# 'Pushing the Boundaries of Roman Britain' – Landscape, Frontier and Identity in Northern Britannia

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# Abstract

This study comprises the use of both newly-created and existing archaeological aerial-survey data (the latter accessed from Historic England), alongside other previously-undertaken forms of archaeological evidence (published and unpublished excavations, surveys and palaeoenvironmental work) and a conceptual framework of landscape, frontier and identity theory, to examine the northern frontier of Roman Britannia. The project investigates wider regional variations in landscapes across the length of the frontier: north and south of the well-known borderland along Hadrian's Wall, from the legionary fortress at York in the south to the outposts beyond the edge of Roman control further north. It also assesses differences to either side of the major natural boundary dividing the region (the Pennine uplands). The aim is to show how aerial survey, rather than merely providing a contextual backdrop to site-based research, can be used to answer academic questions around the Iron Age and Roman periods. Discussion includes the nature of the existing indigenous landscape prior to Rome's occupation (cultural and natural), and the subsequent changes which occurred, assessing the impact of the Roman frontier's establishment and development on the region's landscapes, and the identities of the people living there (both native and newly-arrived).

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# Acknowledgements

# Author's Declaration

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References in the Bibliography.

No element of the research undertaken in this thesis has been published in academic journals or other published works. However, interim results have been presented in oral or poster formats at the 'IALA Landscape Archaeology Conference 2018', 'CIfA 2019 – Values, Benefits and Legacies' conference, the University of York Humanities Research Centre's 2020 PhD Poster Competition, and an internal Department of Archaeology research-forum.

# Chapter 1: Introduction – 'Pushing the Boundaries of Roman Britain' – Landscape, Frontier and Identity in Northern Britannia

The northern frontier of the Roman province(s) of Britannia, located in modern northern England and southern Scotland, is one of the best-preserved and well-understood peripheries of the Roman Empire. When one thinks of this boundary, one imagines Hadrian's Wall (*Vallum Aelium*) – the fortified linear border ordered by the emperor in AD122; together with its associated forts, milecastles, and turrets, strategically-located on the dramatic, rugged Whin Sill (Figure 1). In reality, the Wall is one component of a complex network of features, stretching across varied upland and lowland landscapes in central Britain, from York to central Scotland. This broader 'frontier-zone' has seen much archaeological work over past centuries, especially along the Wall, but is rarely considered in its entirety.

The Roman politico-military boundary is located within broader indigenous later-prehistoric landscapes, developed over millennia of human interaction with, and adaptation of, the region's natural environment. This ongoing, changing landscape of human activity, environmental processes, and interaction between them, is much more than just a backdrop to the Roman military's establishment of a frontier. Indigenous landscapes formed dynamic



**Figure 1 - Photograph of Hadrian's Wall, emphasising the dramatic, rugged aspects of 'frontier' landscapes. Source: https://www.visitscotland.com**

relationships with Roman military personnel and civilians, via an active native population that developed in response to this external change and also had its own effects on the new arrivals.

As a result of this complex network of relationships, sites and landscapes at play within the broader 'frontier', this thesis uses theory from three major stands of archaeological thought – concepts of *landscape*, a theme much-discussed in archaeology and developed throughout the wider discipline's history [Chapter 2]; *frontier*, a body of theory which has only been partially-applied to Roman peripheries [Chapter 3]; and *identity*, applied throughout Roman archaeology since late-20th century post-processualism and influencing both of the above. These will be combined with a primary aerial-survey data-set to produce a framework investigating these relationships in the wider frontier-zone [Chapter 4]. This theoretical triumvirate forms the academic context defining this project.

This region benefits from several research-frameworks, laying out current archaeological knowledge for each period, followed by agendas for further research: North-West England (Brennand *et al.* 2006a; 2007), North-East England (Petts and Gerrard 2006) and the Scottish Archaeological Research Framework (Hunter and Carruthers 2012a; 2012b), along with one for the Hadrian's Wall World Heritage Site (Symonds and Mason 2009a; 2009b). A common theme emerging

from all of these is the need for reassessment of existing and creation of new data that cover large areas, to allow intra-regional comparison and identify new features that contextualise existing site-based archives. One effective approach for largescale coverage, with a long pedigree regionally, is aerial survey, evidenced by many projects over several decades: the National Mapping Programme (NMP). A good example is the Hadrian's Wall NMP project which covered the World Heritage Site's area (Oakey 2009).

Survey data is commonly used for mapping archaeological distributions or adding context to excavated sites, rather than as a primary data-set for academic research in its own right. This thesis thus aims to test whether such data can answer complex archaeological questions, applying the above theoretical framework to newly-produced and existing aerial-survey data, considering them alongside other forms of existing archaeological evidence to answer such questions [Chapters 7/8]. Resultingly, the current project includes a collaborative agreement with Historic England, producing new aerial-survey data for their national archive in return for access to aerial imagery and survey-data from past projects. New data created will thus have an ongoing secondary use in national and local archives: a source for future research and heritage management.

A further key theme identified in these research-frameworks is discussion of the Roman frontier in its wider south-north context (hinterland, borderland, and outer-zone of influence). Meanwhile, another under-studied subject is comparison of differing landscapes either side of the central-upland natural boundary of the region: the Pennine fells. Therefore, two major research aims of the current study are to examine survey data from across the depth of the frontier zone (north-south) and to compare this data (and its implications) east and west of the Pennines, crossing the breadth of the region [Chapter 7]. To achieve this, data will be assessed in two parallel linear sample-transects (Figure 2), the first following a line from Ribchester fort in Lancashire north to the outpost-fort at Netherby beyond Hadrian's Wall in Cumbria [Chapter 5] and the other running along the major Roman road of Dere Street from the frontier headquarters at York north to the outpost of High Rochester in Northumberland [Chapter 6]. These transects each cover various existing aerial-survey projects of differing age, and numerous excavated Roman and indigenous sites. They both also range across upland and lowland landscapes.

With aerial survey as primary data, a theoretical framework of landscape, frontier and identity, and the wider frontier between York and southern Scotland as project area, this thesis will therefore address several research and methodological questions [Chapter 4] to provide new perspectives on the northern frontier of the Roman Empire. Whilst primary data-collection follows existing approaches from Historic England (Evans 2019), and the three theory-bodies have seen application to the period by academics, the combination of theories and this dataset aims to be a novel contribution to study of the frontier.

Establishment of borders, complexities of movement across and around them, and what constitutes such boundaries are of significance to the modern world, as are issues around mobility and migration, including how these modern processes integrally link to how we study boundaries of the past (Gardner 2017b). In turn, how we study Roman frontiers can offer reflection on phenomena such as present-day cross-European migration and reactionary national border-making (Hingley 2018). Researching the establishment, function and development of this long-lived frontier and its impact on a broad region and large number of people thus has present-day resonance. Interaction between different social, cultural, and economic groups and resulting identities is something with universal significance. Similarly, impacts of human action on the environment, and effects of resulting environmental change on human populations, is a two-way relationship significant for

ongoing debates around climate-change and human-nature relations. Therefore, the thesis, though looking at a past imperial periphery, is relevant to both archaeological and modern debates.
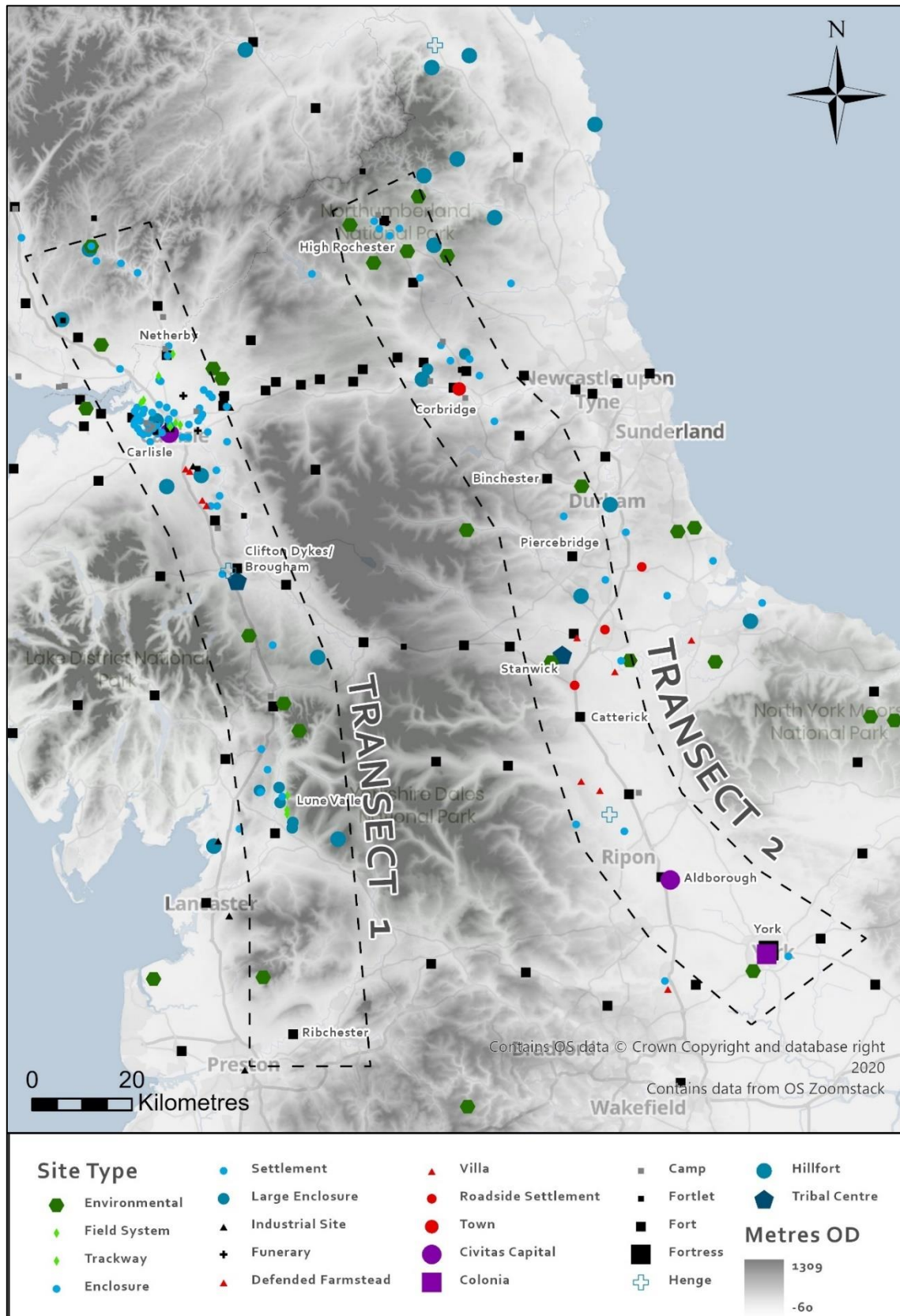


**Figure 2 - Map of the project area showing the wider regional context, natural topography and major Iron Age and Roman sites.**

While specific research questions the thesis aims to address are described in the methodology [Chapter 4], the main aims of this study can be summarised as:

- To ascertain whether, and how, remote-sensed survey data can be applied alongside theoretical models and other forms of archaeological data to answer academic questions;
- To assess variability in archaeological survival of later-prehistoric/Roman remains for the wider region, and how this affects any conclusions drawn;
- To examine aerial-survey data using a theoretical framework to address specific questions pertaining to archaeological themes of landscape, frontier and identity for the period and region under study.

# Chapter 2: Landscape Archaeology and Theory in the Region

This chapter examines 'landscape' as an archaeological concept, together with how it connects with 'identity'. Section 2.1 focuses on broader definitions [2.1a], theoretical trends and approaches in 'landscape archaeology' [2.1b], how the methods utilised by the current project fit into wider disciplinary developments [2.1c], and how landscape relates to identity theory [2.1d]. Concepts of landscape applied to Iron Age and Roman archaeology are then addressed [2.2a], with examples from the region under study and further-afield [2.2b]. This is then drawn together to present landscape approaches for the northern frontier [2.3a; 2.3b], including environmental studies [2.3c] and relationships between landscape and frontier concepts [2.3d].

## 2.1 – Theory and Landscape Archaeology

### 2.1a – Defining 'Landscape'

'Landscape' is a complex term describing several thematic and methodological approaches within wider archaeology. It consequently needs defining prior to undertaking any 'landscape archaeology' research. The word 'landscape' originates from German/Middle English *Landschaft*, denoting an identifiable, measured tract of land (Cosgrove 1998, 16) and a unit of human occupation (Schama 1995, 10), emerging from the specific geographical, social and cultural circumstances of post-medieval Europe (Cosgrove 1998, 1-2). Marx (see Foster 1999) redefined landscape by suggesting labour as the interaction between human and nature, a need for greater surplus dividing people from the environment. Sauer (1925) conceptualised landscape as an interaction between people and environment; a definition subsequently used in geography, history and archaeology.

Present-day perceptions of landscape must be used carefully when studying past peoples' awareness of their surroundings, however. In the contemporary Western world, landscapes are 'perceived', with humans forming the origin-point from which 'seeing' occurs (Bender 1993, 1). As Thomas (1993, 20) argues, landscape in archaeology is not a definitive, all-encompassing way of comprehending the world. The concept was integrally-tied to ideas of commodity and tenure, later-related to politics and arts (Thomas 1993, 22). Therefore, people of different periods and cultures did not necessarily perceive landscapes similarly (Bradley 2000, 33). Ideas of landscape further inform land-claims, conflict, construction of identities and variant historical views, all needing ethical consideration (Stewart and Strathern 2003, 10).

Landscape is often over-simplified as a mere backdrop or contextual-setting for sites, providing resources, opportunities and risks influencing human actions (Knapp and Ashmore 1999, 1) and impacting archaeological distributions. Others use landscape archaeology to study system-based relationships between sites and groups, at various scales (Barrett *et al.* 1991, 7). Emerging from ideas of landscape as 'setting' is the well-known analogy of *palimpsest*, a parchment marked by each generation (Aston and Rowley 1974, 14). O.G.S. Crawford (1953, 51) originally coined this: "The surface of England is a palimpsest, a document… written on and erased over and over again; and it is the business of the field archaeologist to decipher it". Continuous transformation implies landscapes are never complete or fully-understandable.

Another definition of landscape is as 'natural setting' for cultural activity: relationships formed between humans and their surrounding physical environments (topography, geology, geomorphology, flora, fauna, and climate) [2.3c]. Human landscapes consequently result from

culture modifying natural wild places (Hough 1990, 2). Conversely, Hough (1990, 32) also suggests 'nature' only exists in opposition to, or association with, 'culture'. Natural locations' transformation into cultural 'places' began in early prehistory (Taçon 1999, 33), people identifying notable surrounding features (mountains, caves, springs) in the frameworks giving meaning to life (Crumley 1999, 270). Bradley's (2000) *An Archaeology of Natural Places* examines these complex interactions between humans and natural environment, suggesting that natural features are perceived differently over time and dependent on viewer, their significance overlooked into later prehistory due to increasing focus on settlement and monumentality (Bradley 2000, 35,147). Nature's influence upon social evolution also informs Marxist materialism (Maurer 2006, 17). Therefore, natural landscape is not only an environmental backdrop to archaeology, but actively informs human activity and perception.

More recent ideas include landscape as a medium for, and outcome of, individual and wider social practices (Tilley 1994, 10; Tilley 2008, 271), constructed rather than merely perceived (Cosgrove 1998, 13). The European Landscape Convention (Landscape Institute 2018) describes landscape as: "an area perceived by people whose character is the result of the action and interaction of natural and/or human factors." To quote Jackson (1986, 68): "a landscape is… a synthetic space, a man-made system functioning and evolving not according to natural laws but to serve a community." They are constituted by historically-grounded meanings assigned and added-to by people (Lelong and McGregor 2004, 21) and consequently are value-laden (Lazzari 2008, 644). Many such arguments derive from Bourdieu's (1977) *habitus*: routine social practices within which people experience and dwell in the world around them, dependent on social, cultural and historical situation (Knapp and Ashmore 1999, 20-21). Landscape is therefore culturally-defined and mediated. People's practical experience of that world defines their place within it *(*Barrett *et al.* 1991, 8). Debates include ideas of 'space' (a neutral medium for activity) being given meaning and thus transformed into 'place'. Casey (2008, 49) argues that landscapes are made up of places but are also themselves places. Landscape is therefore an active (constantly changing) socio-cultural construct or process, used to control world-views as opposed to merely passively indicating human activity.

*2.1b – Ways of Studying Landscape in Archaeological Discourse*

As shown by these varied definitions, the historic development of 'landscape archaeology' has profoundly influenced ways in which the sub-discipline is practised today, informed by several different theoretical frameworks and methodological approaches. In Britain, empirical field survey has dominated much landscape archaeology (Bowden and McOmish 2011, 20), observation-based approaches ('perception' of landscape) resulting in hachured plans of earthwork or stone-built features interpreted in the field by experienced surveyors (Figure 3) or wider-scale maps of identified archaeological site distributions (Lilley 2017, 179) [see 2.1c].

In contrast to such qualitative methodologies, more-scientific processualist methodologies analyse human adaptation to physical environments and the impact of these processes on societal development, resulting in 'cultural ecology'. For instance, societies expand or retreat alongside environmental improvement or decline (Muir 2000, 9), often assessed via changes in plants, animals and other physical-environment remains (Crumley 1994, 9; Rackham 2000, 3). Butzer (1982) thus integrated geoarchaeology, archaeobotany, zooarchaeology and climatology into ecosystems-based spatial models, illustrating that people dynamically interact with, and are influenced by, the natural environment. Such views consequently stress the importance of natural resources and cultural
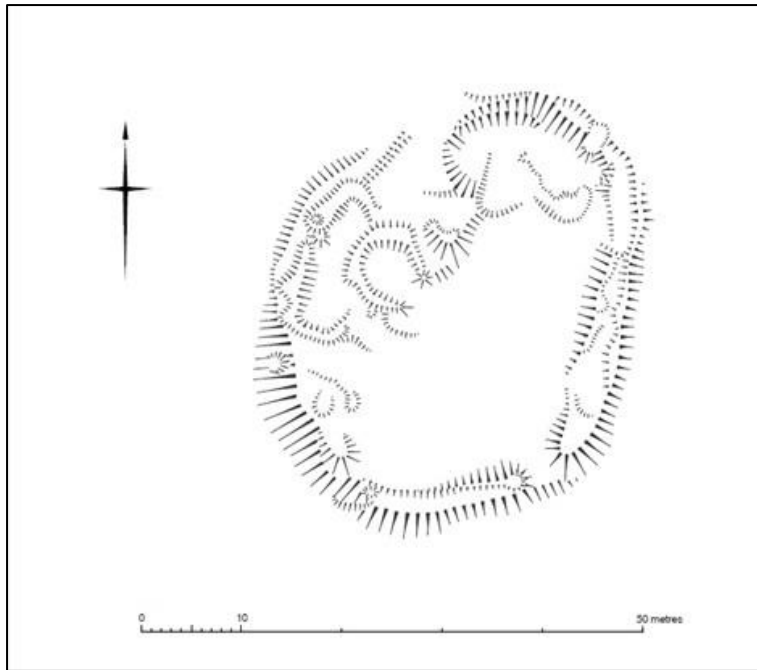
**Figure 3 - Earthwork plan of Kitridding indigenous settlement in the Lune Valley, following the 'British tradition' of analytical field survey (Hardwick 2017, 35).**

adaption to surroundings (Johnson 1999, 103). Another systems-based, American approach was Binford's spatial analysis of settlement (David and Thomas 2008, 30), components in a hierarchical system of places linking to social and economic patterns (Aston 1985, 91).

In opposition to the above approaches to landscape, post-processualism has dramatically impacted landscape archaeology since the 1980s. Debate continues to be heated: see responses to Johnson's (2007b) *Ideas of Landscape* (Fleming 2007; Fleming 2008; Johnson 2007a), which argues traditional 'Romantic' views of landscape as nationalistic and colonial, ignoring multi-culturalism and gender-roles. Another argument is that by examining wider patterns and processes, one loses sight of the people who created those landscapes. Consequently, recent approaches prioritise individual/group perceptions informing landscape-creation and previously-marginalised aspects of landscape.

A well-known theoretical approach, introduced in Tilley's (1994) *A Phenomenology of Landscape*, examines experiential, sensory understandings of the material world through perceived vistas and site-visibility (Brück 2005, 46), landscapes created through people's experience and engagement (Bender 1993, 1). Critiques of this have included the problems of an undefined methodology, reliance on poorly-characterized ritual ideology, and ethnocentric bias (Brück 2005, 54-62). It nevertheless reappraises and reinterprets prehistoric landscapes, the broad concepts allowing study of identities embedded in perception, experience and engagement with landscape (Gardner 2007, 14), despite ongoing issues of intervening landscape-change, different cultural-backgrounds between past and present viewers (Thomas 2006, 55) and highly-differing perceptions between people and over time (Bender 2006, 303).

Another post-processual landscape technique is hyper-interpretation (Edmonds 1999; Edmonds and Seaborne 2001), emphasising imaginative readings and authors' perspectives over analysis of fixed data, generally for early prehistory. While such poetic writing-style moves away from traditional landscape discussions and emphasises human experience, it suffers from similar issues of ethnocentrism and lack of critical-analysis. Therefore, both this and phenomenology are harder to apply to the Roman period, with substantial archaeological data which cannot be ignored.

A third approach sees landscapes as being created during processes of daily life. Ingold's (1993, 158) 'taskscape' thus comprises activities constituting processes of dwelling in a particular environment. Landscape is therefore an enduring record of lives, activities and works of past generations (Ingold 1993, 152), a meeting-point for ideas and things (Carver and Lelong 2004, iv). Key limitations include the focus on generalising socio-economic processes, removing people from

'living' in the landscape, and romanticising of labour (Walsh 2018, pers.comm), ignoring past hardship, conflict and exploitation.

Feminist and gender-dynamics in landscape studies have also advanced the discipline, arguing that women are often ignored in large-scale analyses. Gender-dynamics generate 'powered landscapes', spatially expressing social power structures, including gender segregation or integration, domination and resistance (Spencer-Wood 2010, 343-344). Such critiques also highlight gender's influence on landscape concepts, 18th-century disciplinary origins emphasising largely-male, elite perceptions (Johnson 2007b, 31). Landscapes are often equated to feminine, natural beauty (Rose 1993, 87), viewed by men as visual commodities equable with women, an object of pleasure (Thomas 1993, 24). Such gendered, elitist perspectives add inherent bias to landscape-conception, which needs addressing via discussing varied past perspectives, offsetting larger-scale landscape aspects.

More-recent approaches often fit between these varied frameworks. While the traditionalist Fleming (2006, 268-270) critiqued post-processualism's lack of evidential verification and laid-down methodology, he agreed (Fleming 2007, 96) with Johnson (2007b) that empiricism is too prevalent in wider landscape archaeology; theory thus being important for interpretation. Walsh (2008, 547) further contends that many post-processual approaches ignore environmental influence on past landscapes, favouring human experience alone. Both aspects need evaluation when studying any archaeological landscape. Therefore, with the major landscape archaeology approaches now identified, the survey-method underlying this project's data-gathering, and how it fits into wider discourse, will be introduced.

*2.1c – The Place of Non-Intrusive Archaeological Survey*

Moving beyond the various broad theoretical frameworks utilised in landscape archaeology, the discipline uses a huge variety of data, from artefactual and stratigraphic evidence (excavated from individual sites), to geographical, palaeoenvironmental and geoarchaeological surveys. Meanwhile, primary data-gathering in this thesis employs aerial survey as its main method to assess the wider landscapes under study, before relating this data to other archaeological evidence for a more-complete synthesis. Before specific methodological components are introduced [Chapter 4], it is first necessary to show how this technique fits within the wider development of landscape archaeology.

The aforementioned, qualitative 'British tradition' [2.1b] of landscape archaeology (Bowden and McOmish 2011, 20), using experienced observation via non-intrusive measured survey, has shaped fieldwork in Britain through to the present-day. The 'map' is key to understanding landscape in this approach (Lilley 2017, 179). Monument field-recording dates back to 16th-century antiquarian topographers John Leland and William Camden. Such observational, holistic approaches were further developed by landscape-historian W.G. Hoskins (1977), and field-archaeologists/aerial-surveyors O.G.S. Crawford (1953) and J.K. St. Joseph, culminating in the sub-discipline termed 'landscape archaeology' by Aston and Rowley (1974). Subsequent holistic landscape approaches combine fieldwork and aerial survey with excavation, documentary and cartographic sources, and geographical and geological data. Aerial and analytical field surveys (Figure 3) are championed by both academics and national heritage bodies (Historic England, Historic Environment Scotland, Cadw). Of note are artificial divisions between these British public bodies, which champion 'cultural' landscapes, and separate organisations (Natural England, Scottish Natural Heritage) representing

'natural' landscapes, reflecting a modern false dichotomy between those studying human and natural environments.

O.G.S. Crawford pioneered use of aerial photography for archaeological purposes in Britain, seeing such imagery's potential for capturing landscape site-distributions and relationships with the environment (Bowden 2001, 36-38). Following initial experimentation in aerial survey, the mid-20th century saw extensive data-collection: taking and archiving of aerial photographs (Bewley 2001, 76). A major advantage in using aerial photographs in Britain is thus the record's time-depth, revealing features before modern agricultural intensification and urbanisation (Cowley *et al.* 2010, 1). Aerial survey's other major advantage is its rapidly-generated but widescale coverage (Wilson 1982, 17). Developing from Crawford and contemporaries' philosophies, information from aerial imagery is best synthesised and presented as archaeological maps, with associated site and landscape descriptions (Winton and Horne 2010, 7).

The (former) National Mapping Programme (NMP), undertaken by the Royal Commission on the Historical Monuments of England (RCHME) and subsequently English Heritage (EH) and Historic England (HE), followed this methodology, conceived in the 1980s as a system consistently classifying and recording features via mapping and associated records (Figure 4), meeting the needs of academic, commercial or local-authority users (Bewley 2001, 74). Its aim was to provide primary information and syntheses for all archaeological sites and landscapes (within its defined scope) visible on aerial imagery, assisting analysis of broader landscape patterns (*ibid.*, 78). Newer technology such as airborne laser-scanning (lidar) has been incorporated to increase coverage where traditional aerial photography is limited (e.g. woodland) (Winton and Horne 2010, 15). Though no longer a concerted programme, it continues as HE's Aerial Investigation and Mapping (AIM) standards, directing ongoing large-scale survey projects.
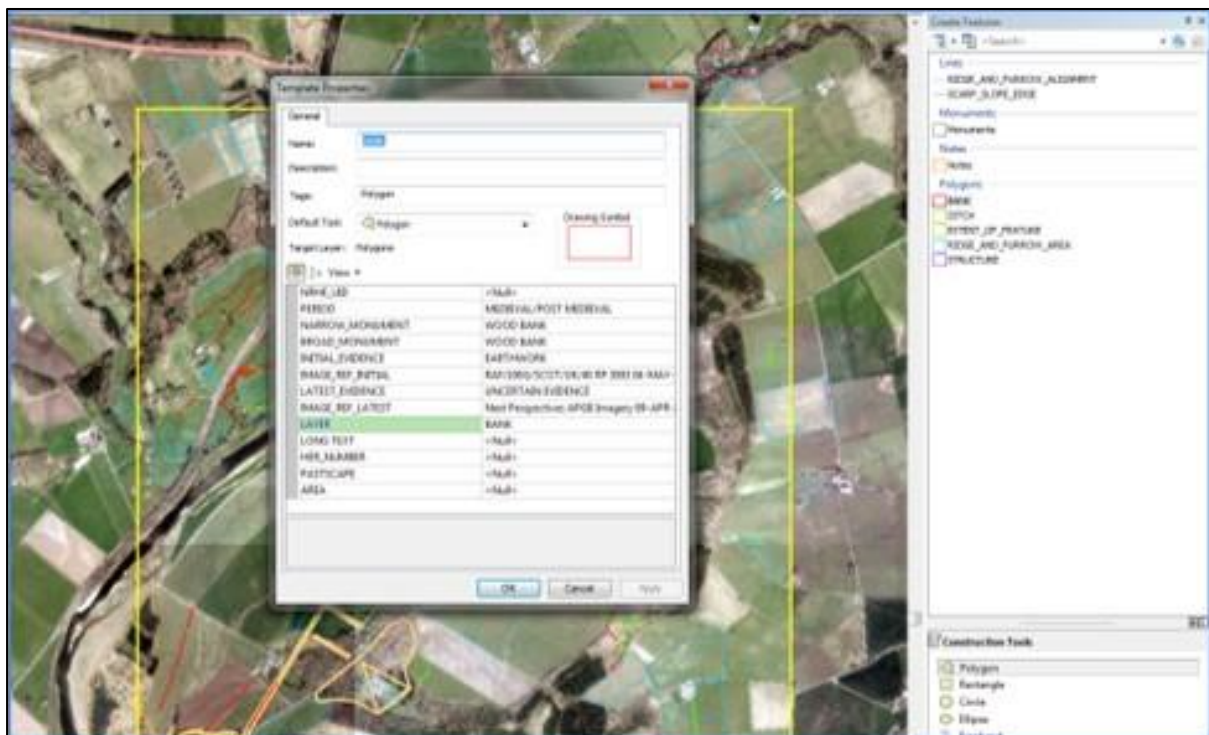


Figure 4 - National Mapping Programme-standard aerial-survey data, with attached data-table (Block 1, this project).

Analytical field survey comprises close ground-surface observation, detailed measurement of significant features and relationships between them, and the production of a hachured plan and

written account illustrating the interpretation (Bowden and McOmish 2011, 20-21). Like aerial-survey interpretation, this approach is openly 'subjective' and interpretative, using the archaeologist's skills, judgement and experience (*ibid.*, 21). Originating with the Ordnance Survey Archaeology Division, it is still used by HE (Bowden and McOmish 2011, 35), as laid out in guidance-documents (Ainsworth *et al.* 2007; Jamieson 2017). Evidence produced by such field surveys are fundamental to the current study, used in conjunction with aerial survey to add more detailed, site-based interpretations.

Critiques of such observation-based survey approaches include Brophy's (2005, 35) assertion that such methodologies are inherently subjective, introducing bias. For aerial survey, this includes following known patterns of site-visibility in flying for photography instead of randomised sampling, while feature-identification and interpretation relies on photographers' and mappers' experience (Brophy 2005, 38-39). Such subjectivity is thus offset by alertness to the issue, with structured peer-review facilitating more-robust interpretation via multiple opinions (Brophy and Cowley 2005, 20). Other factors include weather, modern land-use and combination of soils and geology affecting site-survival and visibility as earthworks, cropmarks or soilmarks (Oakey 2005, 145). Analytical field survey has endured similar broad criticisms: inherent subjectivity of surveyors' decision-making in feature-recording rather than complete topographic-sampling.

Surveys divide sites by broad period categories to organise results, occasionally obscuring temporal relationships between them (e.g. earlier sites remaining extant, influencing later landscape-development) and compressing features into relatively-long time-periods (Chadwick 2013, 14). Furthermore, monuments are commonly identified by physical morphology and inter-feature relationships alone, rather than examining underlying processes (Chadwick 2013, 17) or social and economic dynamics creating them (Taylor 2000, 17). Chadwick (2013, 26-27) suggests combining such macro-scale approaches with detailed, site-based techniques showing time-depth and phasing, such as excavation, to counter these issues: the approach taken in this study.

Aerial and ground-based non-intrusive surveys thus represent observational, empirical, and relatively-atheoretical approaches, their main aim the generation of archaeological data on a landscape-scale. Use of thematic frameworks are required for further interpretation, another reason for the current project's undertaking.

*2.1d – Identity in the Landscape: Approaching This Research*

As discussed [Chapter 1], a major project-objective is to examine such large-scale survey data [2.1c] within a theoretical framework involving concepts of identity, landscape, and frontier. The project therefore also draws upon the theoretical landscape approaches above [2.1b], alongside examining human-environment interactions using palaeoenvironmental data from the study-region [2.3c]. Combined, this allows discussion of how human and natural processes influence and impact one another. However, in order to assess landscapes more fully, one must also investigate the people affecting, and in turn being affected by, that landscape.

One's 'identity' influences how one perceives and interacts with one's surroundings, and identity (an important cornerstone in post-processualist archaeological theory) will thus be introduced briefly here. Identity can be defined as the capacity to classify and identify one's self or others, allowing understanding of an individual's place in the world (Jenkins 2008, 5), via relationships with other people and things: embedded in, and inseparable from, one's surroundings (Gardner 2007, 14). This 'placing' reveals how identity is integral to concepts of landscape. Gardner

(2007, 18) further argues that identity is the key medium through which the natural and cultural worlds interrelate. All human actions derive from perception of one's own identity. To function within any group (family, community, nation), one must perceive how one fits into that group and how that group differs from others. Identity thus informs interaction with others (Wells 2001, 22), as well as how one's self and others interact with their surrounding landscape(s).

Components of identity include gender/sex, age, ethnicity, status/class, occupation, beliefs, group affiliations, and less-definable individuality (Figure 5), all negotiated through similarities and differences in daily practice and interactions (Gardner 2004, 40). These inform behaviour: how one acts, dresses, eats/drinks, socialises, builds and/or uses spaces (Gardner 2007, 198). It is through "mundane generalities of the day-to-day that individuals are inculcated with the structures and strategies which form wider society" (Petts 1998, 79), in which identities are formed. Identity is consequently integral to definition of surrounding social, environmental, and cultural landscapes.
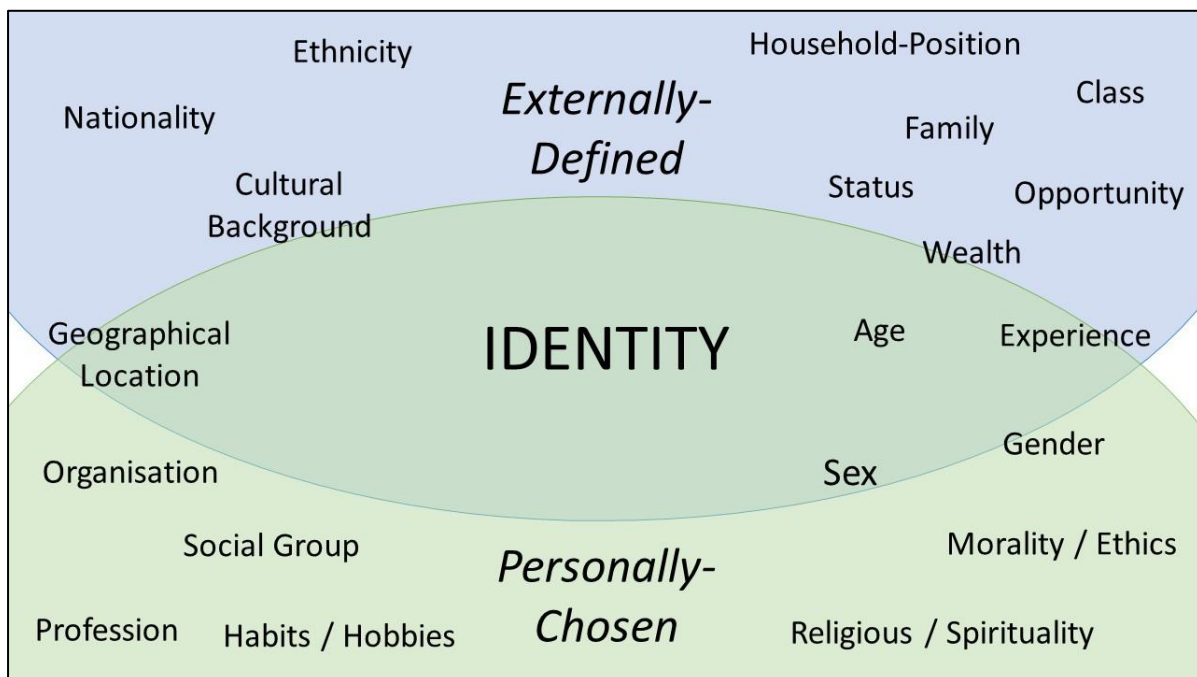


Figure 5 - Different facets of identity discussed, showing overlaps between internal and external identity conceptions (all elements can potentially fit either). Some elements such as 'Status' or 'Opportunity' can be interpreted differently dependent on the cultural setting, e.g. 'citizen'/'free'/'slave' in either category for the Roman Empire.

