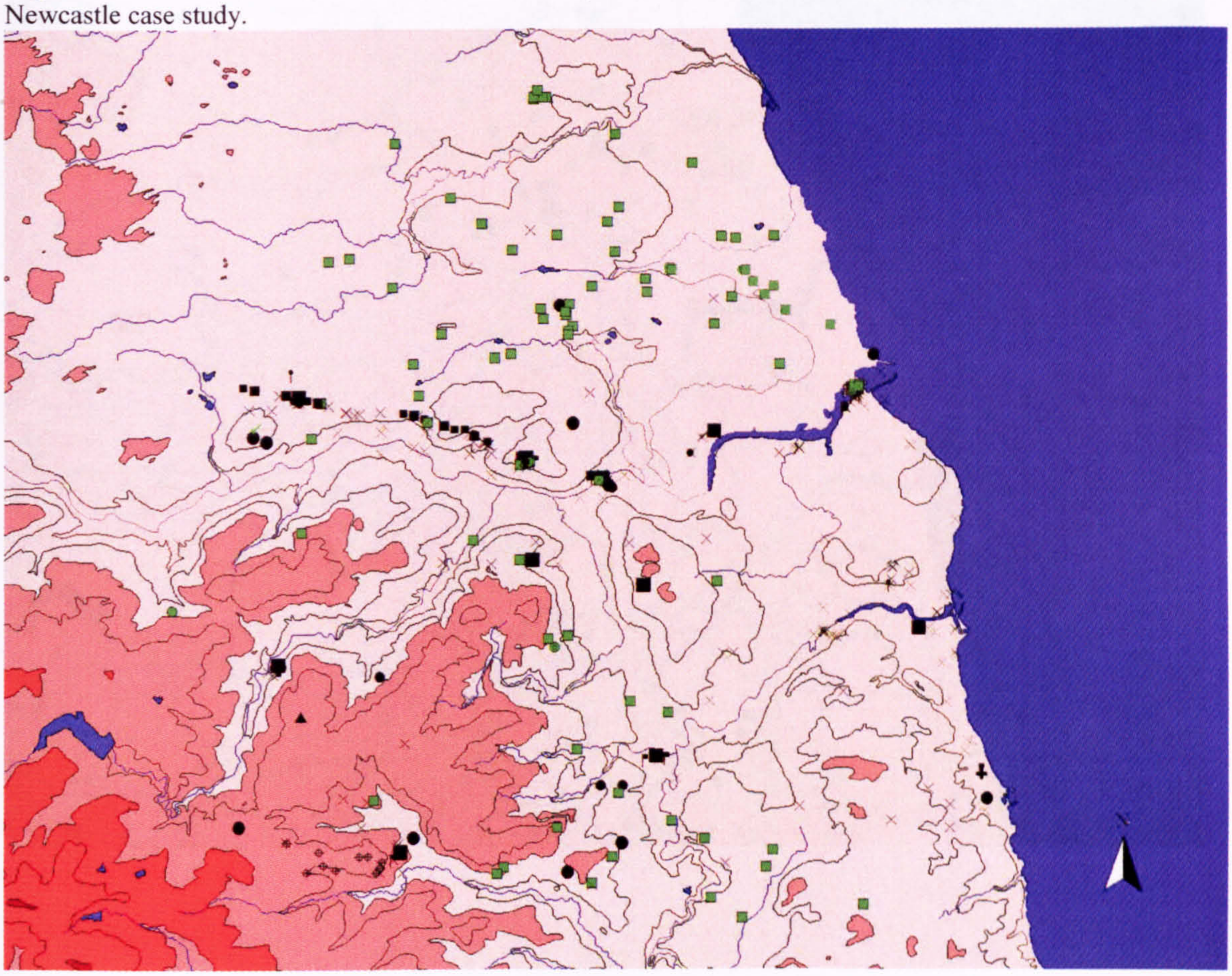


Figure A2.2: The distribution of native farmsteads (green) in relation to Roman forts (black).

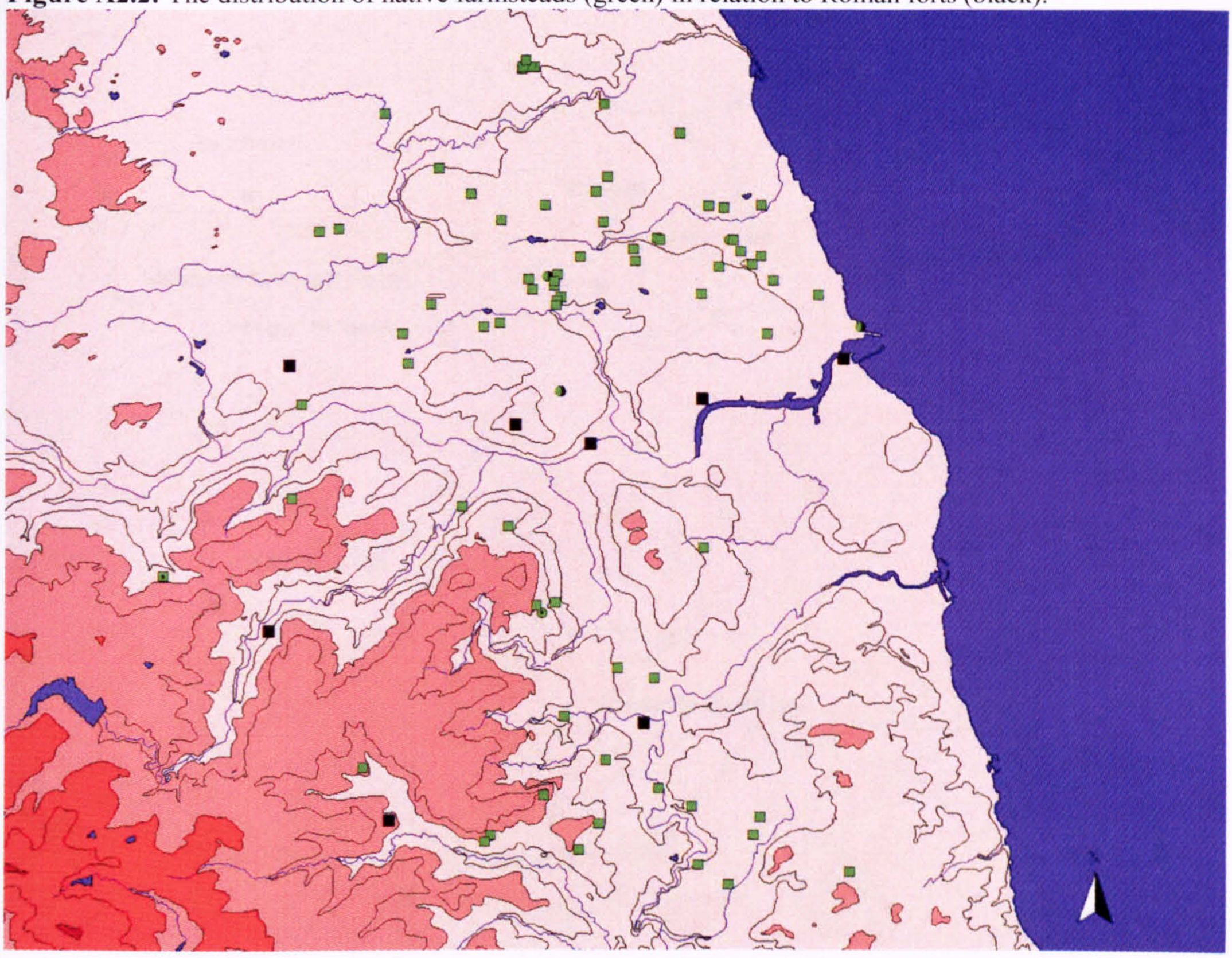


Figure A2.3: The distribution of Roman sites with 4th century evidence.

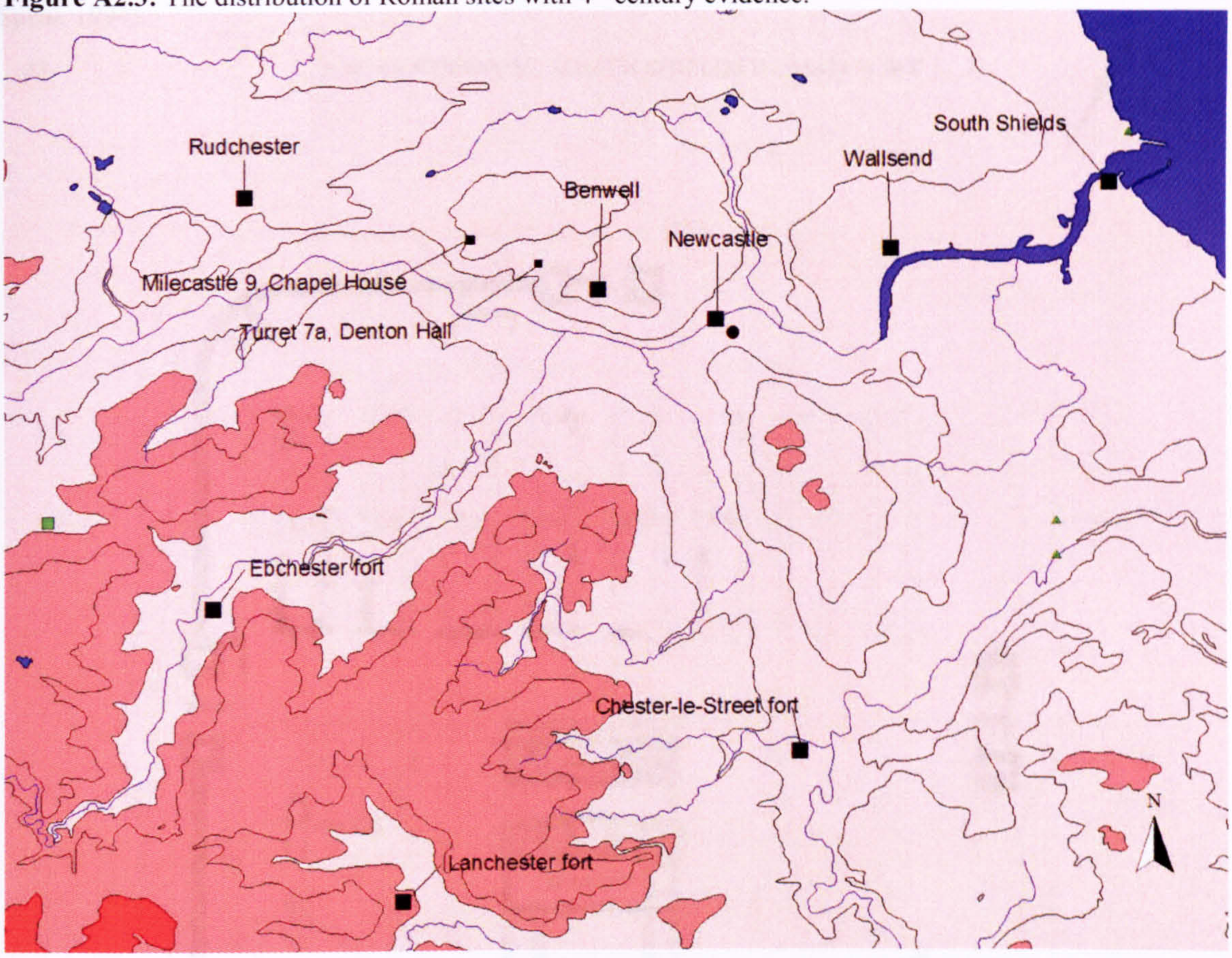


Figure A2.4: The Period 7 (late 3rd/early 4th century) plan of the fort at South Shields (from Bidwell and Speak 1994).

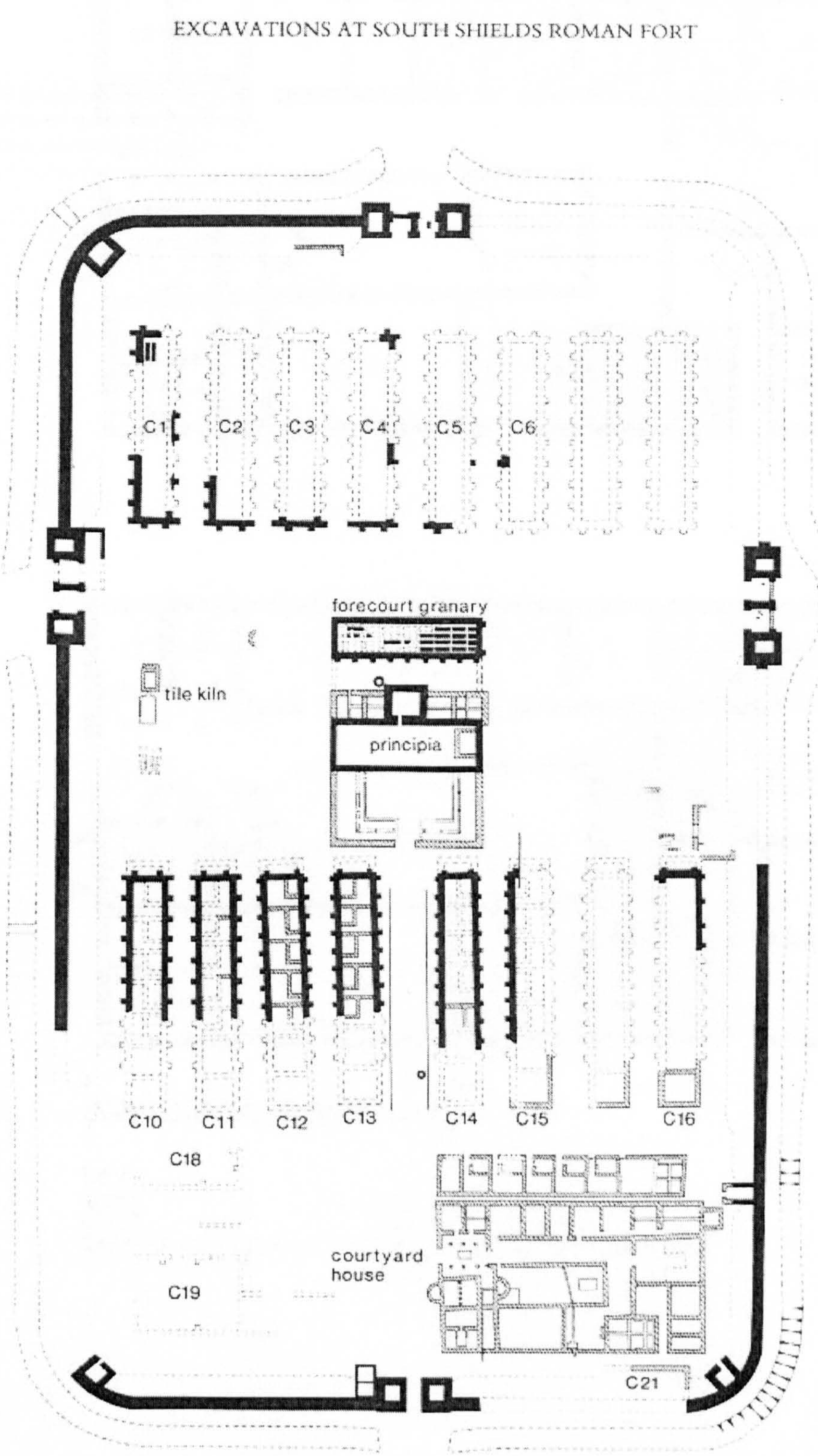


Figure A2.5: The Period 7 *praetorium* at South Shields (from Bidwell and Speak 1994).

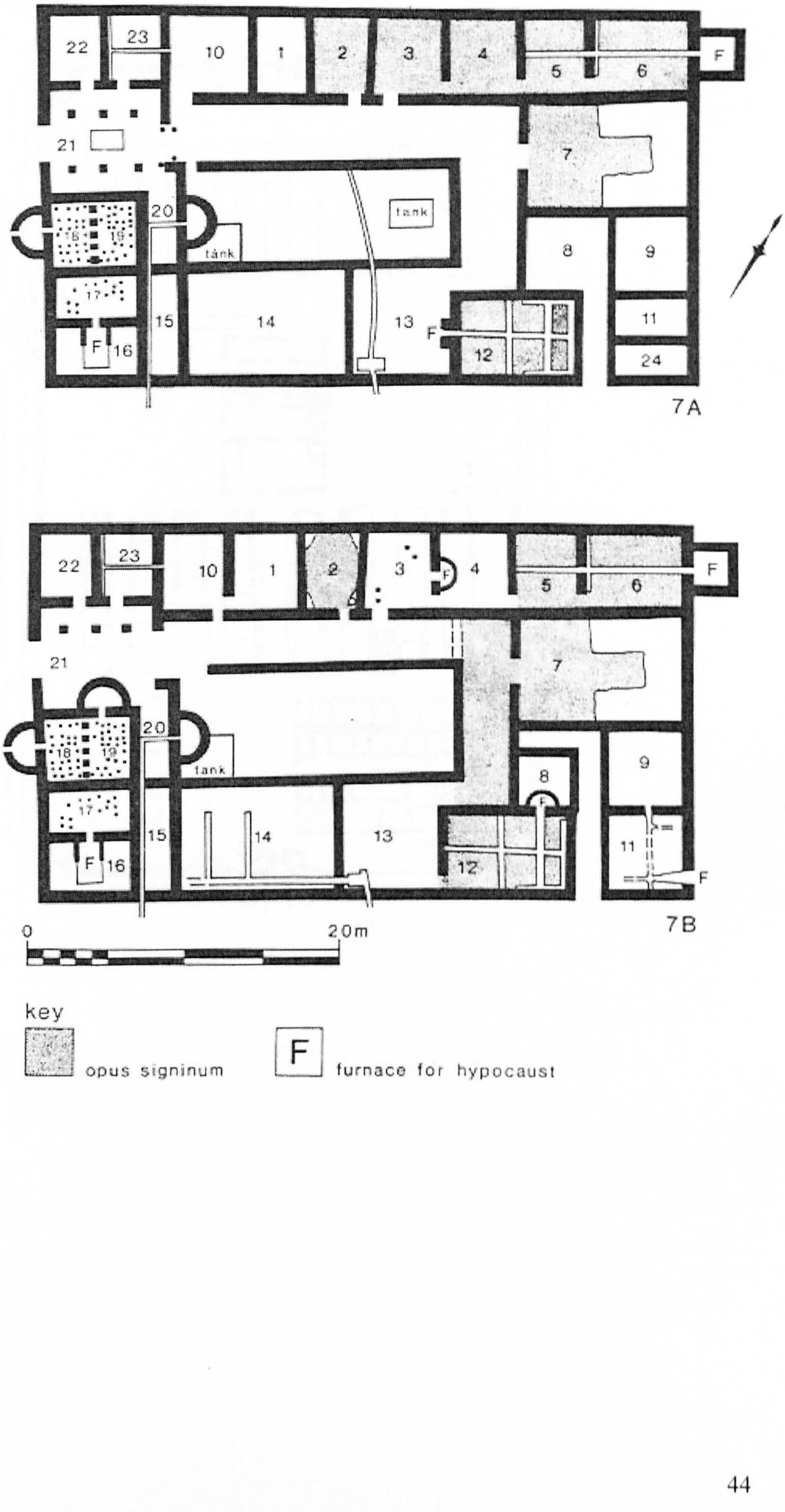


Figure A2.6: The Period 8 (4th century) plan of the fort at South Shields. Building labels remain the same as in Figure 6.4.

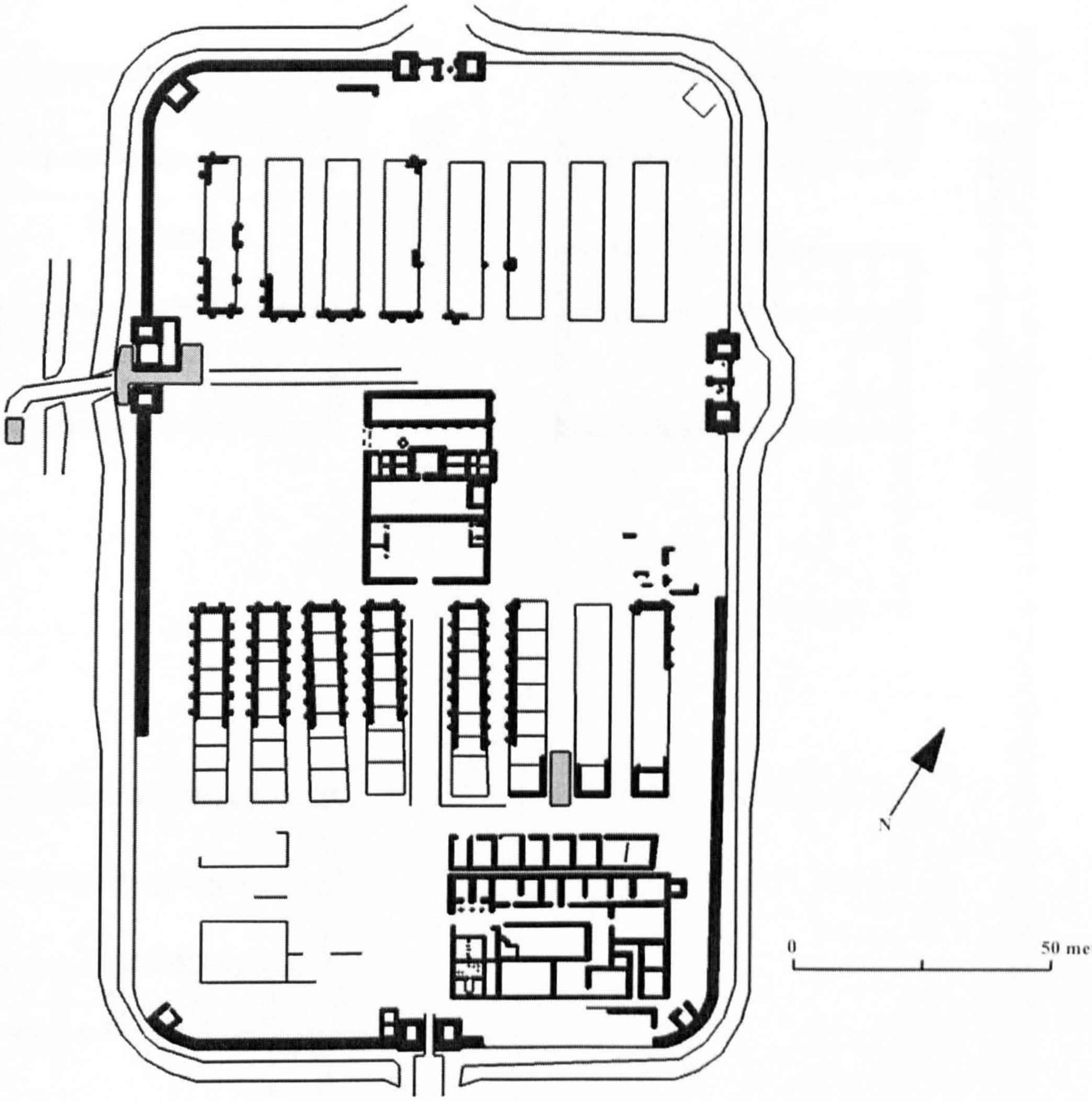


Figure A2.7: The sequence of changes at the *principia* of South Shields from Period 6–9 (from Bidwell and Speak 1994).

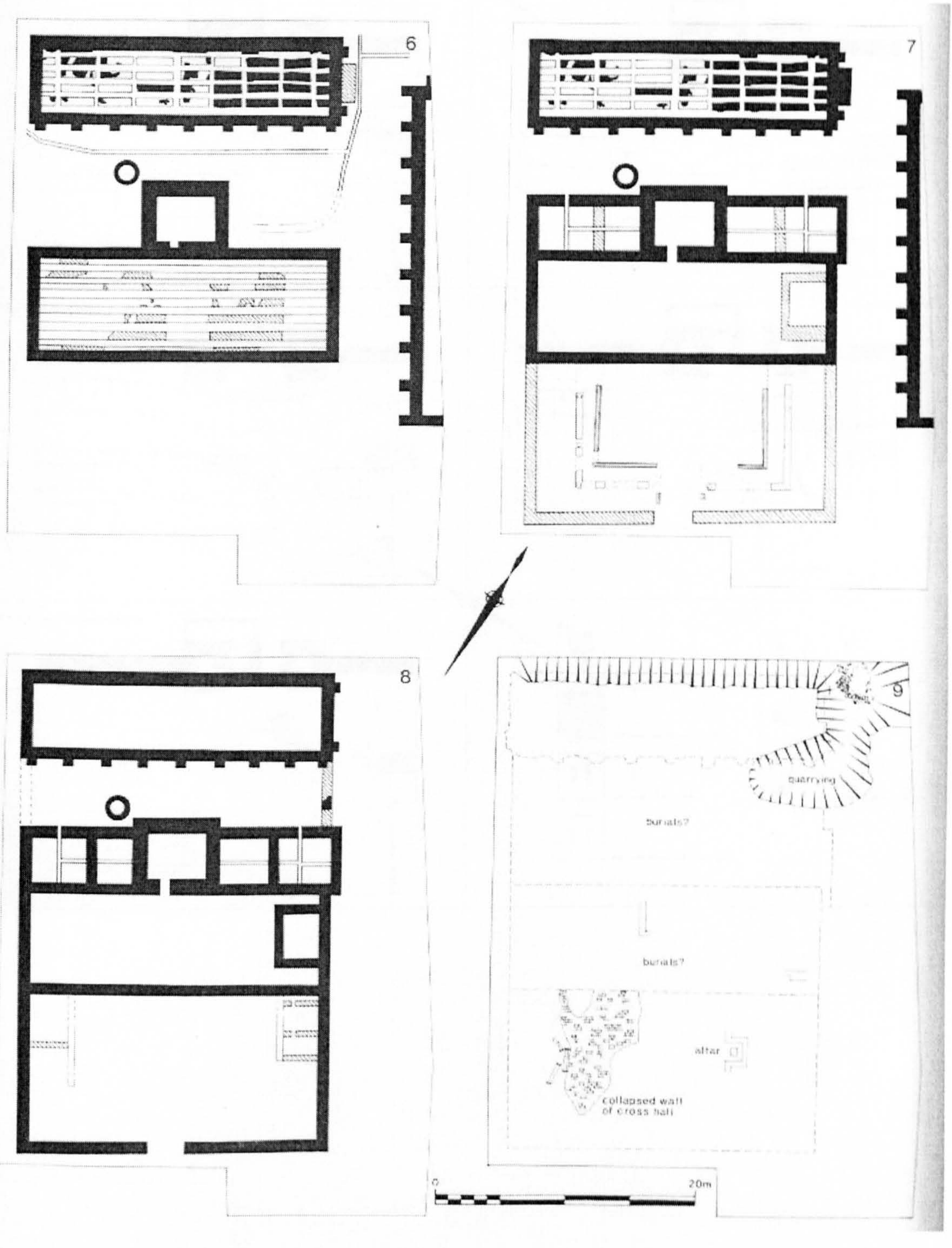


Figure A2.8: The gate sequence at South Shields from Periods 7–9 (from Bidwell and Speak 1994).

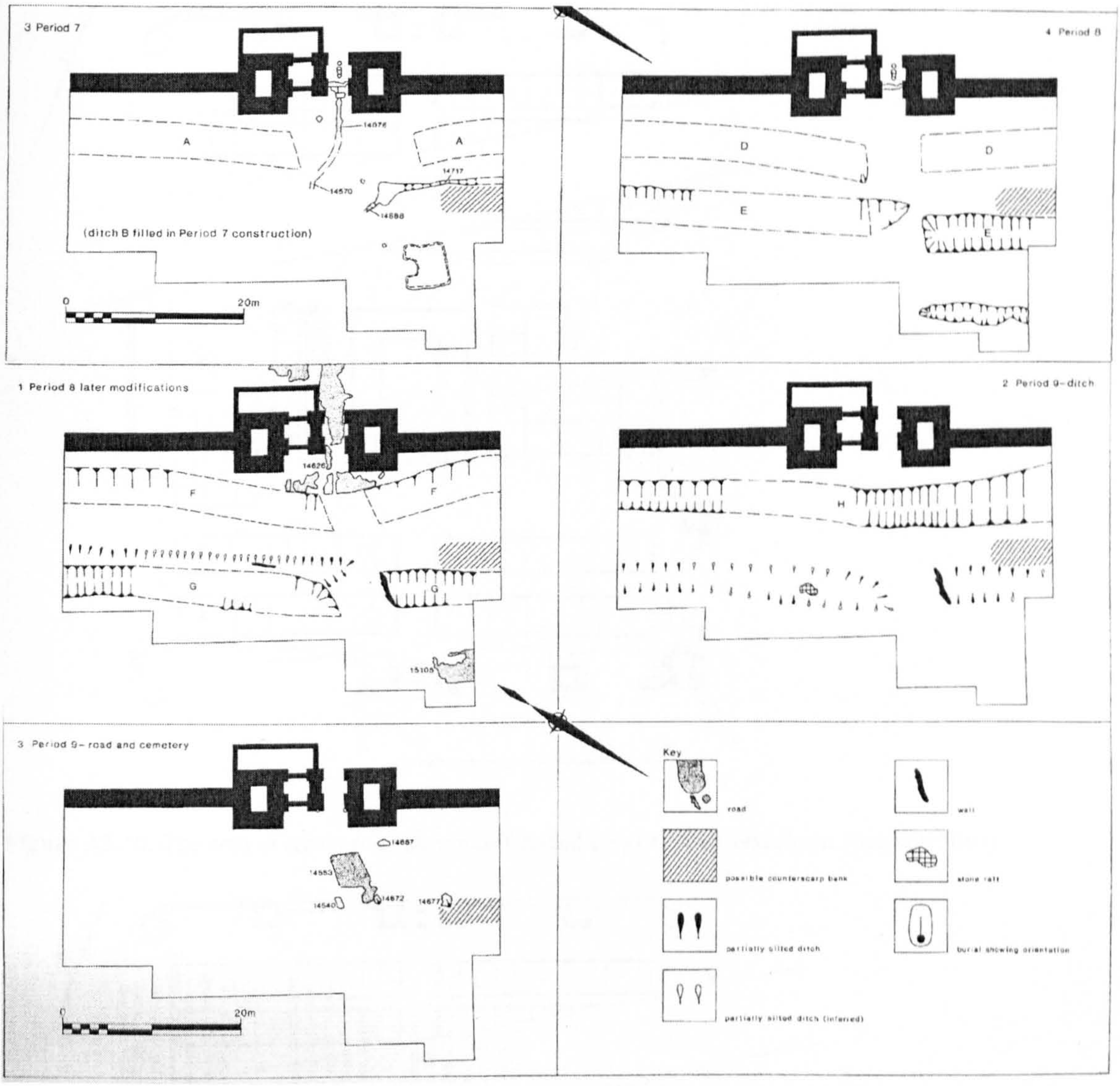


Figure A2.9: Daniels' area of excavation at Wallsend (from Hodgson 2003).