Shanks and Tilley (1987, 57-58) suggest identity comprises constantly-renegotiated relationships of difference, rather than listed attributes, while Jenkins (2008, 5-6) argues it is a process (*identification*) rather than static entity, actively constructed but differently (in scale and focus) over time (Insoll 2007, 6). Furthermore, identities are not necessarily chosen, but can by ascribed by others (Insoll 2007, 4). They therefore exist in the mind of an individual regarding themself, but also within the minds of those interacting with them, constituting a two-way process. Individuals also absorb externally-imposed categories, transforming such classifications through their own actions (Gardner 2007, 199). Identity as a concept is therefore crucial to archaeology, providing structure and understanding of past interaction (Gardner 2004, 40), transformed over time and across space (Gardner 2002, 336), and negotiated via individuals' placement in broader social hierarchies (Pitts 2007, 709), and landscapes. Whilst identities are thus fluid and can never be comprehensively defined, their formation nevertheless affects past people's interactions with their

world, individually or as a group (these relationships crucial to definition, understanding or creation/construction of landscapes).

While any 'identity' incorporates multiple categories or relationships/associations (Figure 5), varying in precedence dependent on the context in which the identity is being used, some are more applicable than others at the regional scale at which the current project operates. Such dominant elements include broad affiliations such as 'culture' or 'ethnicity', which help to centre individuals in geographical and cosmological space (Petts 1998, 80), resulting from identification with a broader group or origin-region in opposition to others, based upon perceived differentiation and/or common descent (Jones 1997, xiii). Again, this shows how identity indubitably links with landscape. However, as Hill (2001, 14) and Jones (1997, 13) note, cultural-affiliation and ethnicity are situationally-specific and subject to transformation. Thus, cultural or ethnic groupings recorded at a given point in past literary sources may not correspond directly to actual perceived identities (Shennan 1989, 15), with such affiliations also more relevant during times of particularly active social, political or environmental change (Wells 2001, 28). Nonetheless, they remain one of the most commonly-discussed aspects of identity when looking at differences in activity across a region or landscape.

Affiliations with other groupings also inform identities, including occupations, organisations and social activities, some of which do leave traces at a landscape-level. Jenkins (2008, 10) argues groups themselves are not real, their reality being members knowing they belong to a group's associated hierarchies, rules and customs, with some groups resultingly more-heavily situated in the material world than others and thus differently affecting their surroundings. Class and/or status are further components of identity potentially visible at an archaeological landscape-scale. 'Class' comprises socio-economic relationships of exploitation, identifying position in wider systems of economic production and relationship with those controlling that system (Ste. Croix 1983, 43). 'Status' relates to more-general position/rank in society, not-necessarily economic-defined. Weber (cited in Ste. Croix 1983, 85-86) consequently argues that status is more useful due to its flexibility. Class and status represent different ways in which people relate to others, and varying opportunities between people. Whilst care must be used when applying modern interpretations of class and status to past identities, given individual self-autonomy and variation in response (James 2001a, 201), the effects of these components upon archaeological landscapes are frequently discussed.

Other aspects of identity are less accessible from evidence at these wider landscape or regional scales, though bear mention here as they greatly inform wider identity-construction. These include sex, gender, age and family/household-relations (Hill 2001, 15), which all affect individual opportunities, actions, and wider division of activities and labour, subsequently influencing both the aforementioned larger identity elements, and the varying formation, perception and changing of landscapes. Another important element is spiritualism, faith and/or religion, evidence for which is generally visible at a site-based level (particularly in the region and period under study), but with implications for wider landscape studies due to its impact on world-view, self-perception and wider societal relations.

To summarise, how people understand and engage with their surroundings depends not only on the specific period and place, but also their identity, including perceptions of self and others, personal experience, group-affiliations, sex/gender, age, class/status, and socio-economic situation (Bender 1993, 2). As stated in my unpublished MA thesis (2012), "construction or reinforcement of identities can be seen in certain circumstances to be a response to people being placed into a situation with new surroundings, as would have been the case with newly-arrived troops throughout the Roman period". An example of this for the period under study is use of ethnicity-influenced

material-culture (Figure 6) linking back to distant 'home' landscapes when in a new setting (Swan and Monaghan 1993), or alternatively showing common, wider military affiliation within the period context of the Roman Empire at a given time (Pitts 2021). Identities alternatively reflect responses of people to new changes imposed upon their existing landscapes, showing the two-way relationship between landscape and identity. It must however be remembered that landscapes operate on a far larger scale than individual identities, comprising large aggregates of actions by many people and groups (Gardner 2004, 36) over long periods of time (Johnson 2004, 242). This is why identity is secondary to landscape in the current, regional-scope study.



**Figure 6 - Third-century 'head-pot' from York, evidence of ethnic/cultural identity expressed in a new setting. Source: http://www.historyofyork.org.uk/timeline/roman/roman-head-pot**

## 2.2 – Landscape Studies for the Iron Age / Roman World

*2.2a – Applying Concepts of Landscape to the Later Iron Age and Roman Period*

Broader theoretical trends [2.1] have impacted studies of Iron Age and Roman landscapes to varying degrees. For instance, perception-based phenomenology has had far-less influence than for earlier prehistory. Roman-period landscape studies have progressed significantly in Britain since Hoskins' 1950s suggestion that pre-Roman and Roman populations had little effect on 'natural landscapes' (Hingley 2007, 101-102). Increased largescale excavation, non-intrusive and palaeo-environmental surveys since the 1960s have greatly improved the quantities and qualities of data available for both later-prehistoric and Roman landscapes (*ibid.*, 106).

This has allowed Iron Age studies, following wider prehistoric research-trajectories, to assess broader variations in landscape, drawing-upon both environmental and settlement evidence. For northern Britain, such discussion revolves around upland-dominated topography isolating different regions, affecting the socio-economic developments and identity-construction which created these landscapes, albeit connected by natural routeways and coastlines (James 2001a, 190). Use of post-processual perceptual ideas has suggested great time-depth to later-prehistoric landscapes via persistence of earlier monuments, though detached from the 'lived-in' Iron Age settlements and field-systems (Barrett 1999, 260-262).

For the Iron Age-Roman transition, Petts' (1998) theoretical approach addresses pre-Roman changes in landscape-focus from symbolic monuments (barrows, henges) to agricultural production centred on *oppida* (higher-status central-places). This is developed further by construction of Roman towns connected by roads (Figure 7), enabling socio-economic change but also comprising ideological landscape components (below) (Petts 1998, 88). More widely, Rippon *et al.* (2013, 35),
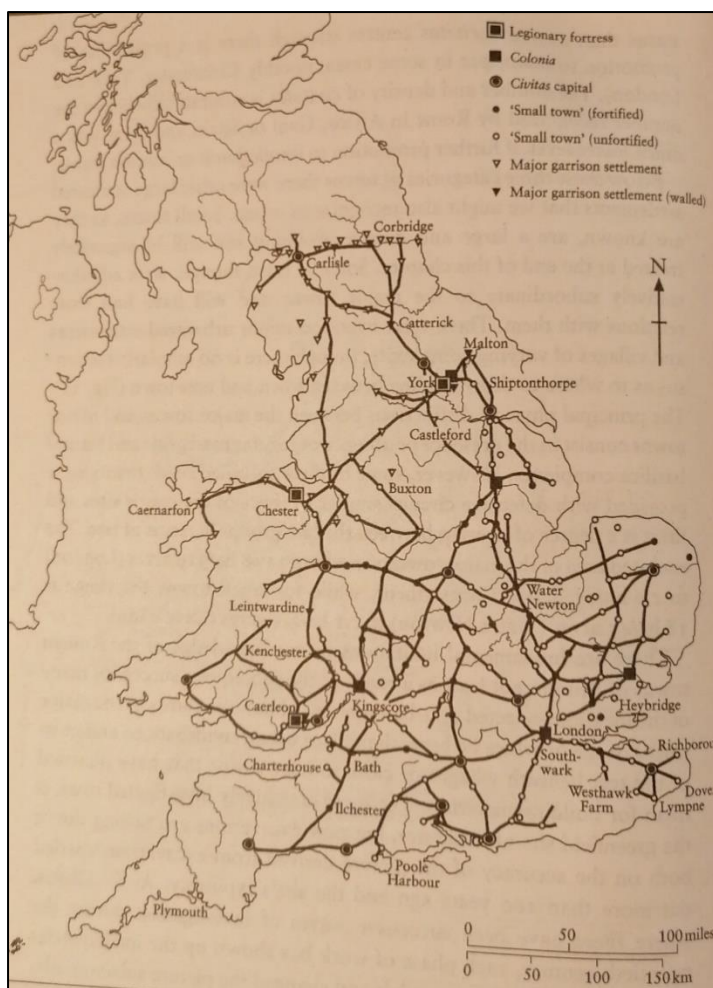
**Figure 7 - Map of the Roman road network, attesting the connectivity and ideology involved (Mattingly 2007, 264).**

suggest that traditional thematic categorisations (towns, military, trade, industry, rural) continue to dominate Roman archaeology, at the expense of examining the larger, holistic landscapes now addressed in studies of prehistory. This categorisation often then leads to fragmented discussions which fail to assess the interaction between all types of sites, indigenous or newly-built under Rome, relationships crucial to definition and investigation of the wider landscape.

Roman conceptions of, and engagements with, landscape have often been assessed via Graeco-Roman texts on agriculture, nature, and environment, often concerning a mythologised transformation of nature into culture over time, spatially represented by symbolic landscapes ranging from (ungendered) pristine rural wilderness to cultivated agrarian hinterlands (gendered female, i.e. fertile productiveness) to the fully-developed, urban, cultural centre (gendered male, with associated economic and political functions) (Cosgrove 1993, 293, 297). Classical writings have also been used as sources for assessing Roman landscape 'domination', via state/elite-sponsored land-division (centuriation, villa-estates) or control of water (aqueducts, watermills), such control of nature embodied in links between 'town' and 'country' (Shipley 2003, 8). In contrast, Graeco-Roman places of worship were often modelled on, or associated with, natural features (Taçon 1999, 40). This Roman symbolism and landscape-impact has been heavily-studied for the Mediterranean imperial heartlands, but the variability of more-peripheral provincial landscapes (natural and existing cultural) means they cannot be applied empire-wide.

Concepts of landscape and identity are connected, with identity forming the basis from which landscapes are perceived and/or constructed [2.1d]. Most identities during the study-period were created in localised landscape contexts, with only those of elite-status or particularly-mobile social groups able to draw upon the wider landscapes they ruled over, encountered or experienced. Thus, personal identity can become associated with landscapes of that person's origin; very-obviously-manifested in Roman commentators' (e.g. Cornelius Tacitus) descriptions of 'barbarian' peoples of northern Europe, inherently connected with primordial forest environments (Schama 1995, 15) (Figure 8). Few first-century AD Italians had seen true 'wildwood', given the extensive previous development of Mediterranean landscapes (Delano Smith 2003, 176-177), emphasising metaphorical contrasts to northern Europeans and more-easily defining Roman against non-Roman,

**Figure 8 - Reconstruction of the Battle of Teutoburg Forest, within wooded 'barbarian' landscapes of Germania, heavily-integrated into Germanic identities (particularly following this defeat). Source: https://www.quora.com/**

at least for the elite ruling the empire (though not-necessarily the everyday-citizen or other parts of society) (Shipley 2003, 12).

It must be noted here that the term 'Roman' is problematic. As Revell (2009, x) states: "we use the term 'Roman' interchangeably to define a form of material-culture, a time-span, a geographical location and a personal ethnicity". There was never a simple definition of 'Roman': it was differently understood and recreated in various places and times (Hill 2001, 14). The term as used in archaeology is inextricably linked to concepts of 'Romanisation' (Revell 2009, x-xi), i.e. the influence of Roman tastes and values on patterns of consumption and production in non-Latin provinces of the Empire (Woolf 1998, 111). Non-Italian communities across the Roman Empire were classified by researchers as more- or less-Roman, with lack of Roman cultural-adoption equating to socio-economic failure (Fincham 2000, 31) and this extended to the various landscapes they occupied and developments within them.

The Romanisation paradigm dominated 20th-century Roman-period archaeology in Britain, emphasising Roman culture's influence on 'uncivilised' indigenous peoples and landscapes, as summarised in the seminal *Britannia* (Frere 1987). Millett's *The Romanization of Britain* (1990) shifted focus from Roman culture as the chief-catalyst, focussing on the indigenous elite as primary agents of Romanisation, using it to assert and maintain their social status. Components of identity (notably ethno-cultural and class/status elements) therefore influenced discussion of Romanisation's socio-economic impacts upon landscapes. Nonetheless, more-recent studies have attempted to move beyond Romanisation, notably through application of post-colonial or decolonial theory to give subjugated peoples a voice in the narrative, examining how such peoples might have identified themselves, rather than accepting externally-imposed Classical categorisations or modern concepts or definitions of 'tribe' (Moore 2011; Wells 2001). Mattingly (2011) sees Romanisation as too-rooted in the early-20th century imperial western-European contexts where it initially developed. His *An Imperial Possession* (Mattingly 2007) rejects Romanisation (and Roman-native dichotomy) and traditional chronological frameworks, in favour of different 'worlds' in provincial Britain: military,

civil and rural (Fulford 2007). In looking at the effects of imperial colonialism rather than grand narratives, post-colonial studies move beyond binary studies of 'rulers' and 'ruled', including opposing 'nativist' critiques focussing on pure resistance (Gardner 2013, 4), and exploring a spectrum of identities between (Mattingly 2011, 27-29), together with their various impacts on the landscapes in which they dwelt. This is particularly pertinent for late-Iron Age and Roman Britain given the rarity of Roman documentary sources (restricted to a few authors including Tacitus and Claudius Ptolemaeus (Ptolemy)) and complete absence of contemporary indigenous chroniclers.

Additionally, while much has previously been made of 'Celtic' or 'British' identity for pre-Roman inhabitants of Britain, there is little evidence that such broad cultural groupings existed (Gardner 2017a, 7). Britain's topography tends to isolate regional populations, forming small-scale, local landscapes of interaction (James 2001a, 190). Without modern communication enabling true 'globalisation' (which does not result in uniform identities anyway), local pre-Roman identities and resultant landscapes would have been highly-variable, as would any subsequent impacts of Roman imperialism (Fincham 2000, 31). One commonly-applied approach to this regionalism is via concepts of 'tribe' (Figure 9): polities of several thousand people in distinct territories with specified leaders, often created in response to interaction with 'state' level societies. Such societies have traditionally been seen to have fluid territorial and political boundaries, less-rigid hierarchies and less-formalised group identities (Wells 2001, 31-32). However, tribal definitions for late-Iron Age and Roman Europe described in Classical texts were constructions in the authors' minds or wider Mediterranean-centred Roman cultural thought, rather than necessarily real distinctions used by the people to whom they were applied. Furthermore, concepts of tribe are rooted in modern conceptions of ethnic groupings derived from 19th-century colonialism, and this term is thus problematic when used uncritically, particularly given that the various groupings recorded by Rome may not necessarily reflect earlier or indigenous-defined societal units (Moore
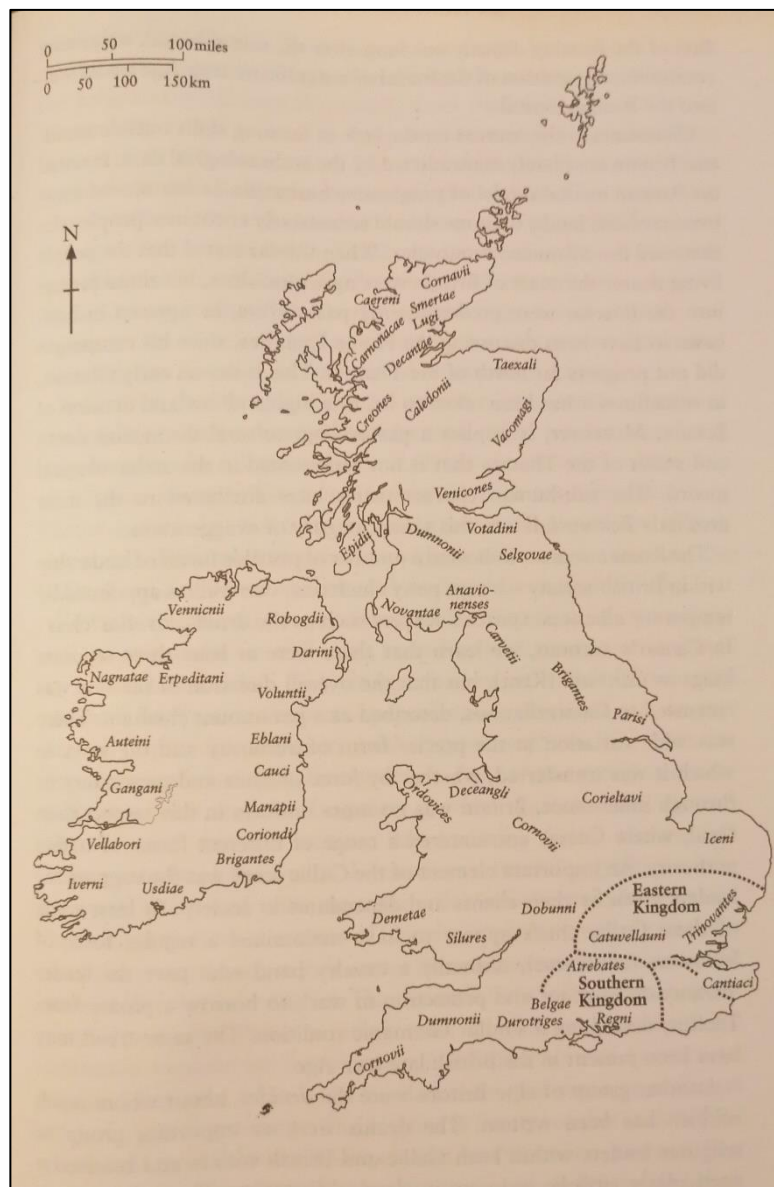


**Figure 9 - The 'tribal' peoples of Britain and their broad territories, according to Roman literature (Mattingly 2007, 49).**

2011, 354). Whilst several such literary groupings are thus discussed in the following thesis, of more interest to the landscapes of the region in question are the less easily-definable societal distinctions visible from archaeological evidence, only potentially affiliated with the Roman definitions.

The Romanisation debate has influenced many archaeological studies of landscapes in late-Iron Age and Roman Britain, focussing primarily on the variability in socio-economic landscape transformation informed by new Roman ideals (either externally-imposed or internally-emulated). Roberts (1996, 48-49) argues western-provincial Romanisation is linked to wider core-periphery landscape-models [3.1a], based in processualist theory: provincial landscapes becoming sources of raw materials, in return for manufactured goods and ideas from the central empire. Some more-ideological dynamics underlying these landscape-changes can be drawn from historical colonial analogies, for instance Kealhofer's (1999, 76) study of 17th-century Virginia which argued that newly-created landscapes were not merely seen as economic commodities but also actively used to create and maintain colonial identities. This manipulation of both socio-economic and ideological aspects of landscape is integrally linked to status or class components of identity, both of which are under-utilised in British Roman-period archaeology, partially due to difficulties in identifying such evidence. Historical-based studies frequently examine status, both civilian (Roman and native-British) and military (variation between *legionary* (citizen) and *auxiliary* (provincial-recruited), and later *comitatenses* (elite field armies) and *limitanei* (low-status frontier-militia)). However, such studies rely heavily on documentary evidence or broader parallels elsewhere and thus need critical assessment before application to Britannia. Furthermore, long-standing focus on urban and high-status rural settlement ('villas', for want of a better term) in archaeological studies skew perspectives in favour of elites. Though such bias is less pronounced in late-Iron Age studies, there has still been a focus on elite material-culture and high-status sites.

The resulting major issue therefore, when using these broader socio-economic models for Roman-period landscapes, is a lack of archaeological or documentary evidence for the perspectives and actions of non-elite people (both indigenous and Roman) living in those landscapes, generally only assessable through inference (Fincham 2002, 78). This neglects the lower-status people comprising the majority of Romano-British populations, including undoubtedly-important identity-groups (slaves, merchants, farmers). Aforementioned post-colonial theory has been used to access possible 'discrepant experiences' in the landscape (passive through to oppositional) to offset Romano-centric, 'colonial' viewpoints for certain British landscapes (Fincham 2002, 1-4; Mattingly 2007). However, Rogers (2007, 113) and Roskams (2004) emphasise the need for consideration of ideological alongside economic aspects within these viewpoints, whilst also accounting for local landscape variations. In terms of this study however, whilst ideological components of landscapes are considered for northern Britannia, aspects of status and class remain inferential (except where epigraphic site-based evidence allows) due to the nature of the survey data forming the primary evidence.

In terms of broader Roman impacts on British landscapes during the period, most archaeological studies emphasise increasing scales of communication facilitated by Roman infrastructure, providing wider connectivity within and beyond Britain [Chapter 7]. As Hingley (2007, 102) states, "the most important lasting influence of the Roman occupation in the landscape was provided by the roads, villas and canals which left a clear physical impact." Communication was key for the Roman Empire, given its size (Adams 2001, 1), resulting in largescale transport systems newly-linking many diverse landscapes together. This model, developed in response to particular Mediterranean maritime-terrestrial connectivity requirements, was subsequently applied to
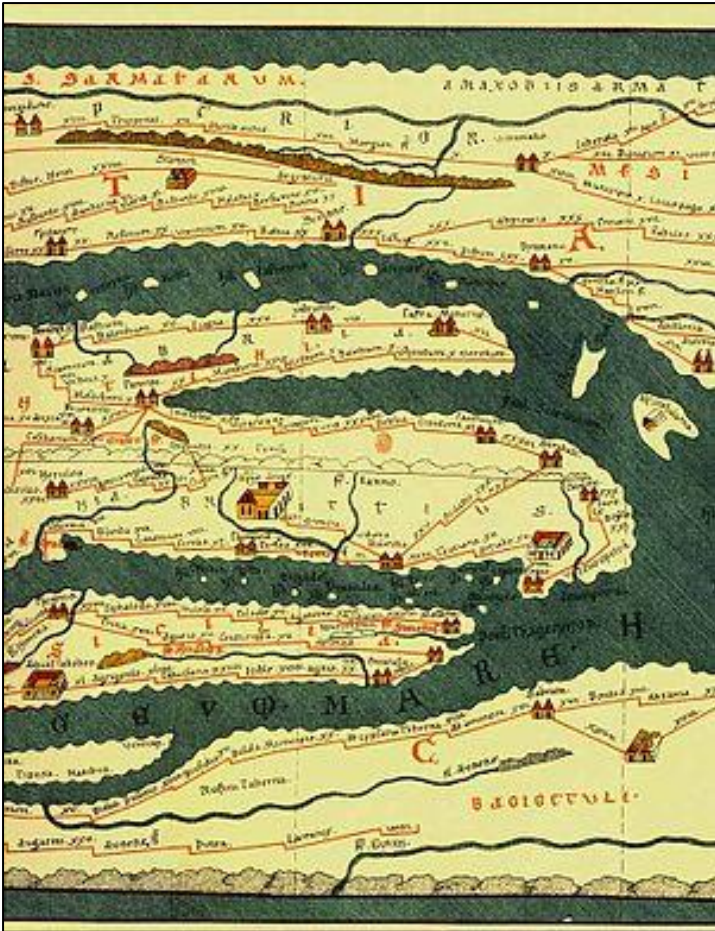
**Figure 10 - The Tabula Peutingeriana: a medieval copy of a Roman road itinerarium ('itinerary' or road map). Source: https://en.wikipedia.org/wiki/Tabula_Peutingeriana**

surrounding provinces (Laurence 2001, 67). Worth noting here is that Roman maps and itineraries (Figure 10) focussed on built-places and the connections between them, rather than the natural environment (excepting coastlines), showing a major difference between Roman and modern conceptions of landscape.

Though road networks served imperial administrative and military needs, they also impacted ordinary people (Adams 2001, 4), though to differing degrees. Roads provided new opportunities for communication and interaction between wider identities and landscapes, though it is debatable whether they were actually used by local people day-to-day (Petts 1998, 87-88). They also comprised ideological landscape-components, familiar features for newly-arrived Romans or those emulating them (Petts 1998, 88). Witcher (1998, 60) takes this further, suggesting that roads embodied structures of Roman power, status and identity, constructed across existing cultural spaces. Millett (2006, 305-307) argues that new settlements thus created interfaces between these corridors of Roman influence and existing landscapes, connecting new and indigenous routeways, and facilitating interaction and exchange. By reorienting pre-existing social landscapes and creating cohesive regional identities via more-rapid, intra-regional travel (Martins and Millett 2006, 322-323), roads therefore had further ideological landscape influence.

Water-borne transport is cheaper and easier for long-distance supply and thus was also crucial to Roman landscape-development. The empire's reputation for hydraulic-engineering and control of water originated in adapting to the varied environments of the Mediterranean region, creating an important ideological role for water-management in Roman culture (Purcell 2003, 180). This was exported to their conquered territories, control of water in the landscape both of economic importance and also a symbol of Roman power (*ibid.*, 189) (Figure 11). Evidence for water management in the study-region is therefore crucial to understanding Roman environmental impact and landscape-perception.

Another aspect of both identity and landscape in the ideological spectrum is that of religion and/or spiritual belief. These form key evidence for the wider socio-cultural changes associated with the Roman arrival, such evidence usually being divided into 'Roman/imperial', 'native/Celtic' and 'eastern mystery' cults (Revell 2009, 110). Evidence for worship of pre-Roman indigenous deities in the landscape is primarily drawn from Roman-period adoption of such belief-systems (Figure 12),

**Figure 11 - The Pont du Gard near Avignon, France: an exemplar of Roman landscape-control, exerting imperial power over water-sources. Source: https://en.wikipedia.org/wiki/Pont_du_Gard**

often assuming worship (and resultant impact on identity) was unchanging between the two periods (*ibid*., 113). Webster (1997, 331) has studied the subtleties of mixed resistance and adaptation in Romano-Celtic religious syncretism, a topic returned to in the evidence presented below [Chapters 5 and 6]. The Roman-period introduction of mystery cults, often linked to other aspects of identity such as gender and status (e.g. Mithraism's exclusivity among male, military groups; or preference for worship of Isis among women) has generated much academic interest but needs further study. This is also true for the impact of Christianity's arrival in late-Roman provincial contexts. As with the landscape impacts of class/status identity above, belief-based ideological impact is covered in this thesis through existing site-based and epigraphic evidence, rather than the primary survey data.



**Figure 12 - Roman-period sculpture of British deity Cocidius, Yardhope (Northumberland). Source: https://historicengland.org.uk/listing/the-list/list-entry/1018943**

There are many other elements of identity applicable to people living in late-Iron Age and Roman Britain and, consequently, the landscapes they perceived and created. For instance, Hill (2001) discusses how gender is overlooked in archaeology of this period, particularly given the likely-substantial changes associated with new cultural and socio-economic ideas arriving under Roman occupation. Allason-Jones (2005) has shown that archaeological evidence in Britain can reveal much about women and their differing status, perceptions and roles between Iron Age and Roman societies and landscapes, including several women with political power and independence (e.g. Cartimandua, particularly important in the current study-region). Roman society privileged the elite, wealthy male perspective, making this the normative experience: a bias followed in much archaeological study, rather than considering further possible identities (Revell 2009, 152). With women forming significant proportions of most populations, this is thus clearly a vital aspect to consider when studying both identity and landscape

for the period. However, the nature of the primary evidence (large-scale survey and site-level overviews) utilised in the current thesis limits their discussion here, alongside the role and presence of children, and further aspects of identity such as dress, language and cultural aspects of food production and consumption (for instance Cool's (2006) work on ceramic assemblages in southern England or faunal comparison of diet between military and civilian, and upland and lowland communities (Stallibrass 2000; King 2001)). This is not to detract from the vital importance of these aspects but is due to the nature of the data available and is offset (where possible) by existing published evidence from the region. In contrast, further elements of identity and landscape which have seen less archaeological study also emerge from the primary evidence [Chapters 5-7], including more-local affiliations (kinship or familial groupings) which have commonly been neglected in favour of wider, regional social or cultural units.

## 2.2b – Different Archaeological Approaches to Landscape for the Roman World

Landscapes around the Roman Empire have been studied in many different ways, dependent on the topography, terrain, climate and accessibility of each region, and also the varied theoretical frameworks and methodological preferences favoured across Europe, Asia, and Africa. These different landscape approaches are far too numerous to describe, so informative examples pertaining to frontier landscapes and Britain have been selected.

Roman military, particularly frontier, landscapes have been a particular focus for developing analytical field and aerial survey techniques. Building upon earlier antiquarian monument-recording [2.1b], the Roman landscapes of northern Britain were surveyed by General William Roy, culminating in the 1793 *Military Antiquities of the Romans in North Britain* (Bowden and McOmish 2011, 25). Various antiquarians added to this, with field survey and excavation focussing upon Roman military features, prior to Crawford and St. Joseph's early aerial surveys of Roman sites across the region (Jones 2005, 86-90). Despite a longstanding focus on Roman landscapes for archaeological aerial photography however, the resultant aerial survey mapping more recently has been under-utilised for their study (James and Millett 2001, 2).

Other 20th-century pioneers of archaeological aerial survey also focussed on Roman frontier-development, in desert landscapes of the Near East (Figure 13) and North Africa (Jones 2000, 50), for instance Poidebard's (1934) Syrian surveys. Such studies continue through to modern Geographical Information Systems (GIS) projects, e.g. Jeddou's (2008) assessment of the agricultural exploitation of landscapes via archaeological and palaeo-environmental data in Tunisia,
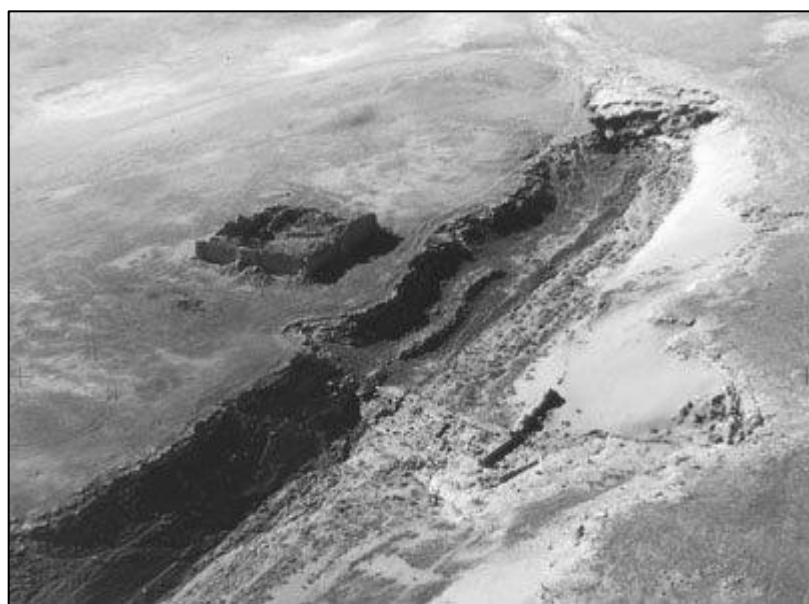


**Figure 13 - 1939 aerial photograph taken by Sir Aurel Stein, of the Roman fort at Qasr Khabbaz in the Near East. Source: https://www.thebritishacademy.ac.uk/**

comparing Roman and French colonial landscape-impact on this 'environmental frontier'. This use of varied datasets to address region-wide transitional landscapes has strong resonance with this thesis.

For Roman Britain, modern landscape-approaches include Dark and Dark's (1997) *The Landscape of Roman Britain*, utilising landscape theory, Classical literature, and data from archaeological survey, rescue-archaeology and palaeo-environmental sampling to assess environmental and cultural impacts of the Roman occupation. Similarly, Dobney's (2001) synthesis of faunal evidence discussed the links between Roman dietary choice and the landscape, focussing on economics and human-environment interaction. Recent large-scale syntheses of existing data (commercial 'grey literature', excavation reports, Historic Environment Record collections, palaeo-environmental survey) have reassessed broader landscape-trends (Chadwick 2013, 17). The *Fields of Britannia Project* assessed late-Roman into early-medieval regional landscapes (Rippon *et al.* 2015, vii-viii), using over 200 well-dated pollen sequences to categorise landscapes into broad types (Figure 14) (Rippon *et al.* 2013, 37), creating smaller, more-specific regional categories than simple Romanisation-based military/civilian or native/villa distinctions (Rippon *et al.* 2015, 17-22). This project's focus on late Roman into early medieval changes means that it is of lessened use to the current study, which aims to look at the Iron Age-Roman transition.



**Figure 14 - Map showing the 'Fields of Britannia' project's new landscape-regions (Rippon et al. 2013, 36).**

Meanwhile, the *Rural Settlement of Roman Britain* project (Smith *et al.* 2016; Allen *et al.* 2017; Smith *et al.* 2018) has examined published and unpublished excavation and survey data for England and Wales to discuss regional variation in the settlement-landscapes of Roman Britain outside of the major urban centres and military sites, evaluating the contribution made by development-led excavations in particular. This data extends into the current project's survey-area (though does not cover Scotland) and period of interest, and thus both summary results and specific records from it are discussed below. For indigenous landscapes, the *Atlas of Hillforts of Britain and Ireland*, compiled from national and local-authority databases, re-examined a particular landscape- and morphology-informed site-type nationally. There are however differences in the nature of this data collected either side of the national border between England and Scotland, and its coverage is limited for much of the current project area. Nonetheless, all of these modern syntheses offer useful comparisons and context to this study.

## 2.3 – The Northern Frontier Landscape

*2.3a – Iron Age/Roman and Subsequent Landscapes of the Study-Region*

Roman-period northern England/southern Scotland have commonly been identified as 'military' landscapes, the opposite to the Romanised 'civilian' landscapes [2.2a] of towns and villa-estates further south. The Roman army's bases and infrastructure are consequently thought to have hindered native elite-led adoption of Roman site-types and material-culture, with indigenous landscape-components continuing along previous Iron-Age trajectories. Such broad, sweeping regional generalisations continued into recent scholarship with Dark and Dark's (1997, 11-12) re-identification of this northern 'military zone' as 'native landscape'. Of importance for the current project is moving beyond such generalising models.

Further south, the army acted as the catalyst for Roman developments and then moved on, leaving local elites to organise change; towns subsequently formed nuclei for interactions between landscape, society and empire (Willis 2007, 143-147), greatly influencing their surroundings. Given the lack of extensive urbanisation and ongoing military occupation in the frontier-region, this model does not apply for the study-area. Gardner (2002, 338) suggests that similar processes occurred at forts, their architecture, layout and relationship with their environs providing an alternative to indigenous-run towns. Millett (2001, 64) further argues that forts and associated *vici* fit many definitions of urbanism. Many larger settlements within the project area, including York, Catterick, Piercebridge, Corbridge and Carlisle, have often been assessed via military dynamics, despite having substantial civilian populations and resultant social, cultural, and economic dynamics (Millett 2001, 66) (Figure 15). Other sites such as Aldborough [Chapter 6] were seen as isolated examples of southward patterns. Broad ideas of the army 'Romanising' the region by introducing material culture and socio-economic supply networks, or opposing academic views of the military's remaining in-situ throughout the period hindering indigenous-organised cultural adoption are, however, overly-simplistic. Such sweeping generalisations about the region's many, varied landscapes are incapable of analysing the resultant complicated interactions between people and environment. Additionally, the many facets of the countless identities at play, and differing scales of interaction between these, affected both landscape perception and development.

Previous work on indigenous rural settlements regionally [3.3a] attests later-prehistoric to early-medieval continuity of form (enclosed farmsteads with enduring use of roundhouses). Such studies focus on construction-types and site-morphologies rather than the people who built them, the activities undertaken there, or wider interactions with the landscape (limited by poor material-culture survival



**Figure 15 - Digital reconstruction of Roman York and its varied urban civilian inhabitants. Source: https://archaeologydataservice.ac.uk/archives/**

and/or recovery) (Taylor 2001, 49). Extensive remote-sensing but relatively-little excavation has thus created region-wide spatial distributions of sites and good understanding of site morphology but has not investigated what they mean and how they relate to past landscape-creation. This has recently been offset in lowland parts of the region (e.g. the Northumberland and Solway coastal plains) by nation-wide surveys of published and unpublished excavations (up to 2013), looking at Roman-period rural settlement characteristics for wider comparison, and using material evidence to investigate the identities of inhabitants and their relationship with surrounding landscapes (Smith *et al*. 2016; Allen *et al*. 2017; Smith *et al*. 2018). There have also been more-recent, localised excavation studies giving new insights into the occupation-histories of lowland, south-eastern Northumberland's indigenous farmsteads (Hodgson *et al.* 2012). However, there remains a discrepancy in the nature of evidence (and what it can tell archaeologists) between upland and lowland landscapes in the region.

Post-Roman developments also profoundly affect modern perceptions of the region's landscapes, in turn influencing our preconceptions of the Iron Age and Roman period. North-eastern England (50% of the study area) was subsequently identified with the politically-unified Anglo-Saxon kingdom of Northumbria, medieval Anglo-Scottish border-warfare and later heavy industries: a homogeneity of landscape 'characterisation' which likely did not exist previously (Faulkner and Gregory 2010, 3-5). The north-west similarly forms a distinct region, affected by medieval conflict but also post-medieval 'Romantic' remoteness. The Hadrian's Wall borderland is usually considered in purely 'Roman' terms, ending in the early-5th century AD, and ignoring 1,500 years of landscape development since (Hingley 2011, 41). However, military elements continue to dominate wider perceptions of the region (Witcher *et al.* 2010, 106). The Wall's continuing landscape-influence is
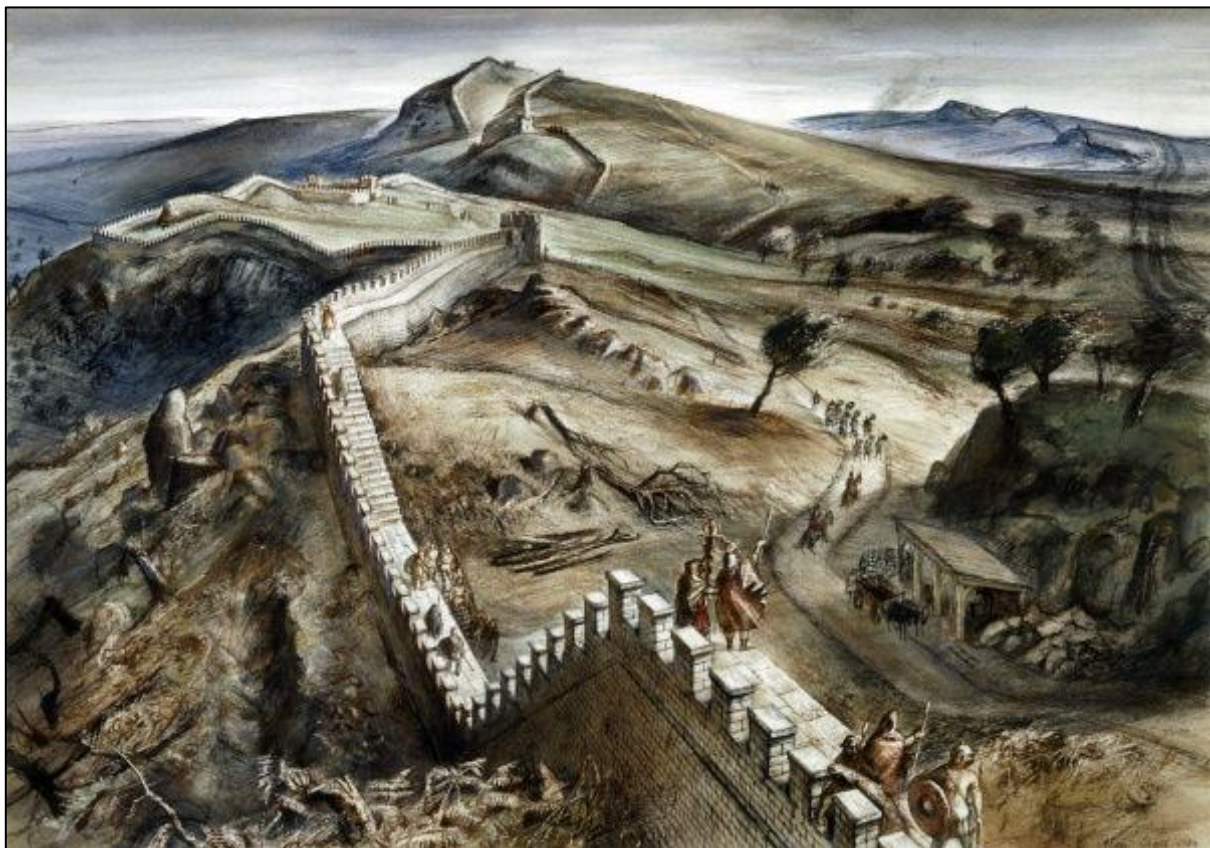


**Figure 16 - Artistic reconstruction of Hadrian's Wall, emphasising differences between Roman-provincial, 'light' landscapes full of activity [right], and dark, shadowy lands beyond [left]. Source: Alan Sorrell.**

attested by Bede and Gildas (as a mythological feature associated with local giants), its later use as medieval/post-medieval building-materials, and artistic (Figure 16) and poetic inspirations, revealing its continuing importance (Hingley 2011, 43-46). Contemporary cultural and economic significance through heritage-tourism (*ibid.*, 51) shows its persisting impact upon landscapes of modern-day northern England.

The modern context in which we study a landscape affects our perceptions of that area in the past. The study-region's landscapes have traditionally been considered 'marginal', partly due to its frontier nature under Rome, but also because of environmental characteristics (e.g. its upland topography and wetter climate) and land-use (predominantly rural pasture or moorland). These, together with the above longer regional history, cause biases in our own perceptions of such landscapes as 'less-civilised', militarised, remote and rugged. Whilst such ethnocentric influences must be carefully critiqued however, they do potentially have some relevance when examining identities and perspectives of people in the period under study (for instance, newly-arrived Roman troops and Roman writers), given its position on the edge of the known Roman imperial sphere and the natural landscapes involved.

*2.3b – Landscape Archaeology in the Current Approach*

In summary, while developments in wider landscape archaeology have embraced diverse theoretical frameworks ranging from empirical, observation-based approaches through to human-environment ecological systems theory and post-processual perception-based studies, landscape studies for the late-Iron Age and Roman periods in Britain have predominantly focussed on socio-economic and political imperatives (with environmental impact and interaction with nature then related to these wider systems). This largely results from the dominant 20th-century Romanisation paradigm. Many recent theoretical developments in wider landscape archaeology, including landscapes representing conceptual spaces linked to identity, experiential emphases of phenomenology, and application of post-colonial/decolonial theory have been relatively little-utilised in landscape-studies for the Iron Age and Roman periods. Recent exceptions to this include the *Roman Rural Settlement Project*'s examination of forms of settlement and economy alongside identity and wider landscape concepts (Smith *et al.* 2016, Allen *et al.* 2017, Smith *et al.* 2018) and also modern re-evaluations of the nature and impact of Hadrian's Wall and its frontier, focussing on Roman-indigenous interactions and symbolic aspects of the border (Hodgson 2017; Symonds 2021). In contrast, post-processual approaches to past identity [2.1d], have made greater headway in Roman studies for Britain than contemporary development in landscape theory. Nevertheless, identity has largely been applied to smaller-scale, site-based studies via artefactual and ecofactual evidence, rather than broader landscape research.

As shown [2.1c], non-intrusive archaeological techniques, including aerial and analytical field survey methods used in the primary data-gathering phase of the current study, are heavily based in almost-atheoretical, empirical contexts of the so-called 'British tradition'. A major aim of this project is therefore to utilise various theoretical approaches to study northern Britannia's Iron Age and Roman landscapes, combining the observation-based approaches of conventional archaeological survey with more theoretical concepts such as human-environment relationships and concepts of landscape perception and experience. It will also assess non-intrusive survey alongside evidence from other forms of landscape archaeology (including palaeo-environmental and excavation data). The following section will introduce one of these data-sets.

*2.3c – The Environment and Natural Landscapes in the Iron Age and Roman Period*

Consideration of palaeo-environmental data requires that the state of current knowledge around the region's natural environment be introduced. As argued by Philpott and Brennand (2007, 66), Symonds and Mason (2009b, 16) and Hunter and Carruthers (2012a, 113) in the study-area's research frameworks, sites need consideration within their wider landscape context, both cultural and natural (including climate, topography, geology, vegetation, and resources). Indigenous landscape features are often placed in the same chapter as the natural environment, as with the Hadrian's Wall research framework (Huntley 2009), which is telling of its perception by Roman (particularly military-specialist) archaeologists: a backdrop to be utilised and exploited, rather than of ongoing influence (a situation only gradually changing in archaeology). As discussed [2.2], nature's importance in defining landscape throughout human history means that evidence for the natural environment needs discussing alongside other archaeological data. This section will therefore examine palaeo-environmental work conducted in northern England/southern Scotland, looking at data types, issues, and patterns, before moving onto key themes emerging from the data and their relationship to other archaeology.

Many different sources of evidence for the past environment are available regionally for the study-period, given the substantial environmental archaeology work conducted over past decades, at both regional and site-based scales (Hall and Huntley 2007, 8-9; Hingley 2007, 106). Table 1 lays out many of these sources, and issues with them.

**Table 1 - Sources of evidence for past environment and issues with data for study-area.**

| Past Environment Evidence Source | Possible Uses for Data | Some Issues with the Evidence |
|---|---|---|
| Palynological (Pollen) Evidence (Dark 2000b, 4-7; Dumayne *et al.* 1995, 122; Wilmott 2009, 170). | • Vegetational reconstruction for an area over time; <br> • Identification of agricultural developments; <br> • Evidence for dietary choice; <br> • Investigating human action in/ relationships with the landscape. | • Variable capability in identifying species; <br> • Differential pollen survival; <br> • Difficulties ascertaining catchment area/ distance travelled; <br> • Different forms/amounts of pollen between species; <br> • Lack of dating-precision (broad-ranges needing calibration); <br> • Fewer late/post-Roman sequences. |
| Charcoal Evidence (Dark 2000b, 9). | • Identification of botanical species; <br> • Examining natural and human landscape processes; <br> • Radiocarbon-dating of deposits. | • Difficulty in ascertaining precise source/distance travelled; <br> • Non-site-based samples cannot be directly attributed to human action; <br> • Rarely studied with regard to potential non-human causes. |
| Macroscopic Plant Remains (Dark 2000b, 10; Dumayne-Peaty and Barber 1997, 244; Hall | • Reconstructing local vegetation; <br> • Identification of floral species within area/site; | • Difficulty identifying source-location; <br> • Needs comparison with off-site evidence (e.g. pollen sequences); |

| | | |
|---|---|---|
| and Huntley 2007, 9-10, 54, 93). | • Discussion of human economic processes (dietary choice, supply, trade) and environmental change (woodland management, agriculture). | • Differential preservation, dependent on charring/waterlogging;<br>• Differential recovery based on excavation practice and date;<br>• Focus on human action (e.g. diet) rather than environmental relations;<br>• General bias toward military/urban sites over indigenous settlements. |
| Faunal Remains (hand-collected and sieved) (Dark 2000b, 10; Hall and Huntley 2007, 9-10; Price and Petts 2009, 142; Stallibrass 2000, 66; Stallibrass 2018, 51). | • Identification of faunal species at sites and within hinterlands;<br>• Reconstructing surroundings (domestic vs. wild species);<br>• Discussion of human economic processes (dietary choice, supply, trade) and environmental change (pastoral agriculture). | • Issues with preservation (regional acidic soils);<br>• Lack of precise sourcing of material;<br>• Focus on aspects of human action (e.g. diet) rather than environmental relations in many cases;<br>• Differential recovery based on excavation practice and date: lack of smaller fauna or small-bones;<br>• Focus on main large domesticates, over other species;<br>• General bias towards military/urban sites over indigenous settlements. |
| Soil / Sediment / Peat Evidence (Dark 2000b, 11). | • Discussion of natural processes impacting/influencing human action e.g. soil fertility influencing land-use, woodland-clearance causing erosion;<br>• Impact on aerial-visibility. | • Hard to attribute to specific human action due to broad date-ranges;<br>• Ongoing processes of human and natural change (erosion, acidity, improvement). |
| Geomorphology / Geology | • Discussion of factors affecting landscape potential (e.g. agriculture, mineral veins and stone for extraction, water course formation and drainage, communication routes).<br>• Impact on aerial-visibility. | • Data generally at much-larger scale than archaeological evidence;<br>• Precise relationship between this human decision-making hard to define for period (prior to geological mapping). |
| Past Climate Data – Alpine/Scandinavian/ Greenland ice-cores, tree-rings, peat-growth variation (van der Veen 1992; Dark 1999, 264; Dark 2000b, 19). | • Broader patterns of dry/wet, warm/dry weather and how this impacted natural landscape (vegetation) and human action (agricultural potential). | • Much-larger spatial and temporal scale than archaeological evidence;<br>• Precise relationship between climatic change and weather difficult to define;<br>• Evidence not generally gathered within study-region. |
| River Systems, Coastlines and Water Sources (Dark 2000b, 33; Passmore *et al*. | • Assessment of communications/ trade routes, and movement-barriers;<br>• Understanding of settlement-siting and other activities; | • Issues comparing past navigability to today for rivers/coastlines (locally variable, isostatic uplift, sea-level, erosion, silting, land reclamation, river-course changes; |

| | | |
|---|---|---|
| 1992, 145; Passmore *et al*. 1993, 225-227). | • Evidence of human impact (e.g. erosion due to woodland-clearance). | • Lack of previous research on water-movement in landscape. |
| Contemporary Literary Sources (Dark 2000b, 1-2; Dumayne 1994, 222). | • References to marshes, woods and 'Caledonian Forest' in Tacitus and Pliny: prominent environmental features in Roman perception; <br> • References to climate/weather throughout Roman Empire; <br> • Place-names hinting at local factors (e.g. Eboracum= 'place of the Yew trees'). | • Difficult linking to specific modern places; <br> • Time-specific, failing to account for wider period change; <br> • Very limited for Britain; <br> • Only show Roman, elite perspective. |
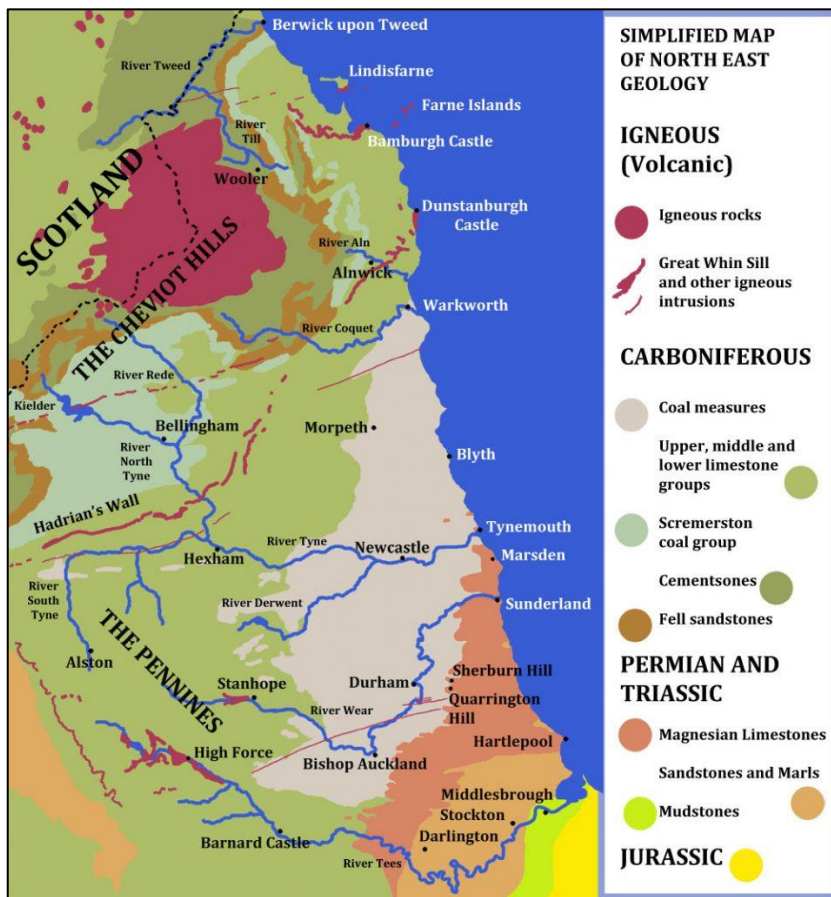


**Figure 17 - Map showing differing underlying geologies in North-East England, with potential resultant taphonomic variation. Source: https://englandsnortheast.co.uk/2020/10/15/rocking-the-regions-history/**

Taphonomy represents a major issue, affecting the palaeo-environmental material available for study. Conversely, the environment also affects the visibility and preservation of other archaeological evidence. For the region-sized project-area in question, large environmental variations create widely-different preservation, skewing any interpretation. Geological and soil conditions vary greatly (Figure 17), as do climate and its resultant weather. North-western England and the many upland areas thus have predominantly damp, acidic soils, hindering preservation of organic material culture and radiocarbon-datable objects (Allason-Jones 2009, 217; Dark and Dark 1997, 10; Stallibrass 2018, 44-45) whilst conversely offering greater opportunity than the drier eastern lowlands for plant-macrofossil preservation via waterlogging. Such aspects of environment also affect the visibility of archaeological features from both air and ground, enabling or hindering formation of cropmarks or masking geophysical signatures. Easily-accessible stone for construction (as opposed to organic materials elsewhere) increases preservation-potential as structures or earthworks, particularly in

upland areas where the topography further limits modern activity which would otherwise mask, damage, or destroy earlier remains.

Varied environment-related data can therefore assist in reconstructing Iron Age and Roman landscapes, alongside identifying issues affecting archaeological surveys. Meanwhile, they also offer insight into the potential reasoning behind past human decisions and landscape-interactions, influencing past perceptions [2.1d] and resulting in different activities and occupation-patterns (e.g. construction material, settlement location, food-production availability, and exploitation of other resources).

Some key environmental features influencing this study are geology, geomorphology, and soils. Hadrian's Wall itself crosses various geologies, its route notably influenced by the central-sector's Whin Sill dolorite intrusion and the scarp/dip topography of the western Pennines, which it follows (Symonds and Mason 2009a, xiv). This defensive, imposing landscape-choice shows clear relationships between the Roman army and the natural environment. Mineral exploitation (lead/silver, iron) in Weardale (Mighall *et al.* 2004) and the north Pennines (Price and Petts 2009, 120) represents either new or greatly-expanded environmental-use, with associated landscape impacts (increased settlement, erosion, vegetational-change). Geology and soils are also key to cropmark formation, aiding or hindering archaeological investigation.

Climate has a profound influence on the local environment and resultant human activity. Studies (e.g. van der Veen 1992; Dark 1999, 264; Dark 2000b, 19) suggest that a cooler, wetter early/mid-Iron Age climate gave way to warmer, dryer conditions from c.150BC, a potential factor in agricultural intensification and increased settlement (below). A return to cooler, damper climate in the late/post-Roman period also potentially influenced wider cultural and agricultural changes (evidenced by woodland-regeneration). Weather (resulting from climate) furthermore influences human perception of a place, impacting the mental construction of landscapes (adding to this region's remote/rugged-feeling) [2.3a].

Flora are another major environmental component, indicating clear human interaction with the landscape. Regional vegetational studies are divided between palynological (pollen) surveys (commencing with Turner 1979), investigating wider natural vegetation patterns and cultivated species' distributions (Dark and Dark 1997; Dumayne 1993; Dumayne 1994; Dumayne and Barber 1994; Dumayne-Peaty 1998; Dumayne-Peaty and Barber 1998; Manning *et al.* 1997; Tipping 1997; Tipping 2010; Tipping 2018), and plant-macrofossil analysis from waterlogged or charred archaeological assemblages (Hall and Huntley 2007; Tipping 2010; van der Veen 1992), revealing local environments and socio-economic uses (human/animal food, bedding and construction-materials) at specific sites.

The region has better-than-average (for the UK) coverage of pollen sequences spanning the period (Figure 18), with particular concentration within 20km of Hadrian's Wall (Dark 2000b, 58). Regarding broader vegetational patterns, general consensus is for small-scale, localised woodland-clearance from the Neolithic to early-Iron Age, accompanied by increased heath, grassland, or arable agriculture (dependent on local environment and human decision-making) (Dark 1999; Tipping 1997; Tipping 2018). Mid/late-Iron Age intensified clearance resulted in largely unwooded landscapes regionally (Dark 1999, 253, 264). Tipping (2018) attributes this to centrally-organised region-wide processes replacing locally-determined landscape-change, terming this the 'Brigantian *landnam'*, increasing agriculture supporting wider socio-economic changes (Tipping 2018, 64). Further intensive clearance under the Roman occupation is limited (Tipping 1997, 243-245), suggesting the

process was indigenous (rather than Roman) in origin (Dumayne-Peaty 1998, 212; Hunter and Carruthers 2012a, 15; Tipping 1997, 242; Tipping and Tisdall 2005, 443).

Contrasting broader trends, palynology in the Hadrian's Wall central-sector (Dark and Dark 1997, 33-35; Dumayne 1993, 29-33; 1994, 221-222; Dumayne and Barber 1994, 165, 172; Dumayne-Peaty and Barber 1997) has been argued to suggest Roman-dated woodland-clearance paralleling the new boundary's establishment (hypothesised as meeting requirements for construction-timber, clearance for surveillance and/or communication, or need for new agricultural land). Elsewhere, the military-zone may have put agricultural land out of use (Tipping and Tisdall 2005, 443; Yeloff *et al*. 2007, 527), e.g. geomorphological and palaeo-environmental sampling from Butterburn Flow north of Hadrian's Wall postulated as evidence of local farmers moving south (Yeloff *et al*. 2007, 534). This palaeo-environmental data mirrors findings of Hodgson *et al.* (2012, 213-214)



**Figure 18 - Map showing the locations of major palynological sequences regionally (Tipping 2018, 61).**

from radiocarbon-dated settlement evidence north of Newcastle, which appears to show abandonment of sites just north of Hadrian's Wall from the second-century AD (Hodgson 2017, 130, 133). Nevertheless, region-wide environmental evidence for sixth-century AD forest-regrowth in northern England and Scotland suggests that agricultural and other requirements remained stable for some time after occupation (Hunter and Carruthers 2012a, 15).

Archaeobotanical studies (e.g. Hall and Huntley 2007; van der Veen 1992; van der Veen *et al.* 2008) augment understanding of regional vegetation change. Seed assemblages were thought to show that different cereals were cultivated north and south of the River Tyne, mirroring differing settlement patterns and forms [Chapter 6], and suggesting difference between subsistence-agriculture (north) and expanding cereal-cultivation (south), possibly revealing socio-cultural divisions (van der Veen 1992). More-recent work (Hodgson *et al.* 2012) has shown this division (both cereal and settlement evidence) to be moved further north, to the lowland-upland margin. Van der Veen's (1992) and Hodgson's (2017) studies overturned Piggott's (1958) longstanding late-Iron Age 'Stanwick Economy' (pastoral, semi-nomadic agriculture dominant regionally), by proving widespread mixed-agricultural systems existed, also overturning Manning's (1975) assertion that the Roman army's requirements resulted in the need for new arable land. Nonetheless, new Roman-period consumer groups (i.e. military and urban), alongside the need for surplus produce for tax, likely impacted agriculture regionally (van der Veen *et al*. 2008, 11). Synthesis of excavated plant-
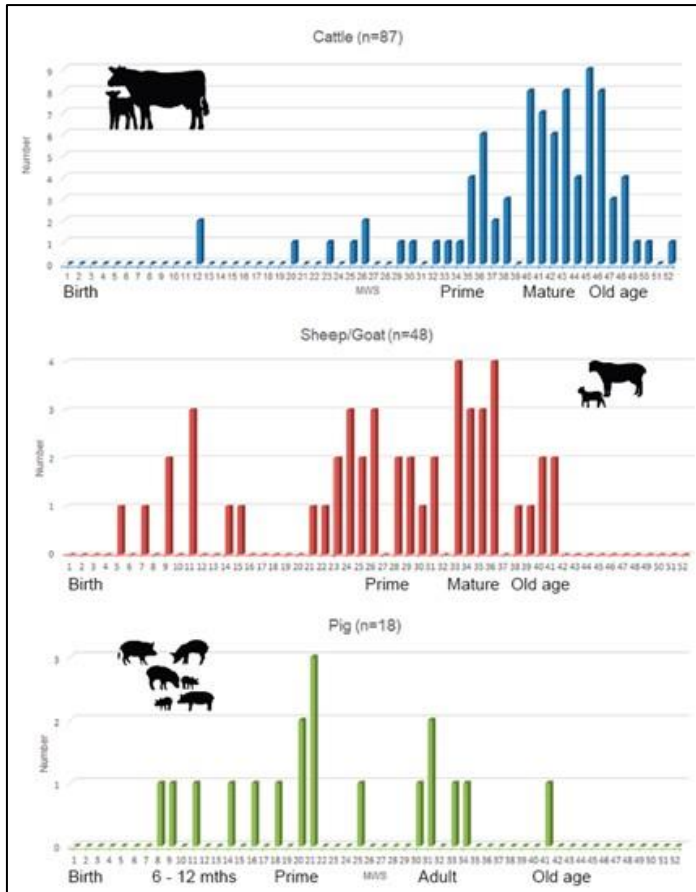
**Figure 19 - Example-diagram showing the main three domesticates of cow, sheep/goat, and pig (and their ages at consumption) from Carlisle (Stallibrass 2018, 46).**



**Figure 20 - Aerial photograph with overlaid plan of Bewcastle outpost-fort, showing its unusual form. Source: https://www.u3ahadrianswall.co.uk/wordpress/northern-roman-frontier/bewcastle-roman-fort-2/**

macrofossil assemblages (Hall and Huntley 2007; Thomas and Stallibrass 2008, 4) show spelt wheat (the Iron Age regional staple) remained dominant through the Roman period, alongside emmer wheat, barley and lesser amounts of rye and oats. Increasing use of bread wheat and imported 'exotic' plant-foods remain the most-obvious Roman changes, suggesting a general continuation of later-prehistoric agricultural landscape forms locally.

The final large body of Iron Age/Roman environmental evidence are faunal assemblages from archaeological sites, commonly utilised to discuss diet and associated socio-economic changes. Cattle comprise the majority of identified specimens at almost all sites in the frontier region (Stallibrass 2000, 66), with varying lesser amounts of sheep/goat and pig (Figure 19). North-European patterns of animal domestication seem to have generally been adopted by the Roman military, cattle and sheep consumed after working-life (providing traction, milk and wool) and pigs produced primarily for meat (with younger animals consumed) (Dobney 2001, 36-37; Stallibrass 2018, 46-48). Stallibrass (2009, 103; 2018, 50) identified that most long-term Roman garrisons regionally are located in upland, damper landscapes suited to livestock production. While warmer, drier climate likely opened upland valleys to greater mixed-agriculture than today, long-distance supply chains for both plant and animal foods probably also impacted the landscape. Stallibrass (2009, 101) proposes regional stock-movement, modelled on known post-medieval local parallels and indigenous

sites beyond the German frontier linked to networks of military-supply. For northern Britain, outpost-forts such as Bewcastle (Figure 20) perhaps operated as central stock-gathering network nodes alongside their surveillance functions (a need for additional space for animal pens and livestock organisation potentially explaining the fort's unusual, non-rectangular form) (*ibid.*, 104, 109). Therefore, the natural environment's influence on agricultural potential clearly impacted the frontier landscape, for both local people and the Roman military.

Relating environmental evidence to theory, debates over levels of local production (agricultural and other resources) versus long-distance imports shows how people's identities impacted, and were influenced by, landscape. Access to not only local resources but also wider trade-routes and settlement-networks underline the environment's importance in directing or hindering both indigenous and Roman landscape-uses and choices regarding the frontier. Long-term environmental change also affected human-landscape relations by altering the resources available; important when examining the long-lived northern frontier-system over time. In turn, human actions and choices within this environmental context subsequently impacted the natural landscape, influencing the variety and distribution of flora and fauna, and causing changes such as erosion or woodland-management. One under-studied aspect of the environment regionally are ideological approaches to nature (both Roman and indigenous) [2.2a]. Socio-cultural views on nature influenced human-environment interactions, perspectives, and identities of those living within these landscapes. Though this review synthesises palaeo-environmental work and its implications regionally, a more-detailed discussion of such data-types will be presented in each survey-transect's analysis [Chapters 5 and 6].

*2.3d – Landscapes of Frontier*

This chapter has therefore introduced concepts and definitions of 'landscape', how they have been studied within archaeology (including the non-intrusive survey methodology used in the current research) and how landscapes are integrally linked to issues of 'identity' [2.1]. These wider concepts have then been discussed in the context of late-Iron Age and Roman landscape studies generally [2.2], and for the specific study-region of northern England and southern Scotland, introducing existing approaches used, projects and results (archaeological and palaeo-environmental) [2.3]. Thus, having discussed the region's human-constructed landscapes and natural environment, one further aspect of the project-area needs addressing: its context as a frontier-region, on the periphery of both Roman and ongoing Iron Age, native worlds. These landscapes therefore need assessing using frontier theory [Chapter 3]. Both identity and connected landscape-perceptions are often reinforced in peripheral regions. This is more-commonly investigated for 'Roman' identities and concepts of landscape, given that more is known about Roman political and cultural dynamics and their concept of 'the other' beyond. Against this is increased distance from Rome, potentially weakening such world-views, although frequent movement of both individuals (soldiers, merchants, etc) and whole or partial military units within the wider empire may have reinforced Roman ideas and perceptions, mitigating somewhat against such distance. Being in a frontier-zone also influences perception of natural and human landscapes encountered [2.3a], and thus interactions and activities within these. What is less-usually examined are effects of being within a newly-created frontier-zone for local indigenous people, and the impact of the border's creation on the less-definable cultures and societies of Iron-Age people beyond Hadrian's Wall. This project therefore aims to assess this dichotomy of viewpoints in the wider context of the frontier.

# Chapter 3: Frontier Theory and its Application to Roman Archaeology

As described previously, the study-area's location on the periphery of the Roman Empire deeply affects the ways in which identity and landscape would have been perceived and/or utilised here. Additionally, the region also represents the boundary of areas to the north and west which were not permanently-occupied by Rome, continuing along late-Iron Age trajectories, but with major impacts undoubtedly brought-about by Roman actions in northern Britain. It is therefore important at this juncture to bring in a third conceptual theme: frontier theory. Though frontier studies are important in various disciplines (geography, politics, history, anthropology, archaeology), each has its own approaches (Parker 2006, 78). Other boundary-types need consideration alongside geographical (Mullin 2011, 9). Within archaeology, concepts and definitions of boundaries fluctuate, dependent on regional and temporal study-criteria. However, although any frontier emerges in a specific historical context, certain forces and processes are common to many (Naum 2010, 126).

Section 3.1 will introduce wider archaeological theorising and modelling of frontiers [3.1a], before moving on to definitions for this thesis [3.1b]. Section 3.2 will investigate how the Roman Empire's frontiers have been researched [3.2a], before examining links between Iron-Age/Roman boundaries and identity [3.2b] and landscape [3.2c]. Current understanding of northern Britain's Roman frontier will be discussed in Section 3.3.

## 3.1 – Frontier Theory in Archaeology
### 3.1a – Theorising, Modelling and Defining Borders and Frontiers

Frontier and/or border theory and large-scale models for social peripheries have long-been used in other disciplines, particularly for political/cultural, military, and economic boundaries. Other dynamics (such as social or environmental) have been less-well integrated.

'Frontiers', as developed in North American contexts, are integrally-linked to concepts of expansion 'beyond the known' and its associated social implications, commencing with Turner's (1893) theorisation of this process. Continually-expanding 18th/19th-century American frontiers thus affected the identities of those undertaking that expansion, and eventually that of the United States itself (Turner 1893, 200-201). Frontier literally means 'front tier' of a country, cultural group or military deployment (Kristof 1959, 270; Green and Perlman 1985, 4; Perdue 2005, 27), comprising outward-looking, centrifugal expansion (McCarthy 2008, 203). A parallel feature of such modern expansions, often compared with past imperialism (because it was derived from such views), is symbolism around superiority over external 'barbarians' (Rieber 2003, 28).

Subsequent North American discussion around frontier challenged Turner's conception, raising issue with ethnocentrism and western bias (Lattimore 1962, 490; Feuer 2016, 38), using post-colonial debates about the role of indigenous societies in frontier-formation. Impacts of frontier-contact run in various directions rather than merely outward from colonial powers (Aron 2005, 176-177). Although post-colonial theory emerged from the aftermath of British imperialism, centred on modern experience (Mignolo 2011, xxvi) and is consequently not universally-applicable, it does identify social and ideological dynamics operating around frontier situations which are useful for examining past examples. Impacts of a frontier's establishment on the identities of those within its region of influence (both existing populations and colonisers) are thus integral to any such study, as are perceptions and worldviews derived from and influenced by them.

In contrast, traditional European border-theory concerns linear political boundaries between organised states, derived from the historical contexts of the Roman Empire's fall and subsequent medieval/post-medieval state-formation and warfare (Perdue 2005, 28). 'Frontier' here is used to reference more-general boundaries (McWilliams 2011, 14; Parker 2006, 79), without American societal connotations. 'Border' is commonly used for formalised boundaries: linear divisions defined for political, economic, or cultural purposes, arising in the contexts of modern, capitalist nation-states. However, it can be utilised (carefully) when defining earlier, clearly-linear, imperial divisions such as Hadrian's Wall or the Great Wall of China.

Mid-20th century border concepts relate to power, boundaries both dividing and connecting different territorial power-structures (Jones 1959, 253). Borders dividing territories of similar, homogenous peoples are different from those emphasising clear cultural/ethnic divides (Baud and Van Schendel 1997, 232). The ethnicity of people either side of Hadrian's Wall likely remained contiguous (excepting Roman military and political personnel); the border thus emphasised political and cultural divides. Borders, forming barriers, also contain symbolic meanings around inclusion and/or exclusion (Pohl 2005, 257, 265). Newman (2003, 22) notes: "Perhaps the most-important question concerning borders is the extent to which they function as barriers to movement and interaction, or as an interface where meeting places and points of contact are created". Recent discussions around mobility and migration comparing the modern world and Roman Empire (Gardner 2017b, 34-36, Hingley 2018, 85-86,90) would suggest that they were both barrier and interface simultaneously, operating flexibly depending on need or situation. These politico-military and ideological components have greatly-informed the study of Roman-imperial peripheries [3.2a].

Wider archaeological theory has also impacted the study of past peripheries. The 20th-century processualist focus on generalising socio-economic models included the use of 'world economic systems' (Wallerstein 1974) to discuss large, imperial polities: cultural/political materials moving from cores out to peripheries, and raw materials/economic surplus returning (Figure 21). World-systems expand outwards until reaching "the point where [economic] loss is greater than gain" (Wallerstein 1974, 338). Such systems are self-contained, resultingly needing defined boundaries to function (*ibid.*, 347). However, for the Roman Empire, the edge of direct imperial control was not necessarily the maximum extent of influence, an issue needing consideration.
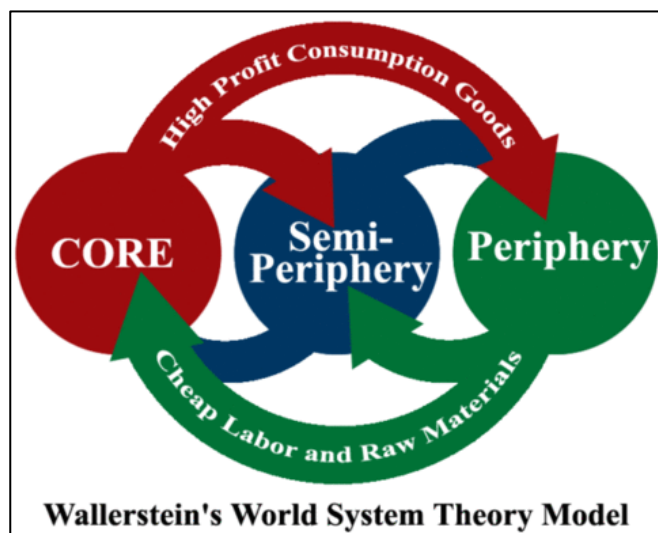


Figure 21 - Core-periphery model, showing the direction of surplus flows (Wallerstein).

These generalising models are problematic due to their scales of operation, losing sight of most people living within the system. Such studies often take a centralised viewpoint (Baud and Van Schendel 1997, 212), viewing frontier-regions as passive recipients of core innovations and ignoring agency of existing indigenous populations (Lightfoot and Martinez 1995, 471, 475), an issue common with Turner's (1893) theory. Associated assumptions include the core being superior to the periphery, and a focus on core/periphery differences (Feuer 2016, 5). Subsequent critique requires periphery-focussed discussion, given that social-change is often most-prevalent at the edges of any
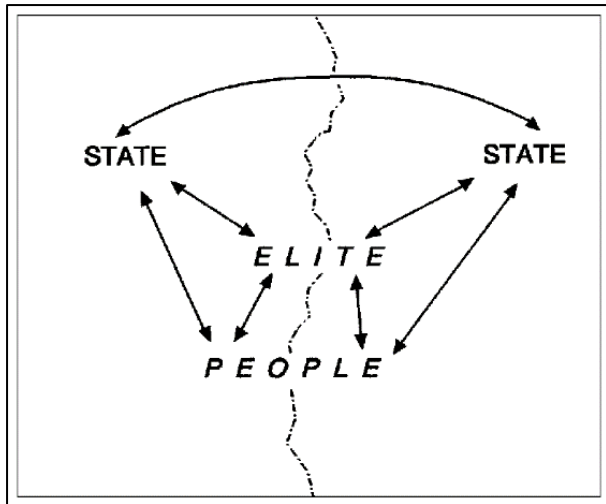
**Figure 22 - Three-way interaction of periphery power-dynamics: state/local elite/people (Baud and Van Schendel 1997, 219).**

grouping, as with identity [3.2b]. Boundaries are foci for interaction between different peoples and cultures, resulting in wider-ranging potential social outcomes (Feuer 2016, 1). Contrastingly, Cohen (2000, 11-12) argues that while peripheral interaction implies diversity, the edges of something are still integral to that larger construct and connectivity to the core is crucial. Issues of peripheries versus cores, and the need to study various perspectives, will inform this research, given its discussion of identity and worldview (further embodied in landscape).