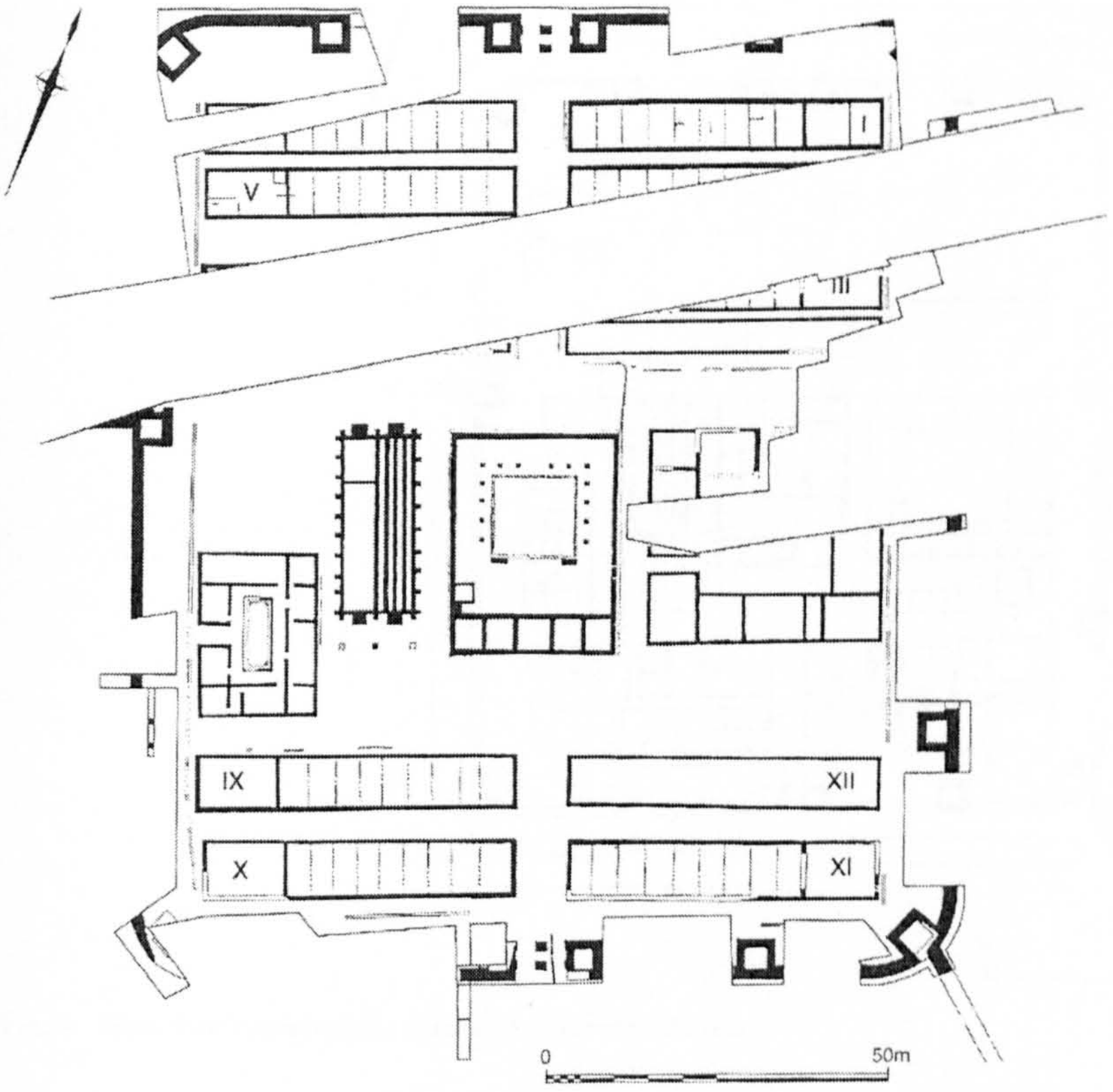


Figure A2.10: The area of recent re-excavations (shaded grey) at Wallsend (from Hodgson 2003).

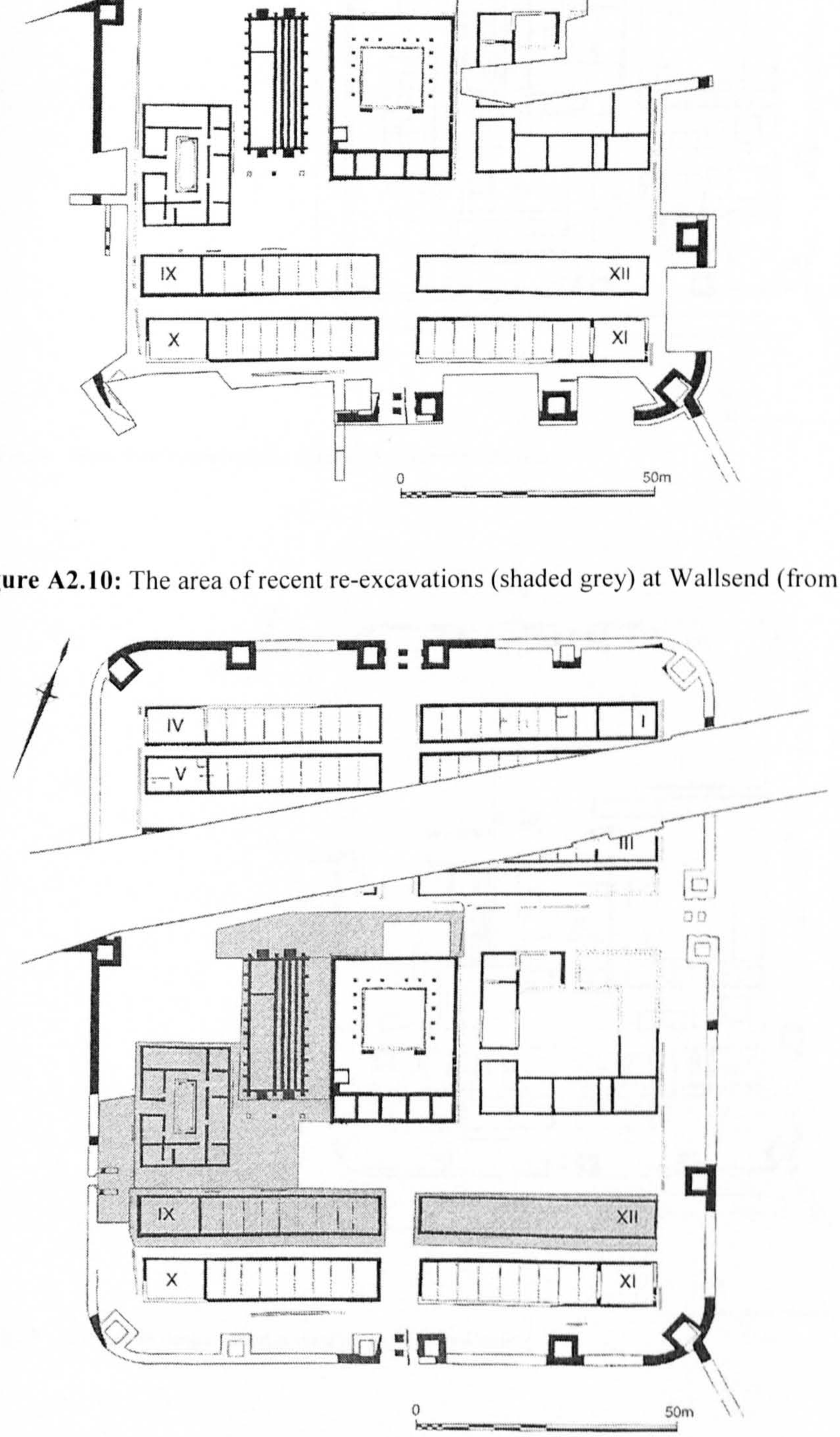


Figure A2.11: Daniels' plans of early and late 4th century Wallsend (from Hodgson 2003).

Fig. 4 *Early-fourth century plan according to Charles Daniels*

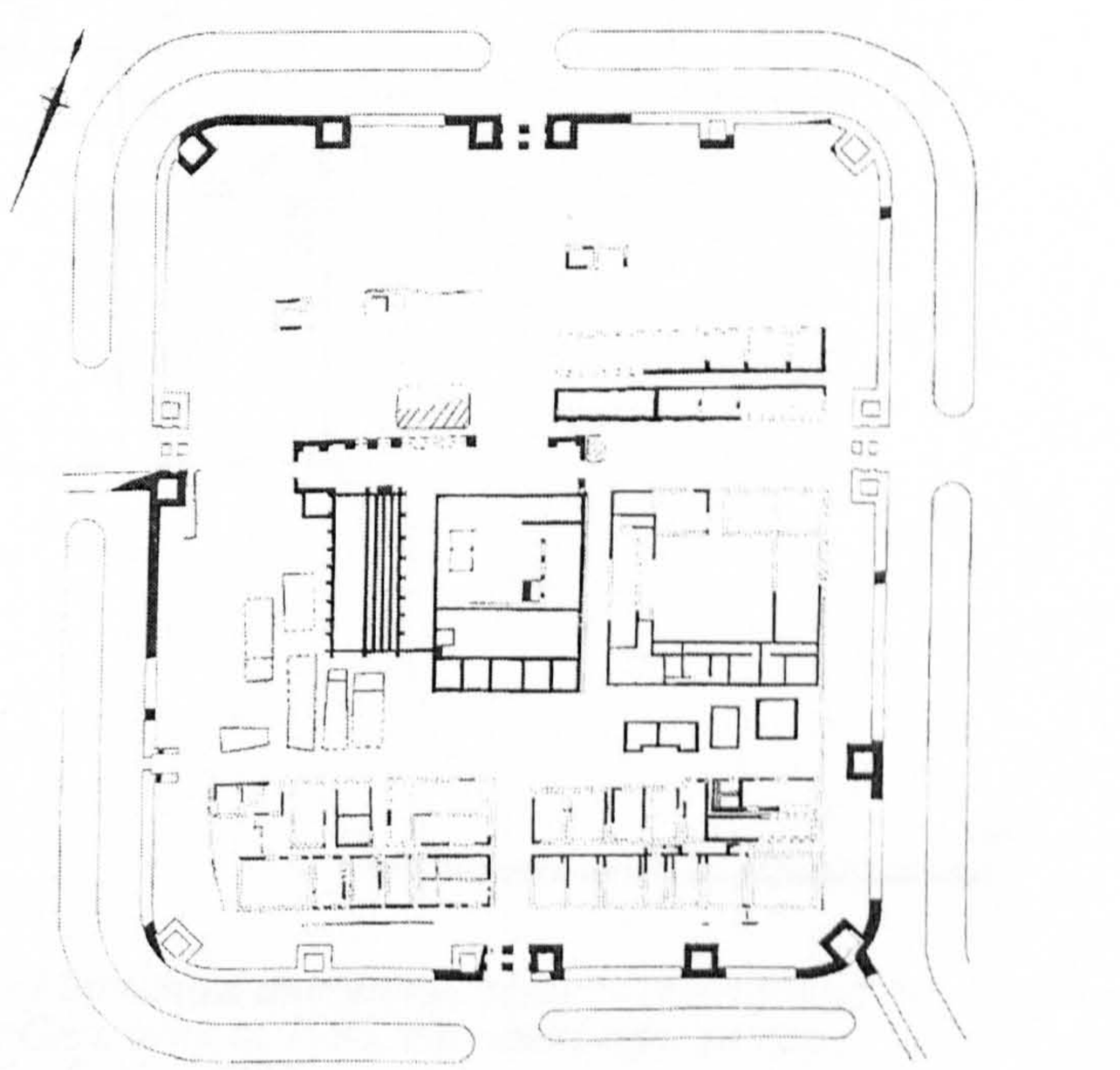


Fig. 5 *Late-fourth century plan according to Charles Daniels*

Figure A2.12: The 4th century coin distribution at the minor west gate at Wallsend (from Hodgson 2003).

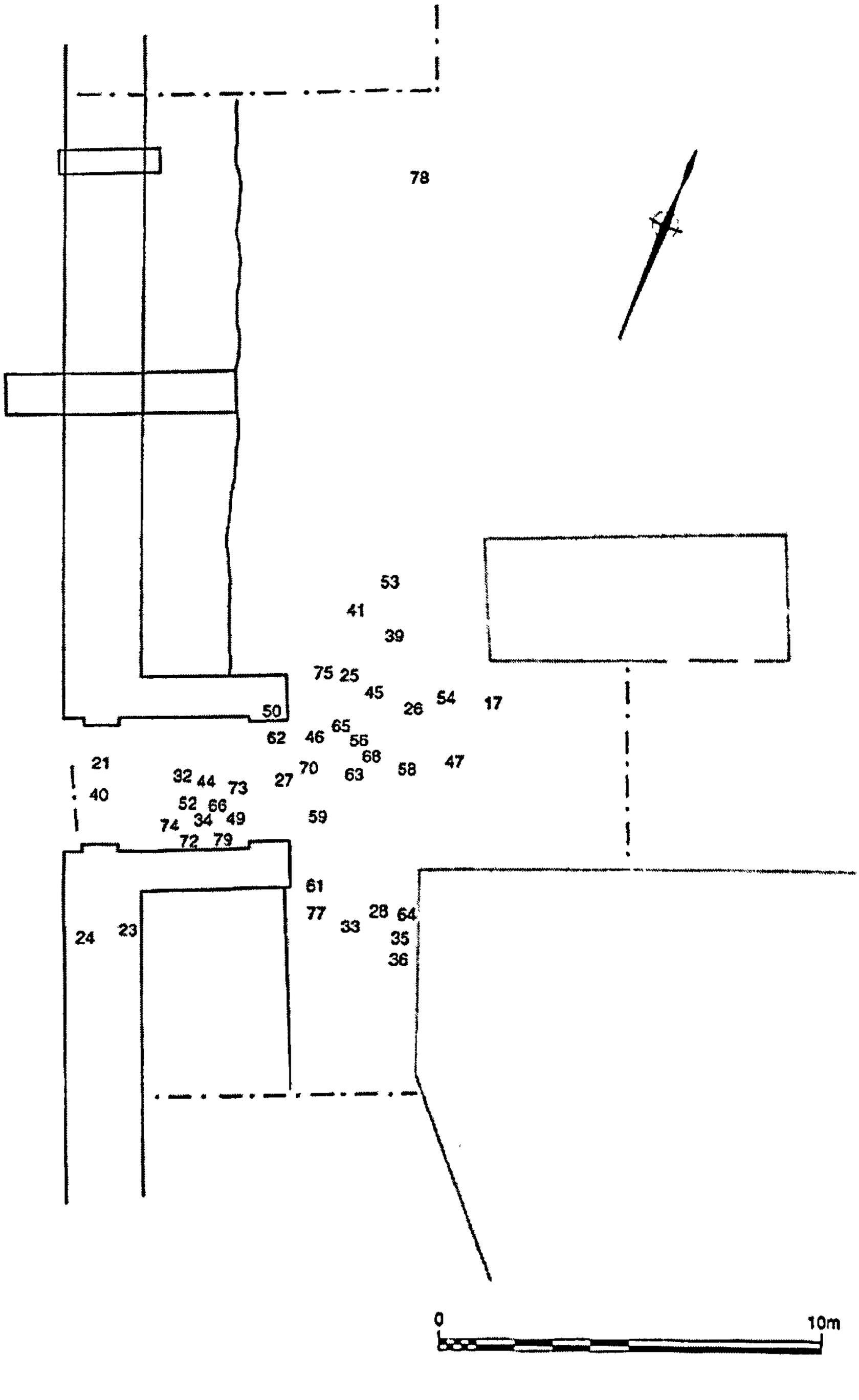


Fig. 116 *Plot of late-third and fourth century coins found in the Minor West Gate area in 1998. Numbers refer to coin catalogue, p202. Scale 1:250*

Figure A2.13: Conjectural plan of the fort at Newcastle based on limited excavation (from Snape and Bidwell 2002).

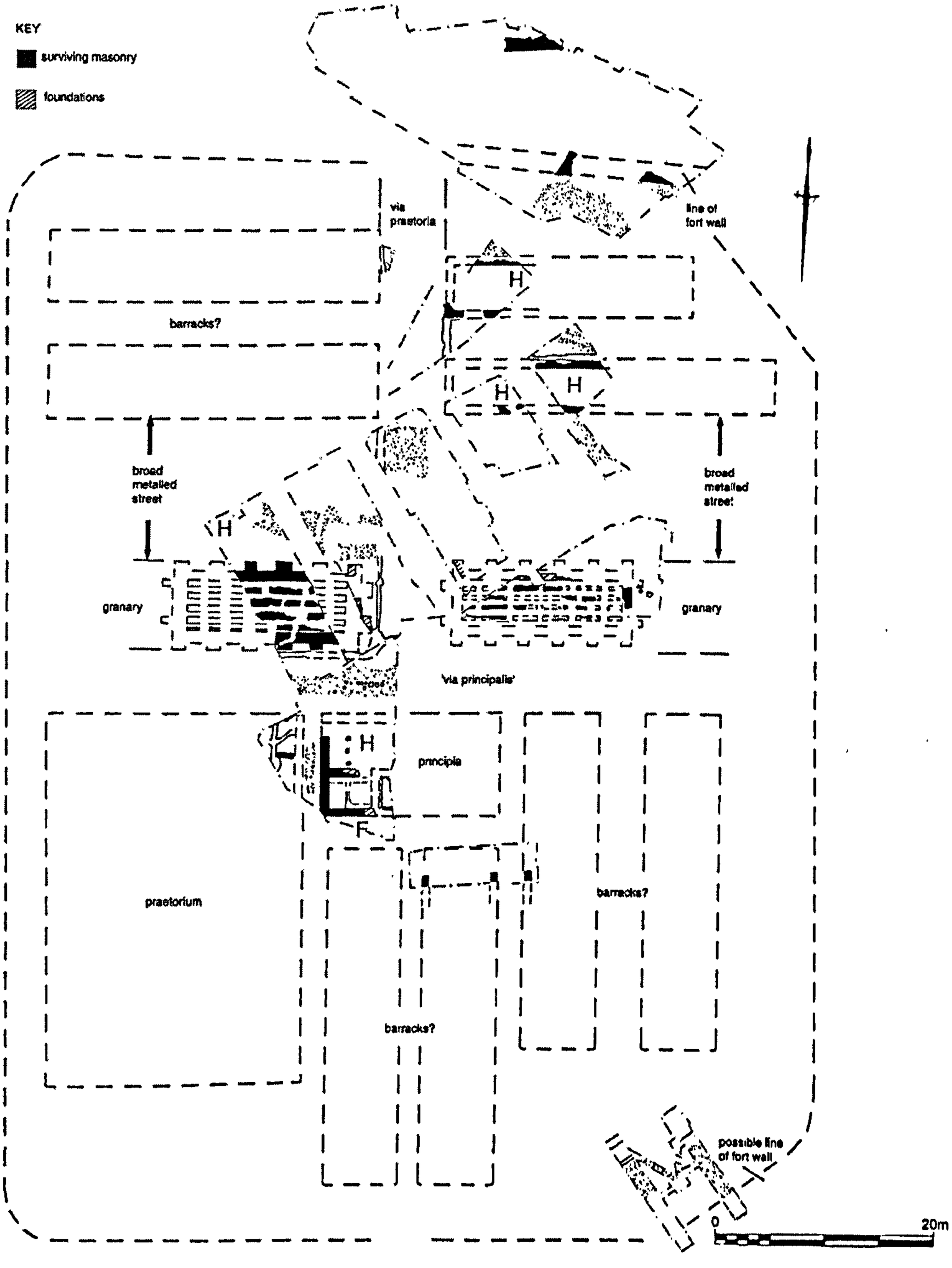


Figure A2.14: A plan of the fort showing the remains of the 2nd quarter of the 4th century at Newcastle (from Snape and Bidwell 2002).

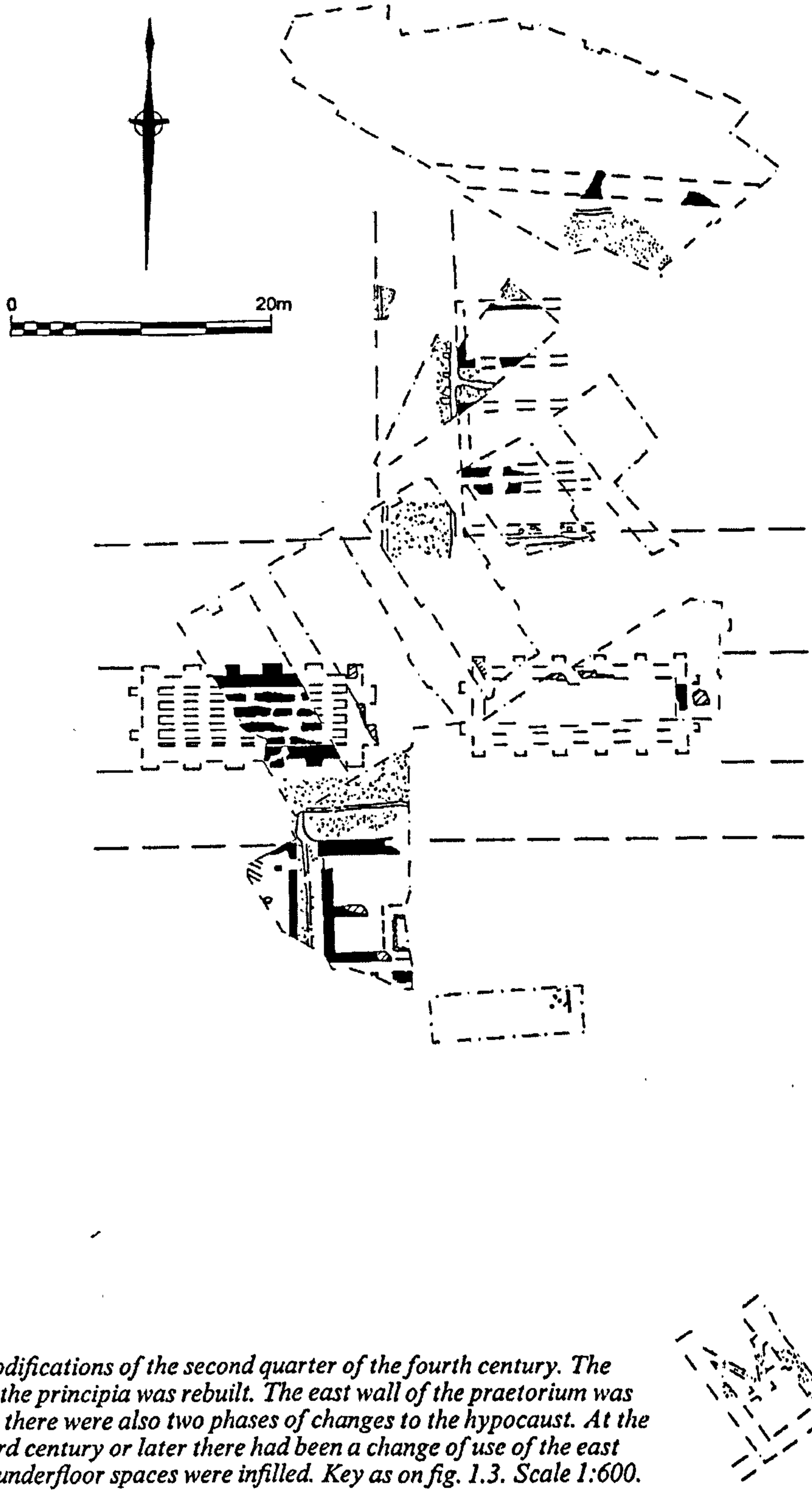


Fig. 1.5 Modifications of the second quarter of the fourth century. The north wall of the principia was rebuilt. The east wall of the praetorium was rebuilt twice; there were also two phases of changes to the hypocaust. At the end of the third century or later there had been a change of use of the east granary; the underfloor spaces were infilled. Key as on fig. 1.3. Scale 1:600.

Figure A2.15: A plan noting the principal areas of activity from the later 4th century at Newcastle.

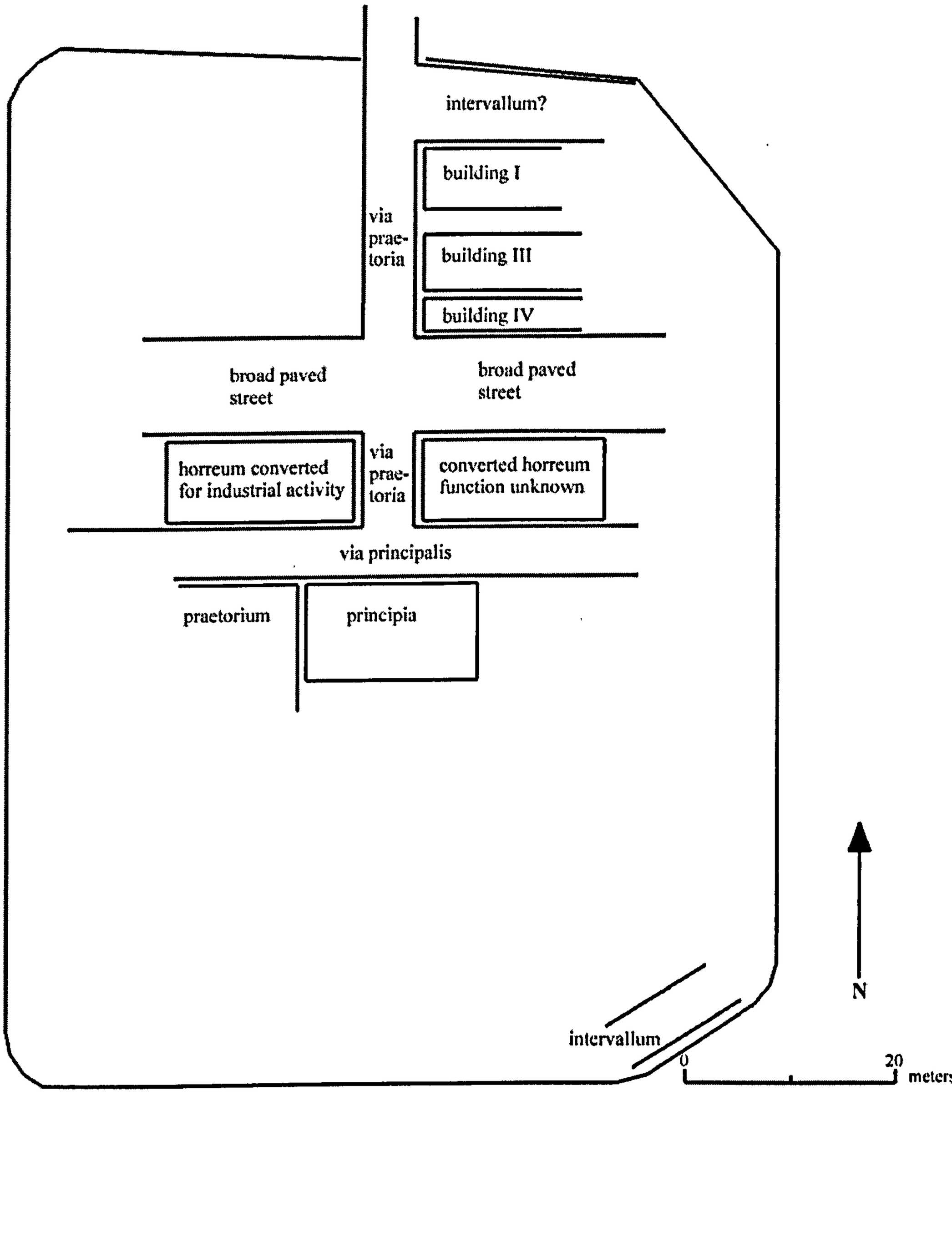


Figure A2.16: A plan of the post-Roman features at Newcastle.

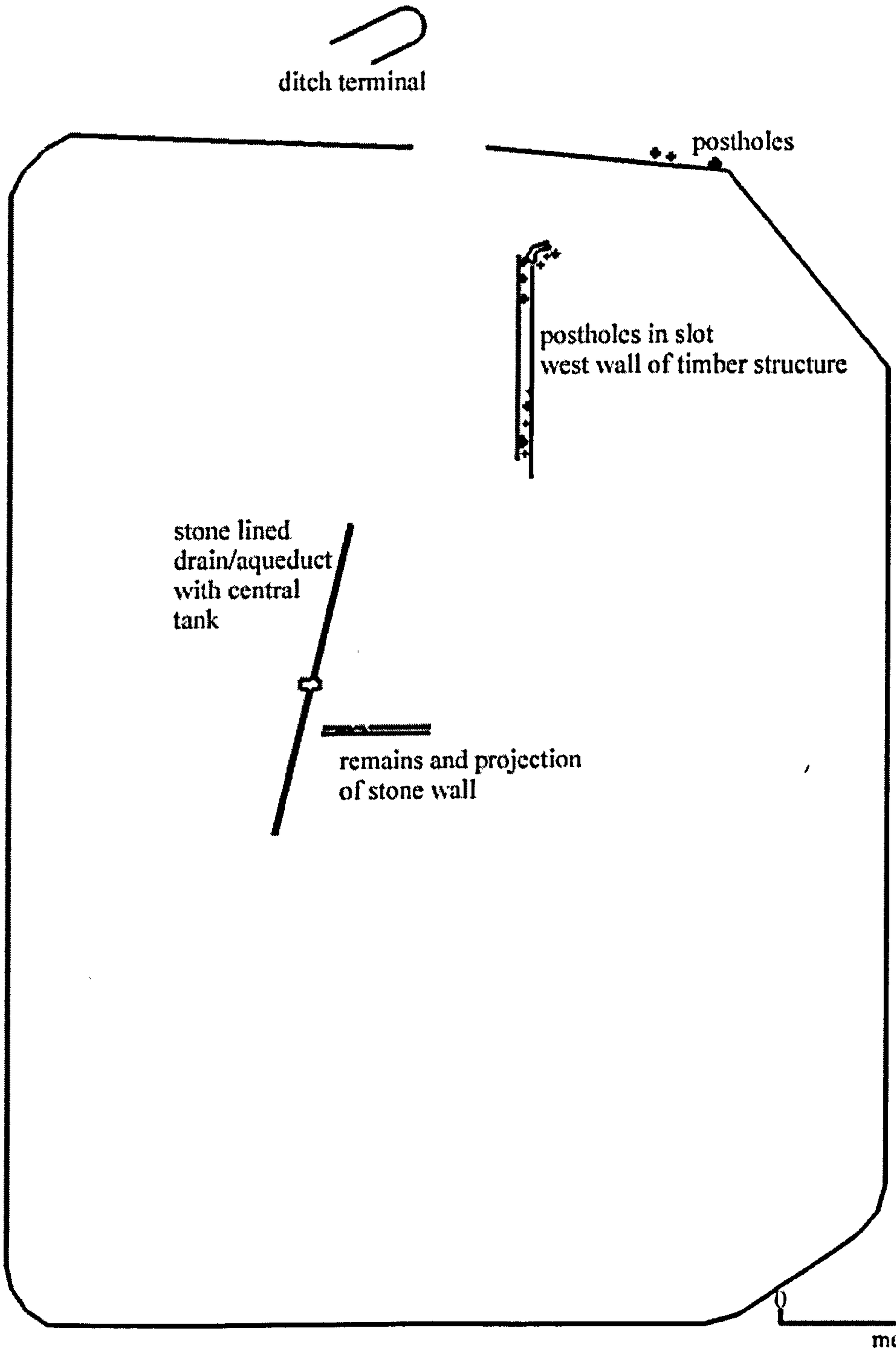


Figure A2.17: A plan relating the post-Roman features to the late 4th century activity at Newcastle.