As with identity and landscape theory, raising of issues around ethnocentrism and imperial-focus when applying frontier/border concepts to the past initially resulted in binary narratives, looking purely for resistance to colonialism. Studies of 'domination' and 'resistance' simplify the process, continuing subordination of indigenous peoples by reducing them to simply reacting to colonial actions (Lightfoot and Martinez 1995, 483). However, resistance is complex in reality, resulting from varying opinions and actions from multiple agents (Given 2004, 11). One way of overcoming these problems is by looking at such regions on multiple scales (e.g. individuals, communities, larger organised resistance groups, and imperial strategy), assessing broader processes alongside smaller, local adaptions and deviations, emphasising how people interacted with both wider peripheral contexts and also their everyday surroundings.

Paynter (1985, 171) and Baud and Van Schendel (1997, 219) approached this complexity via three-way networks of interaction and power-relations between states (the border's originators), regional elite (supporting border-concepts, using them for personal agendas) and local people (adapting to and creating new interaction-forms) (Figure 22). Parker's (2006) 'continuum of boundary dynamics' is another model, assessing differently-scaled boundary processes common to many frontiers. A linear scale of boundary-types from static 'borders' through to fluid 'frontiers' is applied to separate processes: geographical, political, economic, demographic and cultural (Figure 23), aiming to address the nuances of each boundary situation (Parker 2006, 81). Though these models are simplifications, they are nonetheless useful for identifying the different dynamics underlying frontiers.

Defining a boundary lays out a strategy and expectations, but cannot determine all the resulting social-forms (Barth 2000, 30). One post-colonial concept is that of 'third places': along
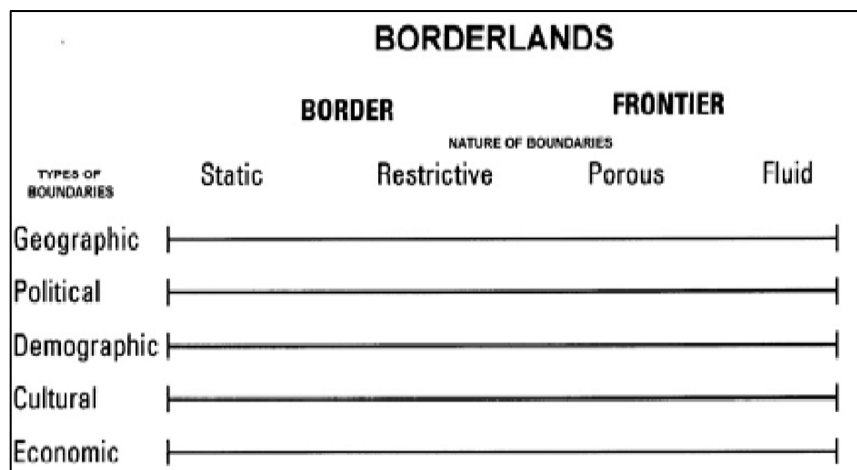


**Figure 23 - Continuum of boundary dynamics (Parker 2006, 82).**

boundaries, distinct groups interacting results in a vague area assuming traits from each (Naum 2010, 101; Ylimaunu *et al.* 2014). Other terms for these new socio-cultural groupings include 'ethnogenesis' (Chappell 1993, 267), 'creolisation' and 'hybridisation' (Lightfoot and Martinez 1995, 474). Contrastingly, groups can fragment due to peripheral forces pulling people in different directions (Ylimaunu *et al.* 2014). Cross-border perspectives are thus needed to view society across the wider region, rather than just as separate groups located to either side.

Peripheral societies develop unique characteristics and interaction networks due to distance from the 'cores' which they originate from. Differences between open, dynamic frontiers and closed, static borders affect these processes accordingly, offering different opportunities for collaboration and adaptation, subversion or unexpected uses (e.g. hiding from authority in one society, accessing different services available across the border, or exploitation of tax/price differentials), or open arenas of resistance (Baud and Van Schendel 1997, 211).

A clear issue with much frontier theory is its derivation from state-based societies with centralised political-systems. For this project, whilst the Roman Empire fits this definition, other major groups involved in Britannia's northern frontier were the less-easily definable later-prehistoric societies. Thus, models based on interactions between equivalent core-periphery systems (political/cultural, socio-economic, military) are much-less applicable. Lattimore (1962, 469) argues for two distinct types of frontier throughout history: those between similar groups and those dividing different types of society. Hard boundaries such as the Hadrianic and Antonine Walls, understood conceptually from Roman perspectives, would have been perceived very differently by indigenous people in Britain. Feuer (2016, 6-7) defines boundaries between non-state, 'tribal' societies as flexible buffer-zones surrounding small core-areas. Asymmetry in forms and perceptions of periphery across the frontier under study therefore needs consideration.

A final complication is that the nature, function, and perception of any frontier changes over time. Long-lived frontiers comprise ever-changing relationships, diachronic processes and intersecting forces (Rodseth and Parker 2005, 16), rather than stable, synchronic entities of colonial occupation. They are thus transitory spaces: zones of expanding interaction and transition. This fits late-Republican / early-imperial Roman frontiers (constantly expanding through political, economic, and military processes). Meanwhile, borders represent attempts to fix boundaries in place, as with early-second century AD Roman developments in Britain. Contrastingly, the variable (spatially and temporally) and differently-perceived (dependent on perspective) group territories north of Hadrian's Wall likely saw constantly-changing zones of interaction and periphery.

*3.1b – Defining Boundaries, Borders, Borderlands and Frontiers in the Current Study*

As shown [3.1a], various terms are used for peripheral regions of cultures/societies, often interchangeably (and confusingly). 'Borders', 'borderlands', 'boundaries' and 'frontiers' are all modern terms describing nominally-similar phenomena along human peripheries, but with differing connotations. Archaeologists have long-been concerned with such boundaries, since early 20th-century culture-history theory's emphasis on identifying bounded, homogenous socio-cultural units (Mullin 2011, 2). Terminology therefore needs defining prior to usage in this study.

'Boundaries' are a general term of demarcation, referring to any division between two things. They occur at various levels of human existence, from an individual's personal-space to the divisions between dwellings, edges of communities or their territories, and larger political/cultural peripheries (Feuer 2016, 13). Boundaries can be nature-defined (e.g. rivers, mountains): largescale
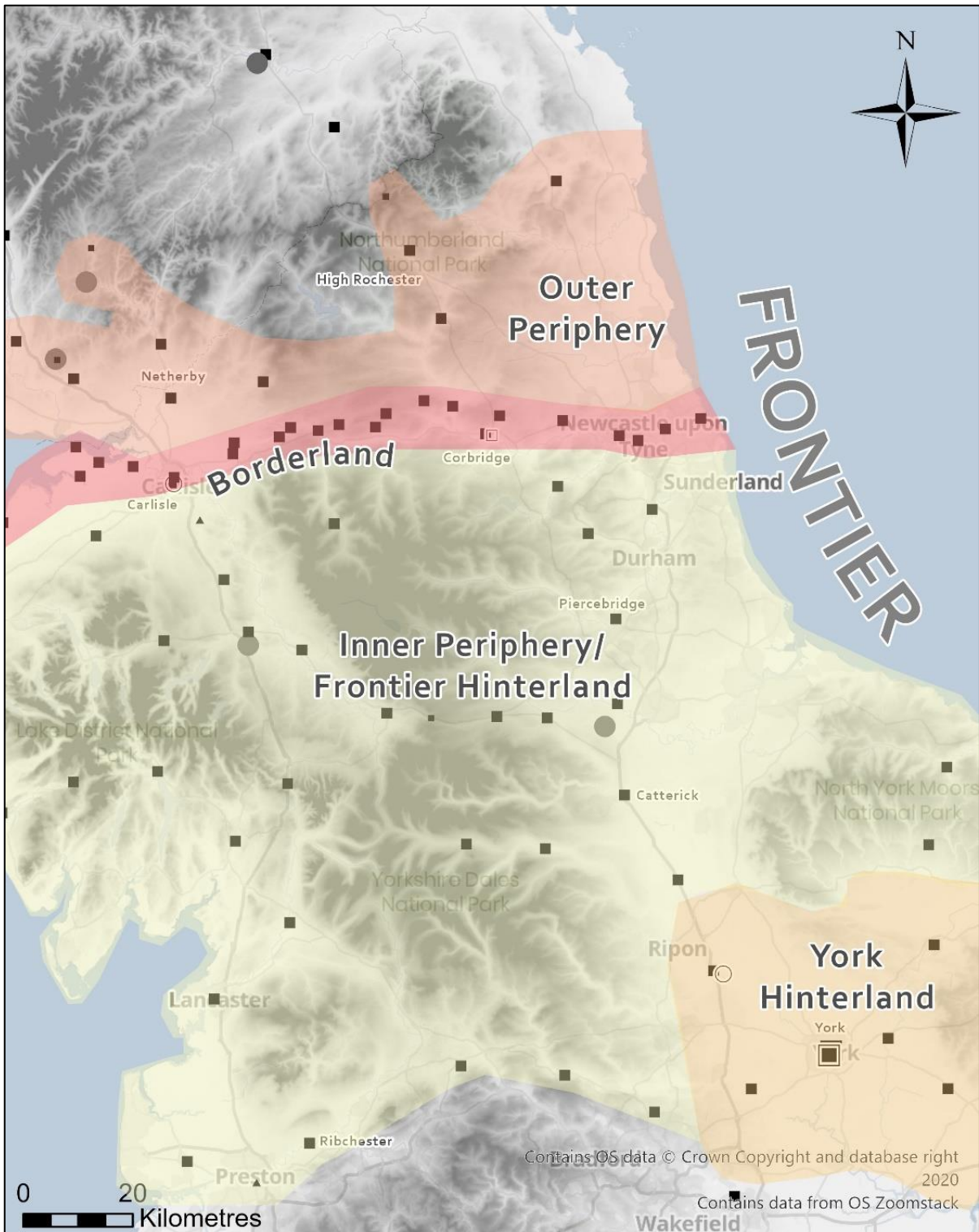
**Figure 24 - Map of the study-region, showing the definitions around boundaries used in this project.**

features dividing geographical regions, territories, or polities. They are also human-conceived demarcations referring to inclusion into something (excluding other things), ranging in scale from the individual person to larger concepts associated with power, belief, mythology, and culture. Consequently, in this thesis, 'boundary' will be used to demarcate any periphery at any scale and with regard to any dynamics: individual, political, military, social, cultural, economic, ideological, or environmental.

Drawing upon aforementioned theory [3.1a], 'border' will refer specifically to linear perimeter-works defining the official 'edge of empire' (though not necessarily the edge of imperial influence) as delineated by Roman state policies (e.g. the Stanegate, Hadrian's Wall and Antonine Wall). These are similar in nature to current-day polity-definitions, usually associated with socio-economic, political, military, or ideological processes. If borders are linear territorial demarcations, then the term 'borderlands' can be utilised to refer to the immediate zones located around and either side of the formal line: a zone of interaction or limitation, where the border heavily influences people living nearby. This definition is used in later European history, examining interaction and conflict zones between definable kingdoms and territories. Baud and Van Schendel (1997, 216) define borderland as "the region in one nation that is significantly affected by an international border." 'Borderland' will therefore refer to the immediate hinterland of the above delineated boundaries, incorporating the perimeter-line itself and forts and other infrastructure associated with the so-called 'military zone'. For Hadrian's Wall, this is situated within modern-day Northumberland and Cumbria along the Tyne-Solway isthmus.

'Frontier' will be the most-commonly used term, as is usual in Roman-period archaeological studies (and evidenced in the naming of the 'Frontiers of the Roman Empire' World Heritage Site), referring to the wider zone encompassing the entire project-area, from York in the south to the Scottish borders in the north. This is the broad transitional/peripheral zone at the edge of the Roman imperial system, but also the region of continued (or interrupted) interaction along the southern edge of enduring and changing (but not permanently Roman-occupied) late-Iron Age indigenous societies in modern-day Scotland. It is also applicable to a range of peripheries, encompassing processes and dynamics beyond merely political or socio-economic. Though Roman-occupied Britannia as a whole is often referred to as a frontier province (or provinces), in this study the frontier-zone will refer to the region north of York (Figure 24), different in character to Roman-period landscapes further south [2.2].

## 3.2 – Researching Prehistoric and Roman Frontiers
### 3.2a – Wider Approaches to Iron Age and Roman Frontiers

Having examined wider archaeological frontier-theory, specific studies of the Roman Empire's peripheries (and, where possible, the late-Iron Age that preceded them) will now be discussed. Roman frontiers have traditionally had greater academic attention than boundaries of later periods; they have also seen less influence from wider-disciplinary frontier-theory (Mattingly 2017, 152), though this is slowly-changing. The many Roman-frontier syntheses and conferences all attest the subject's popularity, though the lack of theoretical discussion is noteworthy. As identified by Hingley (2017, 12), there has been a dichotomy between studies of actual people living on the frontier and research on Roman fortifications and infrastructure (which emphasise politico-military strategy and socio-economic aspects). Although Roman frontiers are often perceived as extensive linear defensive-works such as Hadrian's Wall, these were rare, with natural features (rivers and deserts) forming most boundaries, and cultivated relations with external peoples the major mechanism for controlling peripheries (McCarthy 2008, 204-207). The following summary reviews key approaches to investigating the period's frontiers, contextualising the current thesis, rather than comprehensively evaluating the myriad different Iron Age and Roman peripheries.

Approaches to later-prehistoric boundaries are generally more theoretical, utilising broader zonal definitions and discussing longer-term processes of movement and landscape-interaction. This contrasts with traditional Roman frontier-studies' precise chronologies (Barrett and Fitzpatrick 1989, 1) and politico-military dynamics. Core-periphery models [Chapter 2; 3.1a] are less-applicable to prehistoric societies with fewer (at least archaeologically-visible) central-places, resulting in greater theorisation of boundaries via geographic factors and socio-cultural differences (De Atley and Findlow 1984, 1-3). Emphasising kin-based social-cohesion rather than politically-organised control, such groups have less-uniform and less-definable territories, despite some having elite leadership (Feuer 2016, 45). Nonetheless, archaeological and historical evidence for free movement and political/economic agency of Germanic peoples either side of the Rhine and Danube suggests that so-called 'barbarian' peoples operated similar, centrifugal societal frontiers to those of Rome, at least on a broad archaeological scale (Whittaker 1994, 241-242). Ethnography (often used when analysing prehistoric societies) habitually identifies 'tribe' as the primary study-unit: larger than 'community', with geographical- or linguistic-defined boundaries; whilst period archaeologists generally deal with individual sites (evidence for community rather than wider affiliations) (Ericson and Meighan 1984, 143). Crellin *et al.* (2016, 1) note that distinction of wider socio-cultural groups across the current study-region, though presumably present, remains difficult to identify. Societies of this type are found beyond many, though not all of the Roman Empire's peripheries (notable exceptions being the Parthian/Sasanid-Persian empires).

Regarding Roman frontiers, the Latin term *limes* is frequently used to denote defended military-frontiers linked by roads (Isaac 1988, 125). However, Classical texts (e.g. Tacitus' *Germania*, discussed in Isaac (1988, 126)) use the term to describe road-construction during military advances rather than defined boundaries, and it has never been found in-reference to the British frontiers (McCarthy 2008, 203). The term *limes* is thus problematic and will not be utilised here. Despite Roman culture ascribing importance to boundaries: e.g. Rome's foundation-myths tied to the *pomerium*, the *terminalia* festival, and defined divisions between order/chaos and culture/nature (Fentress 1979, 1), it was not until Augustus that frontier defensive-systems were first-considered, utilising natural features (Jones 1959, 246). What is more obvious from literary sources are imperial peripheries as perceived moral barriers separating civilisation from 'barbarians' (Curta 2005, 1-2; McCarthy 2008, 204). This historical context became subsequently embedded (via modern imperial analogy) within archaeology's focus on military, political and socio-economic aspects of Roman frontiers.

Broader Roman conceptions of frontier during the period were divided between early focus on outwards-expansion (with military garrison locations forming muster-points for ongoing / future advance), and later imperial reliance on static outer-edges (following several short-lived, 'failed' expansions) (Hanson 1989, 55-56; Drivjers 2011, 14). Richardson (2011, 2) notes that Roman concepts of *imperium* identify a cultural group, rather than territory. Therefore, the change to static boundaries represents situationally-specific reactions (Whittaker 1994; Hanson 2014, 4-6), possibly due to ongoing expansion being unsupportable by natural and existing cultural landscape dynamics (Hanson 2002, 30) or incidents such as the Varian defeat (AD9) and Batavian revolts (AD69-70). Lack of expansion led to establishment of linear control- and observation-zones along natural boundaries (e.g. tower-chains at Wetterau and the Gask Ridge, Figure 25) and eventually formalised barriers (Hanson 1989, 57-58). This shows the broader context for understanding the establishment and development of the Hadrian's Wall frontier.

**Figure 25 - Reconstructions showing development of Roman linear-boundaries: the Gask Ridge, Scotland [left] and Upper Raetian Limes, Germany [right]. Sources: https://www.youtube.com/watch?v=Fxy2Ukv8W4w https://en.wikipedia.org/wiki/Limes_Germanicus**

Modern Roman-frontier studies (e.g. Whittaker 1994) often cite Lord Curzon's (1907) *Romanes* lecture as the sub-discipline's origin. Using British colonial experiences from India, Curzon (1907, 8) suggested Roman imperial-frontiers were places of both division and negotiation, impacting the world-view of all those involved. Contextualised within this modern-imperial analogy (with inherent political biases), military and political dynamics (historically-attested campaigns, emperors/generals, and typological studies of fortifications) dominated much 20th-century research. Such approaches continue, as far afield as eastern Europe (e.g. Cătăniciu 1981), Syria (Dabrowa 1986) and Jordan (Killick 1986), often overlooking other dynamics (e.g. social, environmental, cultural, economic), which connect with concepts of identity and landscape.

Another major influence on Roman-frontier research stems from Romanisation concepts [Chapter 2], with distributions of Roman material-culture across frontiers being seen in terms of Roman socio-economic processes (e.g. Wheeler 1954a). Similar 'acculturation' models have been applied to Roman frontiers in the Netherlands (Brandt and Slofstra 1983), southern Numidia (Fentress 1979) and Arabia (Eadie 1986), originating with systems-theory [3.1a]. Major discussions revolve around frontiers forming barriers to Roman/non-Roman interaction or representing controlled movement. That rivers (Rhine, Danube, Euphrates and Tigris) were chosen as imperial borders: easily-definable but more-useful for supply and communication than as barriers (Curzon 1907, 21; Hanson 1989, 59), supports this. Even artificial barriers (e.g. the Raetian *limes* and Hadrianic / Antonine Walls) are located along and/or between rivers, facilitating water-borne transport (Figure 26). Debate around the purpose of the various frontiers of the Roman Empire thus continues, with ideas ranging from defence against external threats, control of raiding, oversight of transhumant pastoralism and movement across the boundary, protection of the outer provinces, keeping Roman troops busy and symbolic edges providing intimidation externally and closure internally (Jones 2021, 122). Examination of these varied socio-economic processes remains useful to the current study, alongside consideration of other aforementioned dynamics and smaller-scale evidence which assist in discussion of identity or landscape.

Within this theoretical context, non-intrusive archaeological survey, particularly aerial photography, was integral to developing studies of Roman frontiers (Breeze *et al.* 2011, 40). Aerial-survey thus became a major aspect of Roman-frontier research (Riley 1986, 667). Early aerial reconnaissance in Britain [2.1b/2.1c/2.2b], alongside field-recording, thus identified much of the northern-British frontier (Crawford 1949; Crawford 1953; Frere 1983; Bowden 2001), the basis for

**Figure 26 - Map showing the changing second-century AD boundaries of the Roman Empire. Source: https://www.antoninewall.org/about-the-wall/roman-frontiers**

resultant widespread-survey and mapping (Kennedy and Riley 1990, 17) and ongoing site-based research. As a result, Hadrian's Wall is the best-understood frontier of the Roman Empire, though many studies still follow traditional approaches, hindering alternative research topics and agendas (Hingley *et al.* 2012, 760).

Aerial survey's key role is found along other Roman imperial peripheries suited to the technique, with work in Syria by Poidebard (1934; also see Jones 2005), Jordan by Stein (Riley 1986, 661; Kennedy and Riley 1990, 11) and North Africa by Baradez (Breeze *et al*. 2011, 40), the latter ongoing (Mattingly *et al.* 2013). Meanwhile, continental-European research into the Rhine and Danube riverine-frontiers, with landscapes less-conducive (for instance, urbanised or forested) to aerial photography, saw differing approaches. Issues with extensive frontier-surveys include sampling bias (flights and fieldwork following known Roman roads and well-preserved sites) (Riley 1986, 661-674) and modern political influences (colonial mandates affecting Near Eastern and African research (Hull 2006, 26), mid-20th century nation-state ideologies impacting continental-Europe). These need assessing for any study.

Modern understandings of the Roman frontier-system draw-upon all of these differing landscapes around the empire's periphery. Synthesising this evidence, Luttwak (1976) theorised the changing nature of the frontiers from early political-oriented dynamics (threat of force and client-states) to fixed, static borders (emphasising territorial-control) and later defence-in-depth (more-reliant on military aspects). As described [3.1a], all frontiers are dynamic phenomena requiring diachronic analysis (Lerner 1984, 67): discussion of temporal change is thus vital to understanding. Subsequent critiques include the lack of evidence for empire-wide, centralised policy (Millar 1982, 2; Whittaker 1989, 64), under-stating of localised variation in frontier dynamics and environments (Mann 1979, 180-181) and an elite, male, Romano-centric focus over alternative perspectives. Elton's (1996) volume addressed this by investigating other forms of boundary involved in Roman frontier-regions (cultural, administrative, ethnic, linguistic, religious), defining overlapping zones of influence for different social-groups (but still relying on historical sources).

It has long-been argued (Fulford 1989, 81), that the development of fixed frontier-systems with regularly-disposed garrisons encouraged contact with indigenous groups through promotion of trade and settlement, stretching either side of the border (Hanson 1989, 55). More recent approaches focus on these 'communities', discussing military-civilian dynamics (Gardner 2017b, 66), and ideas of 'hybridisation' or 'third places' [3.1a], extending these across multiple regions (Gonzalez Sanchez and Guglielmi 2017, 7). Moving beyond these broader-regional discussions and fort-*vici* communities however, rural indigenous populations (and their settlements, existing or new) within the frontier-zone have seen little focus, a situation that is only recently (and slowly) beginning to change for the Roman frontier in northern Britain. Such groups have been approached primarily through artefact-based identity-studies, e.g. Collins and McIntosh' (2014) and Parker's (2017) edited volumes discussing themes such as women, children, and local community. This recent theoretical development forms immediate context for this thesis, which attempts to examine varied identities through landscape-survey data.

Symbolic and ideological components of frontier are a final theoretical strand of importance. Pohl (2005, 259) argues that monumental fortifications created a highly-'Romanised' frontier zone, attracting people from all-around to facilitate exchange-networks and cultural-transfer. Additionally, construction of extensive defensive-works, manifested most-famously in Hadrian's Wall and its forts, is symbolic of Rome's topographic domination, cutting-through existing routeways (controlling new access-points, Figure 27) and consuming large volumes of stone and timber (and land for ongoing food-supply) from local environments. These ideological frontier aspects have been further developed in recent discussion around



Figure 27 - Digital-reconstruction of the curtain-wall and Poltross Burn milecastle on Hadrian's Wall, showing the monumentality of the boundary. Source: English Heritage.

the nature and role of Hadrian's Wall (Hodgson 2017, Symonds 2021), looking at the impact of the boundary as both a unifying influence (particularly for people living to its south, for whom it offered perceived security) and a division affecting existing society and interaction across the region.

To summarise therefore, the present study comes from a long history of Roman frontier-research. Given archaeological survey's integral role in development of the sub-discipline, use of aerial survey here builds upon a long history of research. Furthermore, with theoretical focus on social, economic, cultural, ideological, and environmental impact of boundaries applied to a wide zonal frontier, it aims to build-upon modern academic trends examining the people who lived and worked in landscapes on the edges of both Roman and surviving Iron Age worlds, rather than focussing on fortifications and politico-military strategies.

*3.2b – Concepts of Frontier Applied to Iron Age and Roman Identity*

As identities are constructed in the context of one's surroundings, the 'frontier' nature of the study-region would have profoundly affected how people within northern Britannia constructed and perceived their own identities, and also how they were in turn viewed, from elsewhere in both the Roman Empire and wider Iron Age northern-Europe. Themes of identity have thus been a major influence on recent Roman frontier-studies development (Collins and McIntosh 2014; Gardner 2007; Gardner 2017a; Gardner 2017b; Hingley 2017).

Northern Britannia remained a frontier-zone for the entire Roman period, with military infrastructure and permanent garrisons greatly influencing the identities of people both already-there and new to the area. This differs from traditional 'Romanised' landscapes further south in Britain and the wider empire [2.2]. Identities were therefore constructed in different interaction-contexts (forts, associated *vici*, and indigenous rural sites) from those elsewhere, with different identity-components correspondingly emphasised.

One major debate has been around relationships between military personnel and civilians (and all variations therein), used by archaeologists (e.g. Gardner 2007) to investigate identity along the Roman frontiers. Perceptions of the Roman army in Britain as a homogenous, monolithic institution tied to grander narratives of Romanisation of the province [2.2a] have now been heavily-critiqued (Haynes 2016; James 1999). Indeed, James (1999, 14) suggests that 'Roman army' as an entity is a modern concept only. There was no equivalent Latin term for the whole organisation, Romans instead referring to groups of individuals organised from the lower ranks upwards (James 2001b). Gardner (2007, 241) has examined different levels at play within 'military identity', ranging from the individual through to associations including place, gender, age, status, community, religion, kin-group and unit/profession, and then larger, macro-scale identities such as the army-profession, ethnicity or belonging to the Roman world (Figure 28). Consequently, the military did form a well-defined, self-aware group, with structures imposed from above, but with individual agency developing this into more-complex identities (James 1999, 16-18). Modern studies (Collins 2001; Gardner 2001; Gardner 2007) therefore attempt to look beyond an army comprising automata, by examining diversity of practice, relationships with civilians and the landscape, and status. Roman-period concepts of 'army' therefore differ from modern perceptions, with important implications for the identities involved, and needing critique for potential ethnocentrism.
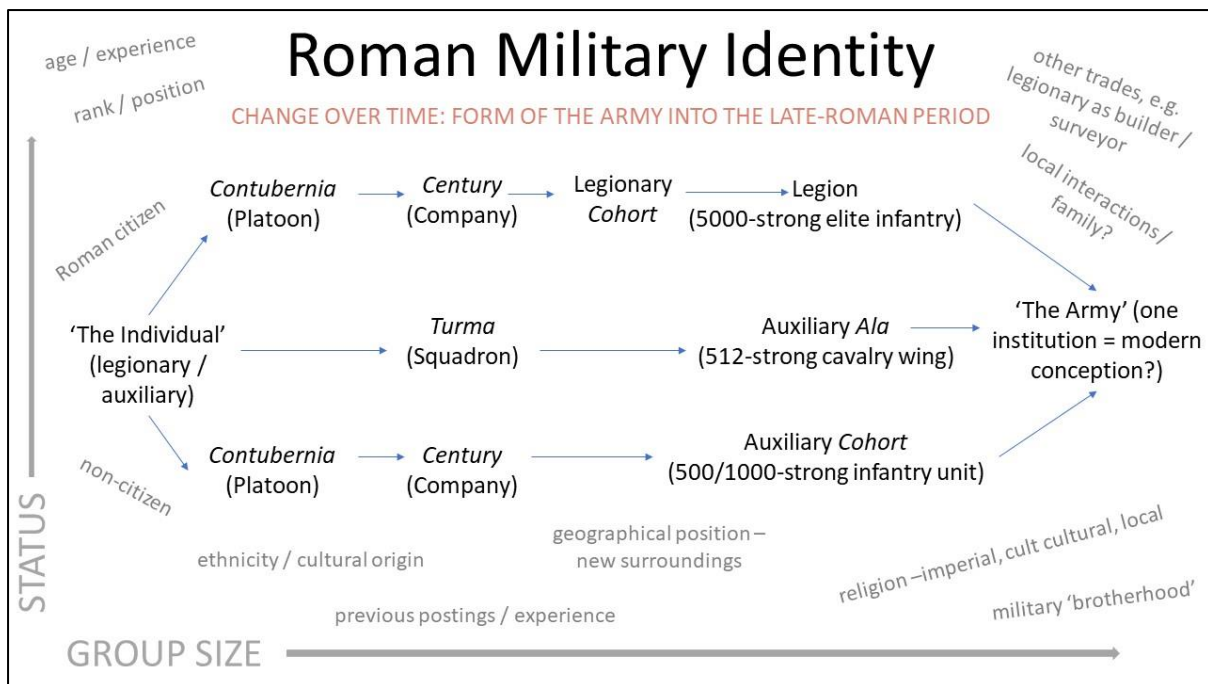
**Figure 28 - Facets of Roman 'military' identity: individual and group-affiliations (different scales, statuses) and other highly-variable aspects. Source: Author, derived from Gardner (2007) and others.**

In re-examining interactions between 'military' and 'civilian' communities, archaeology has questioned the distinct natures of these identities. James (2001b, 84) argues that definitions of 'military' should include non-combatants, associates and dependents. Re-analysis of evidence for different activities between forts / fortresses and associated 'civilian' settlements (*vici / canabae*) has revealed less-definable boundaries between military and civilian than expected, examples from Wales and northern England also showing considerable change over time, from more-clearly segregated first- and second-century activities to later hybridised, locally-oriented communities (Gardner 1999; Gardner 2017a, 15-17). Military-civilian dynamics are therefore one crucial aspect of identity in this frontier region.

On a broader scale, cultural or ethnic components of identity (though constantly shifting) are primarily ways of centring oneself in the world. Being on a particular cultural or socio-political periphery therefore differently-influences one's identity: potentially strengthening ties back to a cultural-core given unfamiliar surroundings, adapting existing perceptions to new environments, or embracing opportunities and influences from the 'other side' to create a new, 'hybrid' identity (Naum 2010, 101; Ylimaunu *et al.* 2014) (below). Thus, "construction or reinforcement of identities can be seen in certain circumstances to be a response to people being placed into a situation with new surroundings" (my MA thesis, 2012, unpublished). For example, monumental architecture and spatial organisation of Roman forts enforce military, status-based and 'Roman'/ imperial elements of identity for the occupants (and those in attached external settlements), via the clearly-defined perimeter, networks of straight, ordered movement, central foci of sanctified authority (headquarters/*principia* and commanding officer's house/*praetorium*) and hierarchical accommodation (Figure 29) – these mark the community off from the outside and discipline the space within (Gardner 2002, 338).

However, alongside the over-arching imperial core's influence on identity [see 2.2a for critique of 'Roman' as a term], the varied ethnic and/or cultural origins of the soldiers involved in manning those frontiers (and the merchants and tradespeople supporting them) adds more

complexity to such identities. Furthermore, these ethno-cultural influences on identities in the Roman frontier regions changed over time, for instance, troops with initially largely-Italian origins, then wider-Mediterranean and eventually more-widespread (north-western and central European, near-Eastern, north African) identities; such varied troops moving back and forth across the empire alongside later local recruitment (Dobson and Mann 1973, 200-205). Epigraphy and written sources have long-been primary to such studies (Jones 1997, 35), only recently greatly augmented by material-culture studies.

Mobility and interaction beyond one's immediate environs are therefore also crucial to the formation of identity, linking to other landscapes regionally and

**Figure 29 - Standard plan of a Roman fort, showing clearly-delineated, ordered axes of movement and defined zones of activity. Source: https://romanforts.org/study/study_sectors.php**

empire-wide, and creating identities with a range of wider affiliations: for instance, troops or merchants with specific ethno-cultural origins moving through (and thus exposed to) different cultural- and ethnicity-areas before arriving in northern Britain (with its own local influences). However, ancient communication-speed (despite new Roman inter-connectedness) means care is needed not to introduce ethnocentric globalising-concepts (Gardner 2017b, 34-35), particularly given recent European focus on mobility and migration along Roman frontier-sites tied to associated international tourism (Hingley 2018, 86). Also, such levels of mobility were not unprecedented (Wells 2001, 8), wider movement and interaction being present throughout later prehistory, a topic returned to in Chapters 5-7. Nevertheless, the scale and diversity of movement under Rome was unprecedented, offering new opportunities for interaction and identity-construction.

Alongside the various newly-arrived ethno-cultural identities appearing in northern Britain with Roman occupation were the ongoing social and/or cultural affiliations informing indigenous peoples' identities. Indeed, identity can renew or strengthen ties to one's existing surroundings and affiliations in the face of externally-imposed change. The impact of pre-Roman local traditions and cultural landscapes in northern Britannia thus needs consideration. Given that local environments affect perceptions of one's place in the world and can constrain or enable displays of identity (for instance, availability of food constraining dietary choices), local influences and relationships further inform and impact new arrivals' conceptions. As identities were primarily formed in local landscape contexts due to smaller scales of daily experience, interaction between indigenous and varied 'Roman' identities is thus vital to discussion.
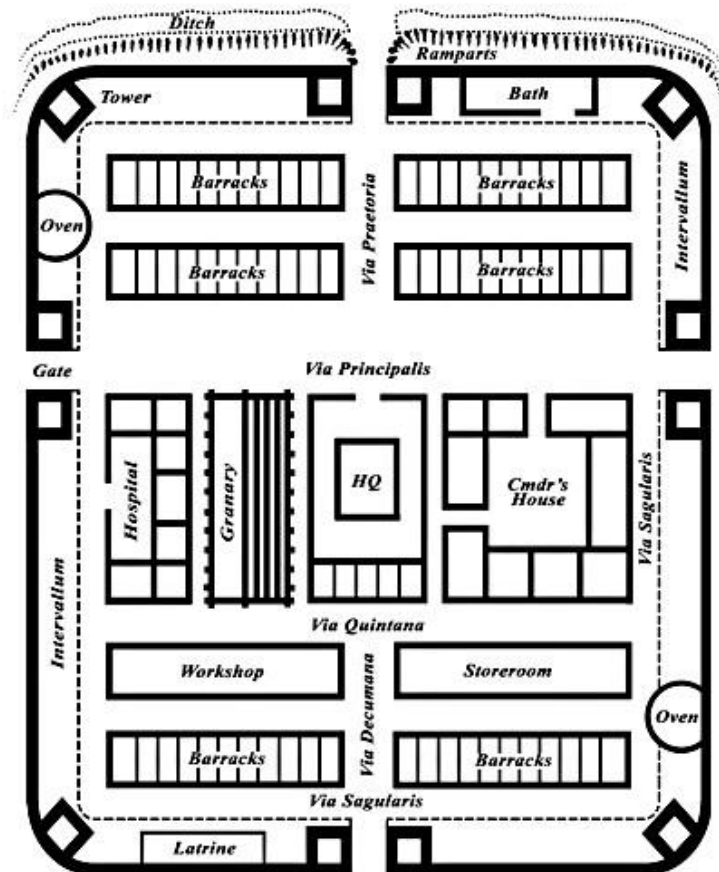
The Rhineland in continental Europe forms a useful parallel for examining such interactions, with non-urbanised pre-Roman societies, mixed wooded and cleared agricultural landscapes and less-definable indigenous groupings and activities (Carroll 2001, 16-17) similar to Britain. Much work has been done in Germany and the Netherlands on interactions between Roman and indigenous identities and resultant socio-cultural forms. Indeed, the Roman Rhine frontier seemingly followed a potential existing ethno-cultural divide between peoples identified by Rome as 'Gauls'/'Celts' (centred in modern France) and 'Germans' (further north-east) (Carroll 2001, 13-14). Such re-use of existing societal boundaries has been previously hypothesised for northern Britain also [Chapters 5/6]. However, complexity is shown by the blending of different indigenous pre-Roman material-culture, activities and other socio-cultural forms on both sides of the Rhine (Roymans and Gerritsen 2006) which undermines Roman categorisations of Gallic and Germanic (Carroll 2001, 112-113) showing evidence of interaction and mobility which undoubtedly changed identities locally. Such mobility (both on an individual scale (such as military recruitment), and wider group migrations) resulted in a constantly-changing situation of politically-defined ethnicities, rather than long-standing, separate cultures with major associated changes to settlement patterns (Roymans *et al.* 2020, 287-288). We must also be careful when discussing ethnic identities derived from Roman writing, which served Roman political, administrative and judicial functions rather than relating necessarily to actual self-determined cultural or ethnic affiliations (Gardner *et al.* 2013, 1-2).