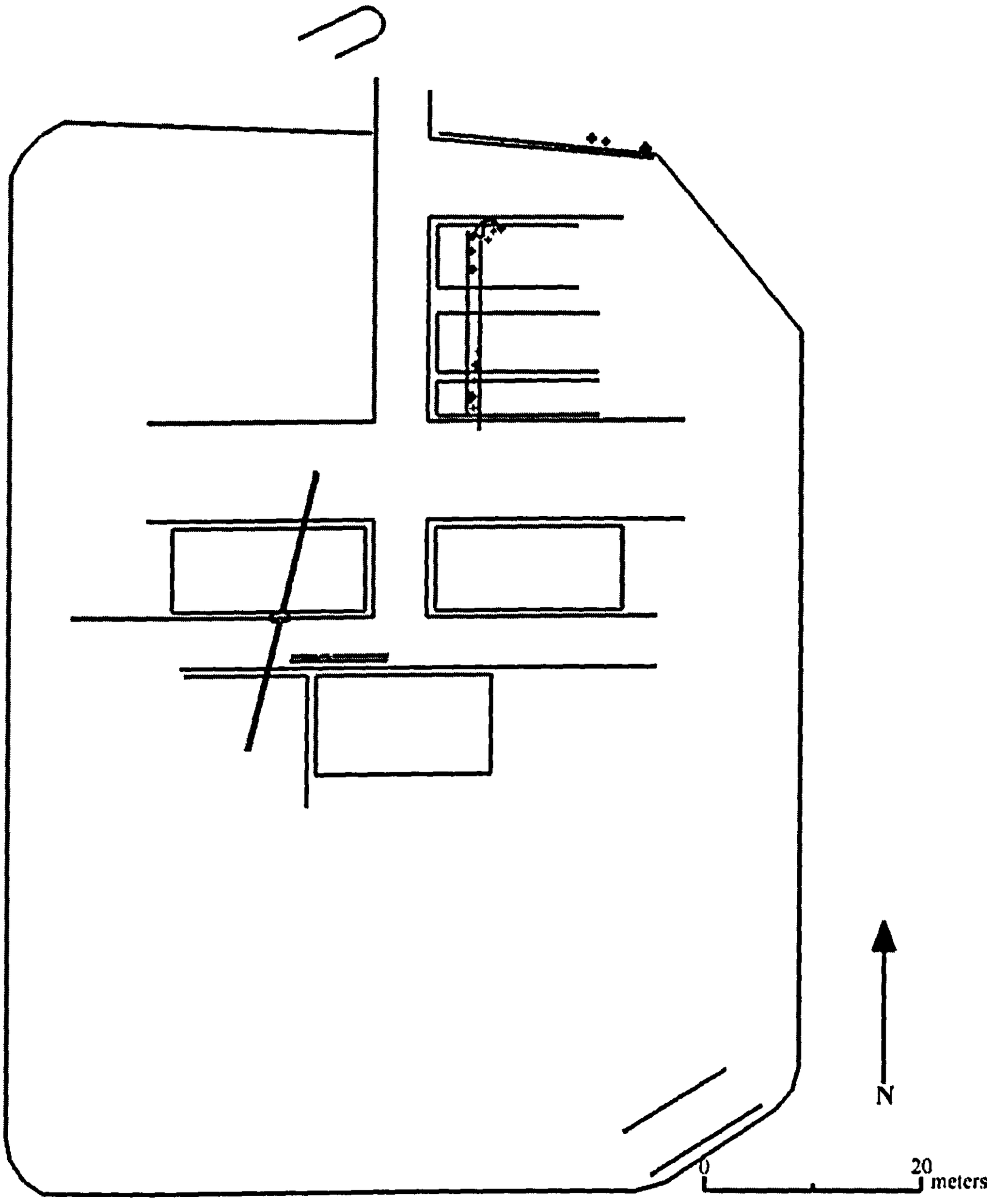


Figure A2.18: The distribution of coins at Newcastle from fort construction until the early 4th century (from Bidwell and Snape 2002).

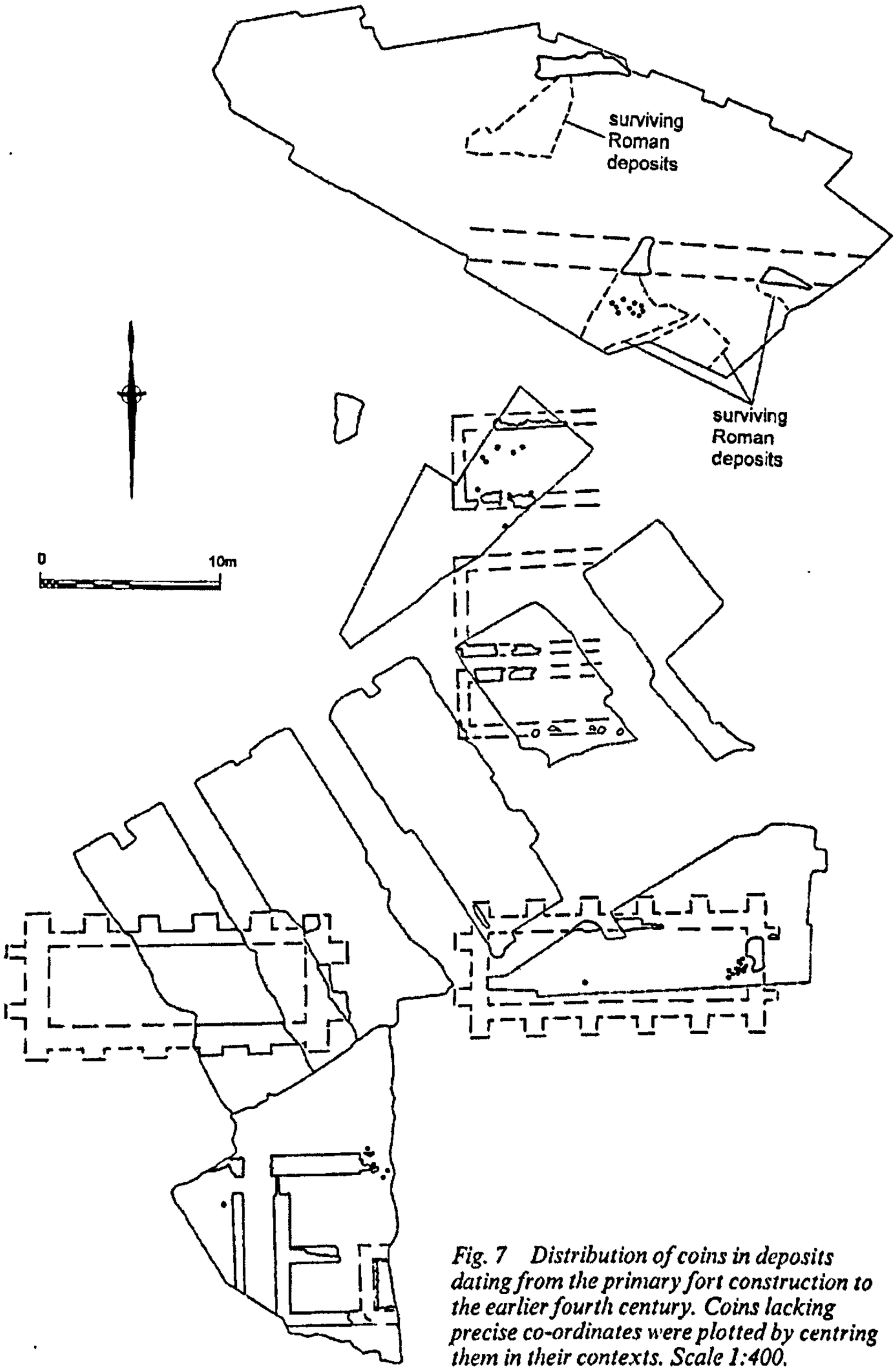


Fig. 7 Distribution of coins in deposits dating from the primary fort construction to the earlier fourth century. Coins lacking precise co-ordinates were plotted by centring them in their contexts. Scale 1:400.

Figure A2.19: The coin distribution from the mid 4th century and later at Newcastle (from Bidwell and Snape 2002).

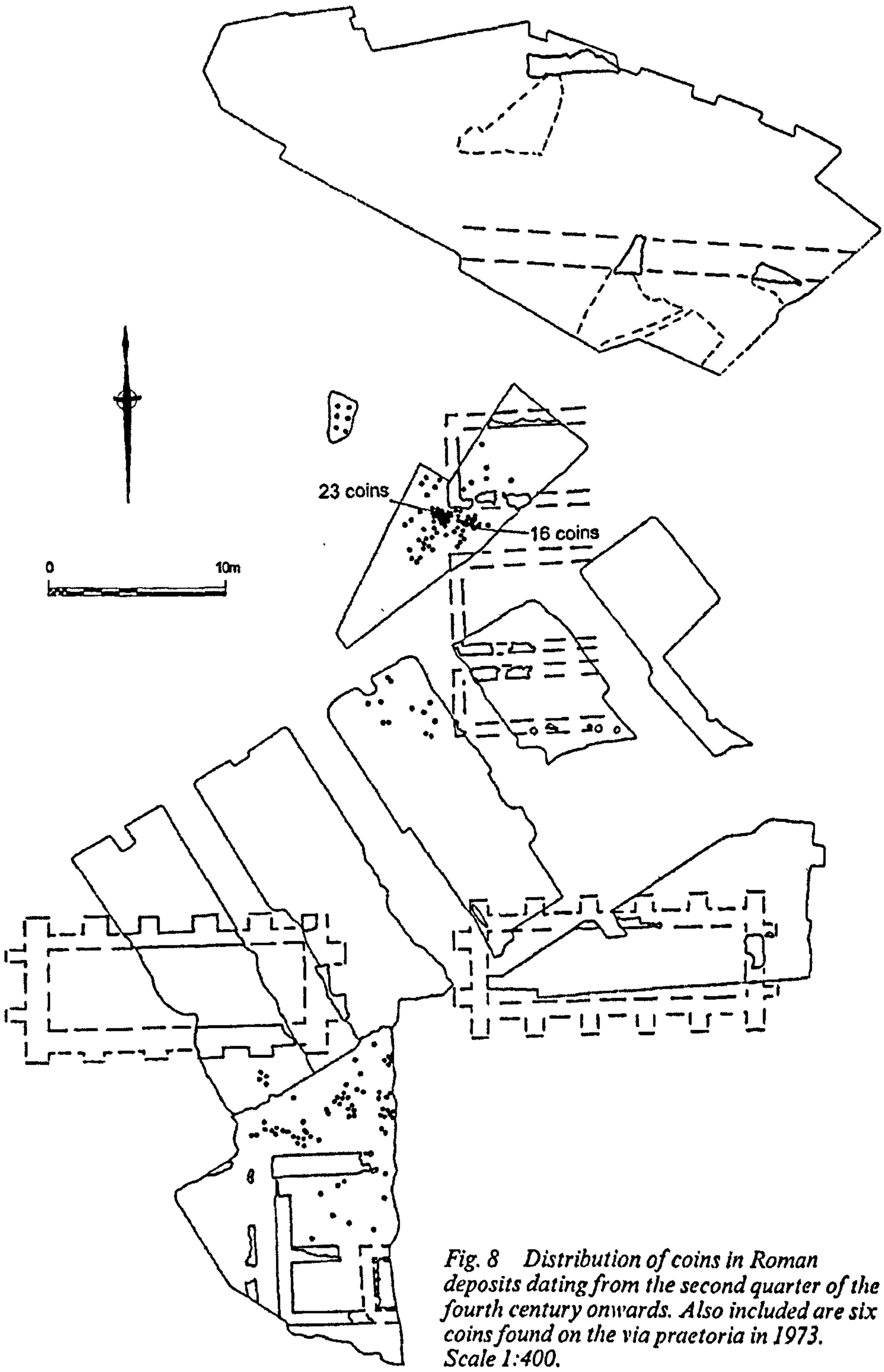


Fig. 8 Distribution of coins in Roman deposits dating from the second quarter of the fourth century onwards. Also included are six coins found on the via praetoria in 1973. Scale 1:400.

Figure A2.20: The distribution of 4th century coinage from Roman and Anglo-Saxon contexts at Newcastle (from Bidwell and Snape 2002).

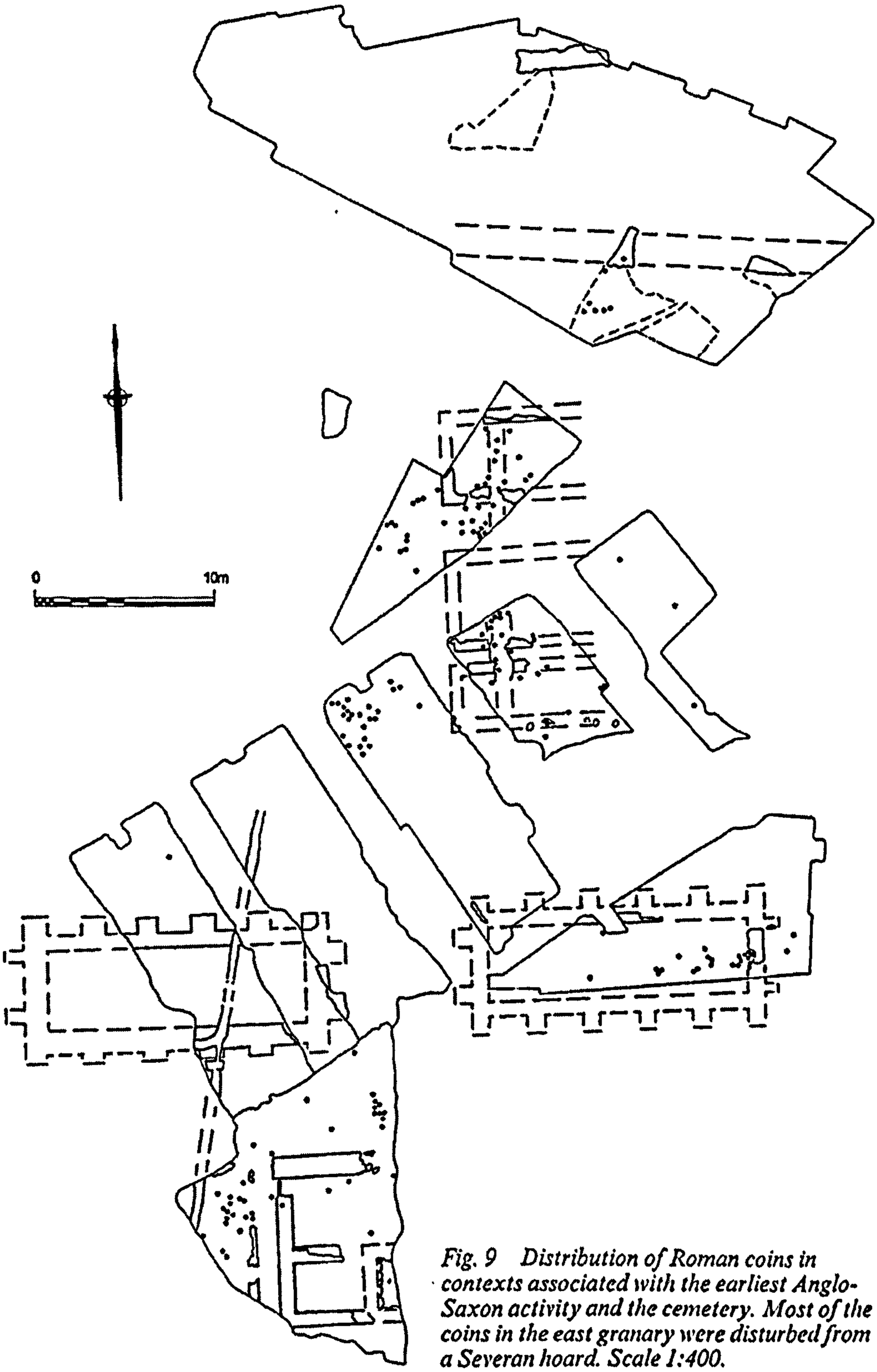


Fig. 9 Distribution of Roman coins in contexts associated with the earliest Anglo-Saxon activity and the cemetery. Most of the coins in the east granary were disturbed from a Severan hoard. Scale 1:400.

Figure A2.21: The fort at Benwell (from Petch 1928).

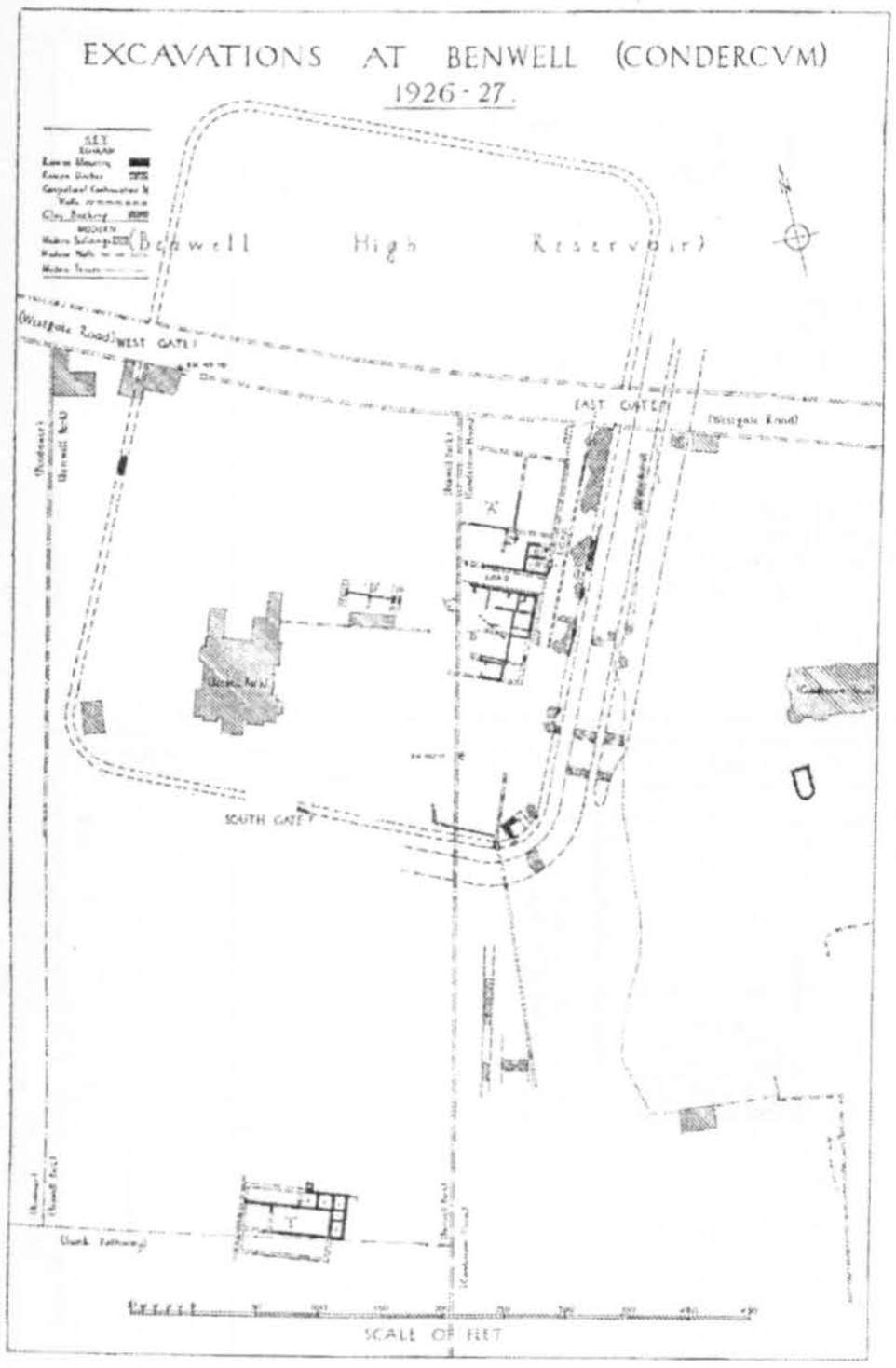


Figure A2.22: The plan of the fort at Benwell as revealed by excavation (from Simpson and Richmond 1941).

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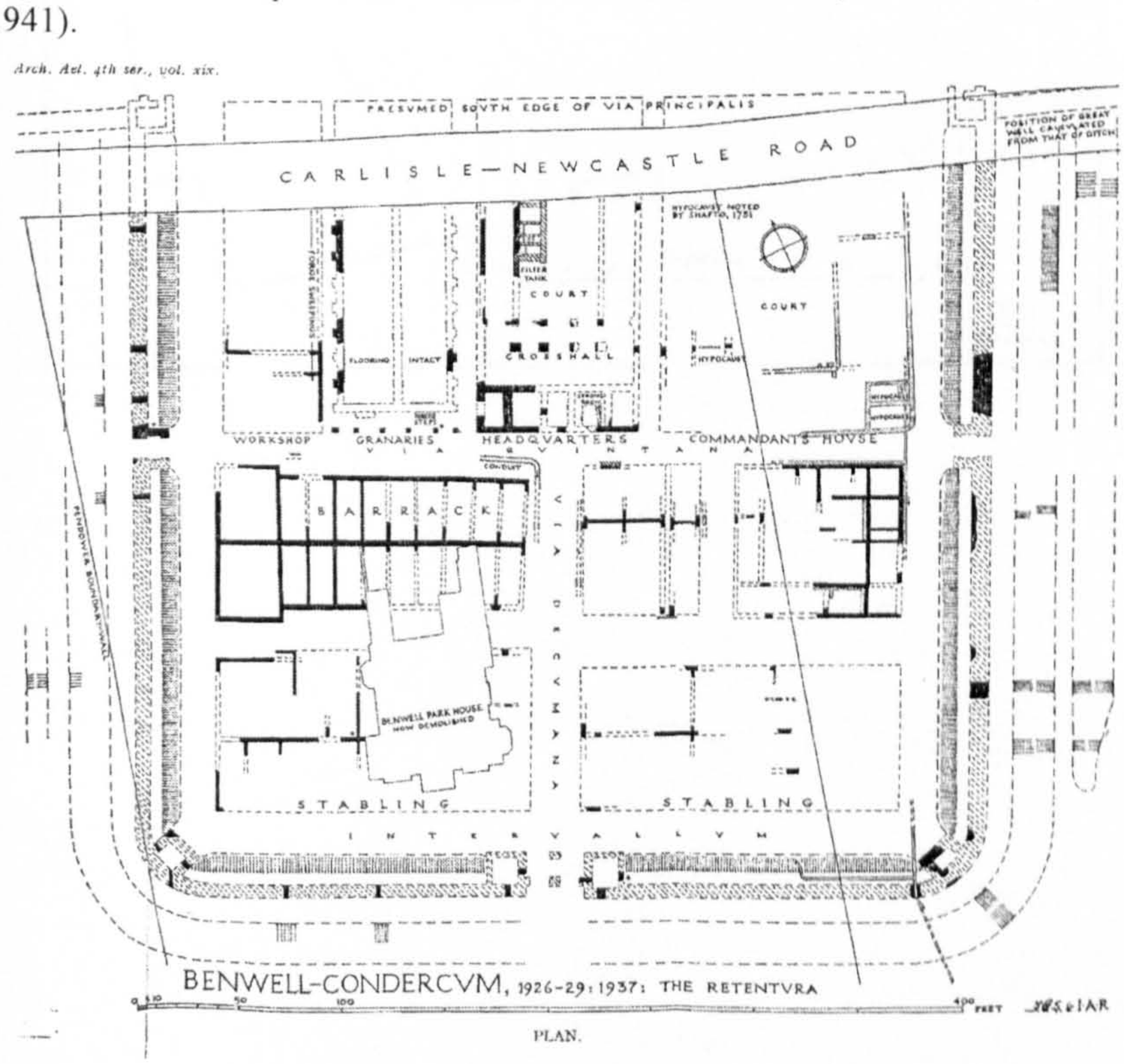


Figure A2.23: The fort at Rudchester (from Brewis 1925).

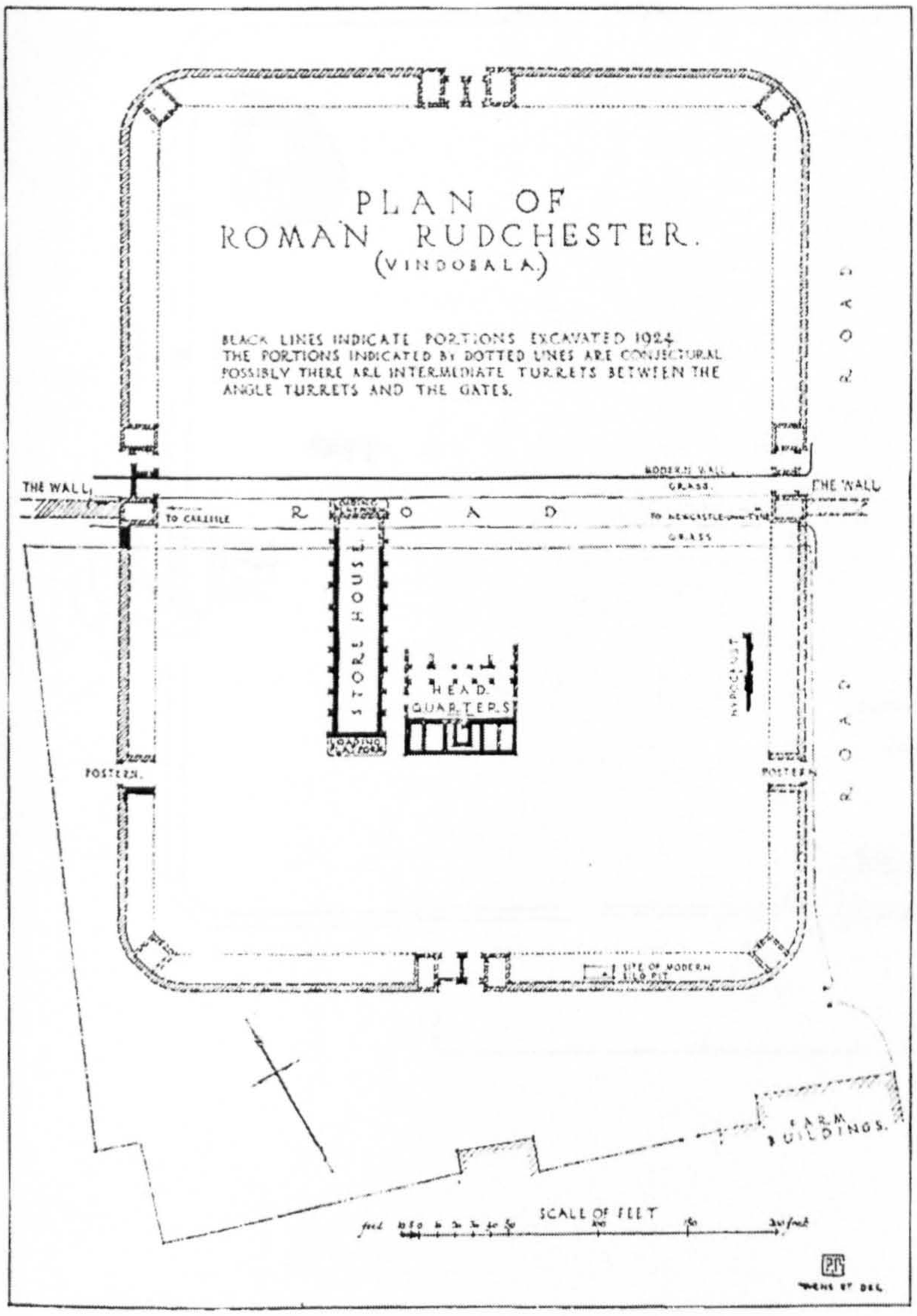


Figure A2.24: A plan of the 4th century fort at Chester-le-Street.

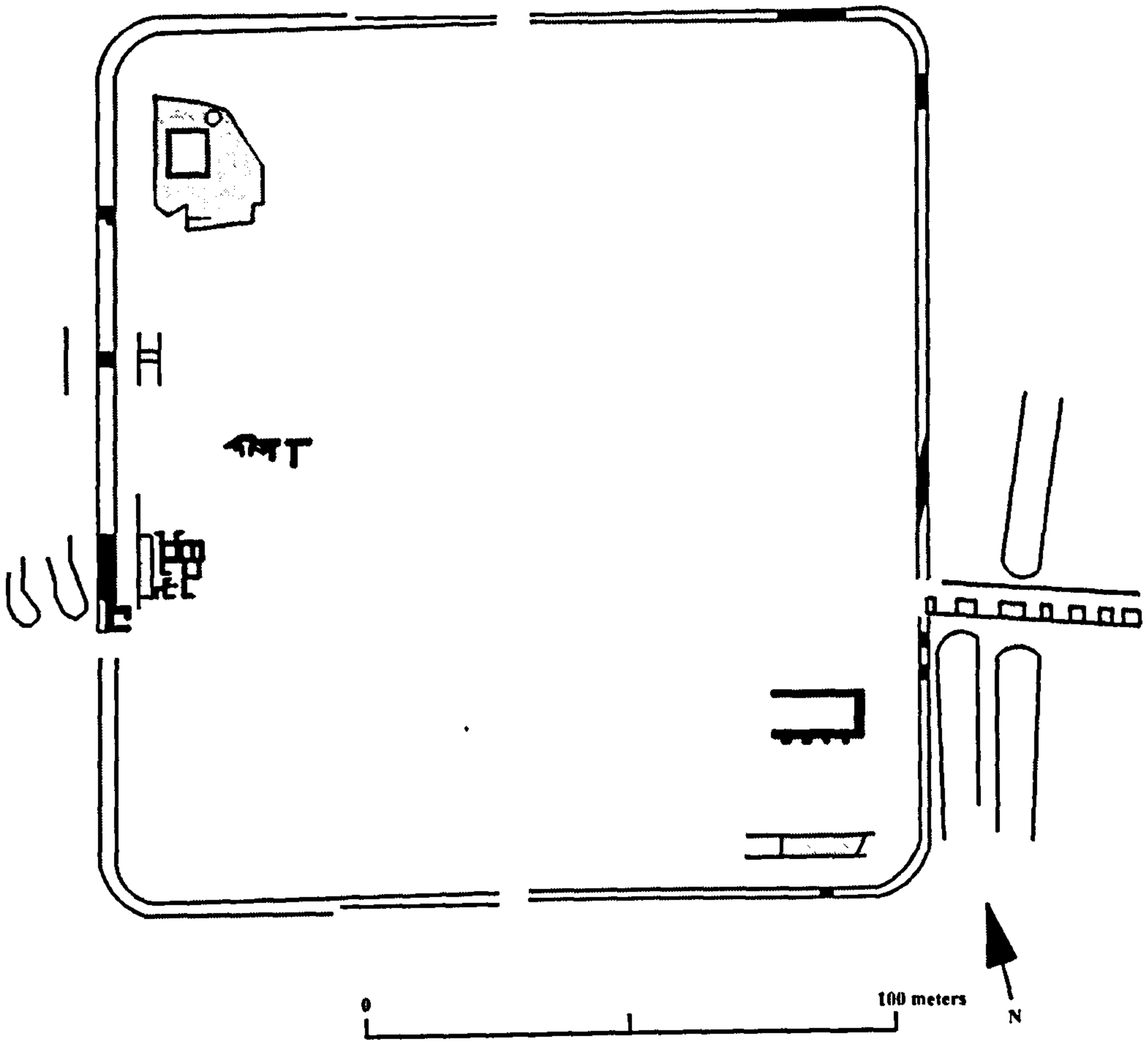


Figure A2.25: A plan of the fort at Ebchester (from Maxfield and Reed 1975).

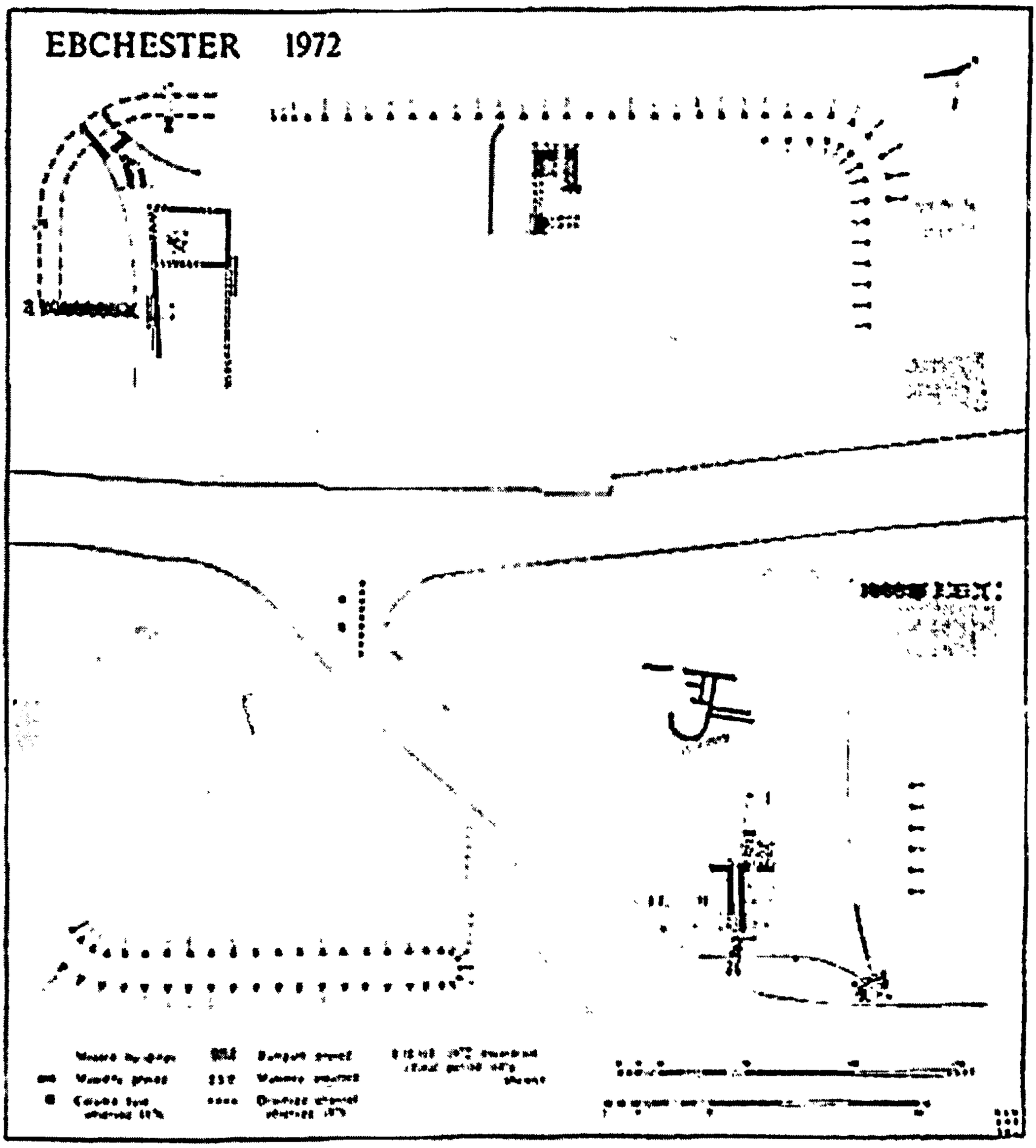


Figure A2.26: A plan of the settlement at Apperly Dene (from Green 1978).

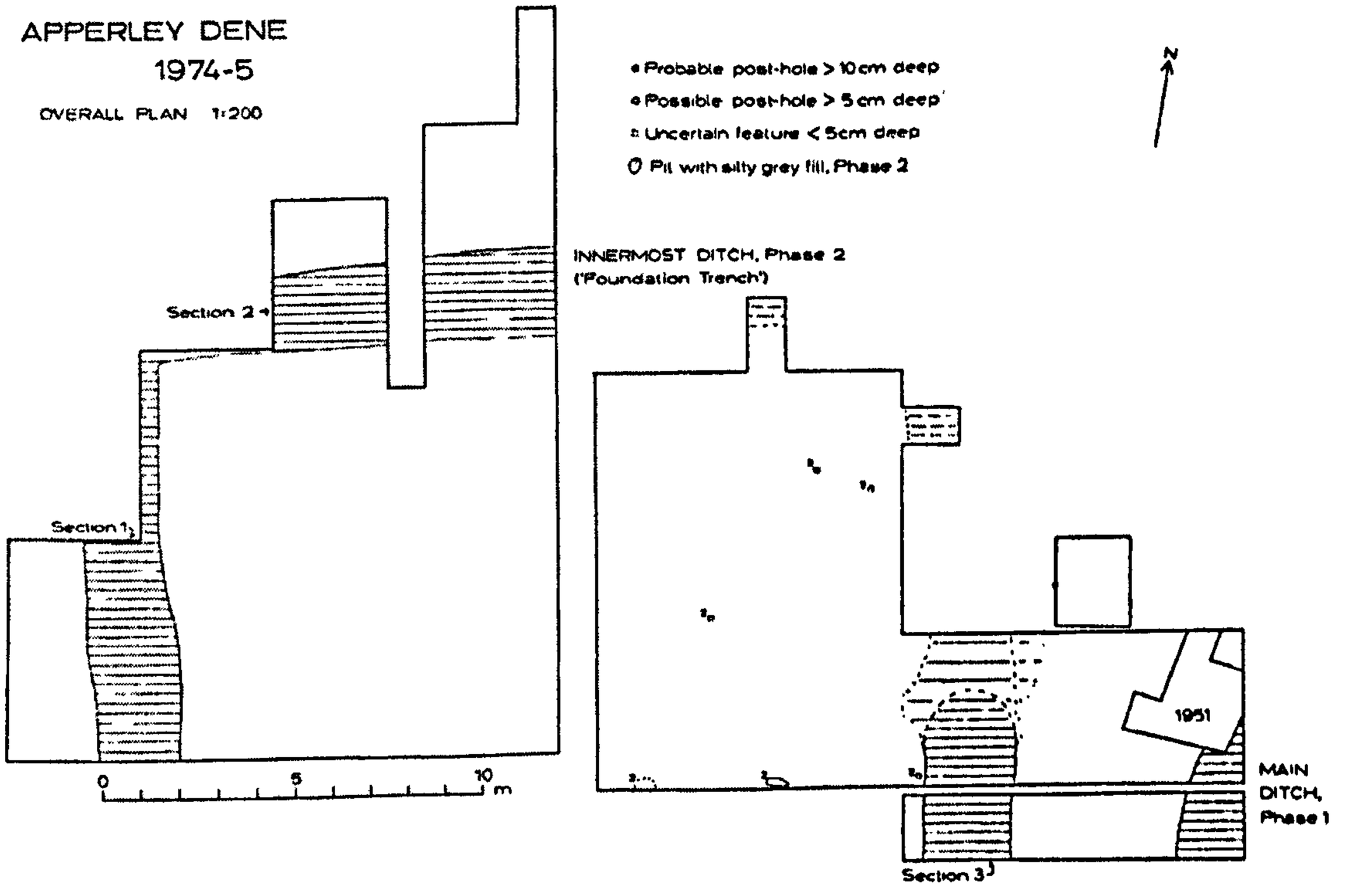


Figure A2.27: The distribution of Early Medieval sites and findspots in the case study.

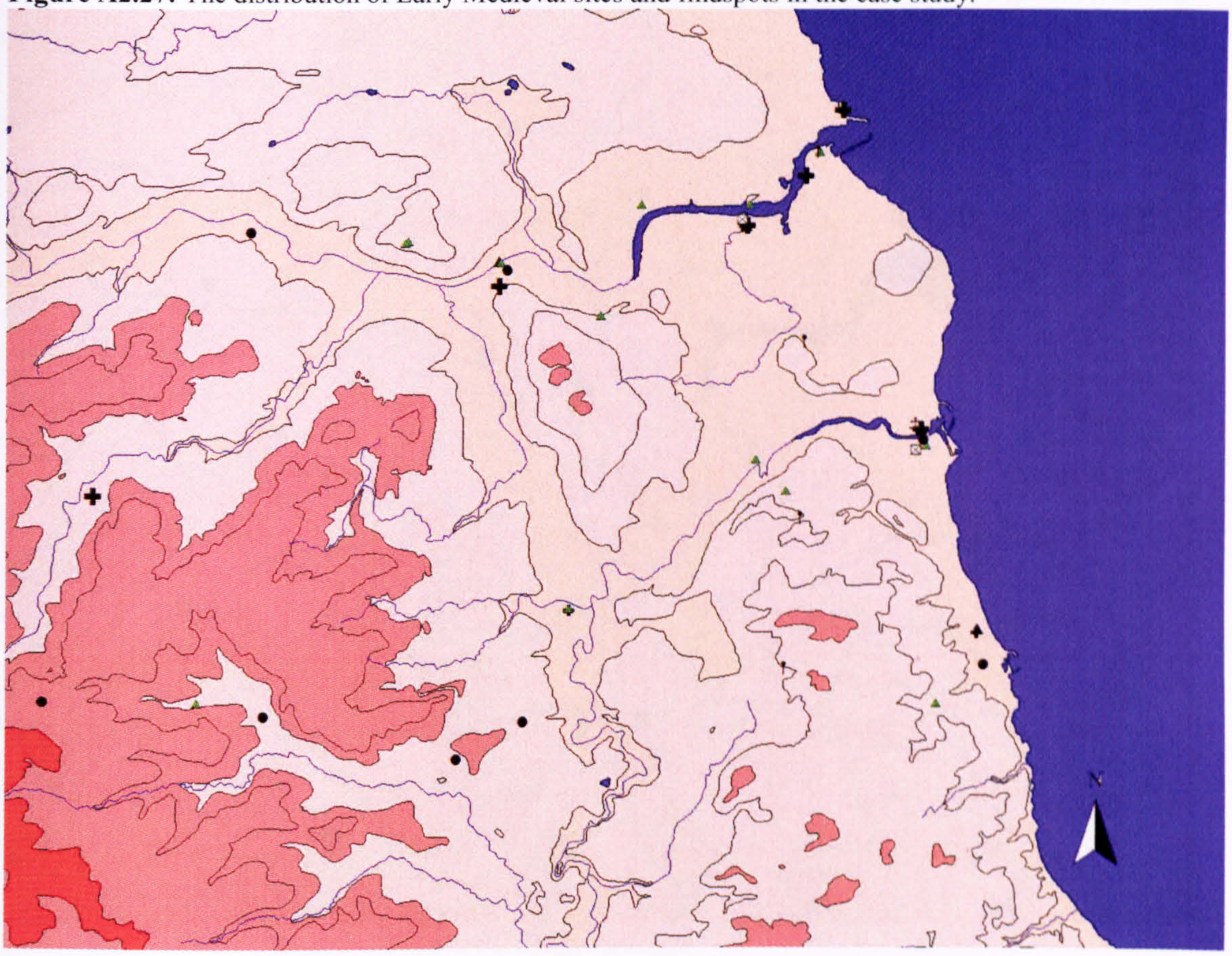
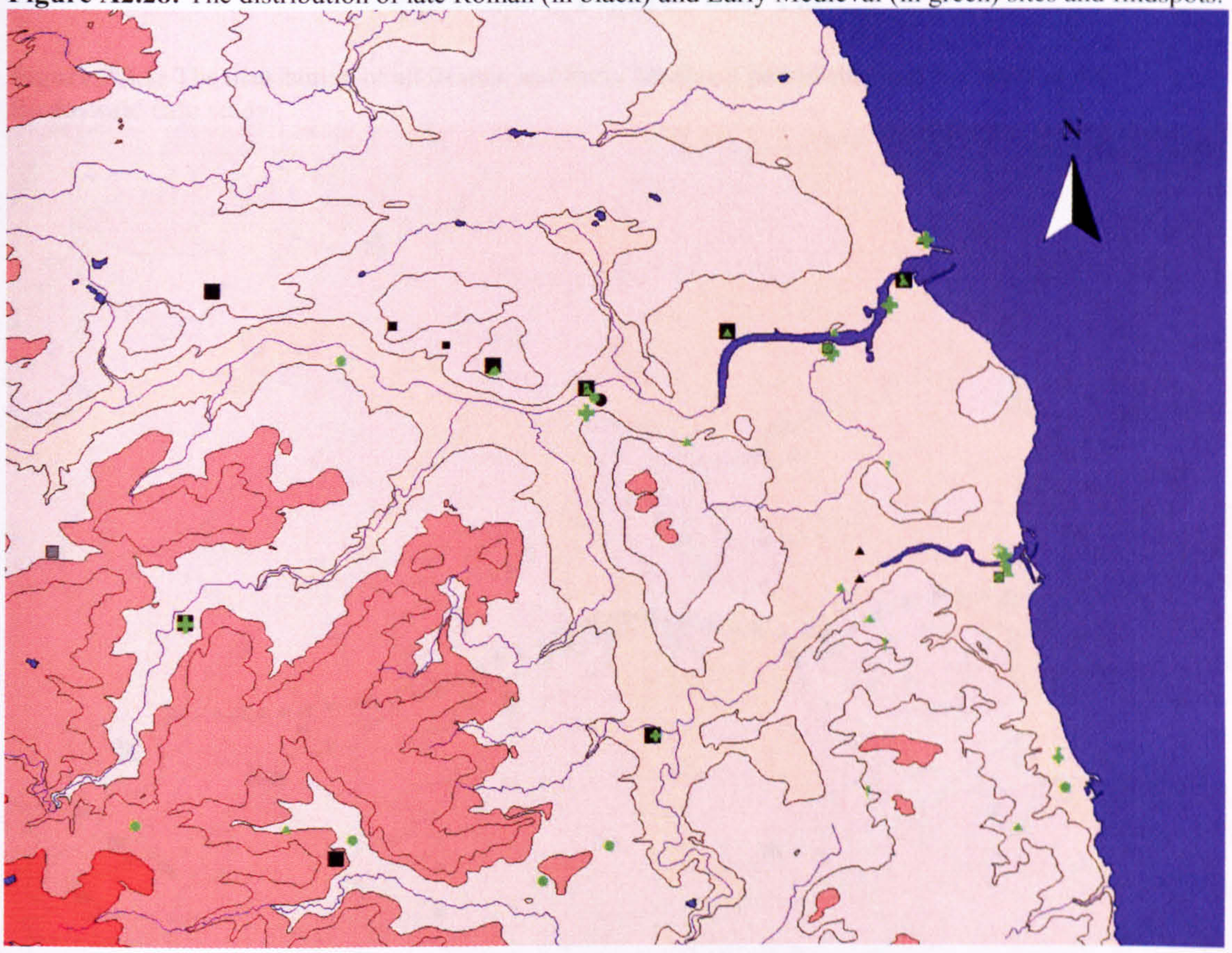


Figure A2.28: The distribution of late Roman (in black) and Early Medieval (in green) sites and findspots.



Appendix 3: Figures and Tables

Figure A3.1: The distribution of all Roman and Early Medieval period sites and findspots in the Birdoswald case study.

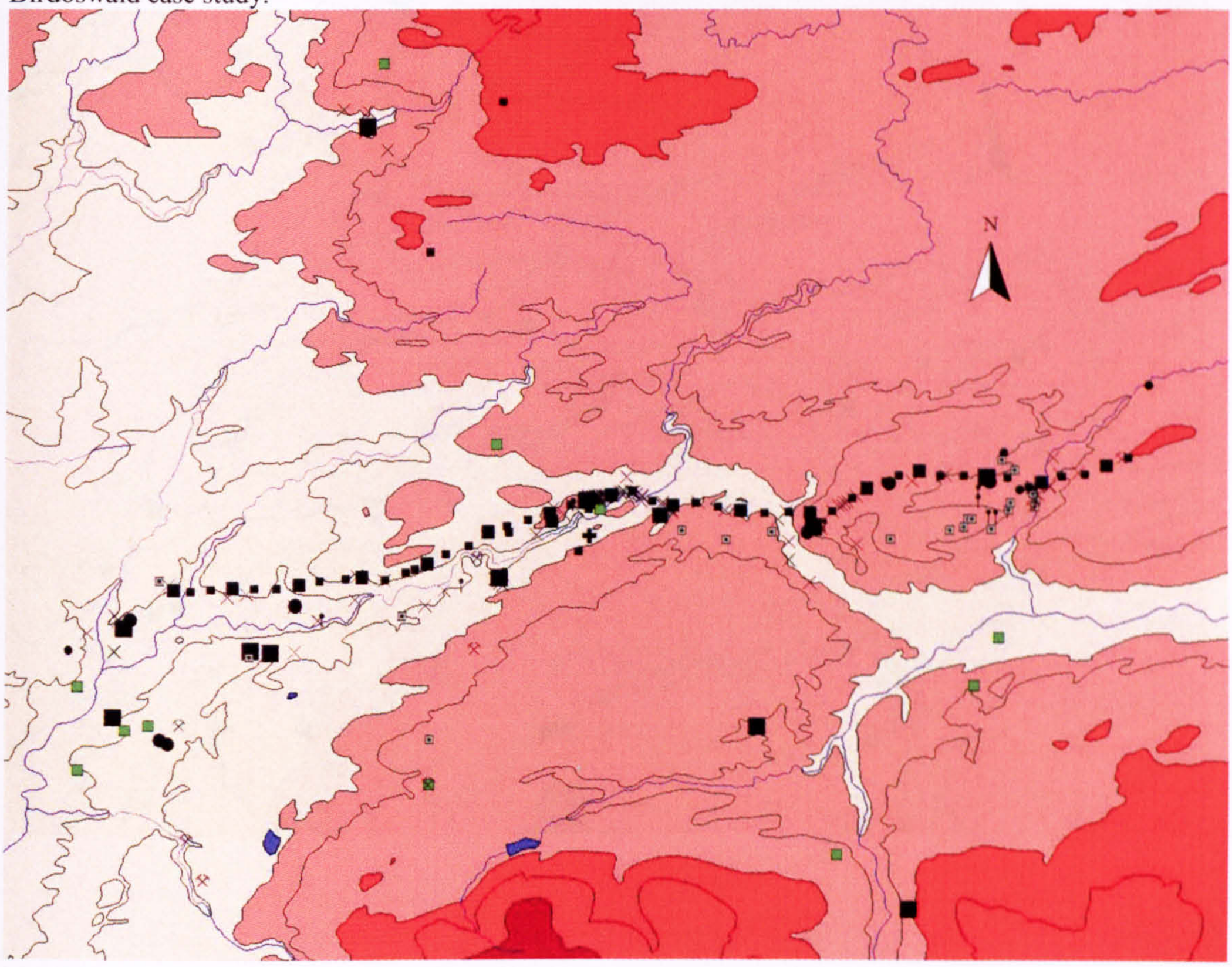


Figure A3.2: The distribution of native farmsteads (green) in relation to Roman forts (black).

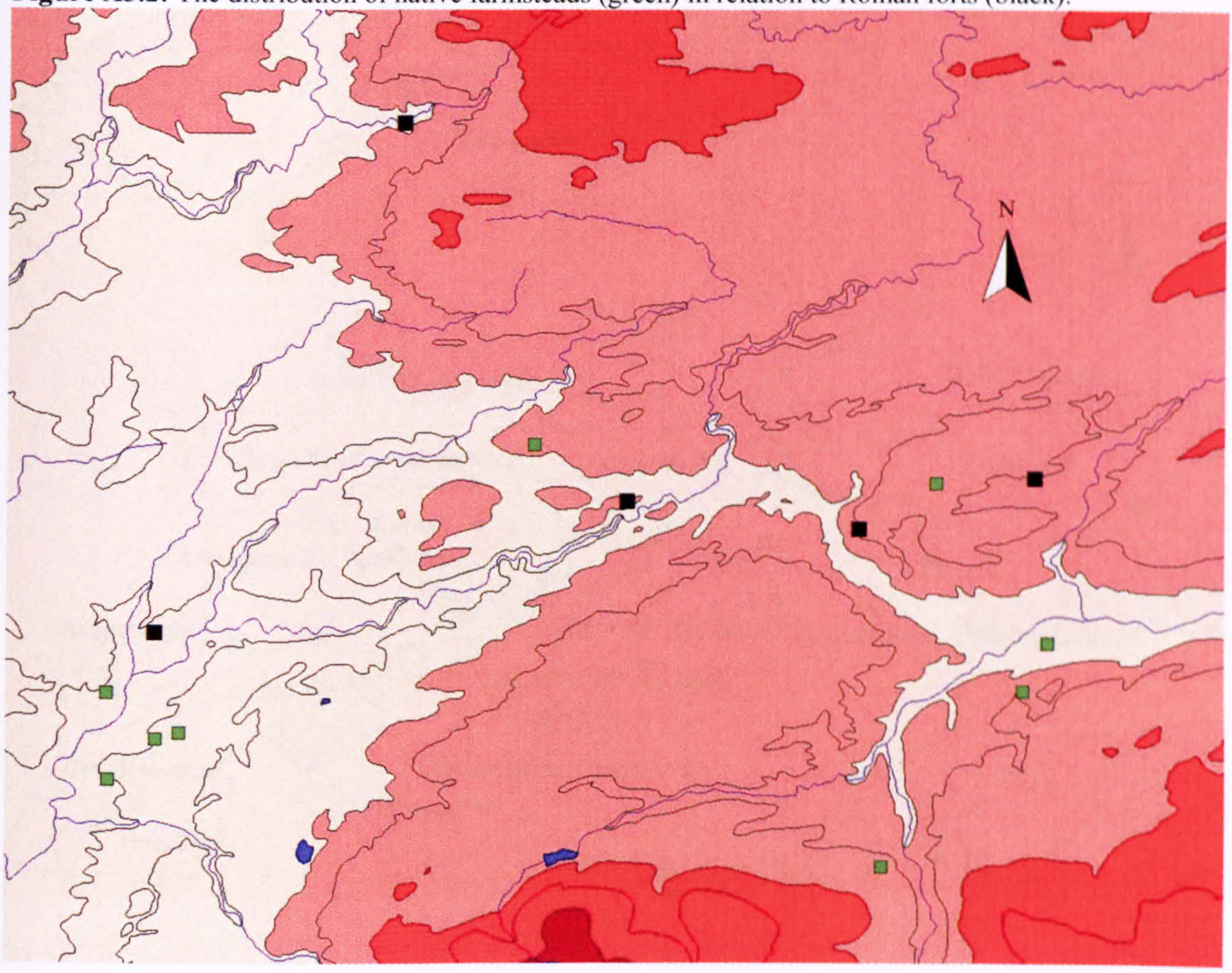


Figure A3.3: The distribution of Roman sites with 4th century evidence.

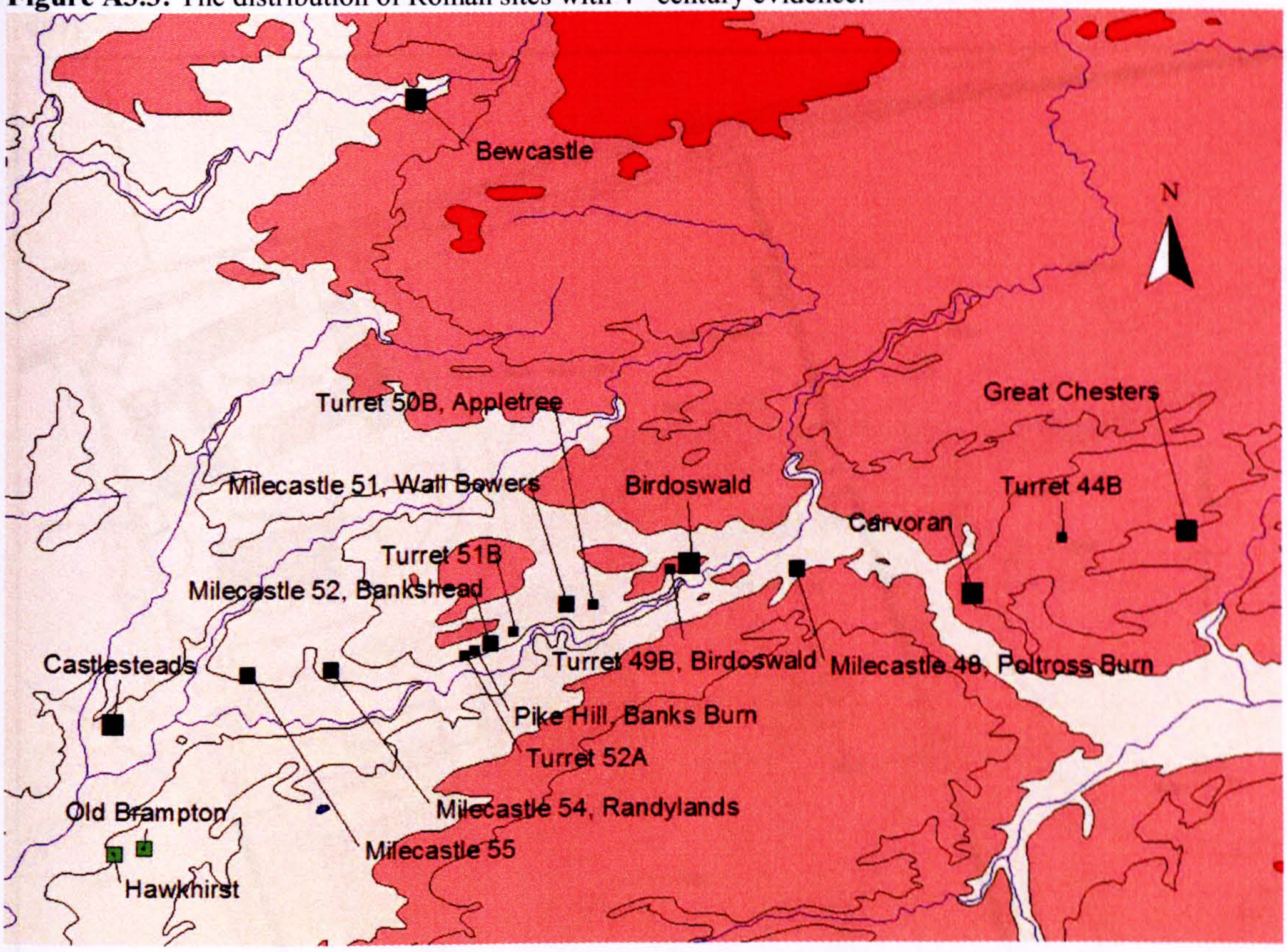


Figure A3.4: A history of excavations at Birdoswald prior to 1987 in relation to the fort (from Wilmott 1997).

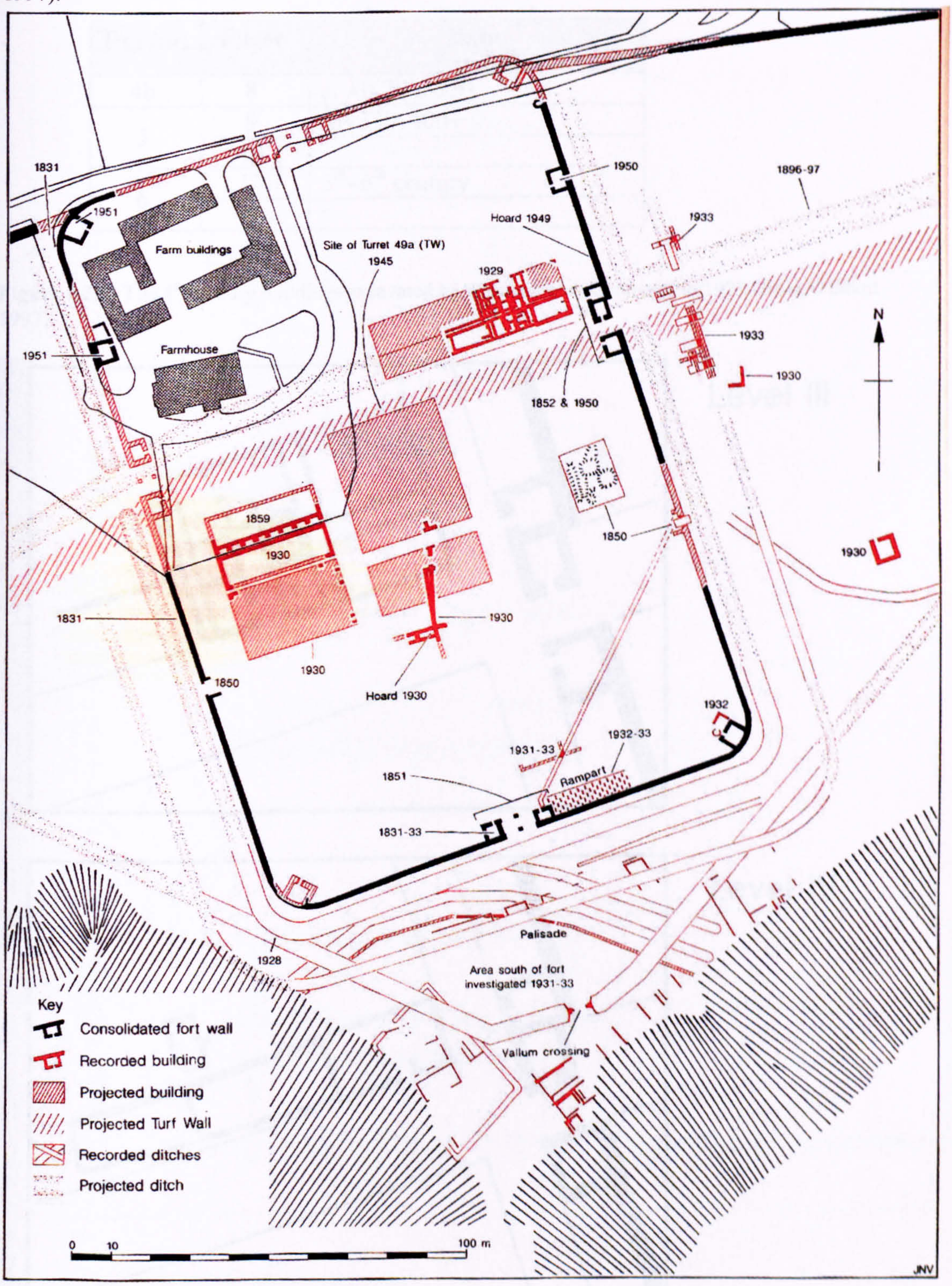


Table A3.1: Wilmott's (1997) periods and phases of the excavations at Birdoswald with corresponding dates.