The ongoing developing nature of such identities along the Roman Rhineland periphery is shown in the creation of new collective-identities such as the Batavians in the first centuries BC/AD (Brather 2005, 140-141; Roymans 2004, 251-253), politically-created by and affiliated with (via mutual military support) Rome. Together with other Germanic groups transplanted by Roman authorities across the Rhine, this resulted in new ethno-cultural identities directly informed by Roman interference (Carroll 2002, 111-112). These Rhineland examples are now seen as socio-cultural ethnogenesis combining elements and identities from both Roman and Germanic societies (Carroll 2001, 10), resulting from Roman political, military and cultural influence associated with establishment of the frontier. This then laid the foundation for later Roman *civitas* organisation (e.g. Nijmegen for the Batavians) to further secure the frontier (Roymans 2004, 251-253). Meanwhile, the later 'Frankish Confederation' (Miller 1993, 277) and Alamanni in Germany (Carroll 2001, 114) and the equivalent 'Picts' in northern Britain beyond Hadrian's Wall (Hunter 2007, 1) are usually interpreted as external responses to Rome's military presence. This complexity of responses and interactions, changing spatially and over time, therefore has important resonance for the influences acting upon identities on the northern British frontier.

Alongside broader culture or ethnicity, further components of identity such as gender, age or religion/spirituality [2.1d] might be affected by distance from a core's societal norms and proximity to alternative standpoints on those aspects. As discussed in 2.2a however, such aspects of identity will only be addressed briefly via site-based evidence in this project, due to the large-scale survey nature of the primary data used. Class and status are highly-stratified in imperial-states and exposure to differing, less-obviously hierarchical societal structures (for instance, late-Iron Age northern Britannia) would impact such conceptions. Conversely, the military context of many sites in this imperial frontier region would reinforce aspects of rank and status.

Peripheries of large cultures/states are potentially more important than cores for the ongoing development of identities. Gardner (2017a, 3) thus argues that cultural identities (e.g. 'Roman' or 'Briton') are more-often defined in peripheries than those polities' central areas due to greater opportunity for the integration of differing perspectives and identities which help define

them, Green and Perlman (1985, 9) also suggesting that wider social-change is more-visible on frontiers. Hekster and Kaizer (2011, 11) further argue that as people moved back and forth across the frontier, they would switch between exhibiting different aspects of their identity, dependent on where in the borderland they were. Recent studies have thus emphasised boundary-zones as places of transformation and creativity, enabling varied connectivity and encounters (Hingley 2018, 85), all influencing the nature of identities constructed there.

Alongside weakening or strengthening existing identity affiliations and components derived from the socio-political or ethno-cultural cores to either side, frontiers additionally give rise to specific 'borderlander' identities: a person's peripheral location in the world directly-affecting how they see themselves and are in turn seen. Frontier people can define themselves in relation to the frontier itself, emphasising that peripherality in construction of their identity. As argued by Turner (1893, 226-227) during early American frontier-theory, traits of rugged coarseness, inquisitiveness, quick-thinking and restlessness, taken from the frontier itself, become embedded in personal (and group) identities (Figure 30). Another defining characteristic is the concept of 'otherness' (Baud and Van Schendel 1997, 213), relating to those from beyond the boundary (varying dependent on one's own perspective). For the period in question, an obvious example would be ideas of 'barbarian' [2.2a] defined by Roman writers. Relationships between people defining themselves in relation to one group, and those they perceive to be from the boundary's other side, are thus crucial frontier dynamics.



Figure 30 - Depictions of northern-'Britons' [left] and post-medieval border-reivers [right], attesting attributes of ruggedness and frontier-living. Source: http://www.thetimetravellers.org.uk/brigantes-group.html http://reivers.info/reiver

As with identity, we must be careful when applying modern definitions of frontier to past situations. Thus, our own definitions (with potential ethnocentric associations from modern borders and identities) must be applied carefully. Furthermore, there is very little contemporary written evidence about concepts of frontier from Roman imperial viewpoints, and these would also have been very different to those of existing local peoples and groups (and to those living on the frontier itself, regardless of affiliation); each conception of boundary-making undoubtedly distinct and complex. Finally, it must be remembered that frontiers are highly-variable in nature along their extent (spatially and temporally), resulting in need to study small-scale interaction, perceptions, and responses against broader characterisations.

*3.2c – Concepts of Frontier Applied to Iron Age and Roman Landscapes*

The frontier-nature of these landscapes affects not only their contemporary observation, but also environmental, economic, and societal/cultural opportunities afforded by the peripheral context. Though boundaries appear in nature, defining of borders and frontiers is anthropocentric, as with landscape-conception (Kristof 1959, 276-277). Nonetheless, many Roman frontiers were defined according to environmental considerations (rivers, deserts, mountains) [3.2a]. Franconi (2017, 85) argues that alongside transport, communication and defence opportunities, rivers like the Rhine also had active roles in local societies. While the Roman frontier under study was not riverine, rivers played a role in its operation, and other natural features had similar dynamism, affecting both its role as a barrier and connectivity through and along it (Symonds 2021) [3.3b].

Frontier concepts influence both past and modern-day perceptions of such regions. Borderland landscapes are often thought marginal, both in relation to a territory's core but also economically, socially, and culturally. As with identities [3.2b], connotations including ruggedness, remoteness, bad weather and untameable nature influence landscape-conceptions around these peripheries (for the Roman northern frontier, this corresponds with the highest uplands in England). Related ideas include activities and processes in the landscape being concentrated in a few key places (e.g. forts/*vici*), whilst other components such as local settlements are traditionally seen as more-dispersed and smaller-scale than those closer to core-areas. A resultant issue in the study-area is the archaeological focus on 'Roman' sites, at the expense of indigenous features (something this thesis hopes to address). Interactions of forts with surroundings are primarily assessed via economic processes (presence of fort hinterlands, systems of food-supply). Frontiers also add connotations of opportunity or adaptation to unfamiliar environments, or alternatively imposition of ideas, practices, and perceptions from central-regions onto remote landscapes.

Movement as social-action is crucial to landscape construction, facilitating perception and interaction. In borderland situations, boundaries hinder existing forms of landscape interaction by functioning as barriers or permeable filters. For Hadrian's Wall, this includes the main 'curtain wall', the *Vallum* (linear earthwork banks and ditch behind the Wall, postulated as demarcating the 'military-only zone') and also fort perimeters. Conversely, roads and other infrastructure offer new modes and alignments of travel (connecting military installations to one another and further afield). Travelling through an imperial frontier landscape was thus highly-controlled (Given 2004, 51). Forts were also sited strategically on natural routeways (valleys, passes, river-crossings or oases) to both control indigenous movement and protect Roman communications (Fentress 1979, 112; Hanson 2014, 6). Rivers, whilst forming natural boundaries, also acted as communication-lines, controlled by carefully-positioned installations (Hanson 2014, 7). While frontiers have aspects associated with remoteness, their nature as part of larger systems (Hudson 1969; Wallerstein 1974) [3.1a] means they are inherently-connected to landscapes near and far within the socio-economic, cultural or political spheres they define [3.1a/3.2a], to either side.

Therefore, frontiers/borders directly and indirectly affected creation of both identity and landscape in the Iron Age and Roman periods for the study-region, and frontier-theory thus comprises the third major component of the thesis theoretical framework.

## 3.3 – The Northernmost Frontier of the Roman Empire

### 3.3a – Archaeological Research on Northern Britain: A Historiography

Having discussed wider frontier-theory and Roman peripheries more-generally, disciplinary approaches to studying Iron Age/Roman dynamics for the particular frontier comprising this project-area can now be examined. Current understanding of these periods within the region is summarised in the regional and Hadrian's Wall research-frameworks [Chapter 1]. The World Heritage Site comprises a 1-6km wide buffer-zone around the line of Hadrian's Wall and Roman coastal-defences of Cumbria, largely based-upon visibility (Breeze *et al*. 2011, 82). The WHS area and research-framework were not designed to cover Iron Age activity, nor the wider frontier-region (Symonds and Mason 2009b, 2,16), which are therefore covered by the regional-frameworks.

While academic interest for Hadrian's Wall has a long pedigree (Figure 31), the surrounding borderland and wider frontier-region have less-intensive histories of research. A detailed historiography is not necessary, given excellent summaries in the research-frameworks and regular syntheses by leading experts (see Breeze 2019, Hodgson 2017 and Symonds 2021 for the latest). To summarise therefore, following initial reporting of the Wall in William Camden's 1599 *Britannia*, antiquarians continuously added to overall-understanding through survey and excavation, including 19th-century purchase and 'conservation' of large sections by John Clayton. More-modern, 'scientific' investigations began in the 1890s. Early-20th century research excavations at key Roman military and urban sites were undertaken by both local interested amateurs and academics from Durham and
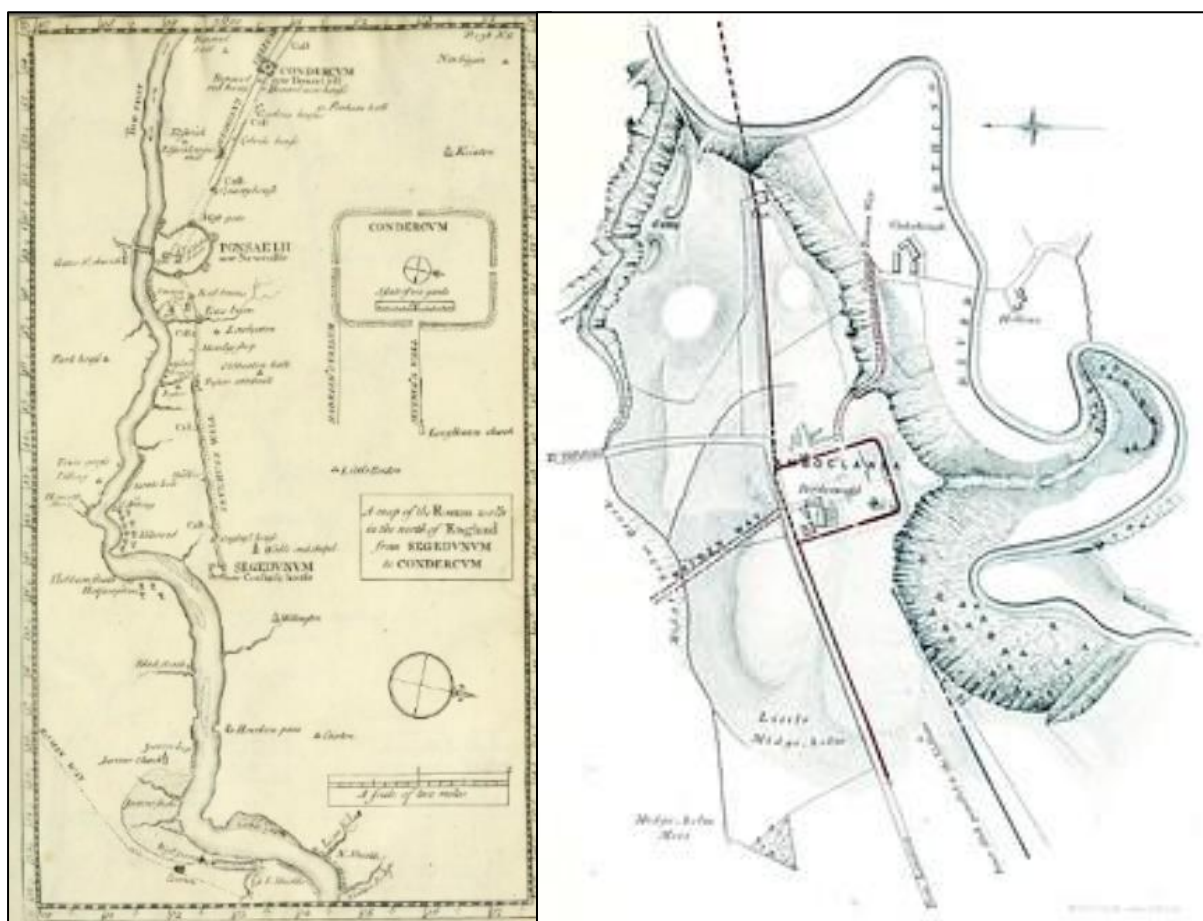


**Figure 31 - Antiquarian plans of Hadrian's Wall by Horsley [left] and MacLauchlan [right], showing the focus on military features. Source: https://perlineamvalli.wordpress.com/2011/10/04/mapping-hadrians-wall/**

Newcastle, before many borderland-features entered state-stewardship in 1945. Longstanding intervention, consolidation and survey included research at Housesteads, Wallsend, South Shields and Birdoswald, alongside the famous, ongoing Vindolanda research-project (Symonds and Mason 2009a, xvii-xix). Carlisle and Newcastle (and more-recently their suburbs) saw much development-led archaeology. Ascertaining phased-development of sites, such excavations also added extensive artefactual and ecofactual assemblages allowing analysis of Roman-period daily life. However, there has been notable focus on Roman military sites (and attached settlements) rather than indigenous landscapes in which they were situated (Figure 31).

Non-intrusive survey has been important to this frontier's investigation. Following antiquarian plans and comprehensive 1850s surveys by Henry MacLauchlan (Figure 31), analytical field survey [2.1c] has been integral to many studies by the Ministry of Works and subsequent heritage-bodies. As mentioned, [3.2a], aerial survey has also been fundamental, commencing with Crawford and St. Joseph (Hunter and Carruthers 2012b, 6), followed by regular seasons of flying for specialist archaeological purposes by heritage-bodies, local professional and amateur fliers, and academics. North-west England/south-west Scotland saw extensive aerial photography by Manchester University (Higham and Jones 1975), Cumbria County Council, and RCHME over both upland and lowland landscapes (Brennand *et al.* 2006b, 16, 19). North-eastern England has seen large aerial surveys commissioned by Northumberland National Park and flown by Tim Gates (1997; 2004) and others, complementing widespread field-surveys and excavations by George Jobey (1960; 1963; 1964b; 1970; 1973a; 1977; 1978b) on indigenous rural settlements (Petts and Gerrard 2006, 38-39; Symonds 2009, 9). For the Roman borderland, aerial-mapping has taken place via the Hadrian's Wall NMP (Oakey 2009), while other NMP projects are dotted through the wider frontier-region [Chapter 4] (Figure 32). Largescale landscape-projects comprising aerial and ground-based surveys investigated northern England's uplands (e.g. *Discovering Our Hillfort Heritage* in the Cheviots (Oswald *et al.* 2006); *Miner-Farmer Landscapes* in the North Pennines (Oakey *et al.* 2012; Went and Ainsworth 2013)), though such surveys are less-common in lowland landscapes. Surveys of Iron Age and Roman-period sites in southern Scotland also have a long history, building upon the Ordnance Survey's work (Hunter and Carruthers 2012a, 116), though integration of site-based studies into holistic, wider-landscape research has only-recently begun (Hunter and Carruthers 2012b, iv,10).
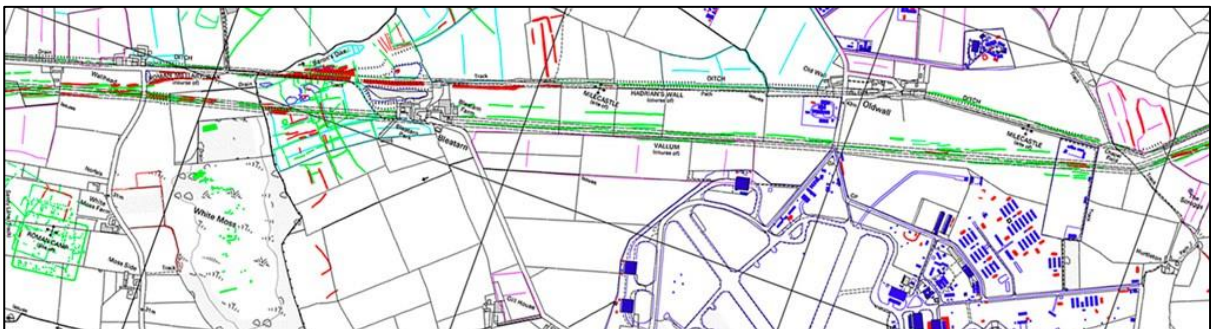


Figure 32 - Extract from the Hadrian's Wall NMP mapping, 2002-2008. Source:
https://historicengland.org.uk/research/methods/airborne-remote-sensing/aerial-investigation/

Traditional narratives of the Roman border focussed on construction and development of military installations, attempting to connect these with wider historical events and particular named Romans (Hingley and Hartis 2011, 81; Hodgson 2009a, 1) [3.2a]. While this detail around chronology and how military features interrelate make Hadrian's Wall the best-understood Roman periphery,

Hingley *et al*. (2012, 760) suggest this may actually constrain modern reinterpretations. Indeed, few new questions have been investigated regarding the nature of interaction between groups, local economy (beyond military-supply) and environment (Petts and Gerrard 2006, 146; Philpott and Brennand 2007, 57). The focus on Roman fortifications led to a knowledge disparity between Roman and native sites (and military and indigenous landscapes) for much of the region, with the two often studied separately. Many Roman-frontier syntheses thus continue to focus on forts, *vici,* and associated infrastructure, leaving wider-regional studies to deal with 'native' landscapes.

Much discussion involves the frontier's operation in contexts of imperial socio-economic systems: for instance, the function of milecastles and gateways, controlling cross-border movement and trade (Hodgson 2009a) and networks of supply and communication [2.3a, 3.2a]. Debate around the broader frontier-zone is dominated by definition as a distinct 'military zone' (Millett 1990) and/or 'native landscape' (Dark and Dark 1997), lacking evidence for Roman socio-economic developments similar to those in southern Britain (Higham 1989). Together, these show the ongoing influence of 20th-century ideas of Romanisation. Post-processual and post-colonial theory have influenced recent frontier-study (Mattingly 2011) via discussions of identity and landscape, including ideological aspects of the border affecting landscape-perception, control of interaction affecting identity-creation, and re-evaluation of substantial artefactual and ecofactual assemblages to address previously-overlooked elements of frontier-society (e.g. Collins and McIntosh 2014; Hingley and Allason-Jones 2009). Nonetheless, these elements need further research.

As mentioned above [2.2b, 2.3b], more-recent excavations at several sites in south-east Northumberland, just north of the Hadrian's Wall borderland (Hodgson *et al.* 2012), together with broader synthesis of the full excavated settlement record up to 2013 (generally lowland sites in northern England) as part of the *Roman Rural Settlement Project* (Allen *et al.* 2017; Smith *et al.* 2016; Smith *et al.* 2018) have contributed greatly to discussions. They have somewhat upended traditional narratives of small, stone-built farmsteads and widespread pastoralism (with limited arable) north of the Tyne, based largely upon upland aerial and field surveys and limited excavations mentioned above. These new investigations have enabled renewed discussion around the nature and density of indigenous settlements (particularly in the lowlands) and the mixed-agricultural landscapes in which they existed, north and south of Hadrian's Wall. This has in turn enabled both wider investigation of the interaction of upland and lowland communities regionally, and also re-assessment of the function and impact of Hadrian's Wall (Breeze 2019; Hodgson 2017). Such evidence has suggested initial Roman military activity in the region facilitated further economic-growth, ongoing from the late Iron Age, but the formalising of Hadrian's Wall in the second century AD resulted in substantial socio-economic changes (at least in the lowlands), with abandonment of settlements and changing life-styles (Hodgson *et al.* 2012, Hodgson 2017, Symonds 2021).

In summary, the development of study of northern Britain's Roman frontier has paralleled, and often led, wider trends in Roman-frontier understanding, due to extensive archaeological archived and ongoing research across the region. However, as has been shown by recent work, alternative aspects to military and provincial-level socio-economic dynamics need further investigation, to understand the peripheral area in its entirety.

*3.3b – The Roman Northern Frontier: The State of Current Knowledge*

Having summarised the historiography of regional investigation [3.3a], this section will assess current understanding of the Roman Empire's periphery in northern Britain, active as a

military-frontier from the late-first to early-fifth centuries AD, occupying an enduring, but also changing, indigenous landscape.

Historical-based accounts suggest first-century northern Britain between the Humber and southern Scotland to have been the territory of the *Brigantes* (generally-agreed to comprise a confederation of smaller socio-cultural groups), centred in North Yorkshire (Breeze 2008, 63-65) and surrounded by several, more-distinct 'tribes'. After decades of Roman interaction with the Brigantes, permanent military occupation in the region began c.AD71 under Governor Cerialis, with founding of *Eboracum* (York) as a legionary headquarters and establishment of a network of forts and roads across northern England (Ottaway 2013, 93-94). Material-evidence from Ribchester, Lancaster and Carlisle suggest a contemporary Roman military arrival in the north-west (Philpott 2006, 63), fort-locations either side of the Pennines suggesting naval supply and communication as key to this invasion and ongoing occupation.

As discussed [2.3], military-expansion took place into pre-existing landscapes of mixed pastoral and arable agriculture, accompanied by settlement-hierarchies of varied form. Hingley (2004) defines differing indigenous rural-settlement patterns regionally: Yorkshire/County Durham (similar though less-intensive settlement forms to southern Britain); upland areas and north-western England (mostly enclosed settlements with little hierarchy); and further north (similar, but with hillforts and other site-types revealing potential social-stratification). Communities would have experienced a series of locally-distinctive but not necessarily clearly-bounded landscapes (Crellin *et al*. 2016, 8; James 2001a). Some researchers previously postulated an existing frontier-zone reflected in differences in settlement-form, material-culture and agricultural-practices south and north of the Tyne-Eden Valleys (Allason-Jones 2009, 219-220; van der Veen 1992), often attributed to boundaries between the (Roman-defined) aforementioned Brigantes and tribal-groups further north (Symonds and Mason 2009b, 2). This area, reoccupied by the later-Roman borderland (below) is generally devoid of indigenous central-place sites or hillforts (Symonds 2009, 5).

Extensive work by Jobey, aerial-surveyors and others [6.2] provides the foundations underpinning understanding of indigenous settlement distribution and morphology in upland parts of the region (Allason-Jones 2002, 823), ubiquitous site-assemblages comprising limited ceramics, quern-stones and occasional ornaments (Allason-Jones 2009, 217; Collins 2014). The most-common settlement-forms here are enclosed farmsteads with roundhouses, pens, and yards (Figure 33), constructed in stone or timber (likely-dependent on local resource-availability) and representing single family-units (Dark and Dark 1997, 80-82; Hingley and Allason-Jones 2009, 148). Other identified indigenous landscape-features in areas of good earthwork preservation include coaxial rectilinear field-systems, trackways and cord-rig fields (narrow, uneven cultivation-ridges from small-scale crop-growing) suggesting localised subsistence cultivation (Huntley 2009, 110). An issue



**Figure 33 - Aerial photograph of typical indigenous rural-settlement at Gillsmere Sike, Lune valley (Oakey 2015).**
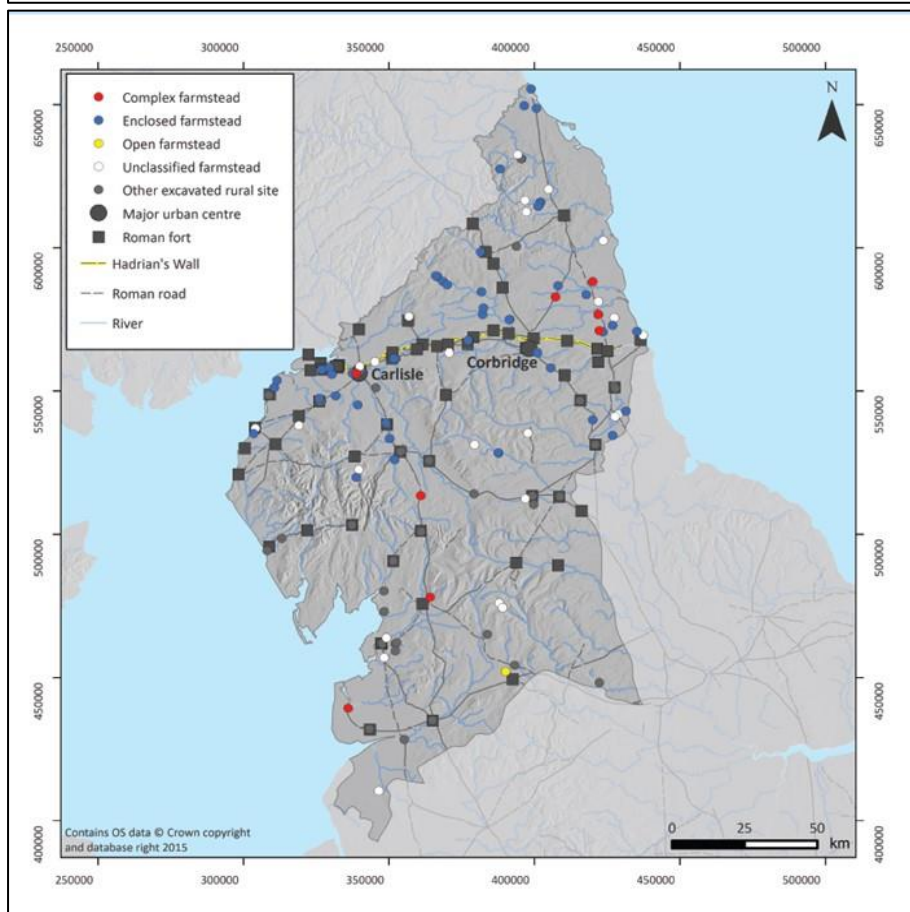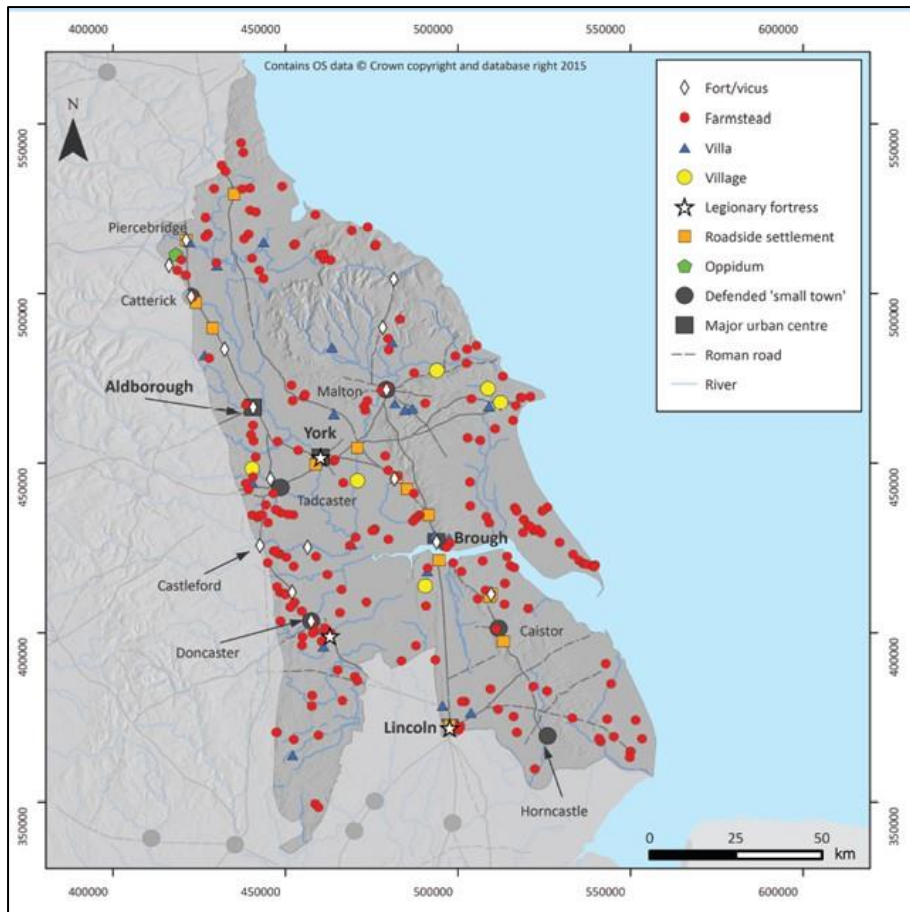
with understanding these upland landscapes is the general lack of material-culture, resulting in inference from settlement morphology being relied-upon to interpret both settlement activities and processes (Taylor 2001, 49), and also problematic for dating of sites, thus providing long date-ranges for potentially short-lived phases (Hodgson and Brennand 2007, 51). There is thus a need for better-dating at most sites (Collins 2014, 166; Hodgson and Brennand 2006, 51; Huntley 2009, 108; Symonds and Mason 2009b, 16). Another problem is that less-well preserved site-types (such as unenclosed roundhouses) are hard to identify from remote-sensing alone (Symonds 2009, 7),

**Figure 34 - Distribution maps of different types of settlement from the Roman Rural Settlement Project, showing two of its regions: lowland north-east England (top) and upland northern England (bottom) (Smith et al. 2016, 246,316).**

methods which make up much of the landscape investigation in these remote uplands.

The bias towards well-preserved upland settlement evidence has been somewhat offset by the aforementioned [3.3a] recent focus on lowland excavations, many resulting from development-led work. The *Roman Rural Settlement Project* (RRS) offers broader regional insights into settlement patterns, examining excavated artefactual, structural and ecofactual evidence for topics such as architecture and site form, agriculture, industry, transport, people's lives and identities, spiritual beliefs and burial practices (Smith *et al.* 2016, xx-xxi,9). This thesis' study region is split between two of the RRS regions – the north (the uplands of northern England and much of the north-west lower-lying valleys and coastline) (Smith *et al.* 2016, 308) and north-east (lowlands of the east Midlands, Yorkshire, Country Durham and southern Northumberland) (Smith *et al.* 2016, 242), divided by natural environment character and Roman settlement dynamics (Figure 34). Though both regions show long-lived late-Iron Age landscape organisation (compared to areas further south), persisting into the third/fourth centuries AD (*ibid.* 280,314-315), indigenous settlement patterns differ more considerably, with enclosed farmsteads (82% of sites) containing circular structures (95%) in the north (*ibid.*, 311,320) and more complex settlements, including Roman forms of building, in the north-east (Figure 34). Meanwhile, Hodgson *et al.*'s (2012) work on
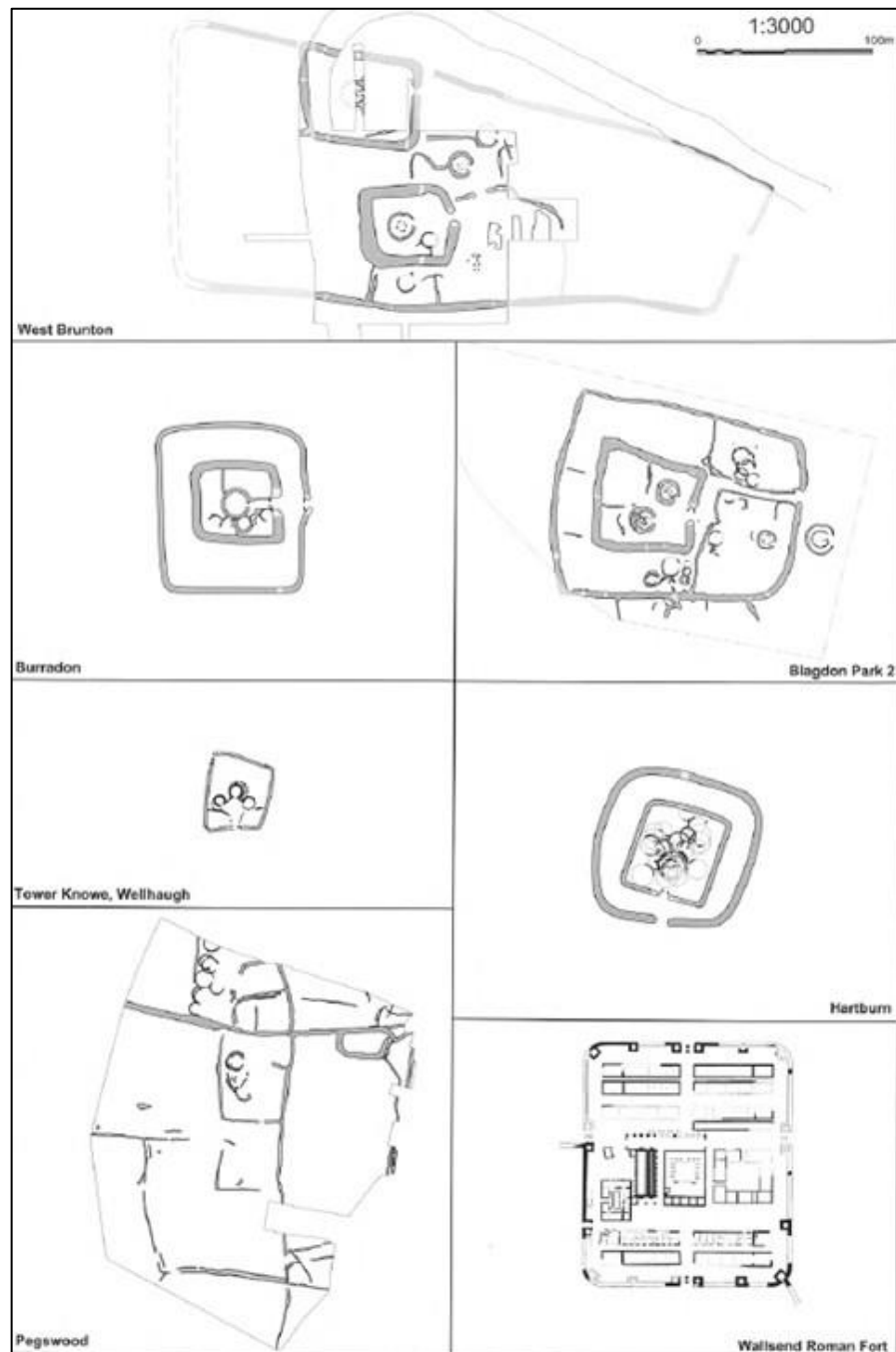


**Figure 35 - Morphology of different indigenous settlements excavated across lowland and upland Northumberland, together with a Hadrian's Wall fort for scale: revealing the size and complexity of the lowland examples in comparison to upland sites (e.g. Tower Knowe) (Hodgson *et al.* 2012, 190).**

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south-east Northumberland's coastal plain shows a similar lowland pattern extending further north than previously thought. Excavation of several complex farmstead sites (East and West Brunton, Blagdon Park, Burradon) with important radiocarbon-dated chronologies has shown a late-Iron Age predominance of regularly-spaced (c.1km apart) enclosed settlements from around 200BC, with open settlements also present between these showing potential site-hierarchy (Hodgson *et al.* 2012, 186-189). These sites are larger than the earthwork and stone-built upland examples (above) and more complex in both form (Figure 35) and surviving material-culture, preserving evidence of a mixed-agriculture of cereal-cultivation and pastoralism (*ibid.*, 193-205). This pattern survives largely into the mid/late-second century (Hodgson *et al.* 2012, 213-214; Hodgson 2017, 130), which has allowed re-analysis of the impact of the Roman frontier (below). Indeed, Roman materials including ceramics and glass indicate many sites across the frontier region survived into the period of military occupation (Allason-Jones 2009, 218-219), with particular site-types suggestive of more-intensive Roman landscape-influence in discrete parts of the region, particularly from County Durham southwards and in the Eden valley [5.4/6.4]. More-substantial Iron Age sites include hillforts (generally isolated examples across much of northern England, excepting areas of greater density in parts of the Pennines and Cheviots [6.2b]) and unique sites [5.4/6.4], such as Stanwick in lowland North Yorkshire, interpreted as a late-Iron Age central-place for the *Brigantes*, with high-status occupation, craft-working and pre-occupation Roman material-culture (Haselgrove 2016).