Period	Phase	Date
4b	8	*c.* AD 290–350
5	9	AD 350–400+
	10	
6	11	5th–6th century
	12	

Figure A3.5: The 4th century buildings excavated by Simpson and Richmond in 1929 (from Wilmott 1997).

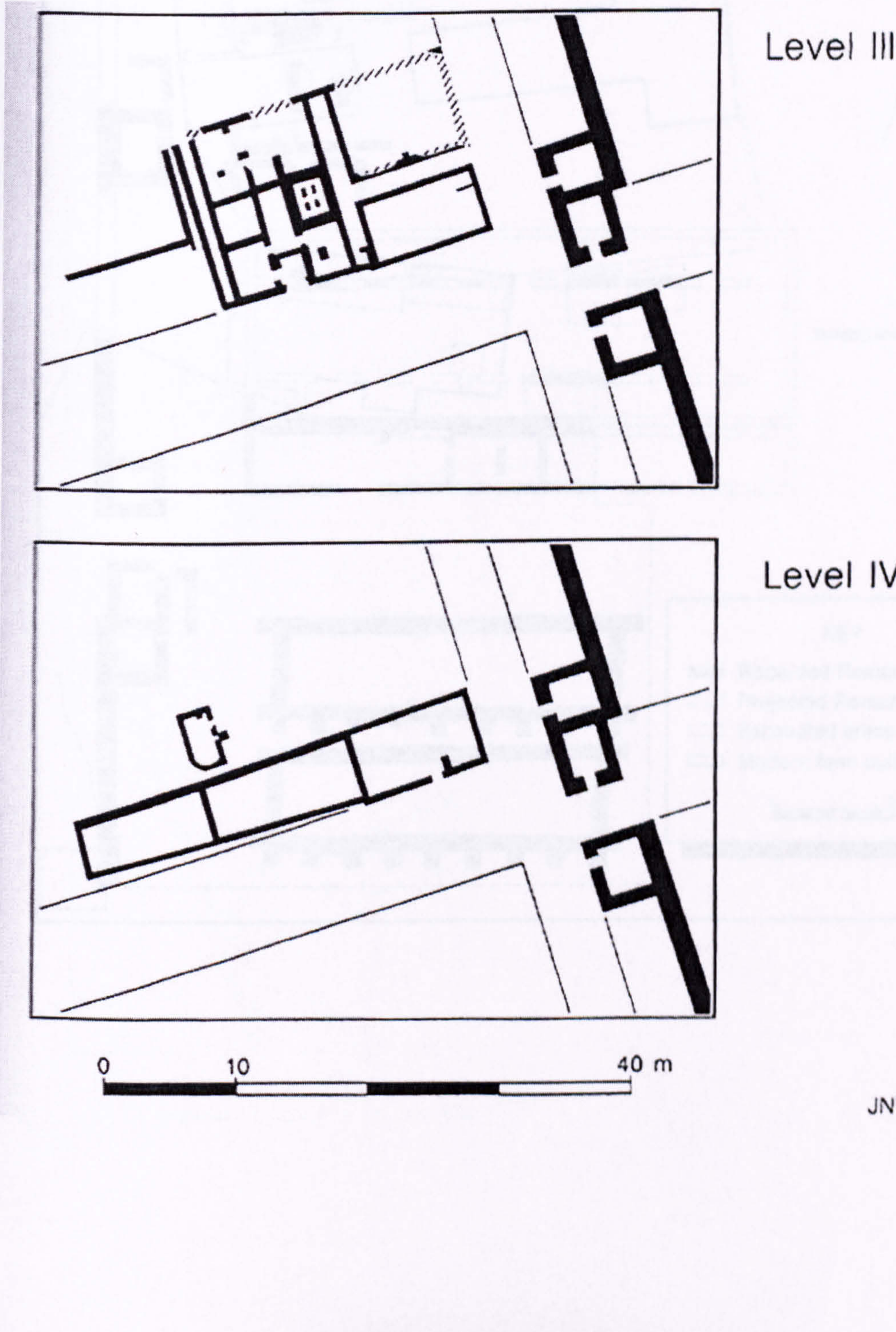


Figure A3.6: The plan of the northwest quadrant of Birdoswald in the first half of the 4th century (from Wilmott 1999).

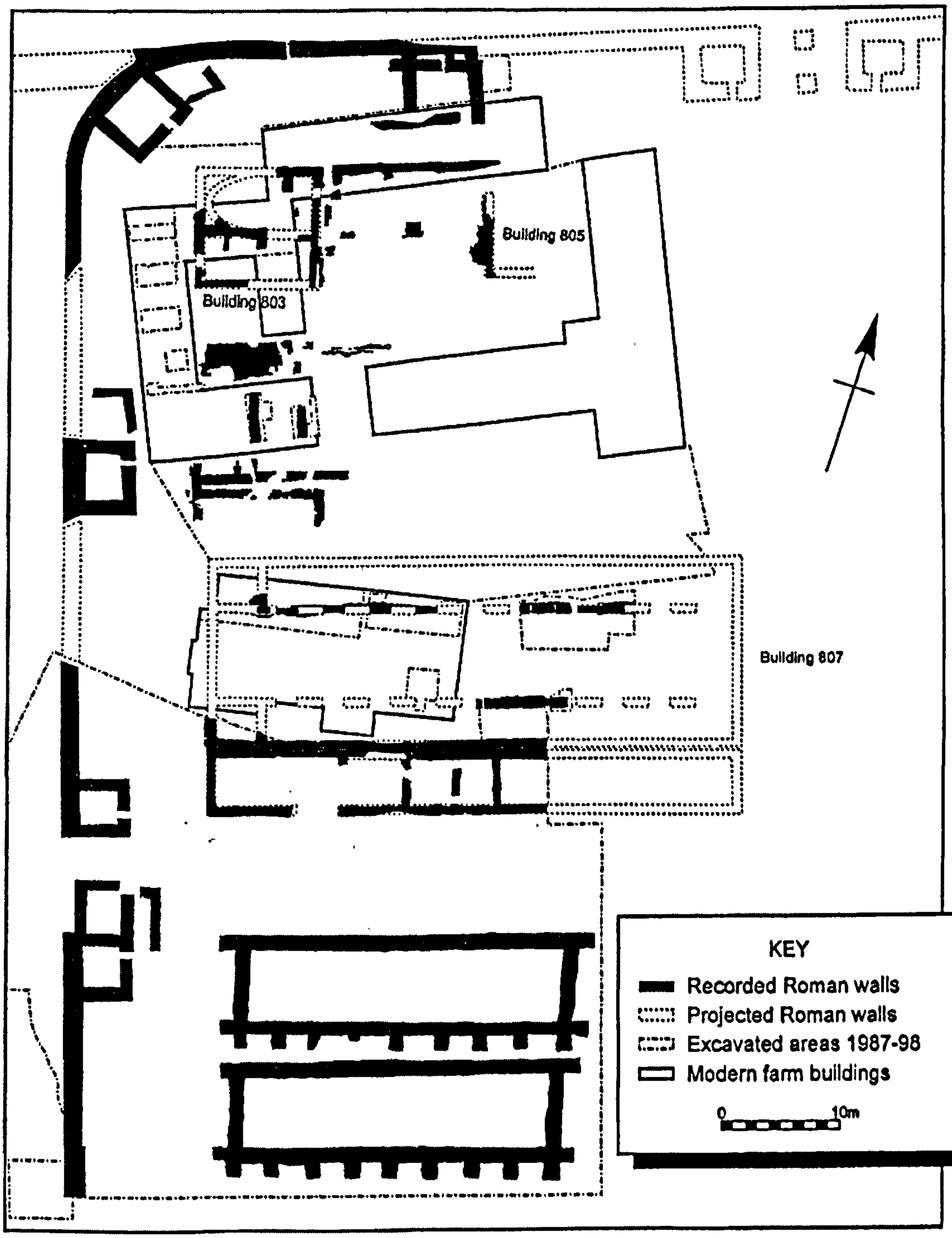
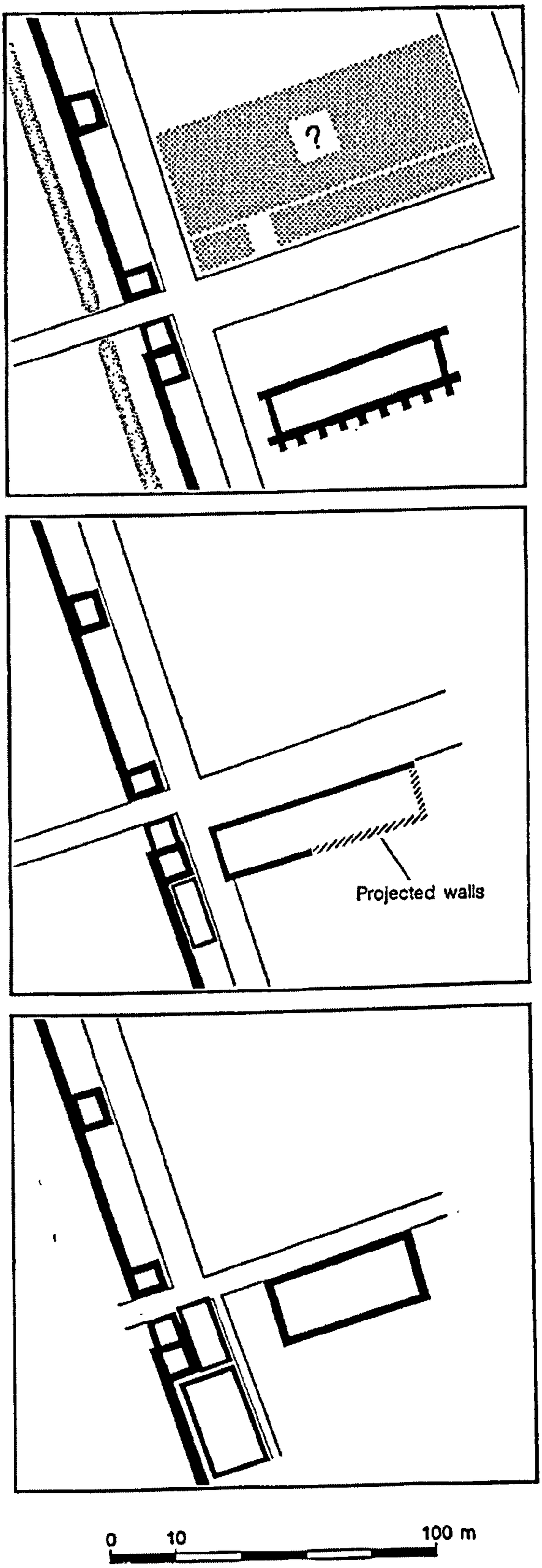


Figure A3.7: The phasing of the *horrea* and west gate in plan (from Wilmott 1997).



Period 5

N

Period 6a

Period 6b

Figure A3.8: Timber post inserts in the west gate at Birdoswald (from Wilmott 1997).

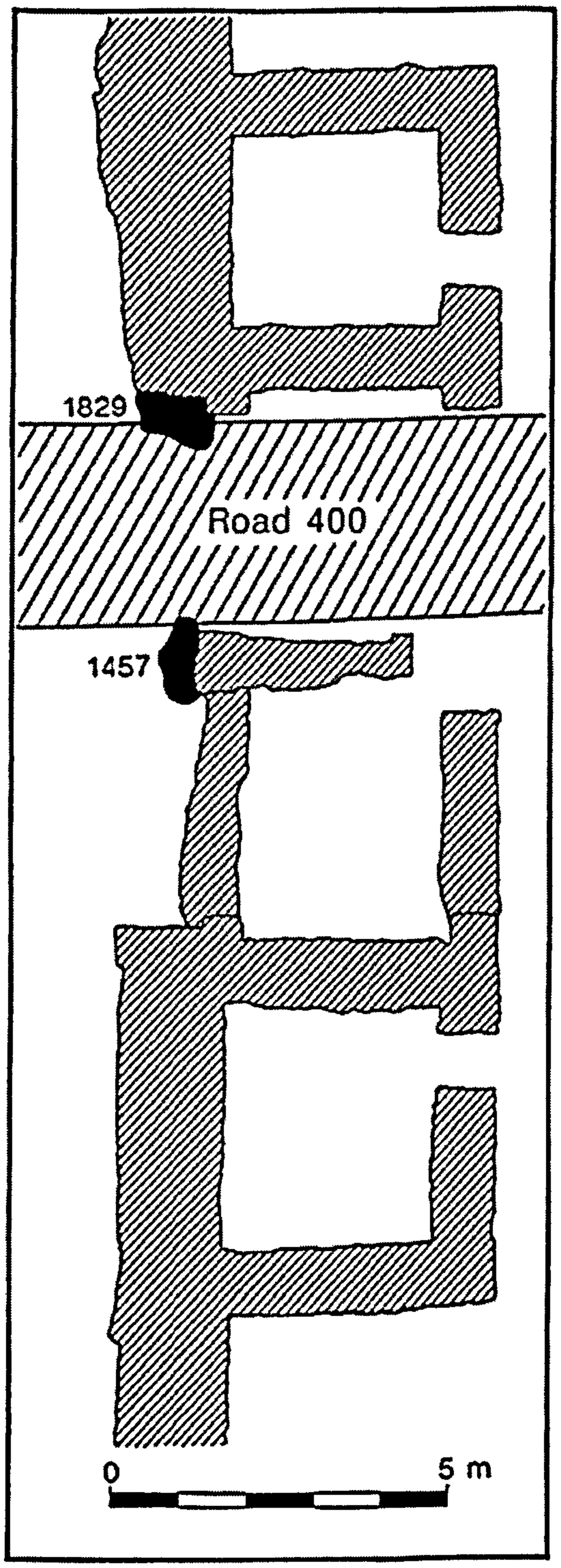


Table A3.2: Finds from Period 5 at Birdoswald, compiled from Wilmott (1997).

Belt plates	2	Intaglio	1
Bone armlet	1	Iron bar	1
Bone pins	4	Iron penannular brooch	1
Bone pommels	2	Iron ring	1
Brooch pin	1	Jet bead	1
Catapult bolt head	1	Jet/shale armlet	1
Ceramic counters	10	Jet/shale spindle whorl	1
Ceramic spindle whorls	3	Key	1
Chisel	1	Knives	2
Coins	44	Lead belt plate	1
Copper alloy armlet	1	Lead weight	1
Copper alloy earring	1	*lorica hamata* fitting	1
Copper alloy finger rings	2	Moulded stone	1
Copper alloy penannular brooches	4	Nail cleaners?	1
Copper alloy ring	1	Ring with split pin	1
Cosmetic pallet	1	Spoon	1
D-shaped buckle	1	Square buckle	1
Dividers	1	Statuette fragment	1
Fork	1	Stone counters	2
Glass beads	11	Stud	1
Glass finger ring	1	Toilet spoons	2
Gold earring	1	Whetstone	1

Table A3.3: Finds from Period 6 at Birdoswald, compile from Wilmott (1997).

Coins	6	Gold earring (fragment)	1

Figure A3.9: A composite plan of known structures at Birdoswald in the first half of the 4th century.

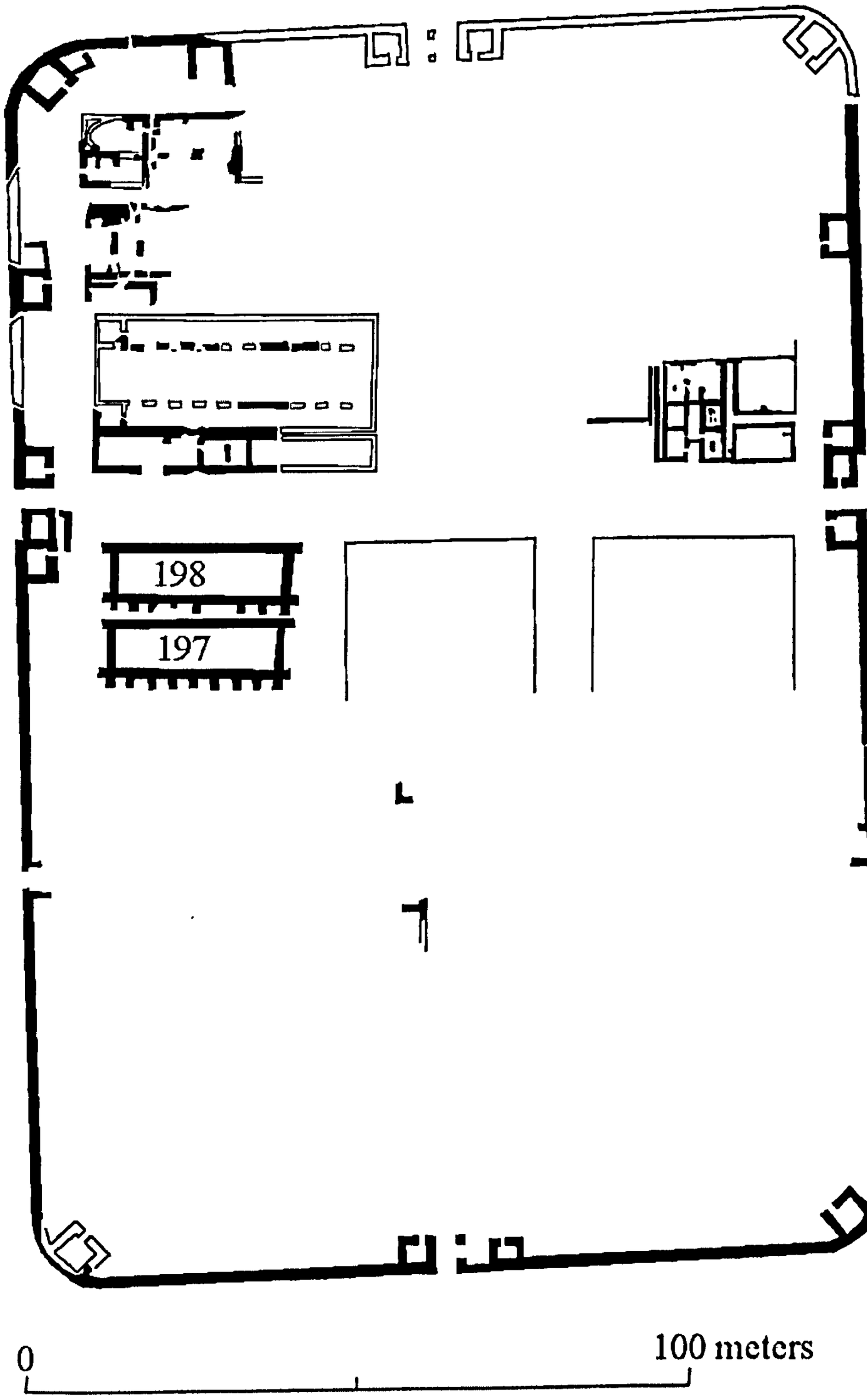


Figure A3.10: A composite plan of known structures at Birdoswald in the later 4th century.

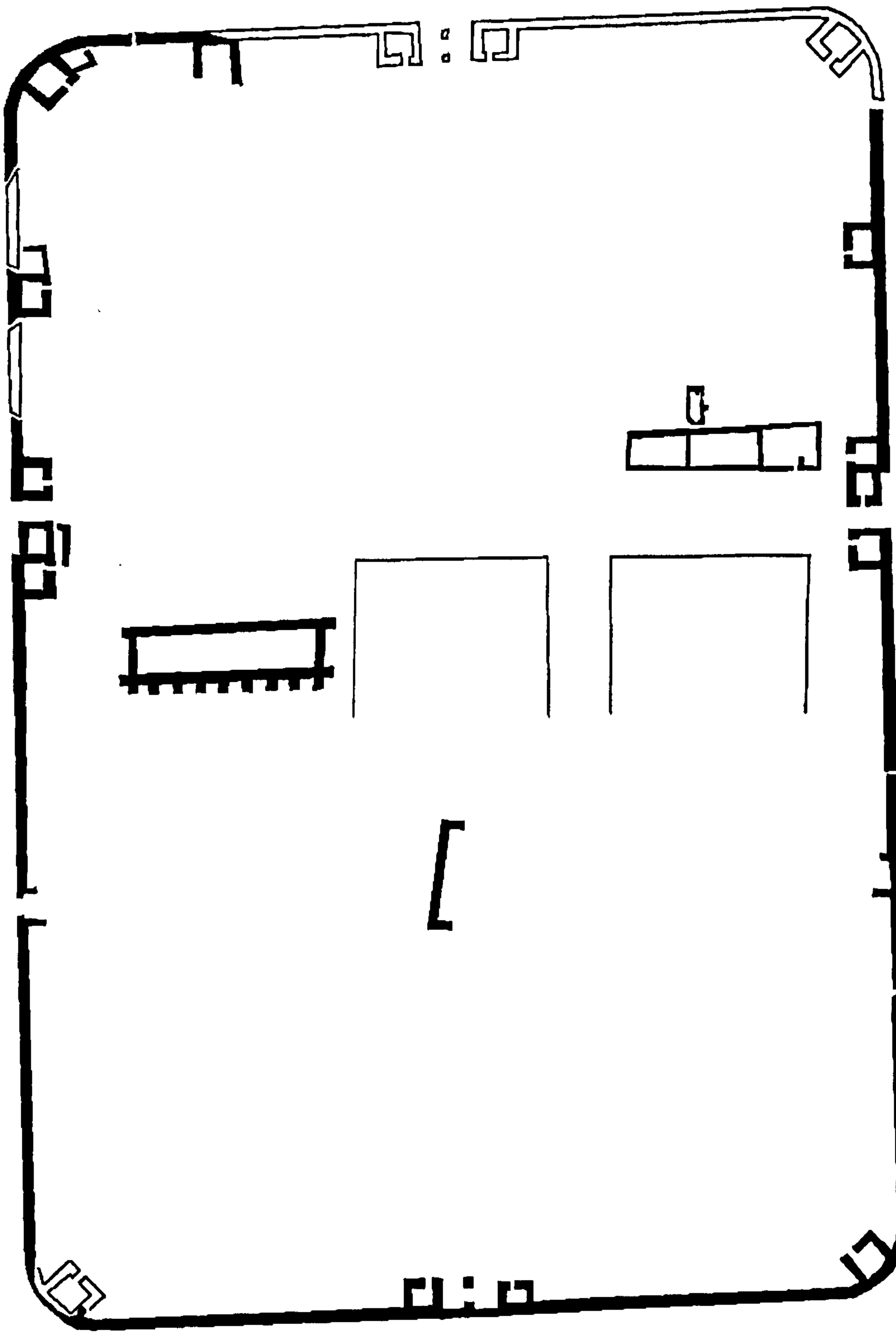


Figure A3.11: A plan of Great Chesters (from Bidwell 1999).

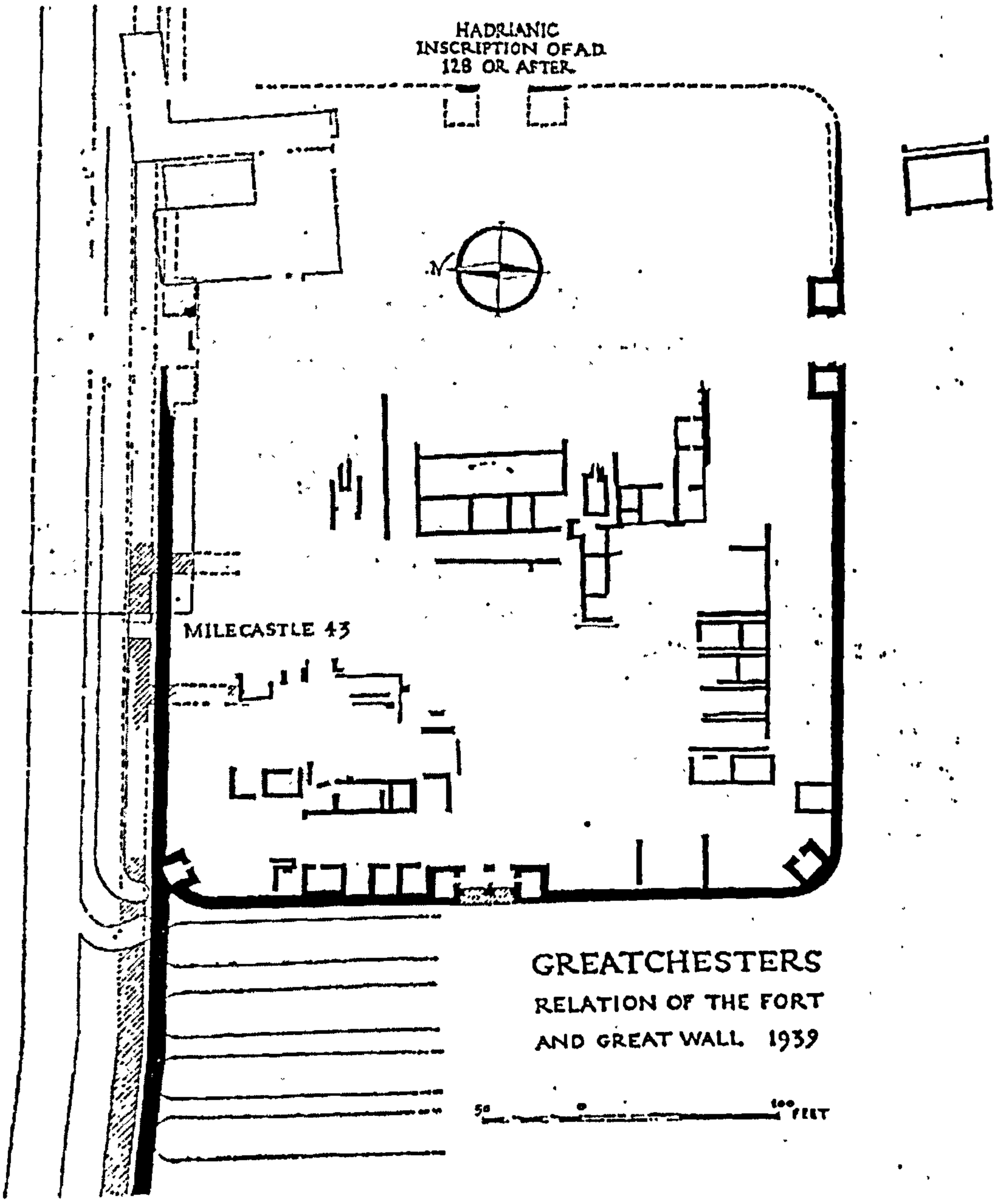


Figure A3.12: The plan of Old Brampton (from Blake 1960).

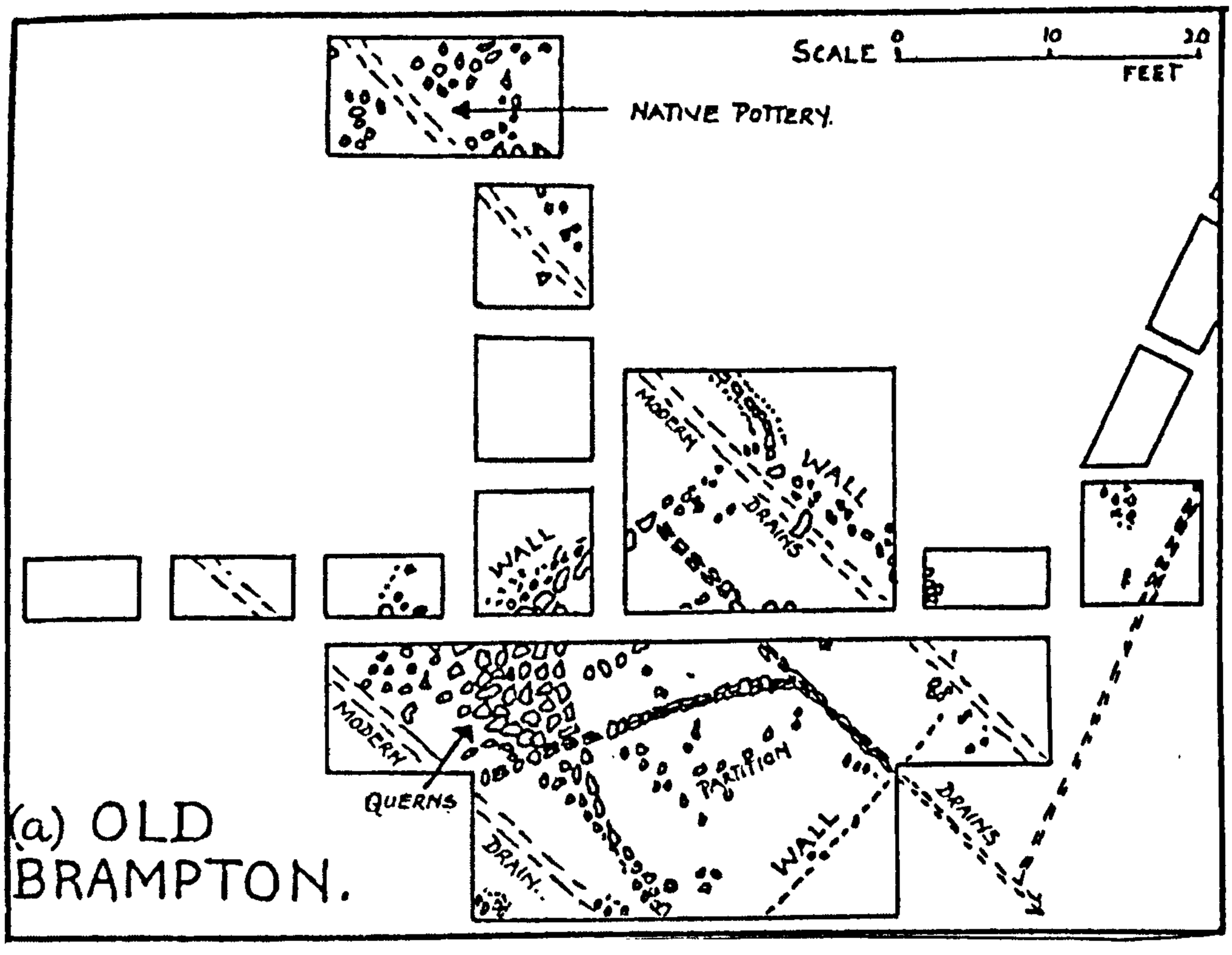


Figure A3.13: The plan of Old Brampton redrawn without the drains.