Following the Roman occupation of northern England, Governor Agricola's expansion as far as north-eastern Scotland (AD80s), described by Tacitus' biography (translated in Birley 2009), prototyped linear-boundaries (roads lined with forts and watch-towers) along the Highlands-fringe and Gask Ridge (Woolliscroft and Hoffman 2006, 14), followed by withdrawal to southern Scotland and then northern England by AD90. First suggestion of a Roman politico-military south-north division in the study-region is the so-called 'Stanegate frontier' (Figure 36, top): a military-road along the isthmus between the River Tyne and Solway Estuary (along the above potential native
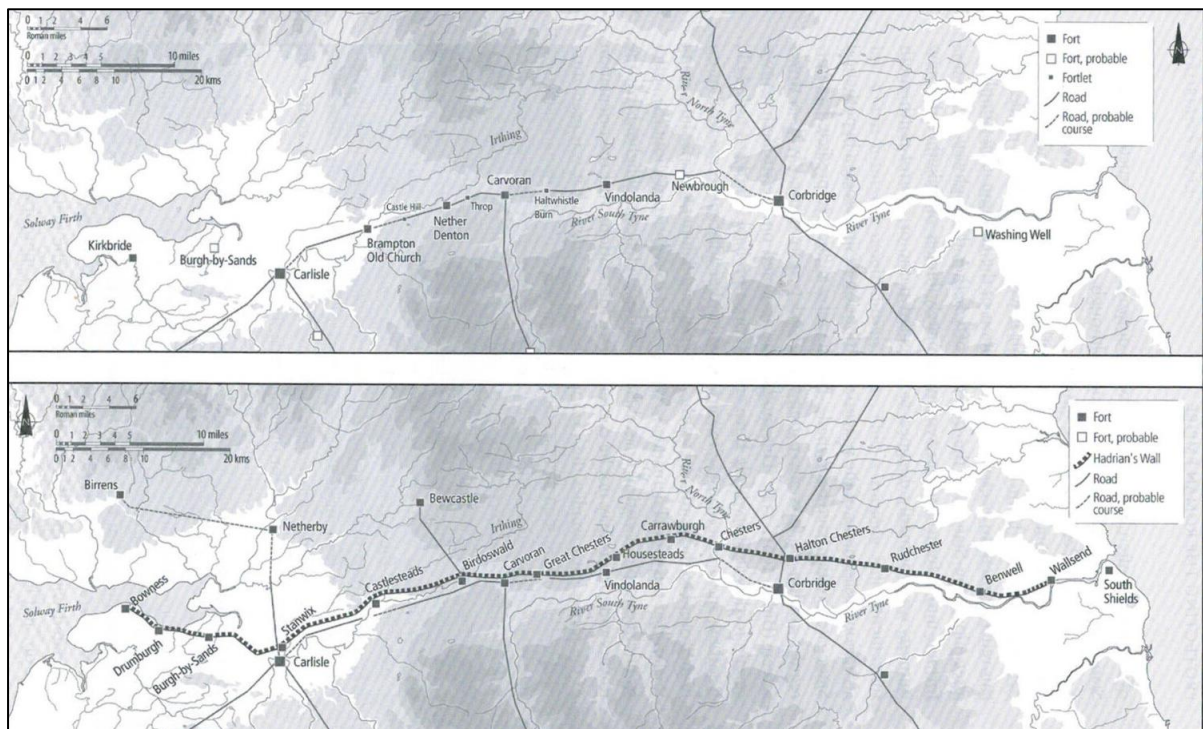


Figure 36 - Map of the Tyne-Solway Roman borderland showing the 'Stanegate' and Hadrianic phases. Source: http://www.civilization.org.uk/the-golden-age/empire/britannia/

boundary), connecting first-century forts and fortlets between Corbridge and Carlisle, established after the withdrawal from Scotland (Hodgson 2009b). Frontier-scholars suggest this 'defended road-system' is the first phase of the northern frontier, although whether it was intended as a permanent boundary or merely represented the furthest-extension of the expansion-oriented military communications-network at that time remains unclear. Recent evidence for ongoing thriving first/early-second century AD lowland settlement on the Northumberland coastal plain has been hypothesised as evidence for the Devil's Causeway road (and its attendant military sites) being a north-eastward extension of the Stanegate (which is only known as far east as Corbridge), the former following the lowland-upland boundary, encircling and protecting a pro-Roman landscape (Hodgson *et al.* 2012, 212; Hodgson 2017, 47).

Whether or not the Stanegate was perceived as a border by the Roman military or local indigenous population, it was nevertheless consolidated as-such during the AD120s, with the constructed linear defensive-work, with 'milecastle' fortlets and two turrets between each, today called 'Hadrian's Wall' (Figure 36, bottom). The new border-line moved north of the Stanegate to better command local landscapes, atop the imposing Whin Sill and westward scarp-dip topography [2.3c], sited with south-facing aspects prioritised, potentially for signalling (Bidwell 2009, 36-37). This linked the Tyne and Solway estuaries, extending west along the Cumbrian coastline via a series of free-standing towers and fortlets (Bidwell 2009, 34). Communication-networks linking components of the Roman frontier-zone include major south-north roads from York to Corbridge and thence Newstead (Dere Street [6.1a]), and Chester to Birrens via Carlisle [5.1a]. Other roads linked these across the Pennines: the Stanegate and 'Military Way' (parallel to Hadrian's Wall), and the Stainmore Pass further south, with further roads connecting new sites to the network (Hingley and Allason-Jones 2009, 164-165). Coastal and river-located forts attest the importance of water-borne transport to this network (*ibid.*, 166).

Previous research has focussed on the border's phasing, including the delayed-decision to move forts from the Stanegate onto the Wall (Bidwell 2009, 34), the establishment, nature and longevity of *vici* (Crow and Mason 2009, 63-65), various re-buildings of the Wall itself (initial use of turf in the western half, different breadths of stone-construction, etc) (Bennett 2002; Hingley *et al.* 2012, 763; Hunneysett 2017), and 'abandonment phases', such as the short-lived (AD140s-160s) northward-advance to the 'Antonine Wall' on the Forth-Clyde isthmus in central Scotland (Bidwell 2009, 34-35) and early-third century campaigning under Emperor Septimius Severus. Recent research has examined the changing nature of sites into the late/post-Roman periods (Wilmott 2009, 167-169). The other academic focus has been investigation of the boundary's purpose and function (see Hanson 2009), varying between a manned military barrier keeping less-peaceful northward native-groups out of the province; a way of controlling movement and trade along the empire's periphery region (the milecastles forming 'customs' checkpoints); and/or an ideological statement of Roman military and political power (to those both within and outside) (Hingley and Hartis 2011, 84). All of these remain debated, with Breeze (2019) taking the view that the form and purpose of the boundary changed over time, according to circumstance and need.

Nevertheless, widespread abandonment or reduction of settlement sites in both lowland and upland settings north of Hadrian's Wall indicates a widespread, major change to the indigenous landscape, scientifically-dated in lowland Northumberland to around AD200 and extending further than just a local military-enforced clearance beyond Hadrian's Wall (Hodgson *et al.* 2012, 215-217; Hodgson 2017, 131-132). Further beyond the border, within the 'outer frontier', study has relied upon largely-theoretical models (given lack of both permanently-occupied Roman sites and

extensive material-culture on upland indigenous sites) ranging from the periphery having little to no impact on indigenous landscapes through to Rome being used in native socio-political transformations (as either ally or threat) (Hunter 2007, 2-5).

Academic study of the frontier itself has therefore generally focussed on the narrow borderland located along Hadrian's Wall itself, with major sites in the hinterland (York) seeing extensive work on an individual basis (generally referencing but not-really discussing their role in the wider periphery). Where larger landscapes are studied, networks of military communication and supply have dominated discussion, rather than wider interactions between the differing identities and social-groupings at play, something only more-recently considered (e.g. Breeze 2019; Hodgson 2017; Symonds 2021). Given historiographical bias towards military and urban sites, and issues with indigenous settlements' site-based evidence for much of the project-area (above), this study therefore investigates wider landscape-patterns when examining the people and environments operating within the frontier-zone as a whole, comparing variations to north and south of Hadrian's Wall, and east-west across the region (as proposed by the research-frameworks).

# Chapter 4: Theoretical Framework, Research Questions and Methodology

Three bodies of archaeological theory: landscape [Chapter 2] and frontier [Chapter 3] and identity [Chapters 2/3], framing the data-analysis in this thesis, have been introduced, alongside current archaeological understanding of the Roman frontier region and northern Britain's later-prehistoric and Roman landscapes. This chapter will therefore draw these concepts together as a framework for discussing the project's research-questions [4.1], before outlining the methodological approaches for collection and analysis of the data [4.2]. The data newly-created or reassessed here comprises that from largescale aerial survey [2.1c]: monument-based polygonal and line data following Historic England (HE) Aerial Investigation and Mapping (formerly National Mapping Programme) standards. What is novel here is combination of this data with other forms of existing evidence, such as excavated evidence from individual site records and the broader regional overviews (Smith *et al.* 2016, 242-281,308-330) of the *Roman Rural Settlement Project* and also palaeo-environmental research, to address the theoretical-informed questions in an academic context.

## 4.1 – Drawing Together A Theoretical Framework

*4.1a – The Tripartite Theoretical Framework of Identity, Landscape and Frontier*

These three areas of theory are important when discussing northern Britain, the Roman frontier, and its impact on existing late-Iron Age landscapes. Indeed, the aforementioned research frameworks [3.3a] all suggest that existing archaeological evidence be used to develop wider theoretical perspectives for topics such as identity, social interaction and landscape (over time), integrating different data-sets such as topographic, aerial-photographic, lidar and geophysical surveys alongside metal-detected finds, field-walking and excavation (Hunter and Carruthers 2012b, iv). Each theoretical body (identity, landscape, and frontier) plays a part in researching northern Britannia, though they are not-often deployed for examining aerial- or field-survey data, which is generally used to provide a backdrop or context for site-based, intensive investigations.

Figure 37 suggests some of the major connections between the three bodies of theory, creating the various dynamics at play in the frontier landscape, and drawing-upon concepts identified in Chapters 2 and 3. This is the framework in which the survey data was assessed. These interlocking themes vary in scale and importance at any point in time, but also change over time. Frontiers by their very nature are transitional, ever-changing places, both spatially and temporally, operating on several levels, from individual interaction to grander political and military strategies. Four major dynamics have been identified due to their role in all three theoretical bodies, each with various sub-themes, and landscape-connectivity common to all.

Movement is integral to identity: defining, connecting, and placing people throughout their lived experience, also facilitating interaction. Landscape and boundaries both influence (constrain and enable) movement and provide physical and ideological contexts for its undertaking. Interaction is how identity is constructed and maintained, with landscape the medium in which that occurs and frontiers weakening and/or strengthening ties to wider cultures and societies (via enforcement of social norms, opposition, creation of new opportunities, and hybridisation). Situation is crucial, defining one's place in the world (i.e. identity, defined on the frontier via ideas of peripherality to
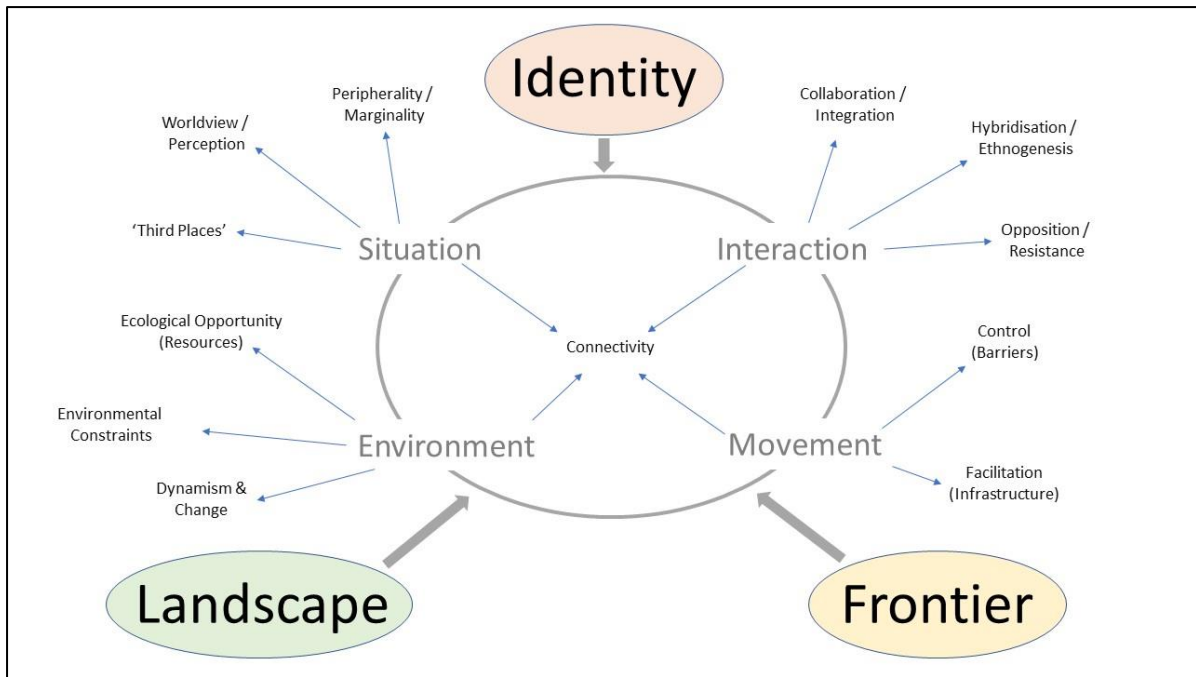
**Figure 37 - Tripartite theoretical-framework for the research, showing major connections between identity, landscape, and frontier theory.**

larger systems or cultures and weakening or strengthening of this connection, or alternatively creating new opportunities for adoption or opposition), and integral to concepts of landscape. Environment constrains or facilitates activities or actions [2.3c], defining identities of those within it (and subsequent landscape-perceptions) and shaping frontiers constructed upon it.

To assess these various dynamics at play in the region, the spatial data produced by analysis of existing and creation of new aerial-survey mapping was augmented with other forms of evidence (Figure 38). While many of the themes can be addressed by largescale spatial-distributions and examination of landscape-connectivity and divisions (natural or human), existing published palaeo-
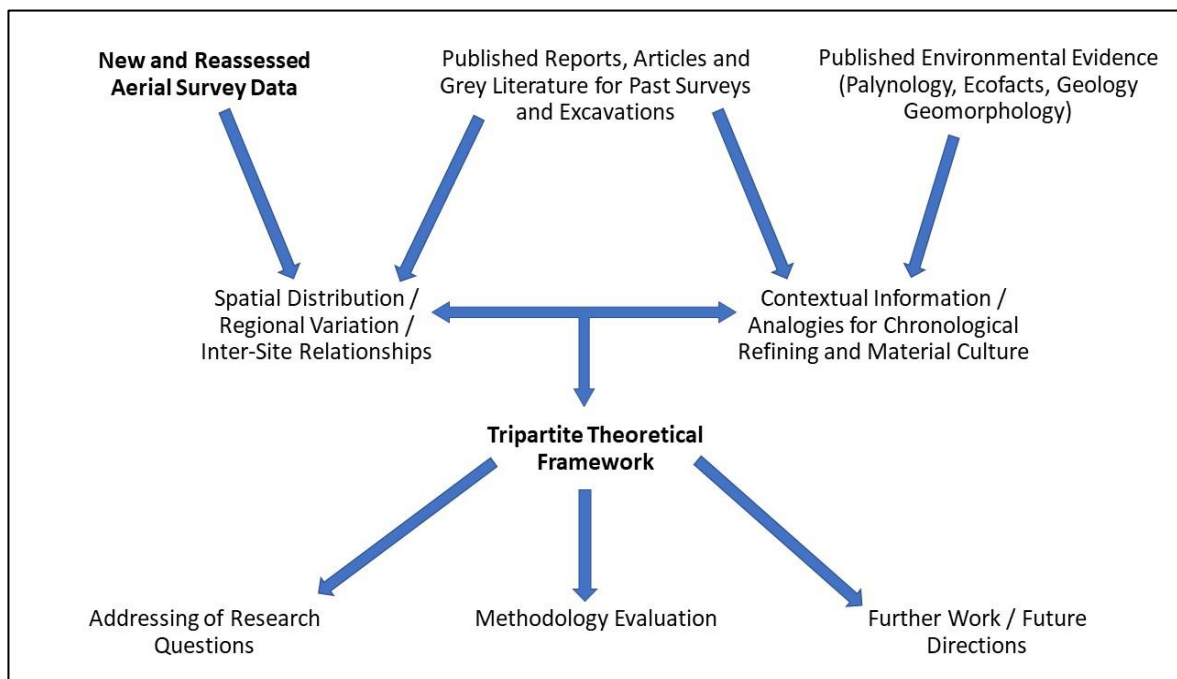


**Figure 38 - Flow-chart showing the project's data-analysis stage, including data-sources used and how they were deployed to answer the research-questions, stated below [4.1b, 4.2a].**

environmental evidence was needed to address some issues, particularly in the 'Environment' dynamic, whilst artefactual and ecofactual assemblages from published excavations, surveys and syntheses were consulted to investigate more identity-focussed elements. Results from site-based surveys and excavations were also required for smaller scales of activity and interaction.

*4.1b – Theoretical Themes and Questions*

Having introduced the tripartite theoretical framework underlying the current study, specific research-questions asked of the data must now be presented. A major driver for this research was the need to bring theory and practice together for a regionally-important type of data (non-intrusive survey) which had little past theoretical investigation. This was then applied to the northern frontier of Roman Britain, focussing on larger-scale patterning and what it tells us about daily-life, moving from landscape to site (as opposed to 'site' being the object of study, contextualised by landscape). Theoretical contexts of identity, landscape and frontier were used (via the research-questions listed) to assess primary and secondary data analysed during the project, examining how effectively aerial-survey data (and other sources used) could be utilised for academic research.

Research-questions are divided into the three theoretical themes:
- Identity –
    - Did ways in which people in the late-Iron Age and Roman periods perceived themselves (and others) affect the way they viewed and interacted with their surroundings?
    - Is there clear variation between 'military' and 'civilian' groups? Are these terms even valid for such an analysis?
    - Did this change over time and if so, was this transformation gradual or sudden?
- Landscape –
    - How did the region's natural environment affect activities and actions of people within it during the period under study, and how did they in turn affect their environment?
    - How did existing settlements, field-systems and other features (such as symbolic places) of the late-Iron Age cultural landscape affect Roman developments in the frontier zone?
    - How did this landscape (and thus interactions with it) vary across the wider region?
- Frontier –
    - How did the Romans perceive the frontier region?
    - How did the frontier impact the existing landscape, natural and cultural? Did this change over time?
    - Is there a clear difference to either side of Hadrian's Wall, or alternatively between east and west of the Pennines?

## 4.2 – Methodological Concerns and Questions

*4.2a – Data Sources in the Current Study*

Having identified the thesis' theoretical underpinnings and the framework for qualitatively investigating the data, the methodology for data-gathering and analysis will now be discussed. Aerial

survey was chosen as the primary data-collection method given its rapid, efficient coverage of wide areas, allowing identification of as many sites and features as possible in a given region (Petts and Gerrard 2006, 138; Symonds and Mason 2009b, 33). This technique also provides evidence around natural and cultural landscape-dynamics influencing this data, through examining the wider landscape (modern and past) visible in aerial imagery, and consultation of historic land-use, environmental and geological mapping to assess influences upon site-visibility and preservation. It is also a technique with a long pedigree researching the period and region in question [3.3a]. This means that in addition to new and updated data directly created by the project, there was an extensive archive of different projects across the wider project area which were also assessed. Given project time and funding constraints, follow-up ground-based fieldwork was restricted to observational visits, addressing difficulties in archaeological interpretation and aiding understanding of landscape-topography. This improved the survey's accuracy, addressing some of the issues involved when using such data remotely.

Existing past aerial-survey projects (Table 2) cover large areas of the region, though one major issue has been variability in the nature of results due to their collection over decades (with consequent improvements in technology and understanding). Early surveys such as the Yorkshire Dales National Mapping Programme (NMP) project and Howgill Fells NMP, while extensive, consist of raster-data scanned from hand-drawn transcription (with associated issues of accuracy and consistency when compared to computer-drawn vector data) and thus were only utilised for contextual information. Initial digitally-mapped surveys (Vale of York / Thornborough Henges NMPs) had less attached written data complementing the line- and polygon-mapping, only-partially offset by examination of associated reports. However, from the Hadrian's Wall NMP's later mapping onwards, spatially-accurate vector-data was available alongside associated data-tables and reports.

**Table 2 - Existing aerial-survey mapping projects used in the current research, including survey's dates, who undertook it, and the nature of data produced.**

| Aerial Survey Project | Dates Undertaken | Author(s) | Data Type Produced |
|---|---|---|---|
| Yorkshire Dales NMP Pilot | 1989-1992 | RCHME | Raster, no attached data |
| Howgill Fells NMP | 1992-1993 | RCHME | Raster, no attached data |
| Vale of York NMP | 1998-2000 | RCHME/EH | Vector, limited attached data |
| Hadrian's Wall NMP | 2002-2008 | EH | Vector, attached data variable |
| Thornborough Henges ALSF | 2004-2005 | EH | Vector, limited attached data |
| Durham Limestone ALSF (2 Phases) | 2006-2007 | ARS | Vector, attached data |
| Yorkshire Henges NMP | 2008-2016 | External | Vector, attached data |
| Cumbria Minerals ALSF | 2013 | External | Vector, good attached data |
| NAIS Upland Pilot: Lakes and Dales | 2013-2014 | EH/HE | Vector, good attached data |
| Pennine-Dales Fringe NMP | 2014-2015 | External | Vector, good attached data |
| Eden-Petteril-Caldew Transect AIM | 2015-2019 | External | Vector, good attached data |

NMP = National Mapping Programme; NAIS = National Archaeological Identification Survey; ALSF = Aggregates Levy Sustainability Fund; AIM = Aerial Investigation and Mapping Project; RCHME = Royal Commission for Historical Monuments of England; EH = English Heritage; HE = Historic England; ARS = Archaeological Research Services Ltd.

Data from previous analytical field surveys of earthwork sites and geophysical surveys were utilised to add contextual detail to the aerial-survey results. Extensive magnetometry has been undertaken on fort and *vici* sites across the region (e.g. Binchester, Castlesteads, Haltonchesters, High Rochester and Lanchester) (Petts and Gerrard 2006, 7), adding site-level phasing detail and settlement-patterning. Lack of precise chronological evidence (either absolute-dating or detailed stratigraphy) or phasing with aerial-survey alone (Crow and Mason 2009, 64), required use of excavation archives, published reports/articles and unpublished Historic Environment Record (HER)

data and archived 'grey literature'. Palaeo-environmental data was predominantly accessed via published literature and syntheses. These sources were also used to address aspects of the theoretical questions [4.1b], particularly those pertaining to identity, past environment, and interactions between the two [4.1a]. Figure 38 shows how each type of data was used.

Modern political, administrative boundaries affect archaeological research-projects in ways not reflected in the past they study. Variations in county-based, regional and/or national heritage policies and investigation methods influence the evidence recovered from different areas, affecting our perspectives on the periods in question (Hazelgrove *et al.* 2016, 16,23). This shows the importance of applying frontier theory, not only for the Iron Age/Roman period but also historiography of previous data collection. Most obviously, the frontier-region extends across two countries (England and Scotland), each with its own heritage policies, research frameworks and methods (past and present) of data-collection and archiving [3.3]. Given this project's partnership with Historic England (below), newly-created data is limited to modern-day England, Scottish evidence being restricted to published materials. The main impact here is therefore less-defined distributions for indigenous settlements north of the modern border, with site-based detail informing discussion less-affected. Whilst the Hadrianic borderland, hinterland and much of the outer periphery all lie within England, questions around the region north of Hadrian's Wall had to take this variation into account. Similarly, smaller-scale differences between modern county-based (and National Park) archives across northern England affected the data available.

Finally, the regional research frameworks had already identified historiographic and taphonomic issues which needed considering for this regional-scale project. For instance, less previous largescale-survey in lowlands than uplands, resulting from reduced surface-preservation and visibility due to geology, topography, modern land-use, and research interests (Brennand *et al*. 2006b, 10; Petts and Gerrard 2006, 146). For aerial survey, variability in geology and soils alongside resultant farming practice has created major differences in site-visibility regionally. The lowlands of north-western England and south-western Scotland thus contain less records due to clay subsoils and pastoral land-use hindering visibility, extensive urbanisation further south, and areas of survey-flight exclusion caused by major airports at Manchester and Liverpool (Brennand *et al*. 2006b, 19; Hunter and Carruthers 2012b, 10). Meanwhile, even upland landscapes of the north-west have seen less modern archaeological fieldwork due to lack of development threat and academic focus, compared to the north-east (Hodgson and Brennand 2007, 31; Philpott and Brennand 2007, 57). In contrast, lowlands east of the Pennines have greater arable agriculture and more conducive geology, resulting in more cropmark sites identified from the air and subsequently investigated (Petts and Gerrard 2006, 36-38), together with academic interest from Newcastle and Durham universities.

Therefore, due to the type of data generated and re-examined in the project, additional research questions pertaining to methodology have also been addressed by the current study, in the hope of testing the methodology for future use and application of such data in wider archaeology.

Methodological research-questions addressed in this project are therefore:
- Can aerial survey alone provide enough data for this type of theory-based research study to be effective?
- How well can the data be related to existing data from other archaeological and palaeo-environmental investigations in order to answer the research questions?
- How significant is variability of archaeological survival across the different landscapes studied, and how does this impact the conclusions drawn?

*4.2b – Methodology of Primary Data Collection*

The Hadrian's Wall Research Framework (Symonds and Mason 2009b, 33) calls for updates to, expansion upon, and analysis of existing remote-sensed survey data to quantify the existing resources and target future investigation. The primary data-gathering phase of the project meets this, with creation of new aerial-survey digital mapping, together with reassessment and updating of existing NMP data [4.2a]. The aim of this is to assess broader patterns and changes in the varied landscapes of the frontier, contextualising but also offering new insights into previously-studied sites and other (e.g. palaeo-environmental) records.

The Hadrian's Wall Research Framework also calls for larger studies covering transects across the wider frontier zone (Symonds and Mason 2009b, 40), examining the Stanegate/Hadrian's Wall military zone in relation to landscapes further north and south, examining broader relationships and networks at play. Therefore, two north-south study-transects (Figure 2 [Chapter 1]) were utilised in this project, following lines of known Roman sites (Figure 39), narrowing-down the vast quantity of archaeological evidence for the Iron Age and Roman periods in northern England and southern Scotland.
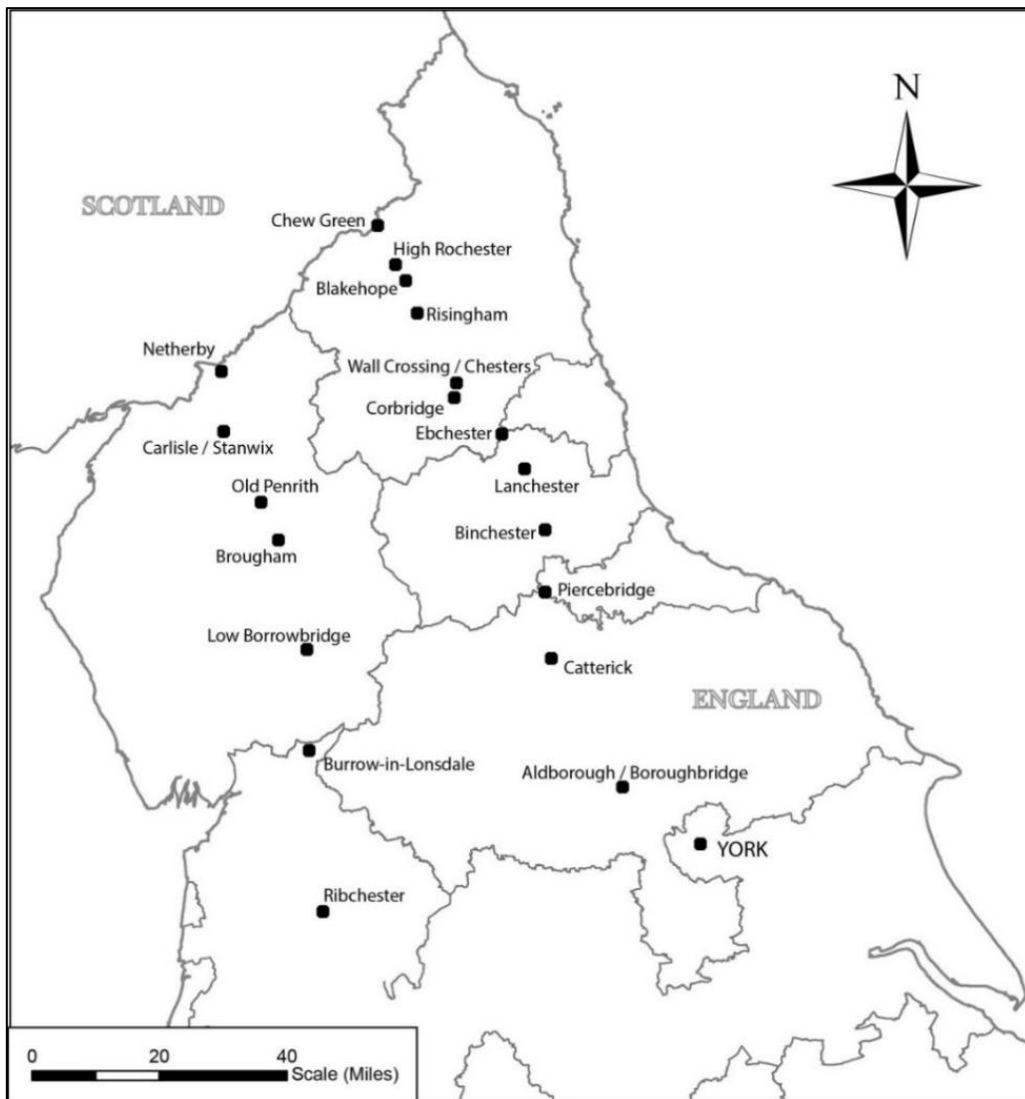


**Figure 39 - Map showing the major Roman sites defining the eastern and western transects (see Figure 2) of the project (as far as the Scottish border).**

Furthermore, comparative work is needed on Iron Age-Roman transitions between regions to east and west of the major natural boundary of the Pennines (Petts and Gerrard 2006, 147), especially given differing quantities of previous studies and available data (Symonds and Mason 2009b, 9). The eastern transect therefore followed the major Roman road of Dere Street, while the other transect utilised a broadly-parallel route west of the Pennines along military roads to south and north of Hadrian's Wall. Though this focus biased the transects towards Roman military sites and infrastructure, impacting discussion of wider, less Romano-centric indigenous landscapes, these surrounding areas have been assessed at a regional level of detail, informing each part of both transects in Chapters 5 and 6, to counter this bias. Each transect covers both upland and lowland landscapes. Following Roman roads thus allowed greater examination of relationships between military infrastructure across the wider frontier-region and the landscapes and sites within it.

Each transect covered the breadth of the region identified by the project as the 'frontier zone':

- The immediate military borderland of Hadrian's Wall and its environs (largely covering the UNESCO 'Frontiers of the Roman Empire' World Heritage Site): reassessment of Hadrian's Wall NMP where the transects crossed it, updating mapping using post-NMP aerial-imagery in the west;
- The outpost-forts, associated military infrastructure and indigenous landscapes surrounding them north of Hadrian's Wall, beyond the official extent of Roman occupation: two new aerial-survey mapping blocks covering the environs of Netherby and High Rochester's outpost-forts;
- The large hinterland behind the military boundary, extending south to York's legionary fortress and settlement (the frontier and later-provincial headquarters), and the latitudinally-equivalent fort at Ribchester further west: reassessment of various different aerial-survey projects [Table 2] of varying date and scope.

New aerial-survey mapping-blocks of 24sq.km (1) and 15sq.km (3) were created to assess each outpost-forts' environs, while a larger 50sq.km area (2) updated the existing Hadrian's Wall NMP around Carlisle, assessing the impact of new aerial-imagery (particularly lidar) unavailable to the original NMP (Figure 40). Similar areas of new (4) and



**Figure 40 - Map of initially-proposed new/updated aerial-survey mapping-blocks. Map Background ©Ordnance Survey.**

updated (5) mapping around Corbridge were planned but dropped to Covid19-related disruptions.

New mapping was undertaken to HE's Aerial Investigation and Mapping (AIM) guidance and archiving standards (Horne 2009; updated and revised in Evans 2019), as per the collaborative agreement with HE for access to existing mapping-data and the Historic England Archive's historic and specialist aerial-photography collections. This included mapping of all features from periods within the AIM scope (Neolithic through to 20th-century military and industrial sites), designed for use alongside Ordnance Survey mapping (from First Edition (mid/late 19th-century) through to most-recent). Although much of this data is thus not directly-relevant to the research for the thesis, it provided landscape context for the work [5.1b/6.1b] and was a requirement of the agreement with HE. The level of detail in such mapping results from the decades-long development of data-creation processes, balancing a sufficient complexity of data with analytical usefulness at the scales used.
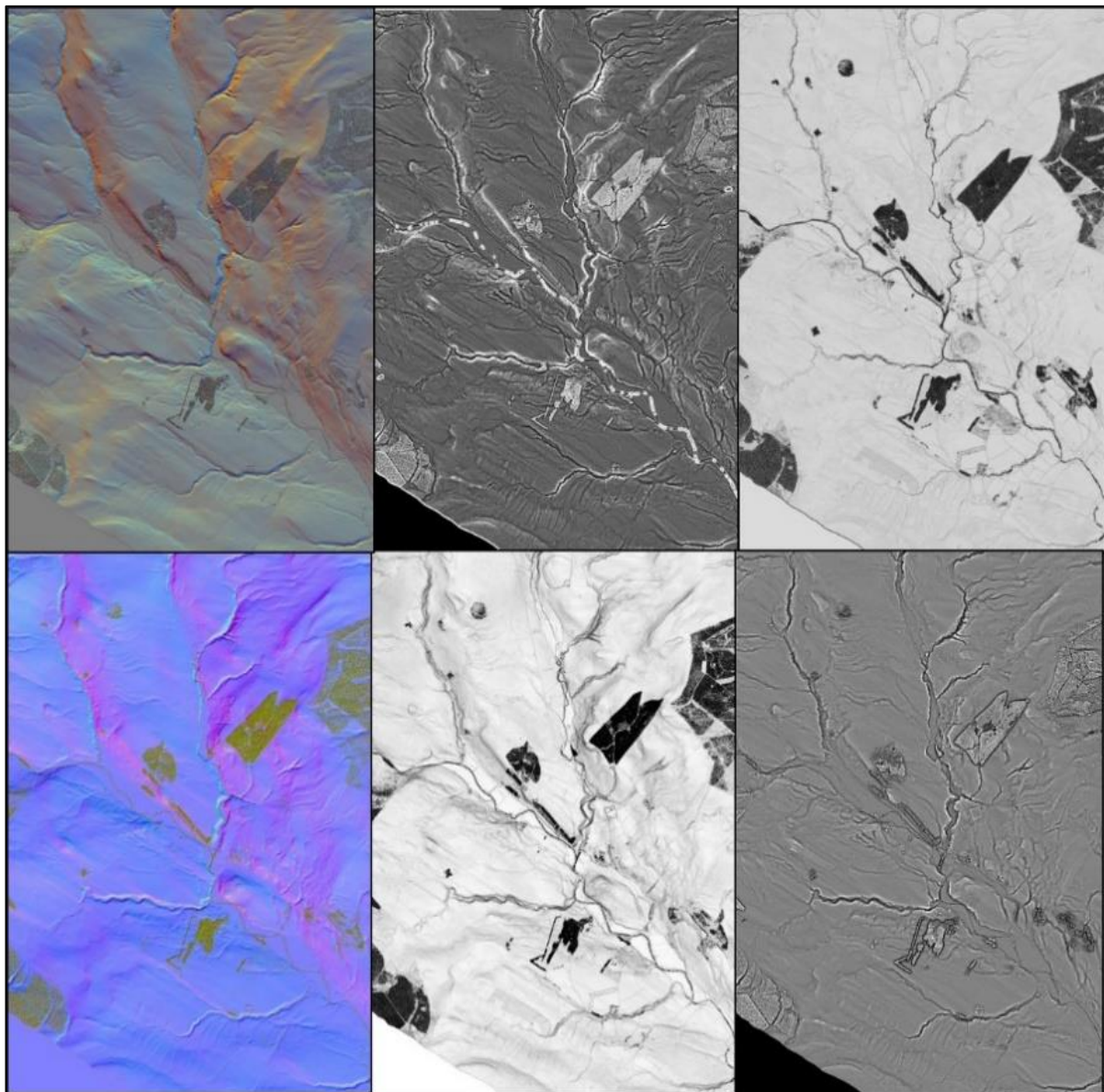


**Figure 41 - Various lidar visualisations for Block 3, showing those used in the project for comparison: (L-R, top) – 16-direction lit Digital Surface Model (DSM), the most efficient approach; Local Dominance Model; Openness – Positive; (L-R, bottom) – Principal Components Analysis; Slope Gradient; Simple Local Relief. Data source = *LIDAR Environment Agency 1m FIRST RETURN 20-FEB-20-MAR-2009***

Sources for the aerial-survey mapping include:

- Historic vertical aerial photography held by the Historic England Archive: Royal Air Force (RAF), Ordnance Survey (OS), and commercial companies (Meridian Air Maps Ltd and Hunting Surveys Ltd);
- Specialist archaeological oblique photography held by the HEA: Royal Commission for the Historic Monuments of England (RCHME), English Heritage, Historic England, Cambridge University Collection of Aerial Photography (CUCAP), and individual local fliers (Tim Gates, Barri Jones, etc);
- Freely available online imagery from Google Earth ™ and Bing Maps;
- Modern high-resolution orthorectified vertical photography from Air Photos Great Britain (APGB), accessed through Historic England;
- Freely-available lidar imagery of varying resolutions (0.25-2m) from the Environment Agency, downloaded as ASCII data and processed in various visualisations (Figure 41) using Relief Visualisation Toolbox 1.3 software (available from Institute of Anthropological and Spatial Studies at the Slovenian Academy of Sciences and Arts). Definitions for visualisations can be found in Kokalj and Hesse (2017, 16-29).

Sources were examined for archaeological features, cross-referenced with existing monument-data from the National Record of the Historic Environment (NRHE) and local Historic Environment Records (HERs), historic and modern Ordnance Survey mapping, and geological data to improve interpretation and accuracy. Once identified, requisite images were imported directly into the mapping software if already georeferenced and spatially-accurate (orthophotography and lidar). For conventional aerial photography, specialist AERIAL 5.35 software was used for rectification, using control points on an already spatially-accurate map-base with topographical height-data included to remove lens angle, distortion, and other inaccuracies in the image, creating a rectified, geospatially-accurate source to map from. Once imported, archaeological features were mapped using mouse-drawn vector lines and polygons to AIM's conventions (Table 3). Mapping was done in ArcMap 10.3 Geographical Information Systems (GIS) software at HE's York Regional Office (due to the need to keep aerial photographs in-house at HE). Alongside spatial vector-mapping, relevant textual data was attached in a table within GIS (again, per AIM scope) (see Table 4 for the data-entry fields).

**Table 3 – Aerial survey mapping – layers and conventions.**

| LAYER | DESCRIPTION | MAPPING CONVENTION |
|---|---|---|
| Bank | Embanked earthwork features, whether extant or plough-levelled | Red polygon |
| Ditch | Sunken earthwork features, whether extant or plough-levelled | Green polygon |
| Extent of Feature | Used to surround large sites, such as military complexes or quarries | Orange polygon |
| Structure | Stone, wooden, or concrete buildings or structures within AIM scope | Purple polygon |
| Ridge and Furrow Area | Polygon to mark extent of an area of medieval / post-medieval ploughing | Cyan polygon |
| Ridge and Furrow Alignment | Line to mark predominant alignment in an area of med / post-med ploughing | Cyan line |
| T-Hachure | Used to denote length and direction of a single-directional earthwork slope | Dark Blue line |
| Monument Polygon | Area of extent of a recorded feature / site within the National Record of the Historic Environment (NRHE) database | Black polygon |

**Table 4 – Aerial survey mapping – attached data in GIS.**

| ATTACHED DATA - FIELD NAME | DESCRIPTION |
|---|---|
| NRHE UID | Unique identifier number, linking to the NRHE database (e.g. 43117) |
| Period | Broad chronological period the feature is assigned (e.g. Iron Age / Roman) |
| Narrow Type | What the feature is (e.g. Field Boundary / Roundhouse) |
| Broad Type | What type of broader site the feature belongs to (e.g. Field-system / Settlement) |
| Initial Evidence | Form the feature was visible as on the source it was mapped from (e.g. Earthwork / Cropmark / Structure) |
| Initial Source | Source-image the feature was mapped from (e.g. photo reference / lidar) |
| Latest Evidence | Form the feature was visible as on the latest aerial evidence examined (e.g. Levelled Earthwork / Cropmark / Ruined Structure) |
| Latest Source | Source-image providing the latest evidence (e.g. photo reference / lidar) |
| Text Description | Longer text-description with further relevant information on the feature, site and context |
| HER UID | Unique identifier number, if already-recorded in local Historic Environment Record (HER) |
| Layer | The AIM/NMP layer the feature was mapped on |

Alongside the mapping's attached-data, longer text-records for each feature or site were created for HE's NRHE database, giving further detail where necessary. The resulting mapping and attached data is held by the Historic England Archive, exported as shapefiles for use in ArcGIS Pro software for the analysis part of the doctoral research. They were supplied as line and polygon shapefiles and attached data / text-records to the relevant HERs (Cumbria, Northumberland) for further archiving. This therefore will hopefully assist plans to create a comprehensive GIS for the Hadrian's Wall WHS, requiring precisely-located spatial evidence moving beyond site-specific studies, and embracing broader, more holistic approaches to the frontier region, as identified in the research framework (Huntley 2009, 108).

There are some issues with this data-type, although they are outweighed by the benefits: e.g. scale of coverage, ease of processing for analysis and efficiency of process. Chadwick (2013, 14) suggested that although survey-mapping in this format is convenient for organising results, it reduces levels of phasing-interpretation and ignores the potential for earlier features being reused or influencing later development. Implications of this are something discussed in the following thesis discussion. A second issue is that (particularly for the existing projects being reassessed) the analysis relied on the accuracy of initial data-creation. For new data created especially for the project, this was addressed by 100% quality-assurance checking of the data by specialist aerial-surveyors from HE, whilst for existing mapping, interpretation has already been through HE's internal QA procedures prior to the current project acquiring the data.

*4.2c – Methodology of Data Analysis*

Though not all of the data created as part of the aerial mapping were directly-relevant to the PhD, features of earlier and later date are important for understanding archaeological landscapes in their entirety. Earlier features may have still been extant and informed the late-Iron Age and Roman

landscape, while later features reflect developments from the period under study, and later land-use and topography provide insight into ways in which the landscape has been viewed, used and altered through time. Nonetheless, the primary features of interest within the aerial survey were those dating to the periods under study: late-Iron Age and Roman. All features and sites identified from those periods were included in analysis. This is particularly pertinent given regional focus on Roman military features within previous archaeological research [3.3]. Incorporating indigenous rural settlements, field-systems and other features has provided greater understanding for civilian and military landscapes during the Roman period, but also the existing cultural landscapes which informed the development of the later frontier.

Though the chronological focus is on the Iron Age-Roman transition and development into the mid-Roman period for the region, in order to assess the landscape-impact of the frontier, the later-prehistoric and late-Roman periods were also included in the project's scope. This is partly due to a lack of clearly-definable chronology (particularly from non-intrusive survey alone [4.2a]) for many non-military sites, given continuities in rural settlement form and landscape use. It also reflects the existing cultural landscape's role in influencing the frontier, and later landscape developments in the period. This influence of existing indigenous trajectories, and their interaction with the new changes brought about by Rome, have been a focus for recent studies of the frontier (Hodgson *et al.* 2012, Hodgson 2017, Symonds 2021) [see 3.3] and it is such discussions that this thesis aims to contribute towards. Another predominant focus has been on late/post-Roman trajectories for landscape and identity in recent research on the northern frontier (e.g. Collins 2001; Collins and Allason-Jones 2010; Gardner 2002; 2004; 2007), a further reason for this project's focus on the Roman landscape's earlier development, attempting to discuss landscape and identity for this previous period of change.

In terms of data-analysis methodology, ArcGIS Pro software was how data was accessed, visualised and spatially-analysed. Aerial-survey data created at HE was exported as shapefiles with associated data-tables [4.2b]. This was augmented with similar files for existing aerial-mapping projects (Table 2), where vector data was available. Within ArcGIS, aerial-survey data was examined alongside other spatial data-sets: the *Rural Settlement of Roman Britain Project* (available online from the Archaeology Data Service), data from requisite HERs (supplied as point, line and polygon shapefiles) and historic-mapping and other sources (Ordnance Survey, geological data, topographic/ environmental data) downloaded from Edina Digimap. Limited field-observation [4.2a] of mapped areas (Netherby in Block 1, Redesdale for Block 3) enabled better-understanding of local topography, vegetation, climate and inter-site visibility and relationships, assessing the condition and context of mapped sites. Review of published and 'grey' literature from previous excavations, analytical field surveys, geophysical work and palaeo-environmental research for each transect and its environs provided further contextual depth and scientific dating for the regional studies. For note in the following discussions, due to the variability of radiocarbon dates in the various sources consulted, a common model is used for reference henceforth, taking into account calibration curves (where available) and standard deviations in the age ranges, and therefore referring to such dates as cal.BC or cal.AD where a calibrated radiocarbon date is present.

By investigating multiple different landscapes regionally, broader evaluations have been made pertaining to the research-questions derived from the theoretical framework [4.1] and methodological hypotheses [4.2a]. This has enabled comparison across the entire frontier-zone, from York and the inner periphery south of the border, to the outer frontier around outpost-forts. It

further allowed comparative evaluation of evidence and methodology between the very-different landscapes east and west of the Pennines.

## 4.2d – Ethical Issues and Data Management

Ethical issues did not arise during this research: no interaction with living persons or processing of data pertaining to such was conducted, and ethical approval was thus not sought. In terms of archive-management, aerial-mapping data (exported as shapefiles and also saved as a geodatabase) and associated textual records (recorded in the National Record of the Historic Environment) were archived with Historic England, as per the collaborative agreement signed at the project's commencement. Spatial records and database entries were also provided to local HERs (in formats suitable to their own GIS systems), available for the services they provide in their particular regions.

Copies of the PhD thesis itself will be held by University of York's library and White Rose eTheses Online repository. The remaining data, in the form of ArcGIS mapping files and associated supporting geodatabases, will also be digitally-archived and backed-up by the author. Though Historic England has provided a personal license to use the aerial-survey data for analysis in the current PhD, this does not extend to the mapping's archiving for purposes beyond this.

# Chapter 5: The Roman Frontier West of the Pennines: Transect 1

## 5.1 – Introducing the Western Transect: An Overview

### 5.1a – The Setting of the Western Transect and its Aerial Survey Projects

The western transect of this project covers a linear sample-zone immediately west of the Pennines, running from the major Roman fort of Ribchester (Lancashire), along Roman military-roads (coinciding with natural landscape routeways in the Lune and Eden Valleys) to Carlisle (Cumbria), the modern city overlying an important Roman military site and town close to Hadrian's Wall, and thence beyond the Roman border to the outpost-fort at Netherby in the Esk valley (Figure 42). The study will also examine evidence from surrounding regions which informs discussion.

Past archaeological study and levels of current knowledge regarding northern England and southern Scotland during the late-Iron Age and Roman period have been discussed [3.2/3.3], as has regional palaeo-environmental evidence for general trends of woodland-clearance alongside increasing pastoralism and arable cultivation throughout later-prehistory, culminating in the late-Iron Age [2.3c]. Discussion of how this transects fit into the wider project aims and methodology has also been covered [4.2b]. This section therefore provides more specific spatial and temporal introductions to this transect, prior to presenting evidence. Section 4.2a discussed the data under study, listing existing survey projects within
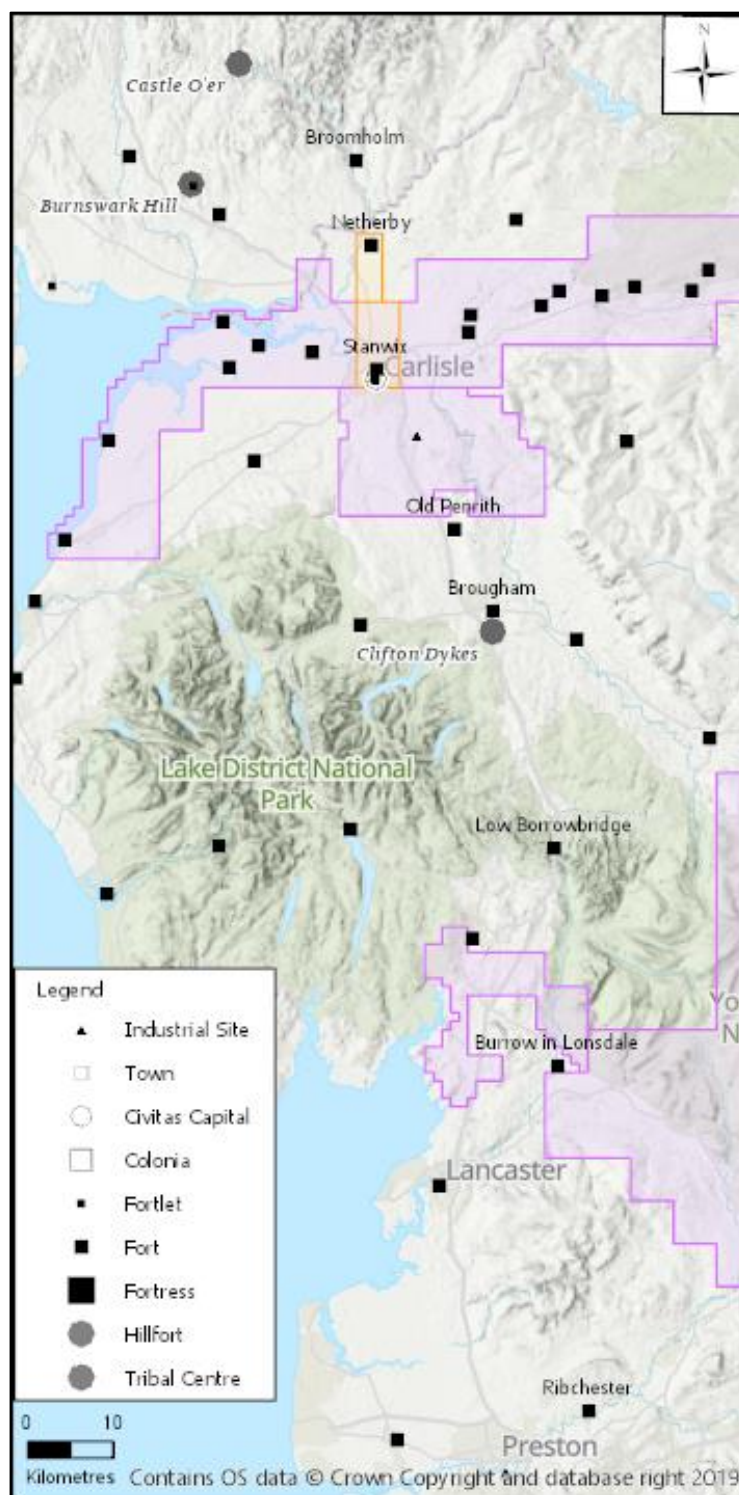


**Figure 42 - Map showing the sample transect (line of named sites) west of the Pennines, including major Iron Age centres and Roman sites alongside new (orange) and existing (purple) aerial-survey mapping.**

both transects (Table 2) and identifying issues affecting the data regionally. Chapter 4 also introduced other forms of evidence complementing the aerial-survey data.

As discussed [4.2b], new mapping undertaken for this project (Figures 40/42) covers a gap in Historic England's (HE) aerial-survey coverage: north of the existing *Hadrian's Wall NMP* project around Carlisle, running up to the modern Scottish border and covering the environs of Netherby fort. This new mapping is referred to as 'Block 1' (24sq.km) and will be discussed within the wider setting of southern Scotland and northern Cumbria [5.2]. Furthermore, a segment of the existing *Hadrian's Wall NMP* (originally undertaken 2002-2008 (see Oakey 2009)) was updated, utilising new sources of aerial-data unavailable during the initial project (including orthophotography and Environment Agency lidar) to test whether new features might be identified. This updated mapping (50sq.km: 5km east-west, running for the full 10km north-south width of NMP), dubbed 'Block 2', contains Roman Carlisle and its surroundings, the line of Hadrian's Wall itself and the major Wall-fort of Stanwix [5.3]. These two mapping blocks (Figure 42) form the principal 'new' data components for the transect.

Southwards, the wider hinterland of the Roman frontier includes three recent HE-funded aerial-survey projects (purple, Figure 42), each using historical and modern photography alongside processed lidar-imagery [5.4]:

- 'Cumbrian Terrestrial Minerals Resource Assessment', comprising eleven sample aerial-survey blocks across Cumbria (totalling 102sq.km) in areas threatened by extractive industries. Four fall within this transect – three just east/south of Carlisle (south of Hadrian's Wall NMP), one c.65km south at Roan Edge astride the M6 motorway between Kendal and Sedbergh (Deegan 2013a, ii,1-4,18);
- 'Eden-Petteril-Caldew Transect' (EPC) aerial-survey, covering 317sq.km in a block crossing the lower reaches of these three rivers (Deegan 2019, 1), connecting the first three blocks from 'Cumbria Minerals' above;
- 'National Archaeological Identification Survey (NAIS): Upland Pilot', an aerial- and ground-based survey project covering a 174sq.km swathe of landscape from the central Lune valley westward to Kendal (Oakey *et al.* 2015).

The EPC and Cumbria Minerals aerial-surveys thus cover the transect south of Carlisle within the lower Eden Valley, while numerous ground-based investigations have examined Iron Age and Roman archaeology further south in the valley, including forts at Old Penrith and Brougham, and major indigenous features around Penrith [5.4a]. The road south from Brougham traverses the upland Orton Fells, another area of archaeological interest, to reach the upper Lune valley. The transect follows Lunedale south to Burrow-in-Lonsdale [5.4b], with the NAIS providing excellent recent survey-data for middle reaches of the valley, including numerous later-prehistoric/Roman settlements. Older survey projects (*Howgill Fells NMP* and *Yorkshire Dales NMP*) cover uplands east of the transect but the raster nature of their data hinders spatial-analysis, so they will only be used for contextualisation. The transect then crosses the Bowland upland-fringe (Lancashire), terminating at Ribchester, with several site-based studies locally.

For ease of communication, this transect's discussion is divided into sub-sections assessing different areas within the broader Roman frontier-zone. Whilst this could be argued Romano-centric (given use of imposed Roman divisions for definition, rather than earlier/contemporary native landscape-organisation), synthesis of the transect [5.5] will attempt to transcend these artificial

divisions, and analysis will only utilise such boundaries where appropriate. This transect (and that to the east [Chapter 6]) are assessed north to south, primarily because areas of new data should be presented first and these are north of, and along, Hadrian's Wall. Additionally, this hopefully removes some Romano-centrism (past narratives often progressing in the direction of Roman expansion: south-north), whilst still focussing on areas of higher Roman-native interaction [4.2b]. Each section will cover both Iron Age and Roman settlement evidence, discussion split into themes of rural settlement and features (given longevity and persistence of indigenous settlement forms/sites in the landscape), communication routes (and their development across the Iron Age-Roman transition), and new Roman sites (predominantly military but also urban and new industrial or agricultural site-types). For better-known Roman sites, with more-substantial research-histories, only evidence pertinent to the wider debate has been kept in Chapters 5/6, detailed discussion removed into the Appendix so as not to interrupt the discussion-flow.

*5.1b – Archaeological Landscapes of the New / Updated Survey Areas*
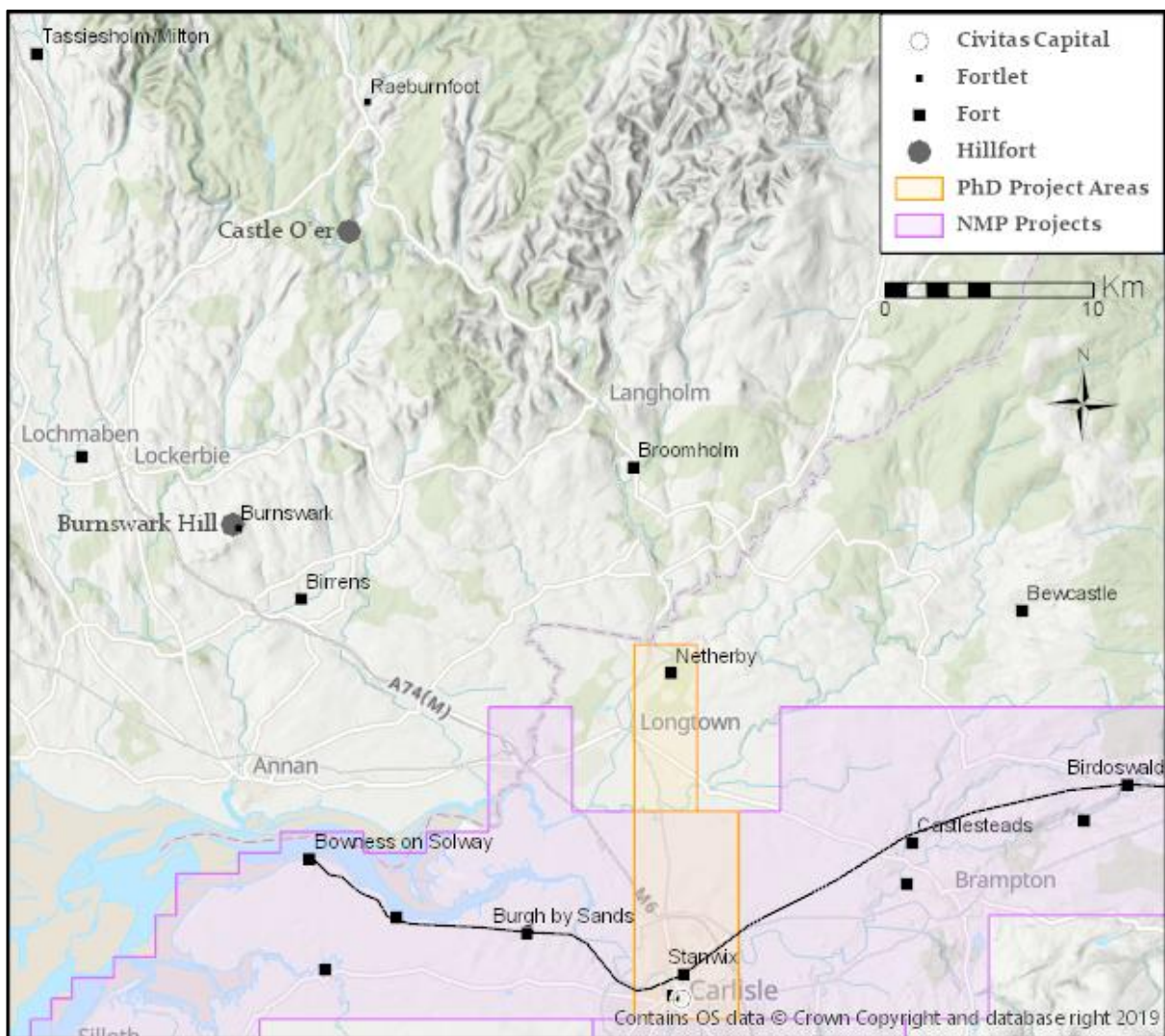


**Figure 43 - Map showing the area north of the Roman borderline of Hadrian's Wall, including major Iron Age and Roman sites and aerial-survey mapping areas.**

Prior to discussing Iron Age and Roman evidence for the transect, general results from the aerial-survey of Mapping Blocks 1 and 2 will be addressed to provide wider contextual information for the period-specific results of the new survey areas. The first mapping block completed (Block 1, Figure 40) comprises the northernmost section of the western transect within modern England, undertaken to Historic England's AIM standards [4.2b]. This area extends north from the Hadrian's Wall borderland around Carlisle, along the River Esk valley, to the border with Scotland. Block 2, immediately southward, consists of existing NMP updated for the current research, in and around modern Carlisle within the Roman borderland [5.1a]. Regional research-frameworks for north-western England and Hadrian's Wall World Heritage Site (Brennand *et al.* 2006a; Brennand *et al.* 2006b; Symonds and Mason 2009a; 2009b) identify need for further research north of Carlisle, which has seen less archaeological investigation than either the Hadrian's Wall corridor or similar lowland landscapes elsewhere.

The area discussed (Figure 43) covers lowland areas of the Solway Plain and lower Esk and Eden valleys, surrounded by higher ground of the Scottish southern-uplands to the north and Border Moors to the east, the Roman borderland of Hadrian's Wall (descending from the Whin Sill escarpment to Carlisle) to the south, and the lowlands of southern Dumfriesshire and the Solway Firth to the west. In terms of the known Roman landscape, the main military site is the first outpost-fort north from Carlisle, postulated as *Castra Exploratorum* ('Fortress of the Scouts') listed in Roman documentary sources [5.2a] and located beneath Netherby Hall (Oswald *et al.* 2015; Oswald *et al.* 2017). Little evidence of later-prehistoric or Roman settlement and landscape features had been previously-identified within the project area.

The whole survey-area comprises low-lying terrain (Figure 44) predominantly east of the Esk and north of the Eden, rising to higher ground to north and east (Natural England 2015a, 3,9). The Esk itself is largely natural in course and riverine structure, slow-flowing and stable as far as the uplands north of Netherby (*ibid.*). Flood risk mapping (British Geological Survey 2019) shows low-lying, floodable land throughout the lower valleys of the Esk, Eden and their tributaries, including around the River Lyne north of Westlinton, dividing higher ground around Stanwix (the line taken by Hadrian's Wall, north of Carlisle) from that south of Netherby, a potential occasional barrier to terrestrial movement prior to modern drainage. Local soils (predominantly tills, with alluvium and sand/gravel fluvio-glacial terraces along rivers, and small areas of lowland peat), overlying Triassic sandstones and mudstones (Figure 45, British Geological Survey mapping 2019) have not been known to produce good cropmark-visibility in the past.



**Figure 44 - Aerial photographs (NMR 20951_11 (left) / NMR 20951_15 (right) ©HE) showing lowland landscapes of Block 1 (pasture, arable, tree plantations, and modern Longtown).**
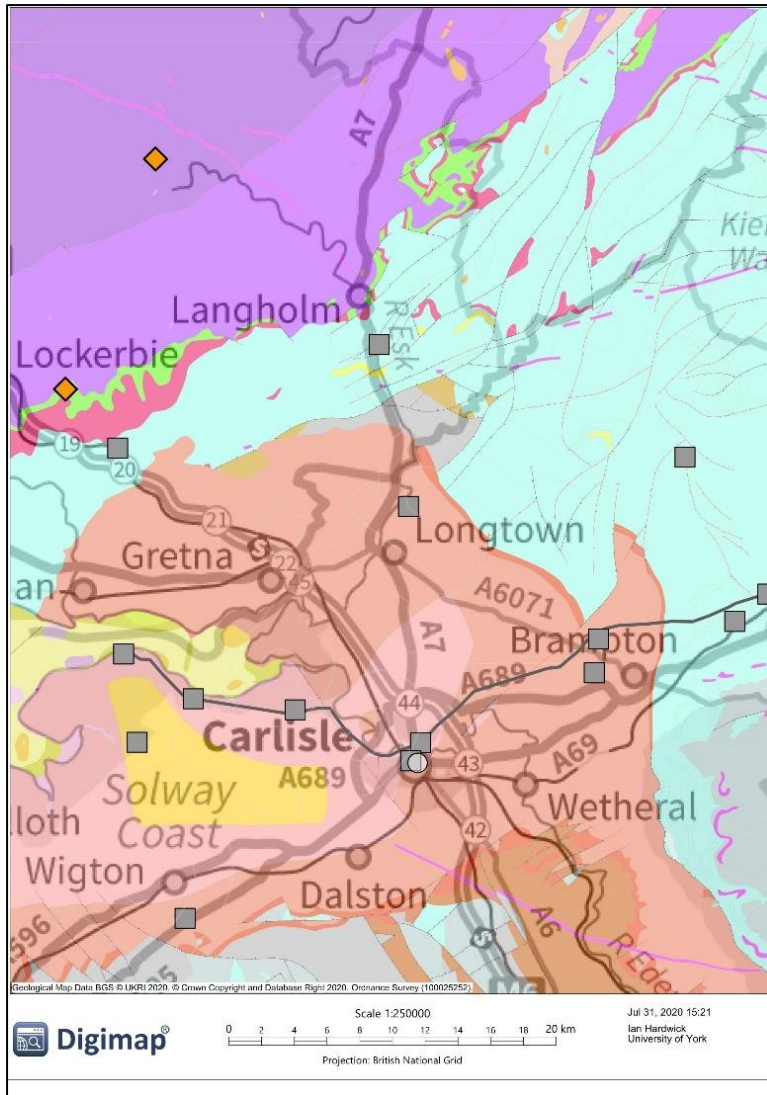
Figure 45 - BGS bedrock mapping for the area. Purple/Blue/Green = Sandstones; Light Pink = Mudstones; Dark Pink = Igneous Intrusions; Yellow/Grey = Limestones. Points = sites of archaeological interest.

Historical sources indicate small-scale, subsistence pasture dominated the area prior to 18th-century enclosure, extensive improvement, lime-extraction, and coal-working under the land-holding Graham family (Mawson 1980, 137-140; McCarthy 2002, 24). Consequently, the project-area is under modern land-uses of limited arable, improved-pasture and extensive tree-plantation (Figure 44), offering lessened potential for substantial earthwork-survival. However, much of the area had one metre-resolution lidar and it was hoped that previously unseen, low-lying earthworks might be identified.

Combination of historic vertical-photography (RAF, OS, etc [4.2b]), specialist oblique-photography (RCHME / Historic England and local fliers) and lidar-imagery was thus applied to this previously little-studied region. Results from this (Figures 46 and 47) confirmed previous perceptions that visibility of pre-modern archaeological features on aerial sources is relatively-limited across the area, both levelled features visible as cropmarks (likely because of geological and land-use factors mentioned above) and upstanding earthworks (due to modern land-use and improvement).

The most extensive feature mapped was ridge and furrow ploughing, largely post-medieval improvement as opposed to medieval open-field systems and mapped in open areas extending into the urban extent of Carlisle. This may further account for lessened visibility of earlier features. There are some smaller areas of earthwork survival, including parkland around Netherby Hall (mostly elements of the Graham family's extensive estate improvement and landscape division) (Birley 1953a, 18-19) and the floodplain either side of the river: predominantly medieval or post-medieval banked/ditched field-systems (Figure 48-F/G/H/J) overlain by ornamental tree-stands (described Oswald et al. 2015, 18). Boundary earthworks associated with the deserted settlement of Arthuret, a potential moated site south of Longtown, and small fragments of relict hollow ways also survive across the area.

Other than Carlisle, the main medieval settlement is Longtown, located at the lowest bridging point on the Esk, though obscured by the 18th-century planned estate town (Masser 2005,
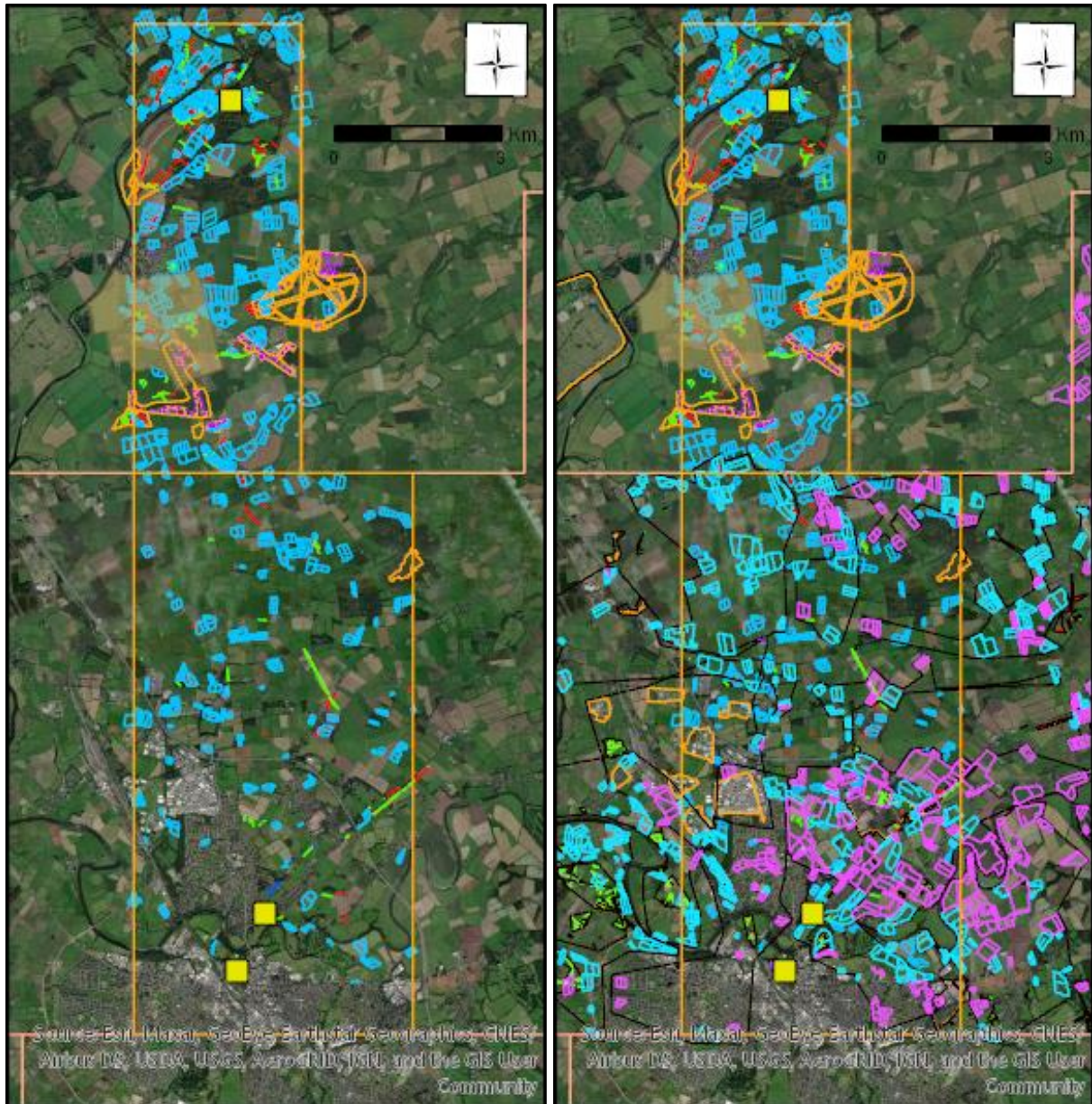
**Figure 46 - Mapping Blocks 1 (new) and 2 (updated Hadrian's Wall NMP), showing the newly-created aerial-survey data alone (left) and new data alongside existing NMP data (right). See Figure 47 for mapping conventions.**

249). Other, recent land-uses identified include peat-cutting on Scaleby Moss (UID 1378221: *National Record of the Historic Environment (NRHE) identifier, bracketed-numbers henceforth refer to NRHE records unless labelled 'HER' for Historic Environment Record*) and Rockcliffe Moss (1379305), and brick/tileworks at Sandysike utilising fluvio-glacial deposits along the River Lyne. Visible in southern Carlisle and extending into the EPC Transect project (Deegan 2019) are small areas of further gravel extraction.

Modern transport infrastructure is dominated by the A7 road from Carlisle to Longtown (and thence up the Esk Valley), with the M6 motorway and Caledonian Railway both leading north-west from Carlisle to cross the mouth of the Esk into Annandale in Scotland. A now-derelict branch rail-line (the North British Railway to Hawick - Figure 48-K) crosses the project area's north-western corner. Most features surveyed therefore date to more-recent periods.