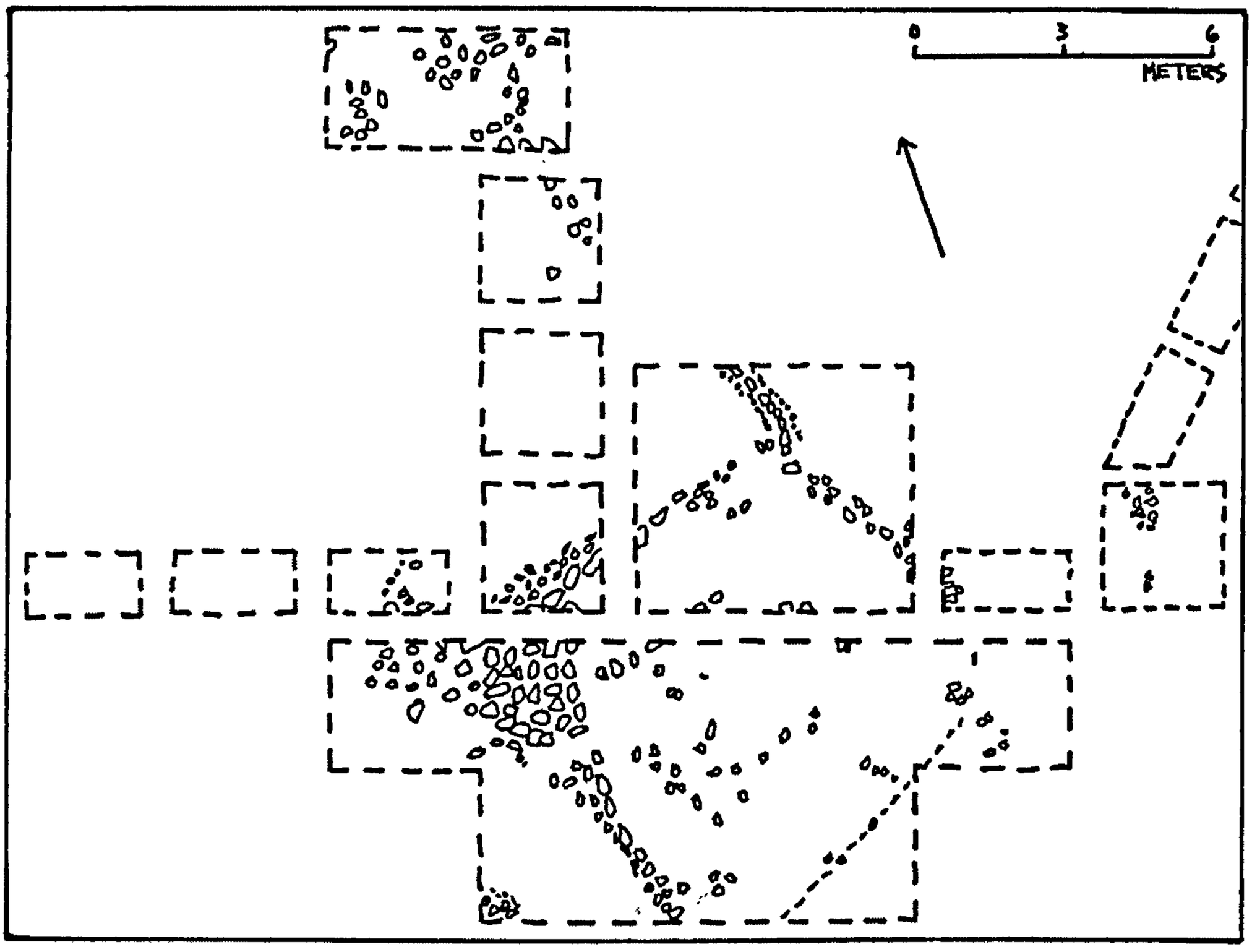
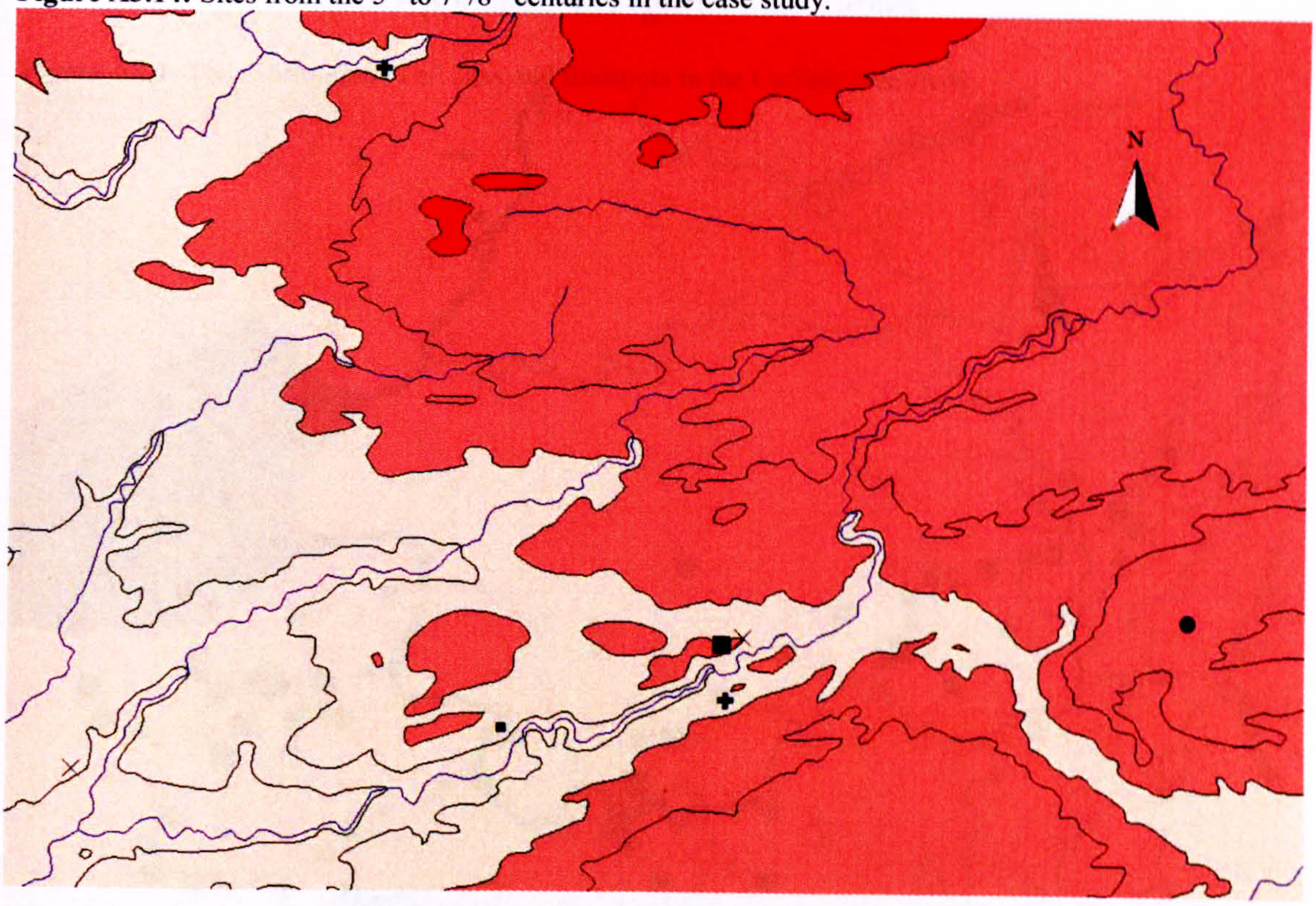


Figure A3.14: Sites from the 5th to 7th/8th centuries in the case study.



Appendix 4: Figures and Tables

Figure A4.1: The distribution of all sites and findspots in the Carlisle case study.

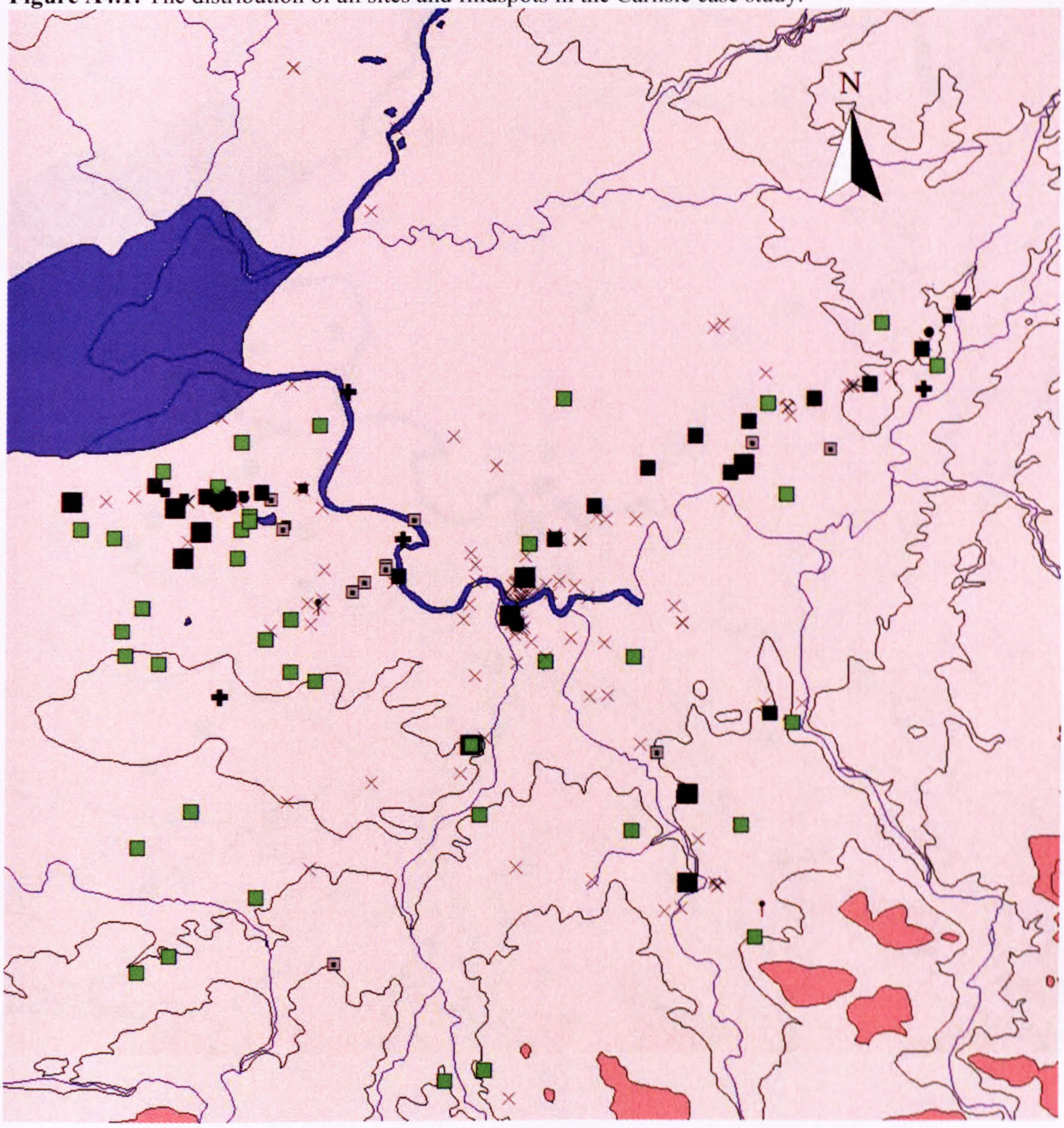


Figure A4.2: The distribution of native farmsteads (green) in comparison to Roman forts (black).

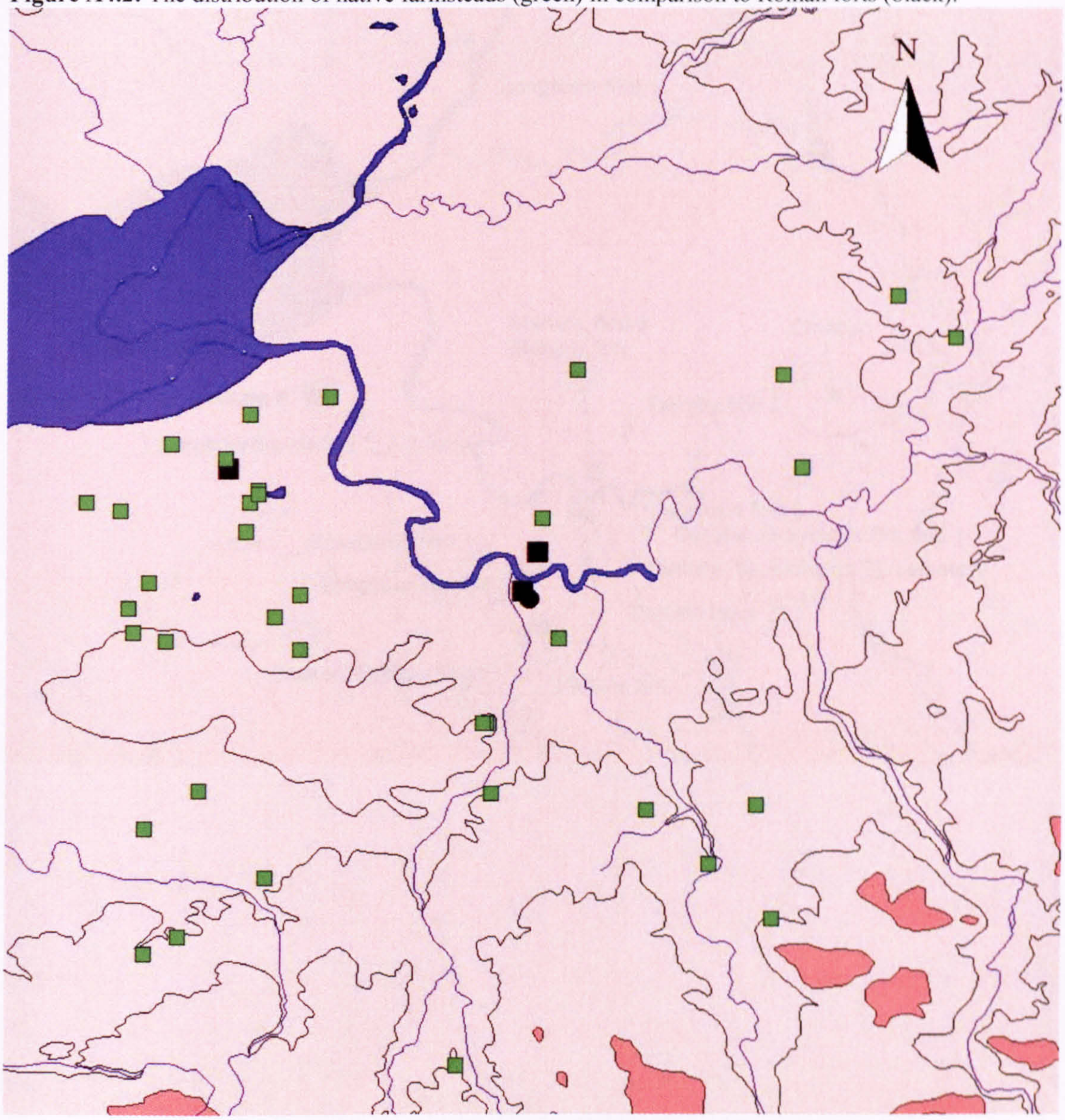


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Figure A4.4: The distribution of Roman sites with 4th century activity.

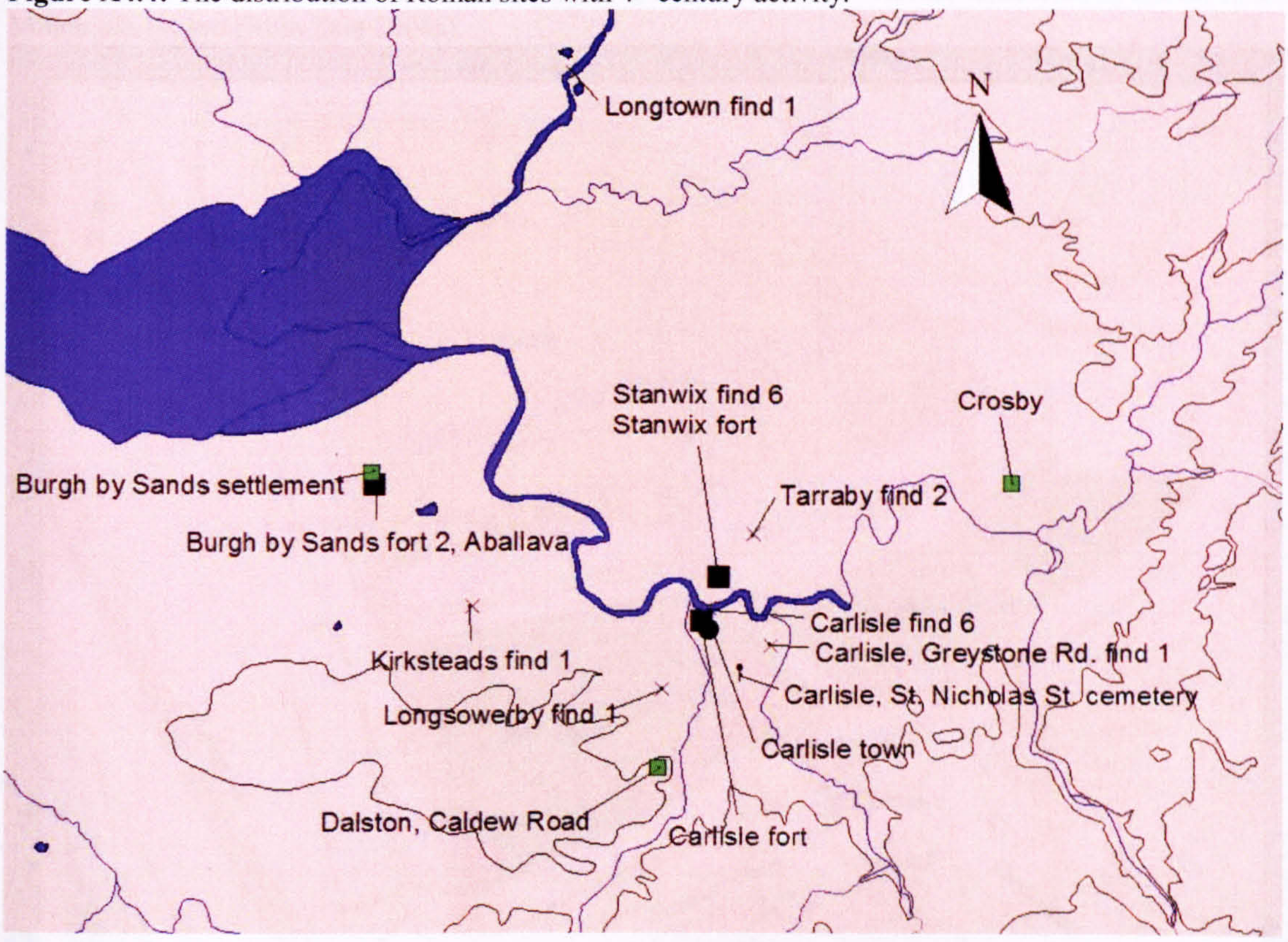


Figure A4.5: The fort at Carlisle, the basic plan as reconstructed from evidence uncovered by the Carlisle Millenium Project (from Zant 2004a).

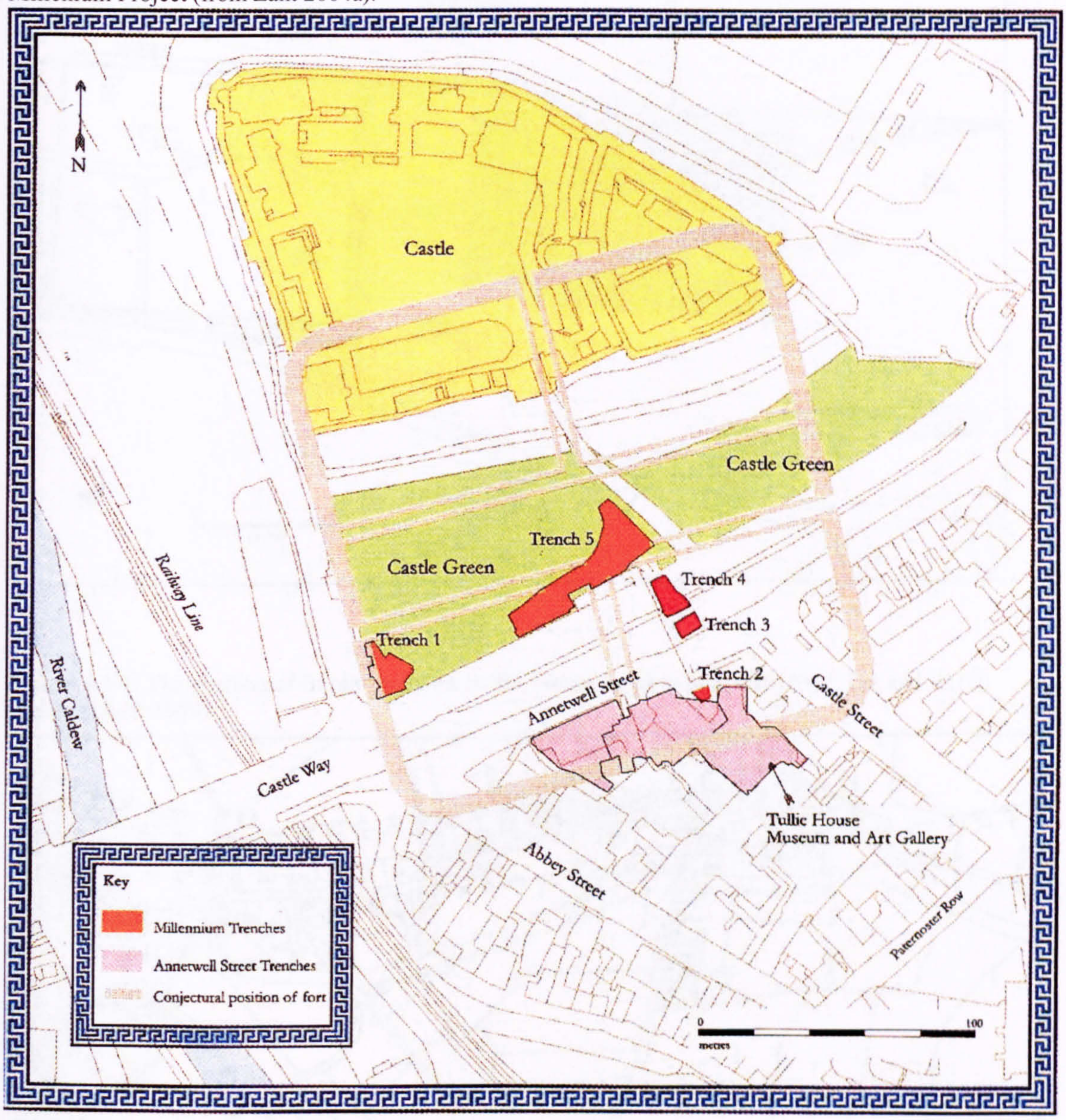


Figure A4.6: The plan of Stanwix fort (from Bidwell 1999).

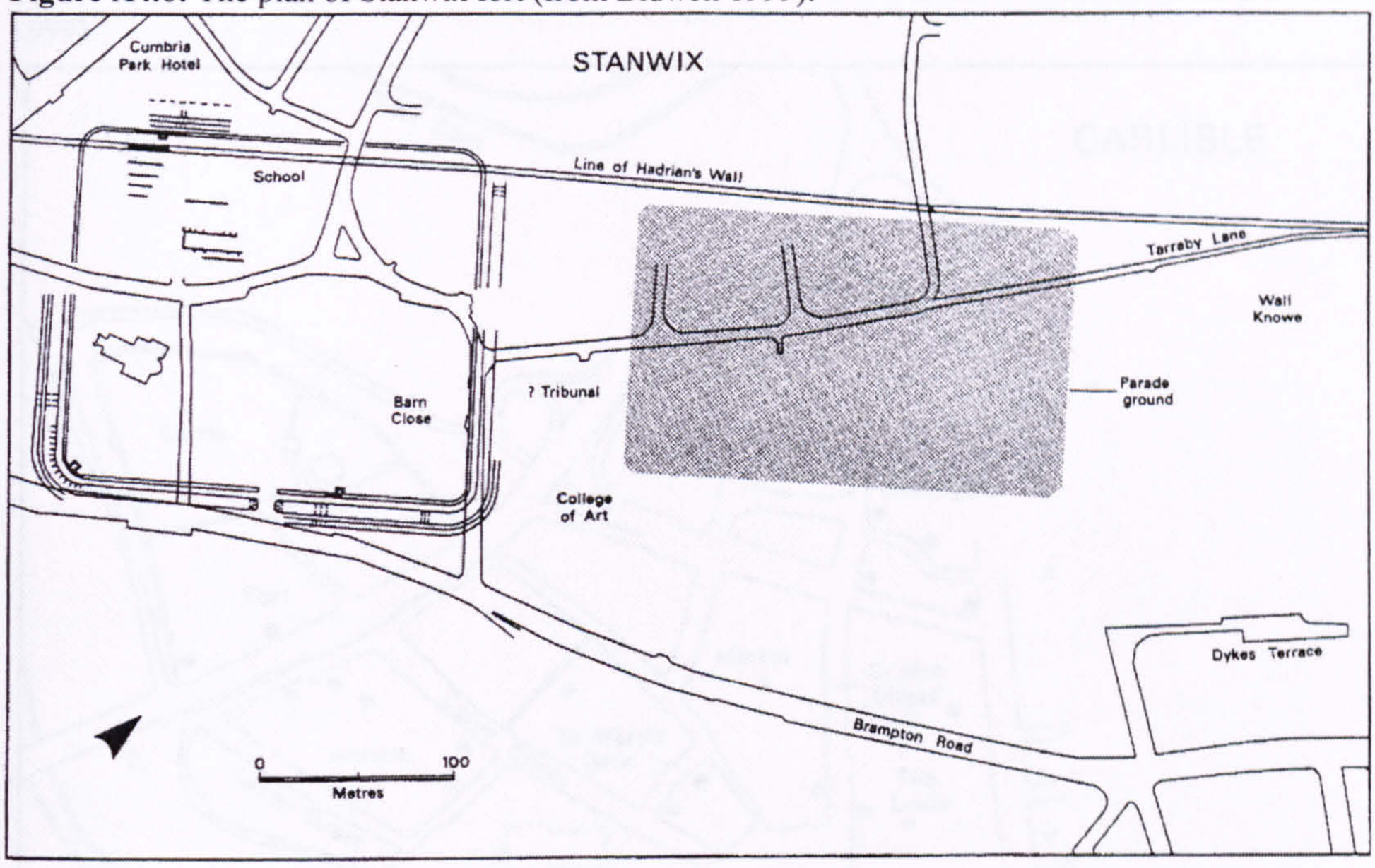


Figure A4.7: The position of Burgh-by-Sands II (B), including the position of forts I (A) and III (C) (from Bidwell 1999).

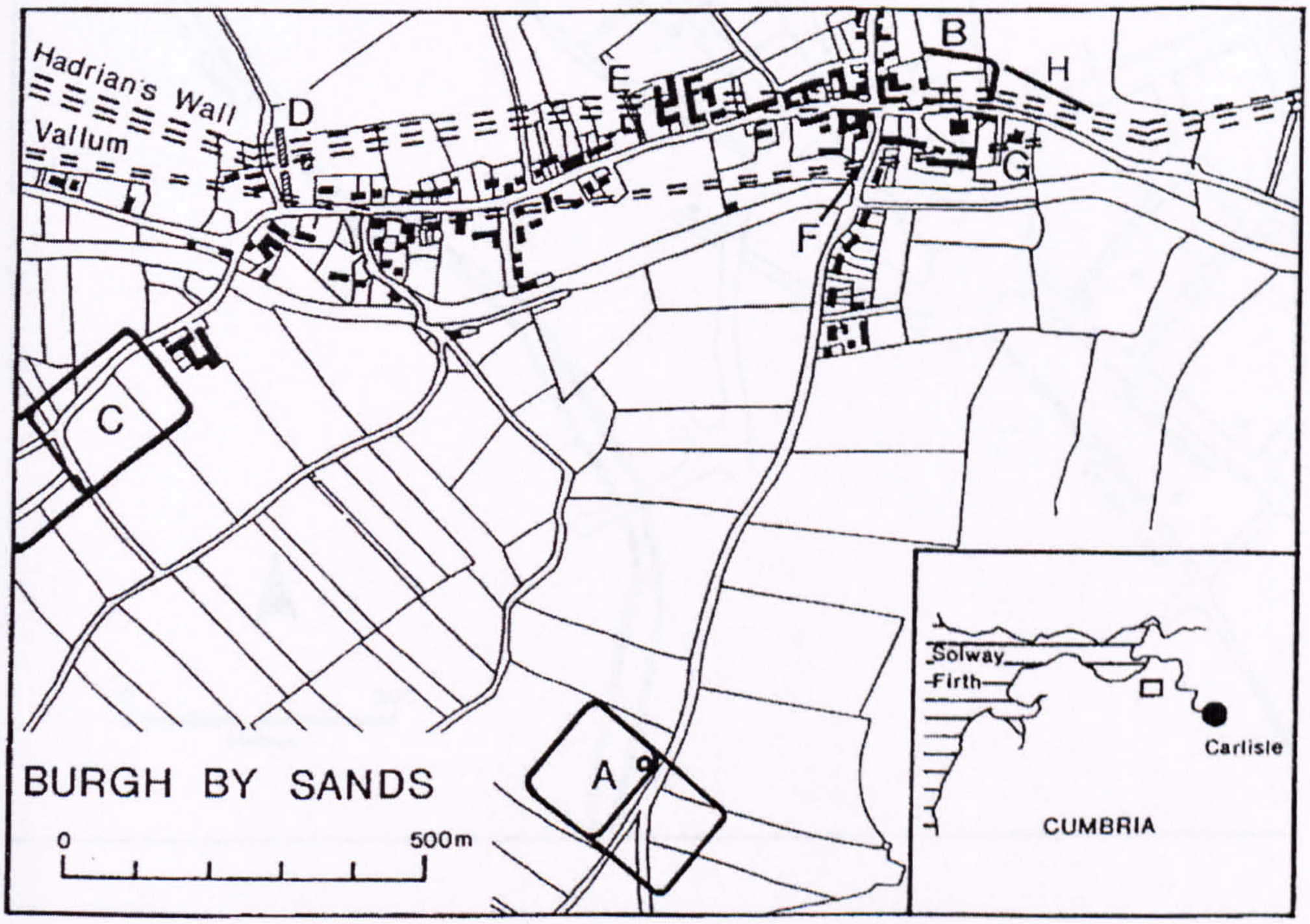


Figure A4.8: The modern town of Carlisle, with streets mentioned in the text labeled (from Bidwell 1999).

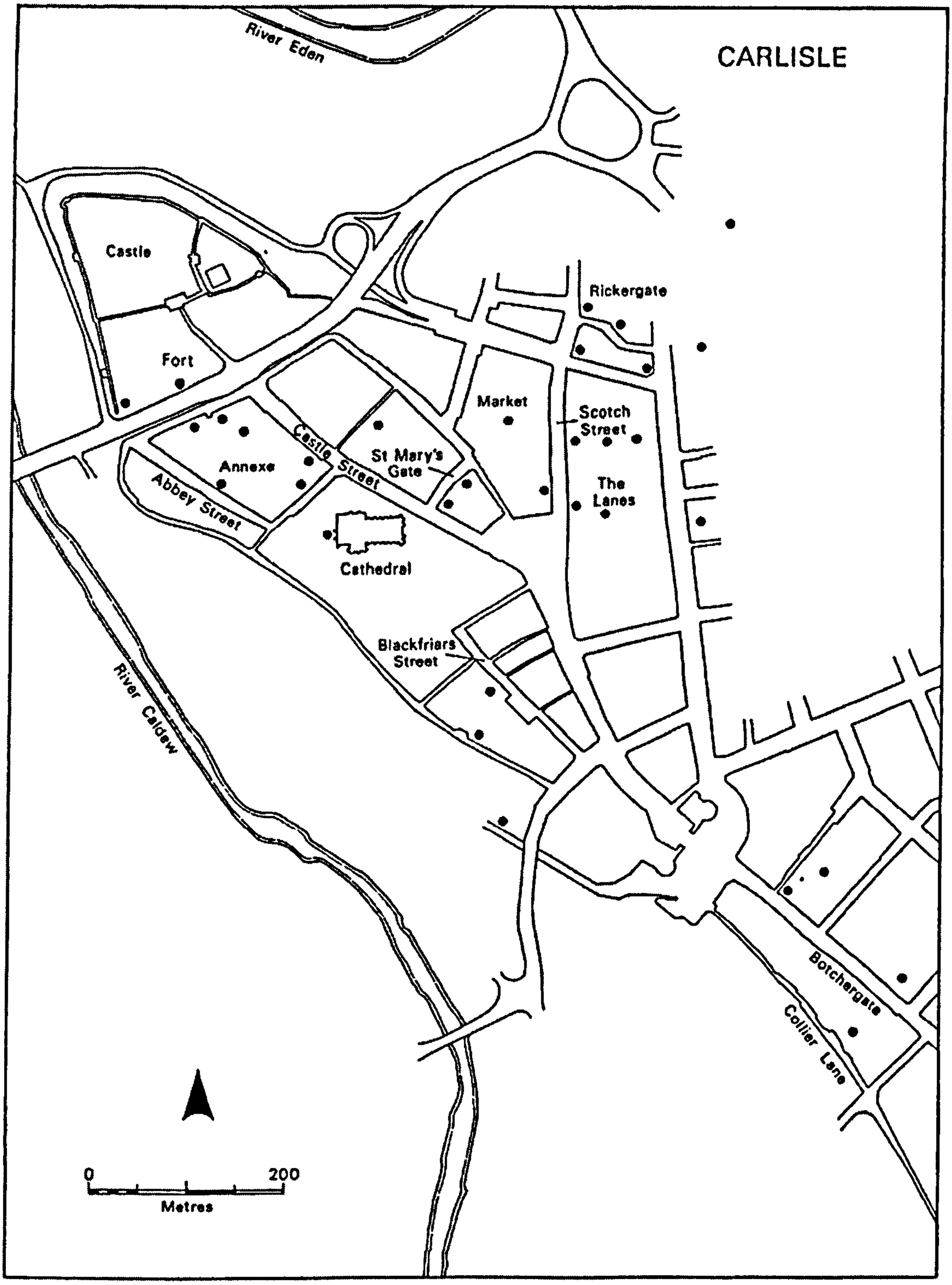


Figure A4.9: Blackfriars building 1, period 10 (from McCarthy 1990).

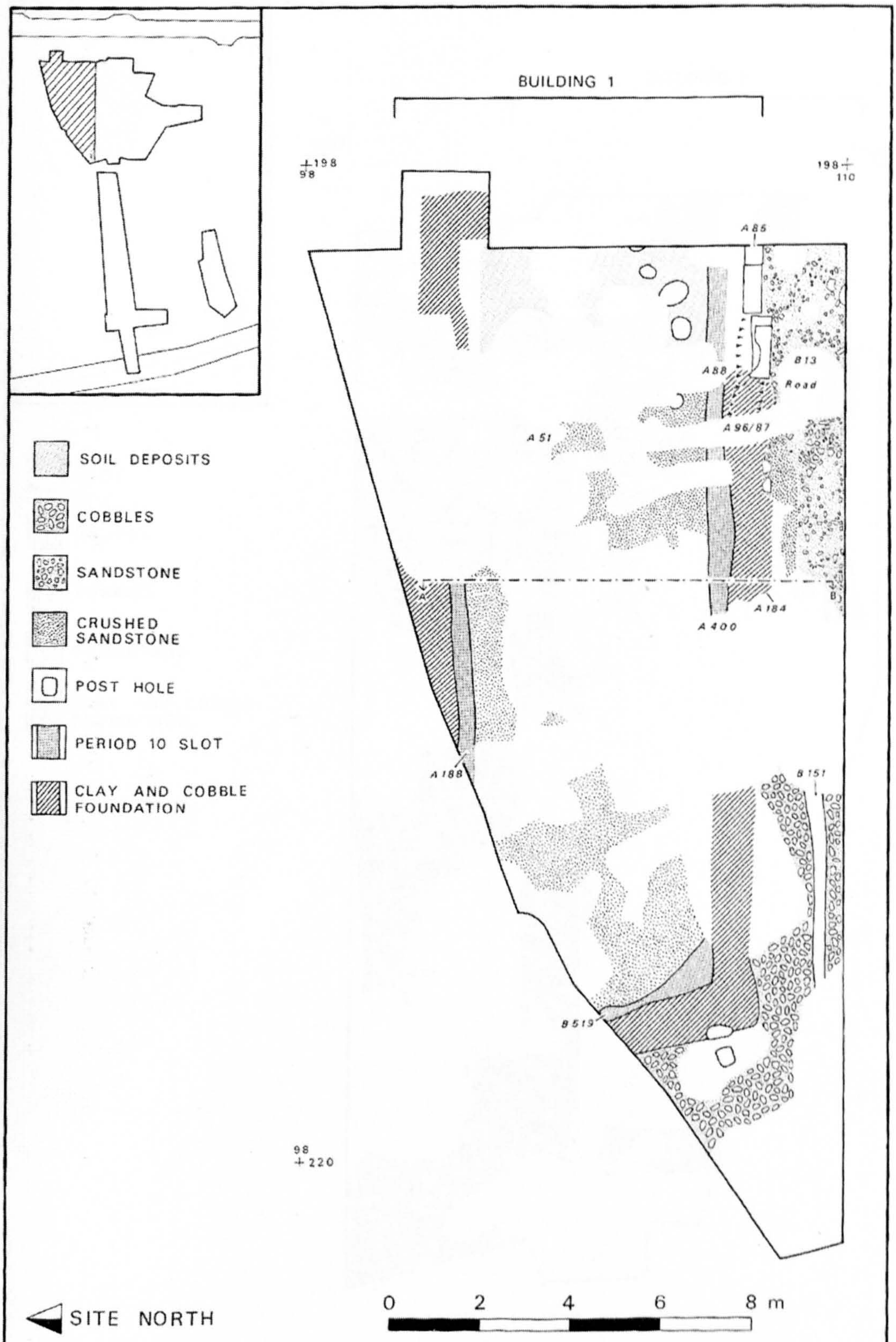


Figure A4.10: Blackfriars building 2, period 10 (from McCarthy 1990).

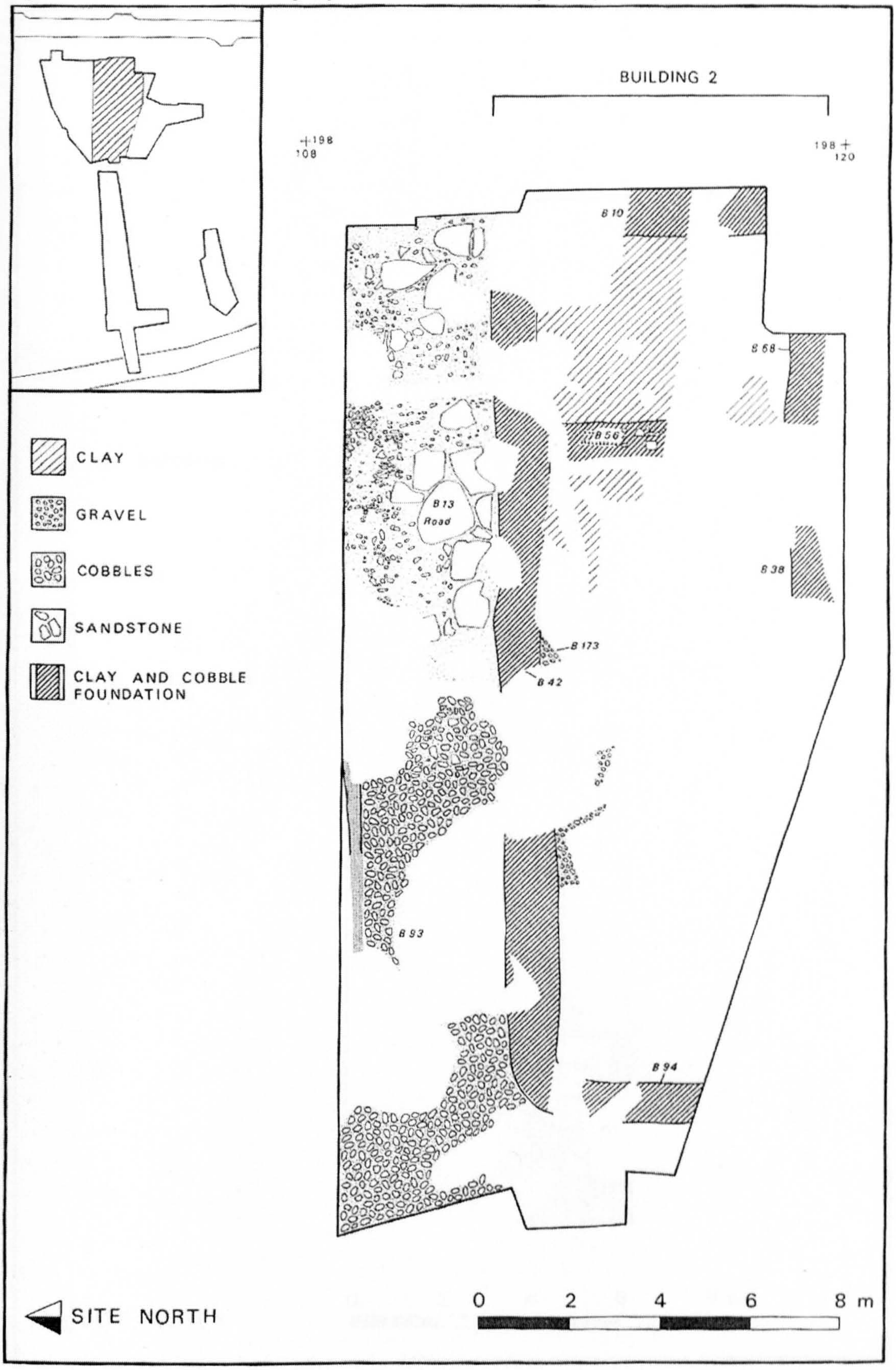


Figure A4.11: Blackfriars building 2, period 11 (from McCarthy 1990).

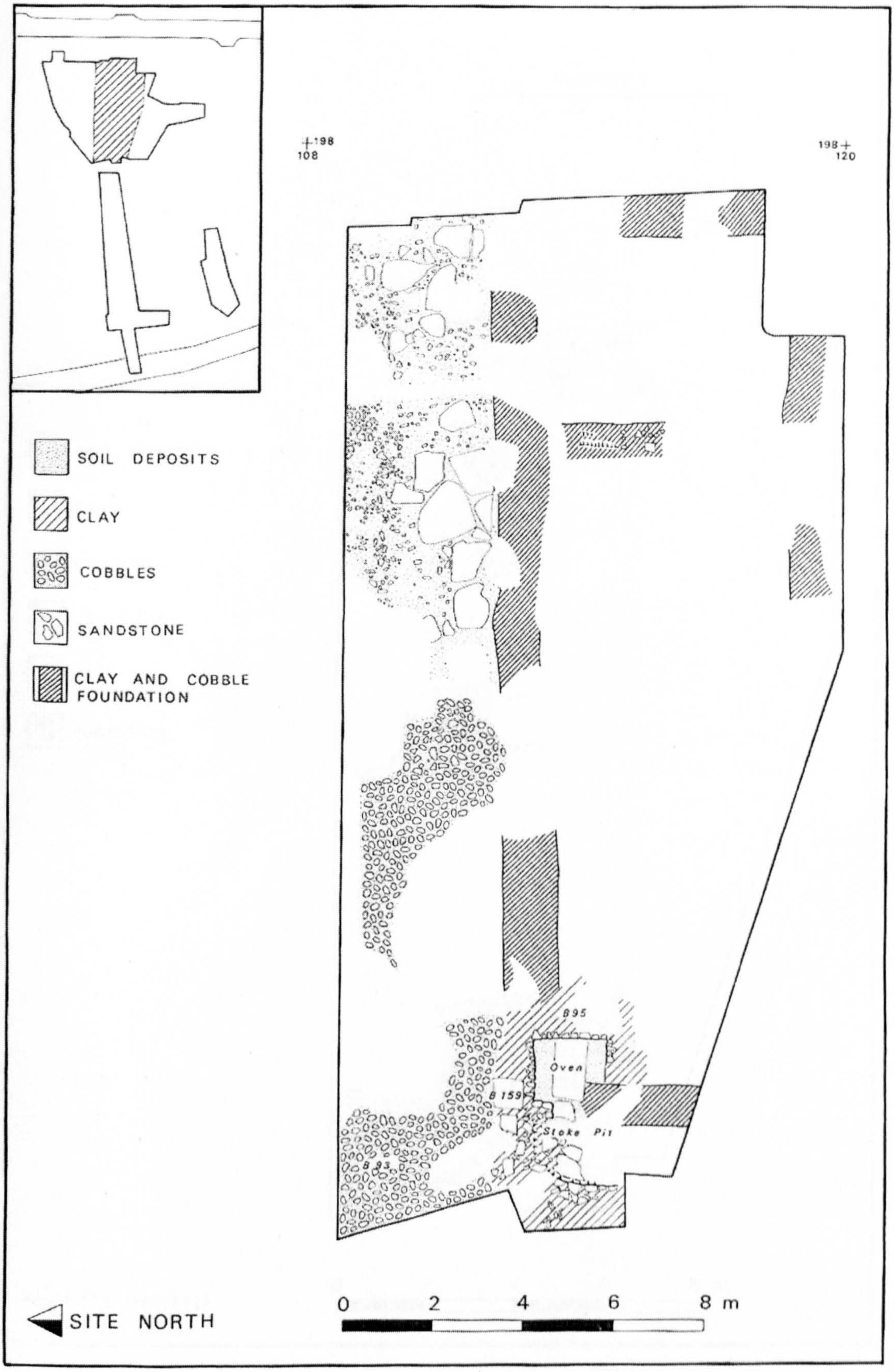


Figure A4.12: Blackfriars building 2, period 12 (from McCarthy 1990).

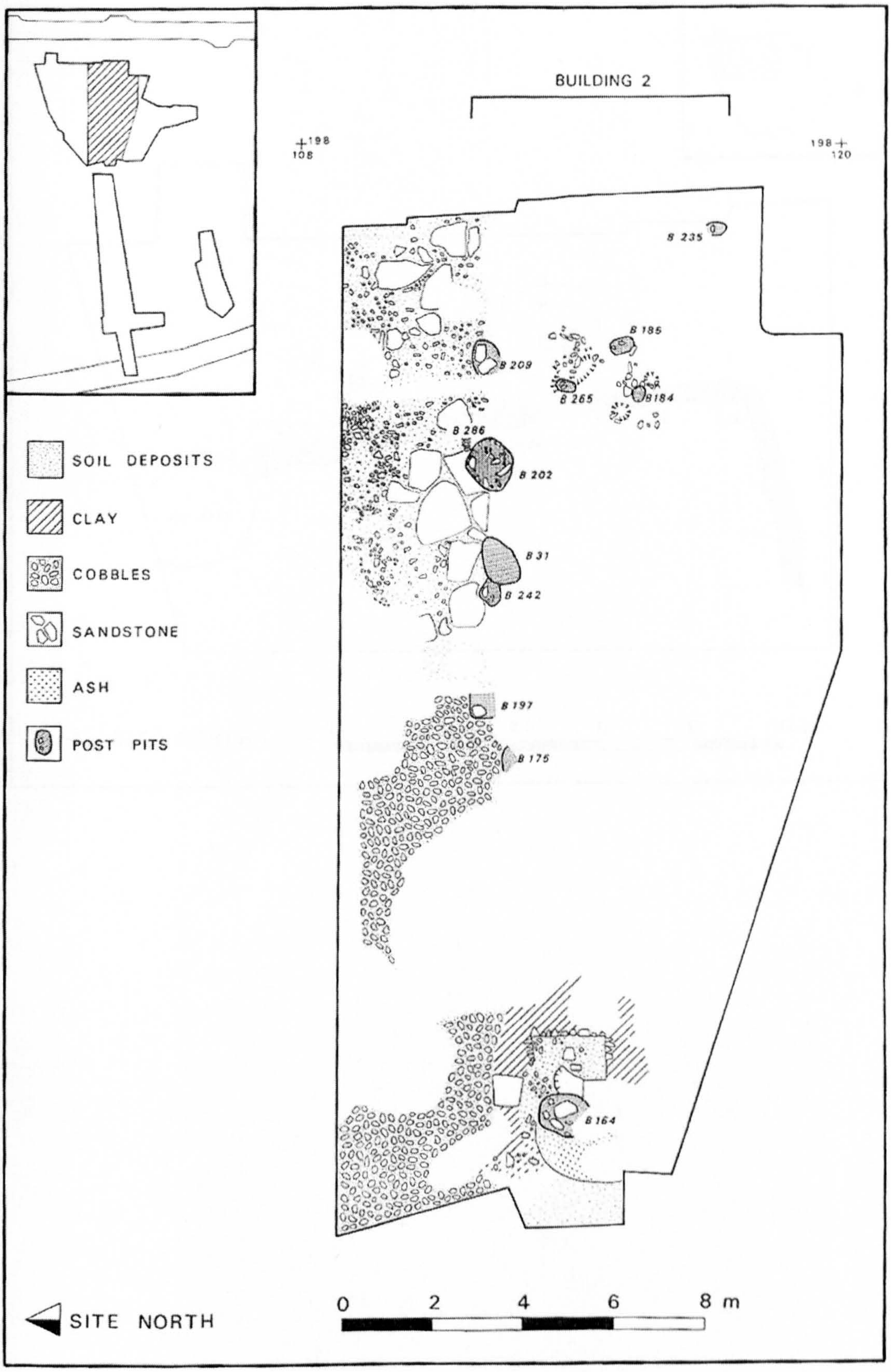


Figure A4.13: Blackfriars building 2/3, period 13 "Anglian" building (from McCarthy 1990).

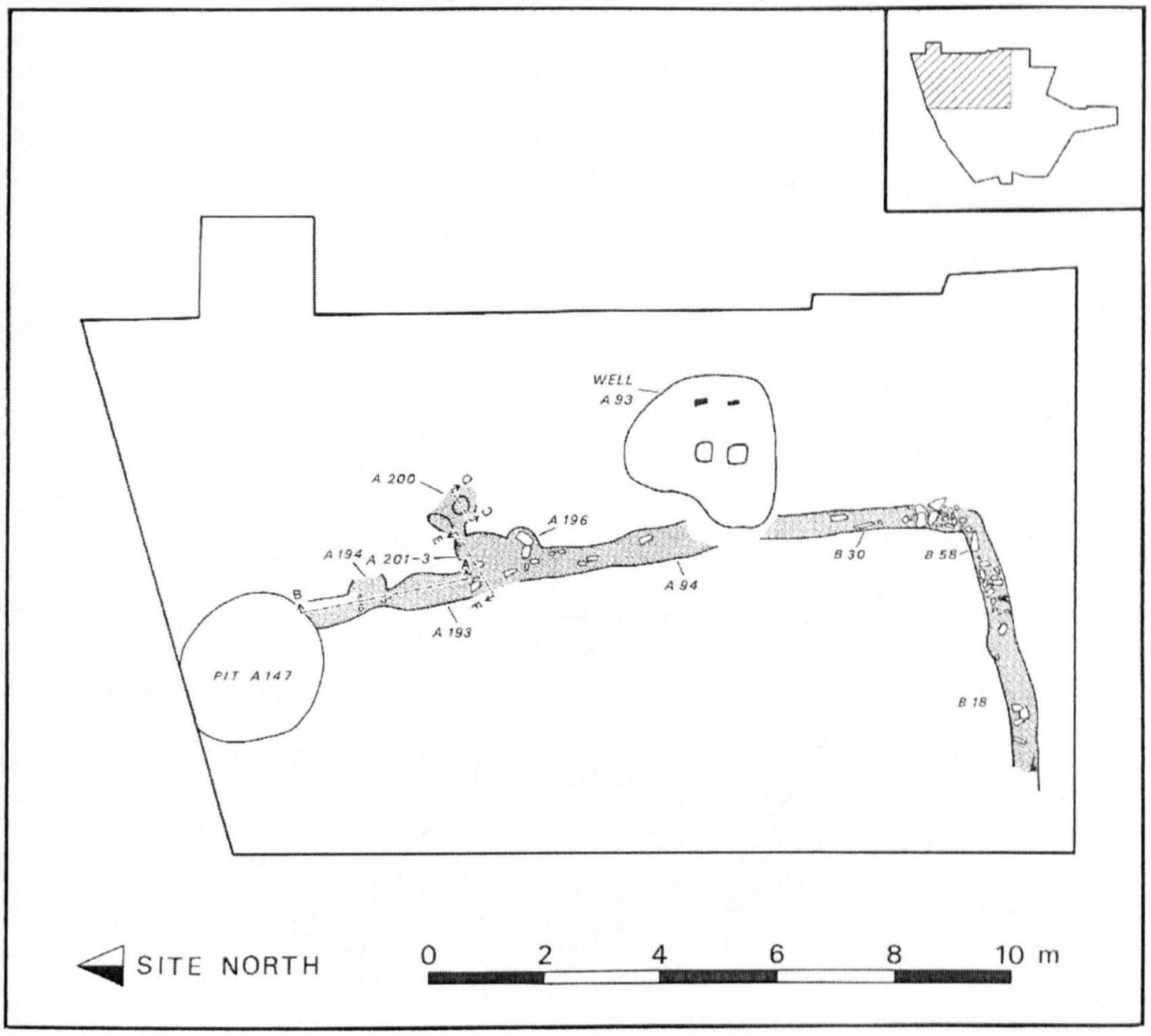


Figure A4.14: The trench-plan of the Carlisle Cathedral precinct excavations (unpublished, from archive).

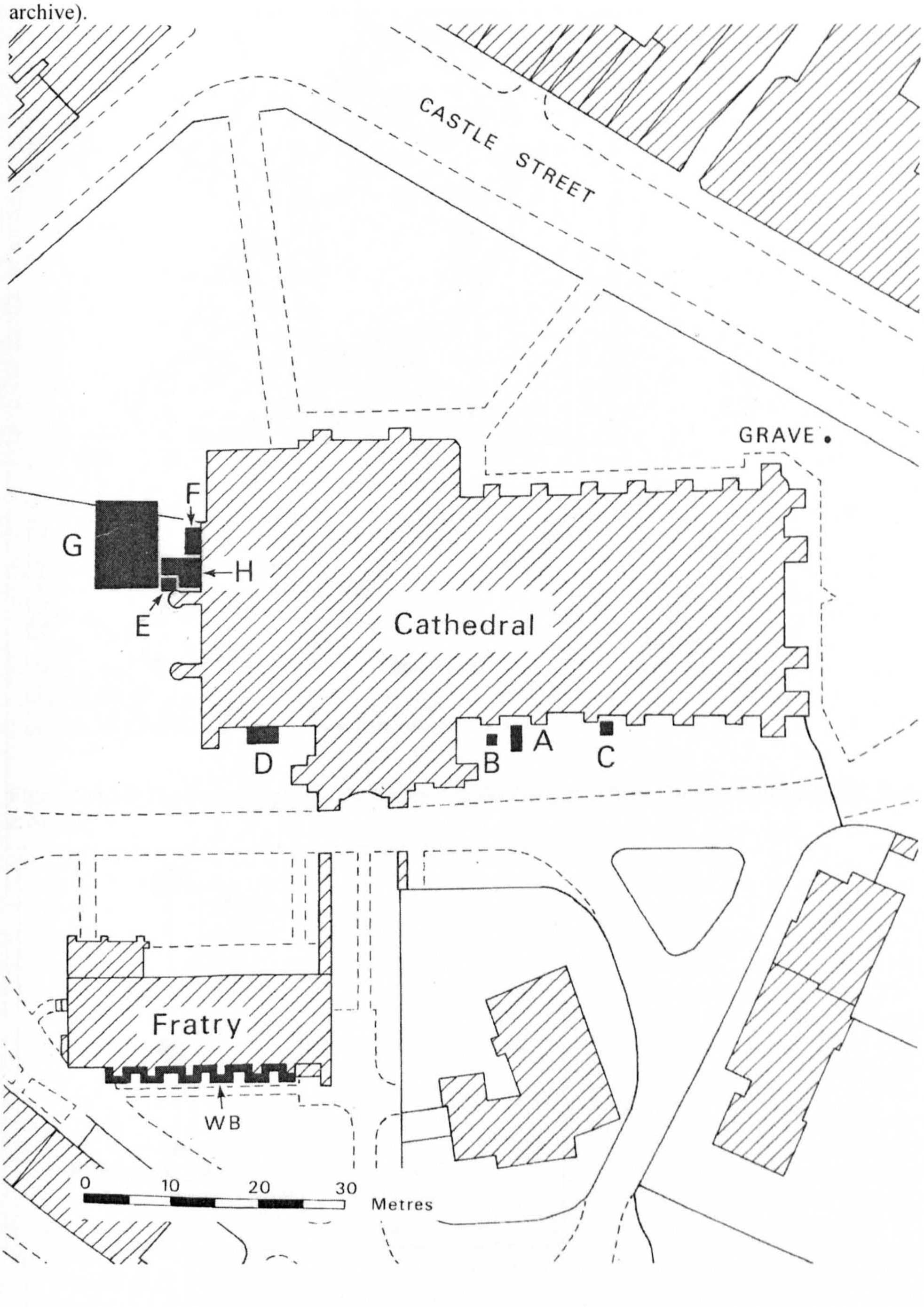


Figure A4.15: The Period I plan of trenches G and H at Carlisle Cathedral (unpublished, from archive).

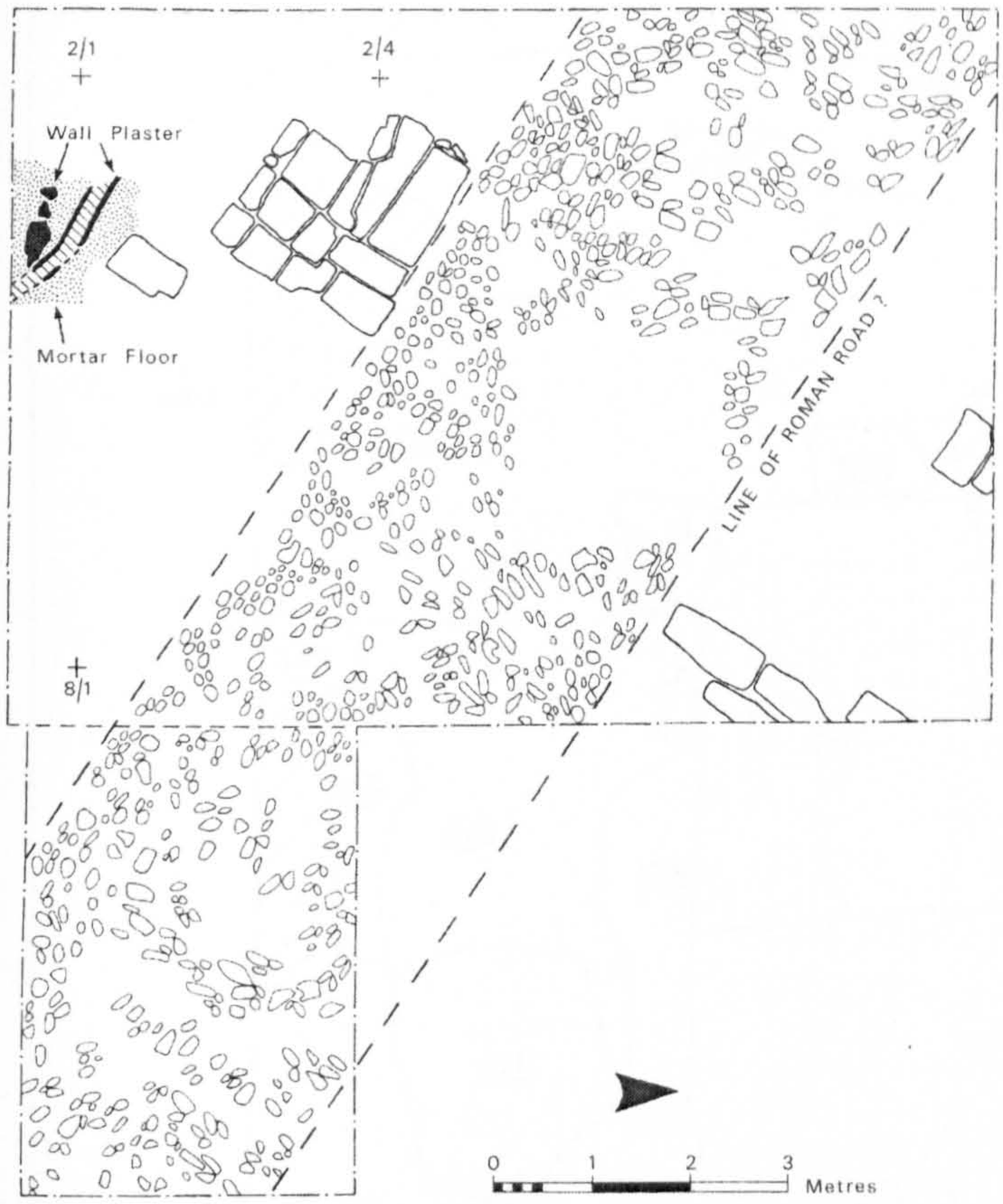


Figure A4.16: The Period II plan of the timber post structure at Carlisle Cathedral (unpublished, from archive).

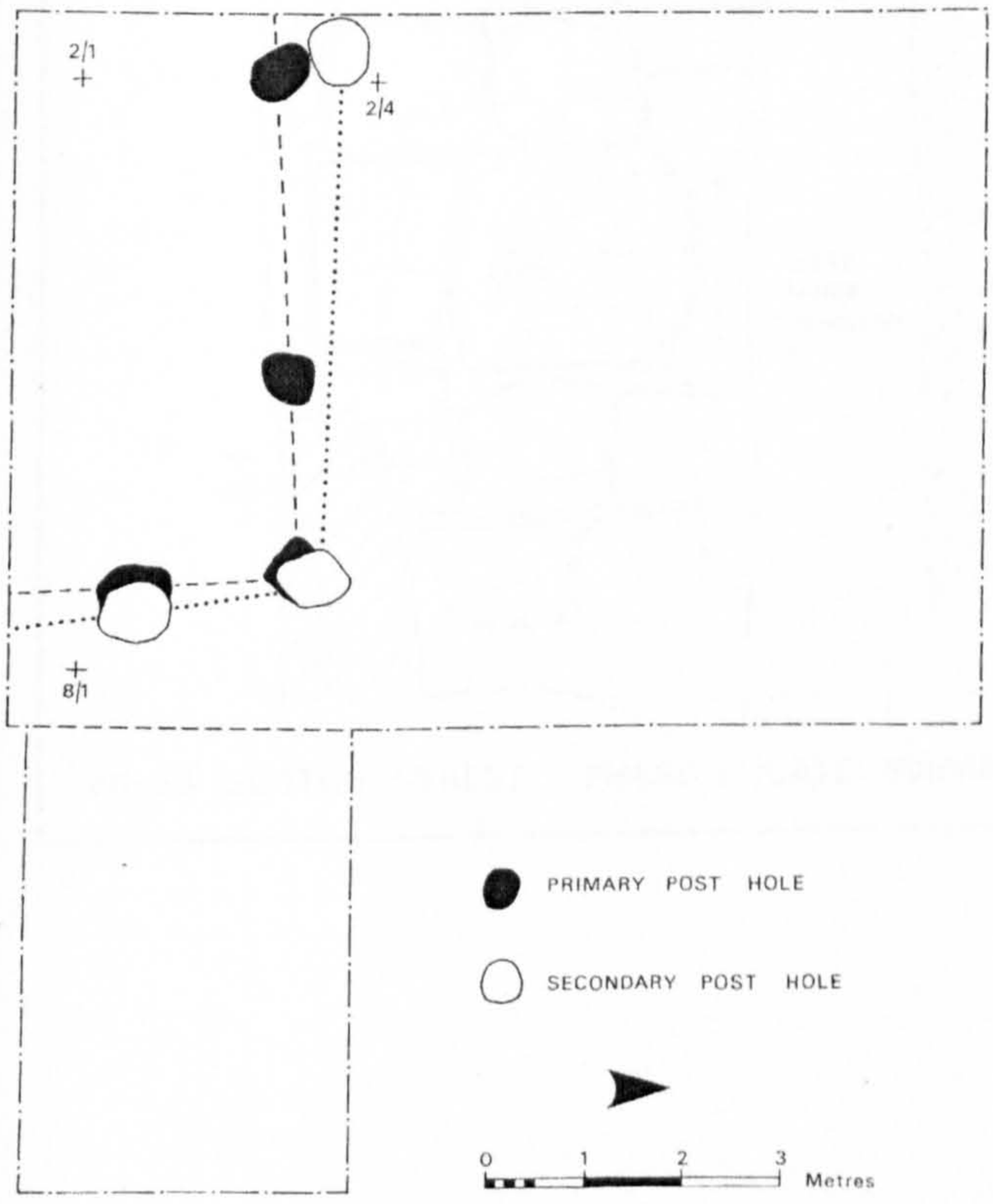


Figure A4.17: Scotch Street phase 1 plan (modified from Keevill 1988).

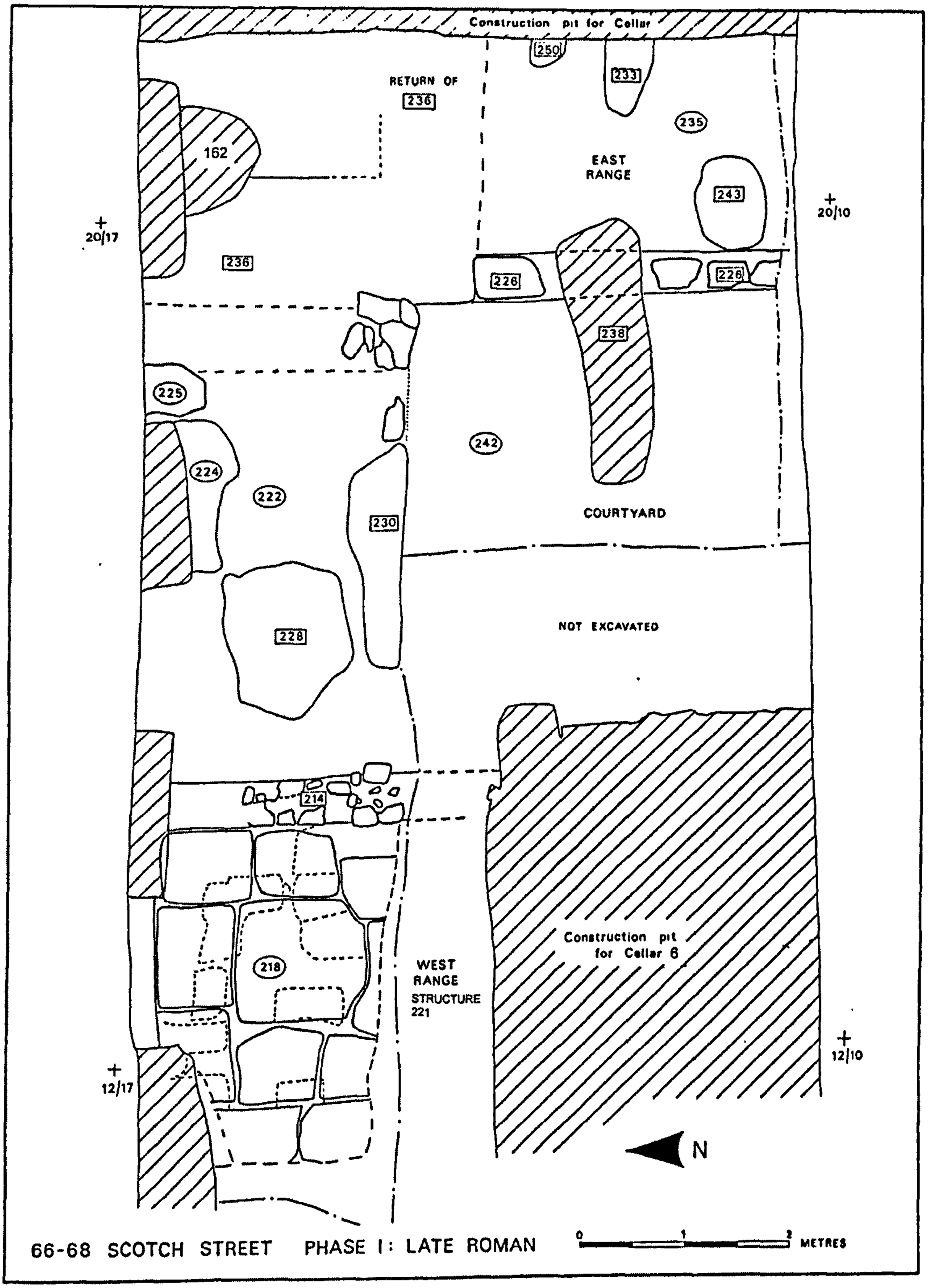


Figure A4.18: Scotch Street hypocaust room in west range: A – hypocaust subfloor; B – 1st layer of floor flags; C – upper layer of floor flags; D – deposit over flags (modified from Keevill 1988).

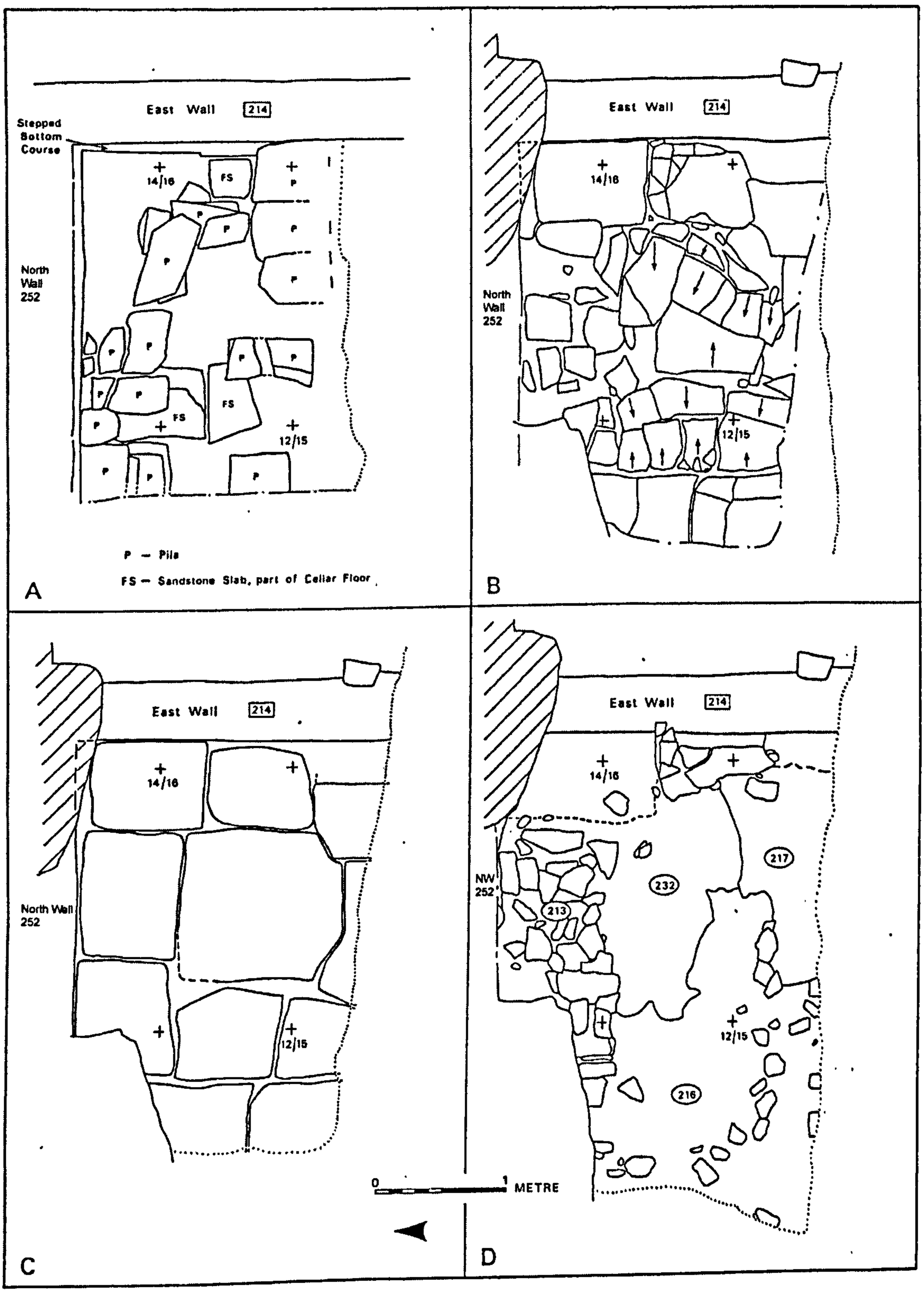


Figure A4.19: The Lanes, street plan (from McCarthy 2000).

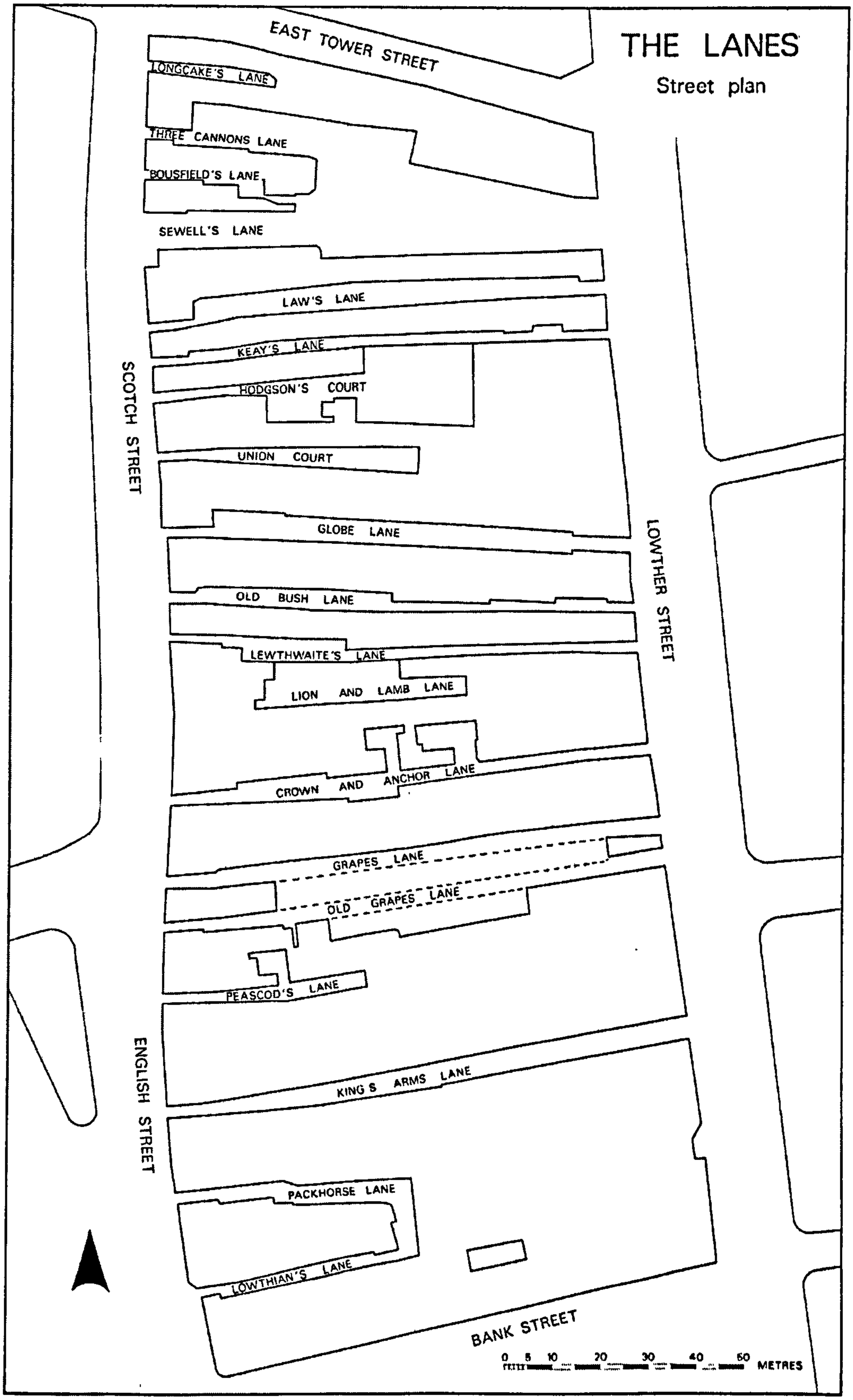


Figure A4.20: The Lanes, trench plan (from McCarthy 2000).

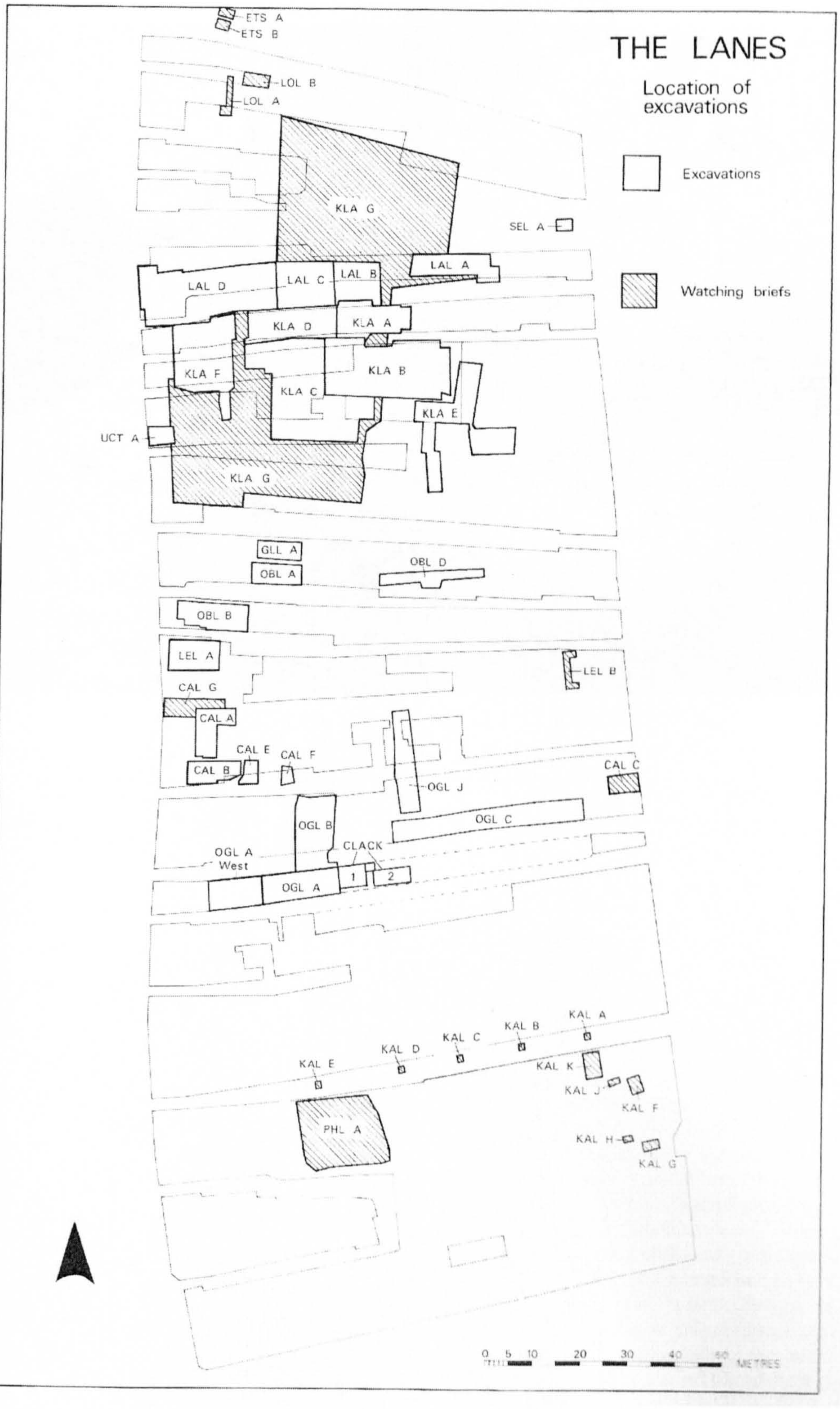


Figure A4.21: The distribution of Early Medieval sites in the case study, dating to the 5th to 10th centuries.

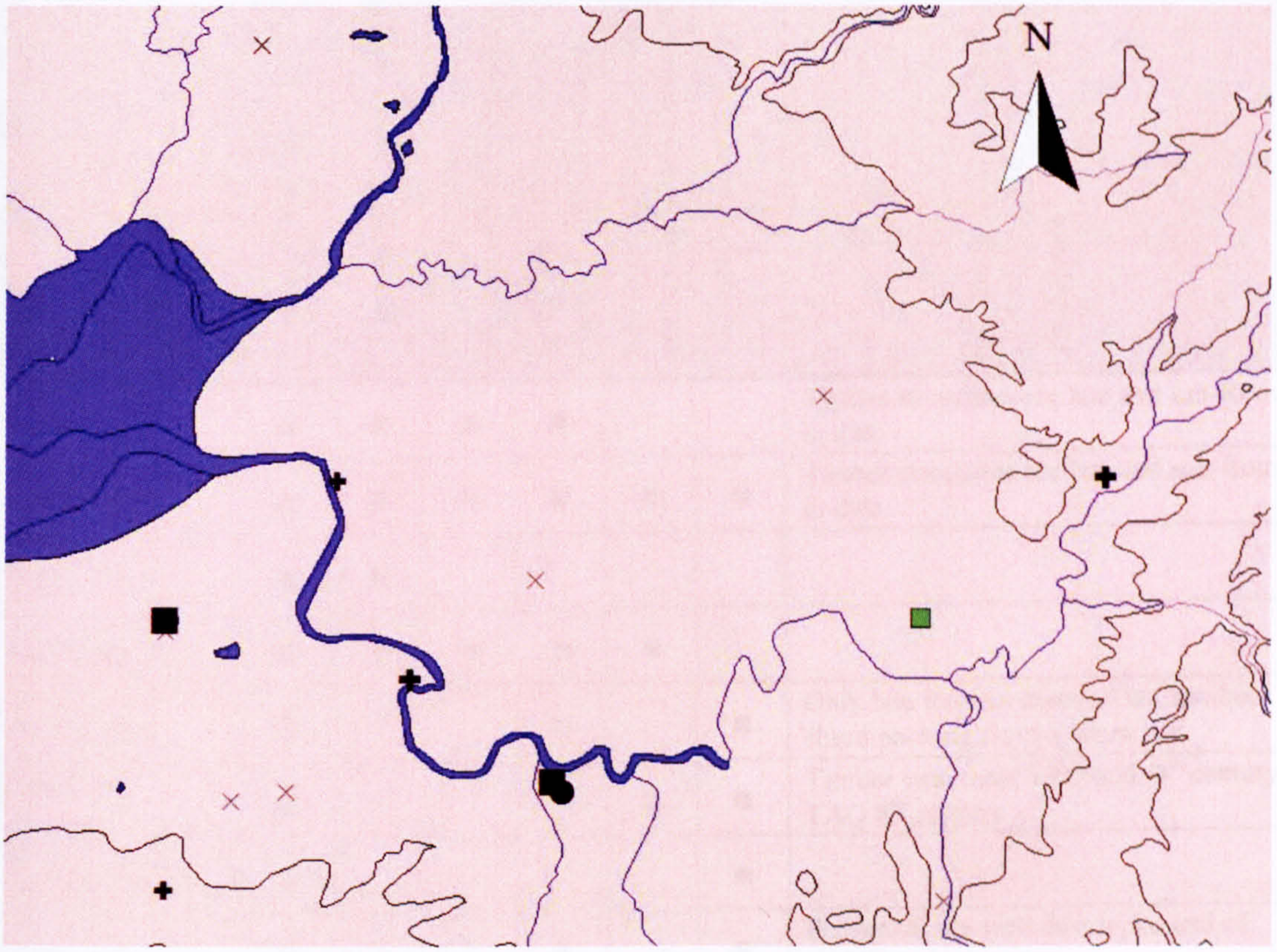
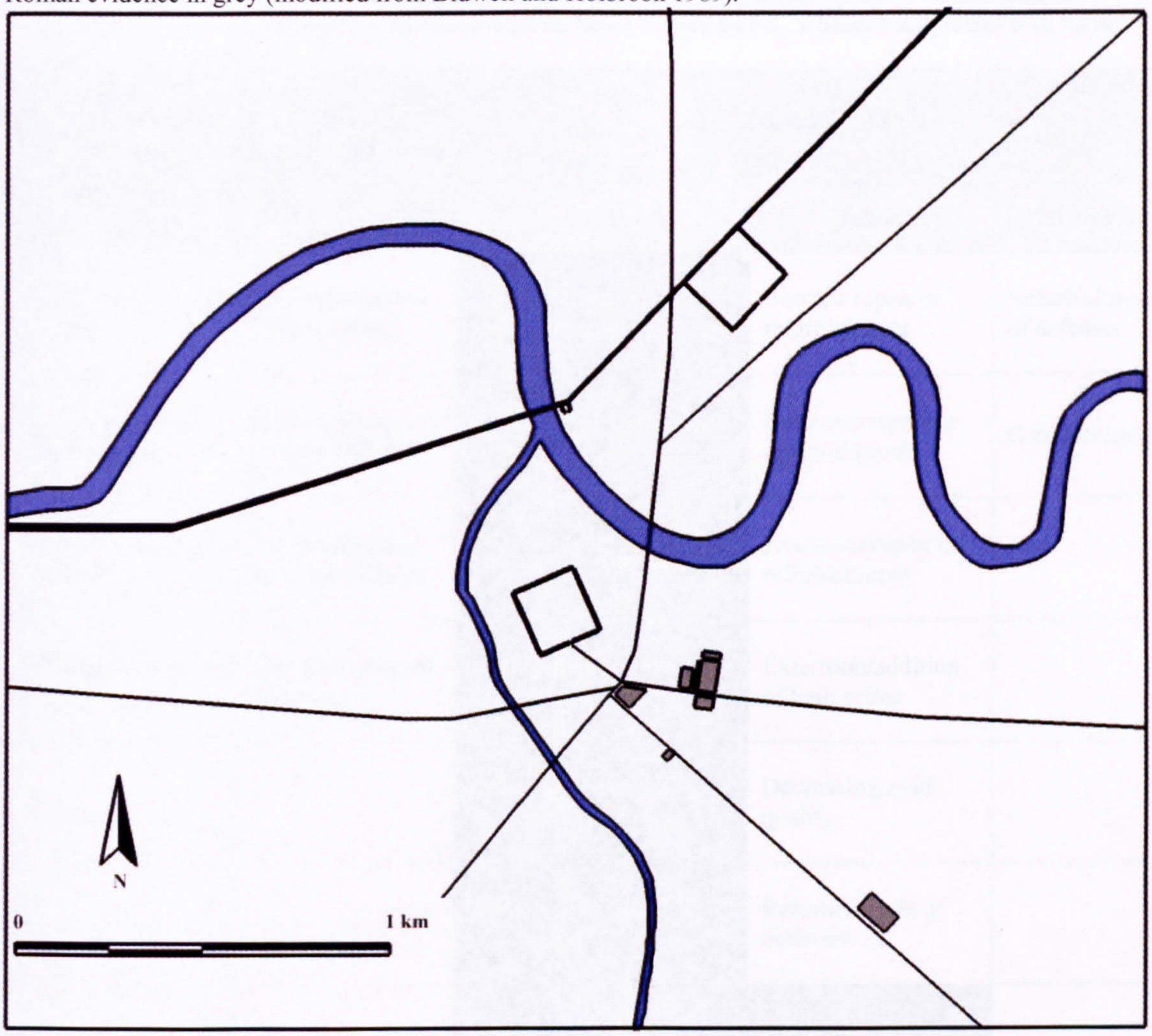


Table A4.1: A summary of evidence from sites in Carlisle and at forts in the case study.

Site	4th century activity	Dated late 4th century activity	5th century activity (stratigraphically determined)	Occurrence of late timber or timber-framed buildings	Residual late Roman coins or pot in post-Roman contexts	Sequence ends with dark earth/soil deposits	Comments
Stanwix fort	■	■	■	■			Timber structures are late and sub-Roman in date
Carlisle fort	■	■	■	■	■	■	Timber structures are late and sub-Roman in date
Burgh II fort	■	■					
Blackfriars St.	■	■	■	■	■		
Botchergate	■	?		■		■	Only late Roman material is Crambeck sherd packing from a beam slot
Cathedral precinct	■	?	?	■	■	■	Timber structures TPQ mid–4th century, TAQ 8th century
The Lanes, south	■					■	
The Lanes, north	■	■	?	■		■	Properties are well developed and of middle to high status.
Rickergate	■	■		■	■	■	
Scotch Street	■	■	■		■		Likely high-status residents compared to structures on Blackfriars and the Lanes

Figure A4.22: The Carlisle area during the 2nd-4th/5th centuries, demonstrating the previous course of the Eden and Caldew Rivers, the Roman road network and bridges, the position of Hadrian's Wall and the forts, as well as the approximate position of sites discussed in the text with evidence for late and post-Roman evidence in grey (modified from Bidwell and Holbrook 1989).



Appendix 7: Figures and Tables

Table A7.1: The trends that provide evidence for the transformation of the soldierly occupational community, separated into the relevant factors. Note that each trend provides positive evidence of each factor. Evidence for a decrease or decline in a given factor is indicated by a black background with white text.

INVOLVEMENT	STATUS	INCLUSIVITY		
		Pervasiveness	***Embrace***	***Restrictions***
Barrack repair or refurbishment	Barrack repair or refurbishment	Barrack repair or refurbishment	Barrack repair or refurbishment	Refurbishment of defenses …
Principia repair or refurbishment	*Praetoria* repair or refurbishment	Changed use of *principia* space	*Principia* repair or refurbishment	Gate blocking
Praetoria repair or refurbishment	*Principia* repair or refurbishment	Decreasing road quality	*Praetoria* repair or refurbishment	
Refurbishment of defenses …	Refurbishment of defenses …	Infringement on road space	Extension/addition of bath suites	
		Changed use of gate space	Decreasing road quality	
		Horrea demolition or conversion	Refurbishment of defenses …	
		Subdivision of rooms	*Horrea* demolition or conversion	
		Increased use of timber	Barrack demolition or conversion	
		Accommodation expanded into formerly specialized buildings & spaces		
		Metalworking was no longer restricted to purpose-built *fabricae*		