The area's position within the so-called medieval/early-historic 'Debatable Land' between Scotland and England (Natural England 2015a, 13) has a clear impact on the landscape, apparent in
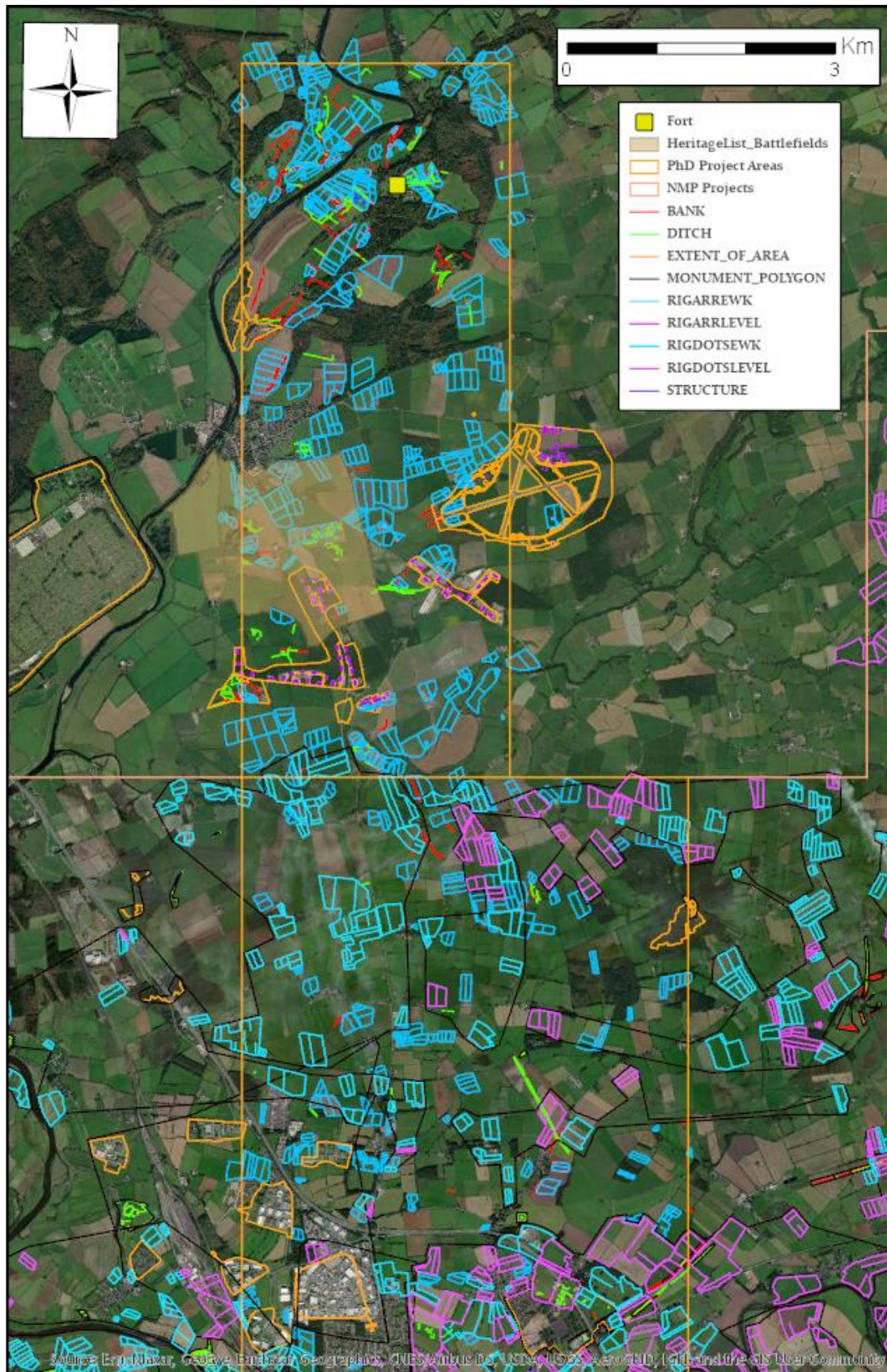
**Figure 47 - New and existing aerial mapping data for the area north of Hadrian's Wall. See Legend for mapping conventions [described fully in Table 3].**

the defended enclosure and 16th-century bastle-house at Kirkandrews (across the river from Netherby, Figure 48-I), and other tower-houses at Millees, Netherby itself (forming the core of the
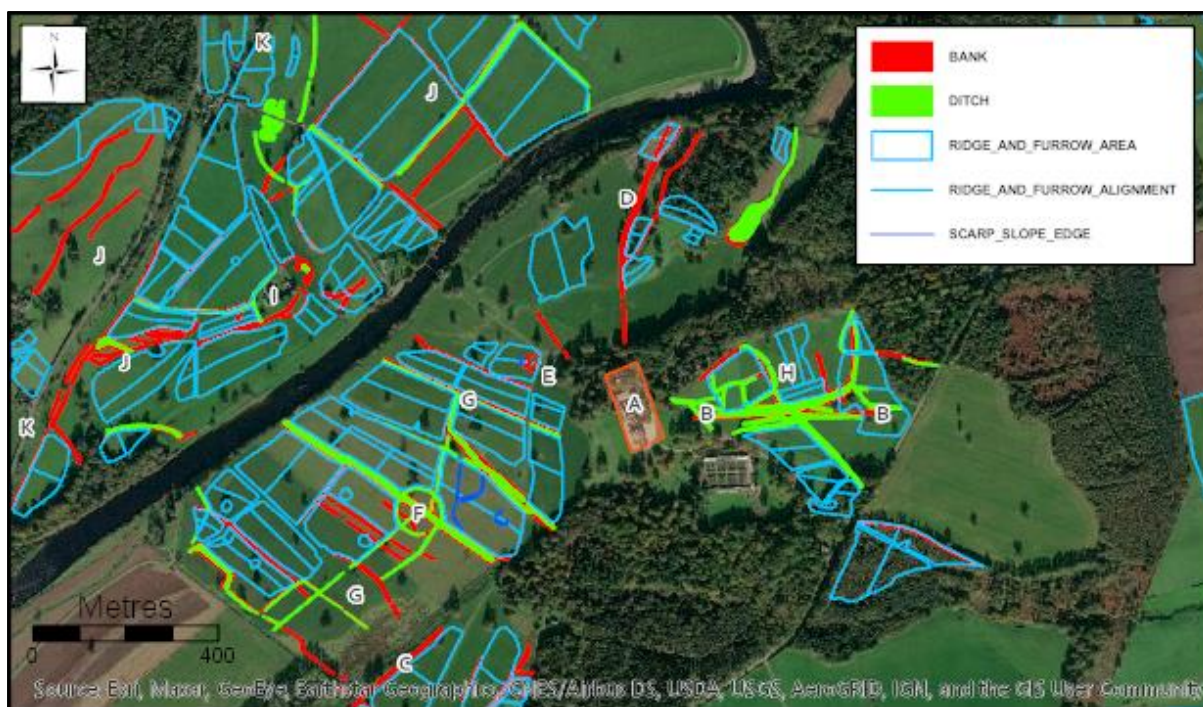
**Figure 48 - Mapping of the environs of Netherby Hall ('A'), showing all archaeological features mapped from aerial sources during the project (key features lettered and described in-text).**

later hall and possibly constructed of re-used Roman masonry (Oswald *et al*. 2015, 2,7)), and Arthuret. Later military sites include the Battle of Solway Moss (1542, Figure 47), 16th-century Scots Dyke earthwork, 19th-century rifle ranges in Carlisle, and 20th-century armaments depots and airbases (Gretna, RAF Longtown and RAF Carlisle), bomb-craters and anti-invasion measures. Alongside direct post-medieval border conflict, large military sites are often situated in areas thought liminal or peripheral to modern society, thus showing ongoing 'frontier' perceptions of the area under study beyond the Roman period.

Relatively limited coverage on aerial sources, and the urban nature of Carlisle in the south, affect evidence visibility of earlier features, hindering the project's research questions focussed upon later-prehistoric/Roman landscapes, frontier, and identity [5.2b]. This has implications for the methodological hypotheses, especially whether remote-sensing data can answer such questions alone. With only pockets of survival visible from the air, other existing data-sources are needed. In terms of significance of survival and visibility impacting archaeological conclusions drawn [4.2a], this impact is clearly quite severe here, particularly in contrast to better-preserved landscapes of this period elsewhere in the region. Figure 46 does however show that addition of recent aerial sources, particularly lidar and recent orthophotography, to areas covered previously by NMP, has increased the number of features identified, with features of past landscapes identified across the whole project-area. This includes new later-prehistoric and Roman features, discussed below [5.2/5.3].

## *5.1c – North-West England and South-West Scotland in the Late Iron Age and Roman Period*

Broader landscape-dynamics for northern Britain [2.3a], and environmental evidence [2.3c] have already been introduced; what follows is an introduction to the particular landscapes of the western transect. While natural environment is important in any landscape, influencing and affected by human activity [Chapter 2], it has a crucial impact here given the mosaic of very-different

topographies, geologies, resultant soils, and weather-systems within north-western England and south-western Scotland. This range of landscapes, west of the major upland-range of the Pennines, includes upland topographies (the western Pennine foothills, South Cumbria Low Fells and southern Scotland), broader, settled upland valleys (Ribble, Lune, Eden, Esk and Annan), and larger low-lying areas (Lancashire and Solway Plains).

The upland areas form natural obstacles filtering movement, influencing societal boundaries and 'frontier zones', and reduce potential for arable agriculture, dividing the region into landscapes separated by physical boundaries before human-created divisions are even considered. While much of the region is less-suited to arable agriculture because of climate and topography, this does not mean society was necessarily politically or culturally marginal (Hodgson and Brennand 2007, 54); we must be careful when defining areas of subsistence production, particularly pasture, as 'marginal' in comparison to large arable surpluses elsewhere, as this is an ethnocentric viewpoint centred on modern capitalist economics. The subsistence nature of later-prehistoric/Roman landscape-activity likely results from environmental and existing social dynamics of the region rather than any position in the subsequently-established Roman frontier. Most settlement (past and present) is concentrated in low-lying coastal and estuarine plains or larger river valleys, as would be expected. Water-borne communication thus likely played an important role, connecting areas divided by mountain and hill ranges (Jones 2009, 28). Terrestrial routes in the study-region also generally follow natural valley and coastal conduits.

Regional palaeo-environmental evidence predominantly comes from upland mires, with relatively-little environmental sampling in lower-lying areas, excepting urban Carlisle (Wells 2003, 67). The general picture nevertheless is one of largescale woodland-clearance beginning in the Bronze Age, accompanied by settlement, mixed agriculture in lowlands and pasture in higher uplands (Dark 1999, 258; Dark 2000b, 57; Wells 2003, 72). This will be discussed further for specific parts of the transect.

There have been many attempts to ascertain the development of later-prehistoric settlement, e.g. the 'Hownam Sequence': unenclosed settlements developing into palisaded enclosures, followed by univallate and then multivallate earthwork sites (Piggott 1949; 1950). This has proven overly-simplistic, such developments varying by site (Kokeza 2008, 4). A broad range of unenclosed and enclosed settlements, often with field-systems, have been identified from cropmarks in lower-lying areas, excavations indicating many continued into the Roman period (Bewley 1994; Jones and Woolliscroft 2001, 7-8; Oakey 2009, 13-14). In uplands, sites survive as earthworks or stone-structures (Oakey 2009, 12-13). Larger sites (Figure 42) include 'hillforts' at Burnswark Hill and Castle O'er in Dumfriesshire (Keppie 2009, 241; McCarthy 2002, 65) and a large enclosed site at Clifton Dykes in Cumbria (Ross 2012, 62), discussed below.

Archaeological evidence for the late Iron Age appears to show relatively little diversity in material-culture regionally, hindering differentiation of social-groupings (McCarthy 2002, 66). Much discussion has thus concentrated on social-units attested in Roman literature and epigraphy, often applied backwards to pre-Roman groupings with little evidence. The main group discussed in these sources are the *Brigantes* [3.3b]. Other groups within the western transect include *Carvetii* (centred around the Solway and Eden lowlands based on epigraphy, possibly a Roman sub-division of the wider federation), *Setantii* (less archaeologically-evidenced but thought centred in Lancashire) and *Anavionenses* (postulated from literary sources including a Trajanic census and place-names, occupying southern Dumfriesshire) (Breeze 2008, 65, 68; McCarthy 2002, 66; Ross 2012, 55). Whether such named-groups have any bearing on regional socio-cultural organisation in the Iron

Age is consequently debatable (Moore 2011, 354), given the potential for tribes to first be defined in this way by Rome, or tribal-groupings only forming because of Rome's arrival [2.2a/3.2b].

Ongoing settlement and landscapes across the Iron Age-Roman transition in the region are often studied separately from traditional discussions of military installations and infrastructure, which tie in to 'Roman' military and political activities and identities [3.3]. Debates include routes of initial Roman incursion, north from Chester to Lancaster, with close coastal contact vital (Jones 2009, 28, 47; Shotter 2000a, 39-40), or inland via Manchester/Ribchester to Carlisle using the Lune and Eden valleys (Philpott 2006, 87; Wild 2002, 268), connecting to trans-Pennine roads including the Stainmore Pass and 'Stanegate' routes (Hingley and Allason-Jones 2009, 165). What is no-longer contested is that the Roman military arrived in north-western England by the early AD 70s, verified by earliest levels of Roman activity in Carlisle (McCarthy 2002, 51; Shotter 2000a, 35). Whether early, rapid advances were due to easy expansion into pro-Roman territory or alternatively a military push to control a known hostile area is debatable (Ross 2012, 61), and important for discussion of identities locally.

First-century auxiliary forts and temporary camps are found throughout the region (Figure 42), located along major roads and the coastline/estuaries as far north as Annandale and Nithsdale in Dumfriesshire (McCarthy 2002, 52-53; Philpott 2006, 86). Forts controlling specific areas (e.g. the Lake District) were added following the initial expansion, alongside increasing infrastructure (with production sites at Scalesceugh, Brampton and Quernmore, discussed below). Further garrisons were added in the early-second century along the Stanegate, running across the Pennines from Corbridge to terminate at Kirkbride on the Solway (Shotter 2000a, 48-49).

However, it was not until the formalised border-line of Hadrian's Wall was constructed in the AD 120s, initially of turf in this area but later rebuilt in stone, that a man-made obstacle interrupted long-established patterns of movement across the region (*ibid.*) [3.3b for discussion about Hadrian's Wall's function], together with Cumbrian coastal-surveillance posts controlling maritime movement. New sites included the major Wall-fort constructed at Stanwix, 1km north of Carlisle (and resultant changes at Carlisle's initial fort-site). Following semi-abandonment during the Antonine advance northwards, the Hadrianic line was fully reoccupied and garrisoned (with some local variation) until the end of the fourth century. The overall distribution of military sites thus continued throughout the period, ranging from outposts at Birrens, Netherby and Bewcastle south to hinterland forts such as Ribchester, identified archaeologically and supported by third to seventh-century Italian geographic sources: the Antonine Itineraries (Roman road-maps [2.2a] divided by routes along specific *Iters* or routes, mentioned below), *Notitia Dignitatum* and Ravenna Cosmography; with much-debated attributing of listed place-names to sites identified archaeologically (Smith 1997, 372).

Roman 'civilian' settlement appears directly-related to forts, with *vici* located near many (ranging greatly in size and form), and the major urban-centre in the region developing at Carlisle– *civitas Carvetiorum*, proposed from milestones and a tombstone at Old Penrith as the seat of local Roman government (Breeze 2008, 63, 67; McCarthy 2002, 62). Rural settlement appears to remain morphologically-similar to that of later-prehistory, limited artefactual and environmental evidence (compared to military or urban assemblages) hindering comparison (Philpott 2006, 69). Nonetheless, the arrival of Rome undoubtedly impacted existing landscapes, with military occupation disrupting existing indigenous activities, communications and land-uses and likely killing large numbers of people (whether across the region or in discrete areas) (Hingley 2021, pers.comm). Longer-term impacts include exploitation of great amounts of natural resources (timber, turf, stone, etc) for

construction and maintenance of new sites, large numbers of military personnel (though varying substantially over time) not contributing directly to agricultural production but requiring sustenance, substantial infrastructure connecting topographically-separated areas on a scale not previously seen, and new boundaries created, both physically (Hadrian's Wall) and socio-economically/culturally. The nature of this impact will thus be investigated for each part of the transect in the following discussion, beginning with the area north of Hadrian's Wall.

## 5.2 – North of the Roman Border: Outposts and Indigenous Society

*5.2a – The Iron Age and Roman Period in the Study Area: New Aerial Survey Mapping Results and Previous Research*

Despite issues with visibility of Iron Age and Roman-period features in the lowlands north of Carlisle [5.1b], features of this landscape (Figure 49) are identifiable from aerial sources, informing this research. Isolated enclosures and small areas of extended field-system are detectable as cropmark ditches in improved-pasture and arable. The enclosures are morphologically similar to others across lowland Britain given later-prehistoric or Romano-British dates (though with issues of dating precision and occupation longevity for each site), while the fields appear on completely different alignments from modern (or medieval) land divisions, suggesting
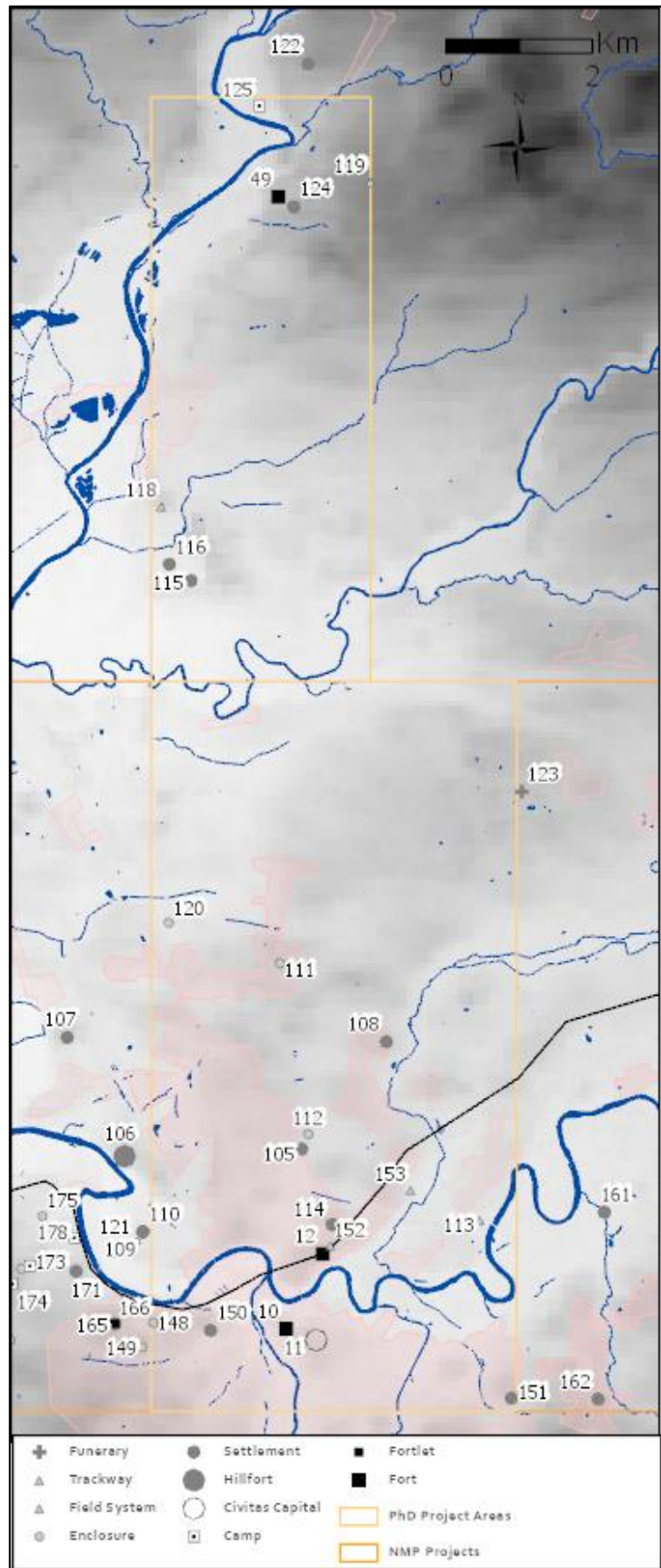


**Figure 49 - Later prehistoric and Roman Sites mentioned in the text, located within and around Mapping Blocks 1 and 2. Background shows the natural topography and river systems, with modern urban areas in pink and line of Hadrian's Wall in black.**

earlier date. Therefore, although overall visibility is low, the lowlands north of Carlisle were definitively occupied and farmed during this period. Limitations of local evidence do not indicate a genuine dearth of activity. As mentioned [2.1c/3.3b], issues of chronology from survey data alone are pertinent, especially given the fragmentary nature of the evidence, which hinders identification of phasing or other temporal changes. Sources such as the Roman Rural Settlement project add little to the picture here, given that its only recorded site north of Hadrian's Wall is the Windsor Way farmstead [RRS-41027] in the urban environs of Carlisle, dated by in-situ finds to the Roman period.

Nonetheless, by examining sites known from existing sources, the rural Iron Age-Roman landscape of the region can begin to be reconstructed. Several sites were identified in the Hadrian's Wall NMP project and other investigations. Of these, the most prominent is the proposed 'hillfort' at Cargo (10572) north-west of Carlisle (Figure 49-106; left, Figure 50), cropmarks revealing multivallate ditches and at least one substantial bank enclosing an area atop the eastern scarp-bank of the River Eden, with associated boundaries forming fragments of a potential field-system. Without excavated evidence, the occupation history and function of the site (and its relationship to Hadrian's Wall, located south-west of the river at this point) is unclear, but the site's morphology shows differences from others in the lowlands north of the Eden (discussed below), which are predominantly defined by single ditches (with no visible surviving banks). The usual debates around multi-vallation equalling defensive purpose or capability are now out-dated, given the fact that many excavated multi-vallate sites across Britain appear purely domestic in character and are not located in highly-defensible topographic positions; nevertheless, this example does stand out from other rural settlements due to its form.
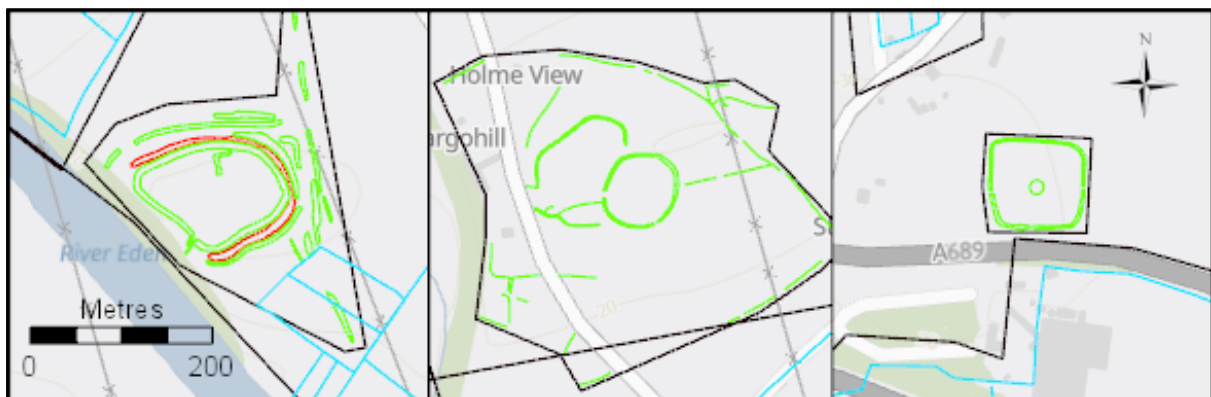


**Figure 50 - Iron Age/Romano-British rural sites, visible as cropmarks on aerial photographs, and mapped by the Hadrian's Wall NMP (conventions as above).**

The excavated farmstead at Windsor Way (Figure 49-105) comprises ditches, post-holes, and a metalled trackway 1.3km north of Hadrian's Wall and Stanwix fort (Figure 49-12), with at least one phase of activity during the mid-Roman period based on limited ceramic evidence (the majority of the site being undated). Whilst this shows that the landscape immediately north of the border was not completely abandoned upon the construction of Hadrian's Wall, the limited artefactual evidence for site function and wider chronology from the site hinder further interpretation.

Other rural sites include those visible as cropmarks in and around northern Carlisle's suburbs, comprising enclosures of varying form (circular, curvilinear and rectilinear) and size (Figure 50), generally detectable as ditches. These sometimes survive as isolated settlements (as with a rectilinear enclosure containing a single visible roundhouse (927783) (Figure 49-108; Figure 50, right): the only site identified north of Carlisle by Higham and Jones (1975, 34)); and occasionally with associated complexes of ditched boundaries, likely field-systems, as with curvilinear enclosures

near Holme View (927375) (Figure 49-107; Figure 50, centre). A relatively extensive complex of curvilinear and rectilinear enclosures with associated field boundaries (1383241) located near the Eden north-west of Carlisle (Figure 49-109/110), though undated, is interesting given that it incorporates two ring-ditches interpreted as Bronze Age round barrows (based on morphology and size) – the only potential funerary monuments identified in the



**Figure 51 - Cropmark ditches in arable fields near Longtown on specialist oblique photography (NMR 28069_044 ©HE).**

entirety of the study area. The field-system likely post-dates the barrows and thus interesting questions exist as to whether the barrows were still extant in the landscape or levelled prior to agriculture, with implications for the identity of local people [discussed Chapter 7]. Other features such as a small circular enclosure (1379316; Figure 49-111) north of Harker Park and ditch complex of less defined morphology (1383198) are less-easily attributed to the later-prehistoric or Roman periods, but may represent further fragments, as do excavated square enclosures (Figure 49-152) in modern Stanwix. This all reveals a complex rural agricultural landscape of scattered settlements, associated enclosures and field-systems, similar to that south of Hadrian's Wall on the Solway Plain (Bewley 1994). At least one settlement remained in use into the Roman period, despite lying immediately north of the formalised boundary of the Roman Empire and garrisons at Carlisle (Figure 49-10) and Stanwix.

Aerial mapping from the project shows probable Iron Age/Roman rural settlements and field-systems extend northwards up the Esk Valley, comprising ditched boundaries and enclosures where modern land-use and underlying geology enable formation of cropmarks in isolated patches (e.g. Figure 51). The most apparent examples are a pair of rectilinear, sub-divided enclosures (with potential roundhouse) and fragmentary ditched field boundaries with possible embanked trackway (Figure 49-115; Figure 52, right); and a more complex, multi-phased system of rectilinear fields including potential trackways, pits and at least one ring-ditch, likely a roundhouse (Figure 49-116; Figure 52, left). These represent the best evidence for non-military landscapes in Block 1. Other cropmark features include fragments of rectilinear ditched field-systems south of Longtown (Figure 49-118) and north of Stanwix (Figure 49-112), two sinuous ditches suggesting a trackway east of Netherby (Figure 49-119), and large curvilinear enclosures just north of Carlisle (Figure 49-120), all potentially offering further insight into this landscape, though needing further dating evidence. A rectilinear enclosure (1572145) (Figure 49-122) identified previously from aerial photography and attributed as Iron Age or Romano-British based upon form, just north of Block 1, indicates this settlement pattern continues up the Esk Valley towards higher ground in Scotland. The only other evidence for 'native' landscape activity from the project area is a bog burial discovered in peat at Scaleby Moss in 1845 (875505) (Figure 49-123) but since lost: a man with a deerskin cloak and staff,

**Figure 52 - Two examples of mapped cropmark archaeological sites, both located south of Longtown and comprising fragments of probable Iron Age/Romano-British settlement and field-system (blue = later ridge and furrow ploughing).**

likely Iron Age and the only evidence aside from the two barrows described above for later-prehistoric funerary activity within the project area.

Evidence of enclosed settlements, with accompanying agricultural activity in rectilinear field-systems (likely contemporary, given relationships between sites and boundaries, paralleled elsewhere [5.2c]), and limited evidence for monumental and ritual funerary rites, show that the Roman army established its frontier zone on the western part of the Tyne-Solway isthmus in an existing occupied and permanently-settled landscape. Whether or not all sites remained in use at the time does not change the likelihood that people were living and moving within the landscape, given contemporary indigenous sites in surrounding areas [5.2c]. The distribution of surviving sites (Figure 49) reveals they are generally located close to rivers, on slightly-higher terrain above floodplains. If this visibility is not merely due to such terrain suiting modern improved-pasture and arable, with underlying, well-drained soils, facilitating increased cropmark production, this suggests later-prehistoric and Romano-British rural settlements and enclosures were clustered within a liminal zone between flat, alluvial soils subject to seasonal flooding and better-drained farmland. This would provide a variety of potential land-uses, connectivity provided by rivers or valley-floors. Eskdale connects easily (topographically) with lowlands to south and west, and various valleys leading into adjacent uplands north and east (Figure 58), as well as regions further afield via the Solway Firth and then Irish Sea. It is consequently likely to have been a zone of movement as well as settlement, both of which were truncated upon construction of the Roman frontier to the south.

Prior to Rome's arrival, terrestrial communication between sites was likely via trackways and droveways integrated within formalised field-systems and broader pasture areas, fragments of which have been identified in the cropmark evidence above but with insufficient clarity over the mapping blocks to suggest the complete network. Water courses are another option for transport within this landscape, valleys forming natural conduits through the wider landscape. The first comprehensive evidence for extensive man-made communications infrastructure in the project area are however the Roman military roads cutting across the lowlands north of Hadrian's Wall (though precise phasing is unclear) (Figure 53). One wide, straight earthwork bank heads south-west from Netherby towards modern-day Longtown, following the scarp edge above the floodplain for much of its length (Figure 48-C; Figure 54, right). This likely turned southwards, linking with the road north
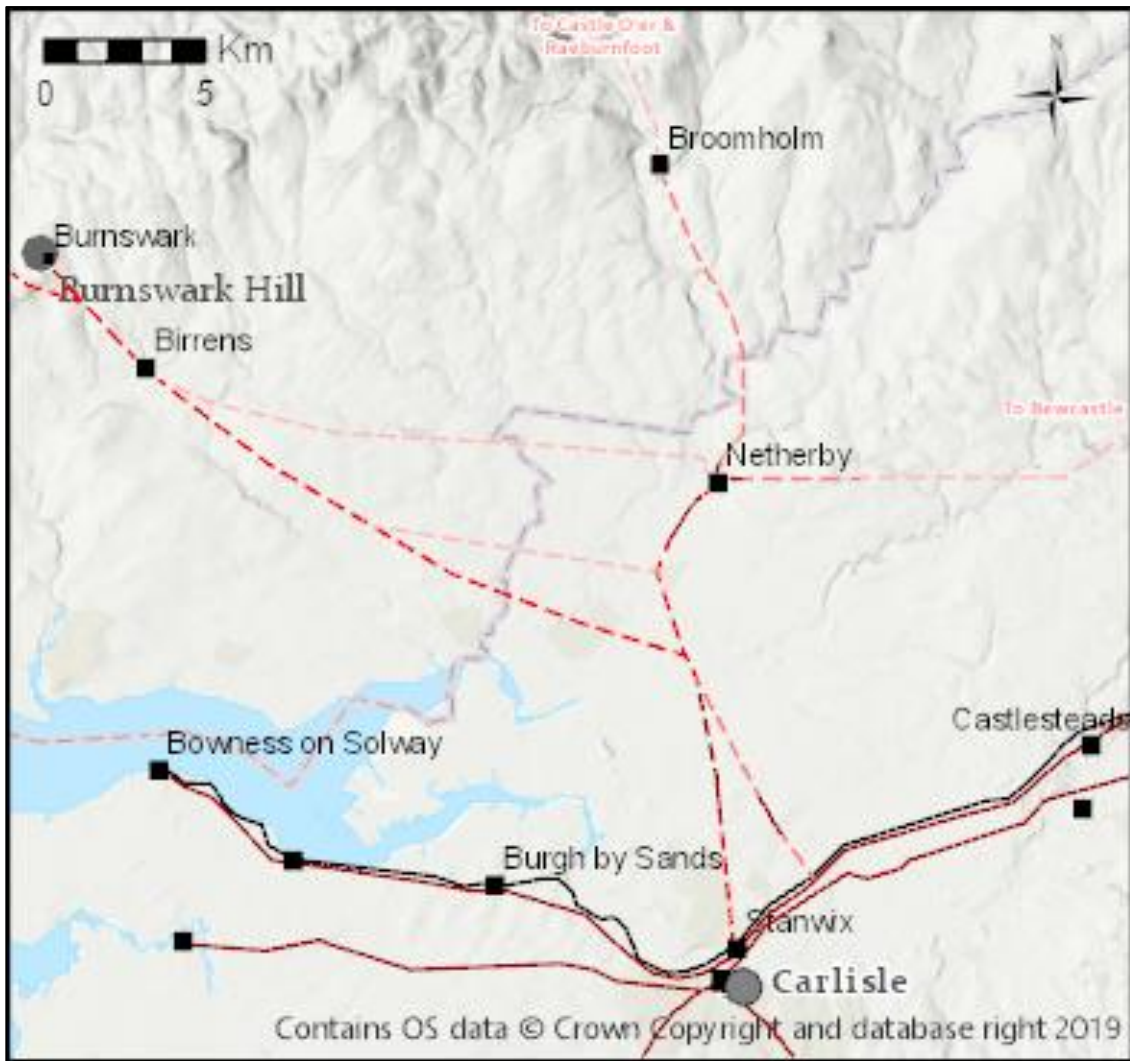
**Figure 53 - The network of known (solid red), probable (dashed red), possible (dashed dark pink) and proposed (dashed light pink) Roman roads along the Roman border-line and further north.**

from Carlisle (followed by the straight modern A7/Harker Road (HER No.186) to Westlinton). The latter was presumed to divert north-west, crossing the lower reaches of the Esk and thence traversing Annandale to the outpost fort at Birrens, but can now also, or alternatively, be extended to Longtown and a further river crossing north-west (Figure 53). A further Roman routeway, newly identified from modern imagery in Block 2, projects north-west from a presumed crossing point on Hadrian's Wall north-east of Stanwix, visible as an earthwork bank in places and cropmark flanking ditches in others (Figure 54, left).

Another potential road agger extends for several hundred metres from the eastern side of Netherby fort (Figure 48-B), slightly obscured by later earthworks (H), though no known further road sections nor Roman military sites (other than the outpost fort at Bewcastle and central sector of Hadrian's Wall itself), are previously known in that direction. A broad bank extending across the dry valley north of the fort (Figure 48-D), heading towards a modern meander in the Esk and previously postulated as a Roman road (Wilson 2017, 339-341), may represent a route into the uplands, following the eastern side of the Esk at least as far as Broomholm, with a secondary, proposed branch north-east into Liddesdale. Finally, it has been hypothesised (Birley 1953a, 28-30) that the
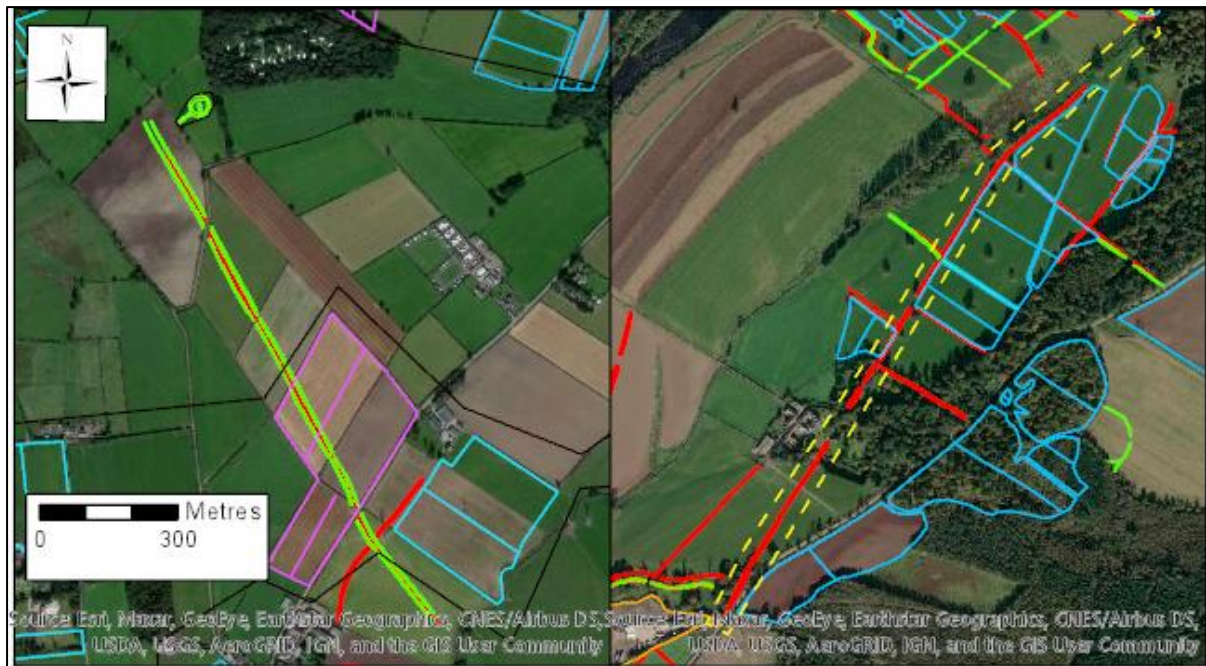
**Figure 54 - Two surviving earthwork lengths of probable Roman road in the area north of Carlisle and east of the Esk.**

fort at Netherby guarded a further river crossing westward to Birrens (argued via *Iter II* of the Antonine Itineraries); no evidence for this was found in aerial or field surveys (below).

Taken together (along with riverine routes), these roads show a major Roman impact on the low-lying region. Offering interconnected, efficient lines of movement through the existing rural landscape, the new network might also provide social and economic opportunities to locals (and incomers), also representing ideological, cultural expressions of Roman imperial power [2.2] beyond the official edge of Roman rule. It should be noted that much of the evidence for such roads beyond the immediate environs of Roman forts is based upon morphology and alignment, due to lack of excavation. However, when combined, these convincingly comprise a road network connecting various military sites north of Hadrian's Wall: further excavation may confirm this. With little surviving evidence for later-prehistoric routeways (beyond likely use of the river), it is difficult to say whether this network over-rode previous movement patterns or was utilised beyond military personnel.

Moving on to Roman military sites connected by these networks, the main site north of Hadrian's Wall within the project area is the fort at Netherby (*Castra Exploratorum*), identified on *Iter II* of the third-century Antonine Itineraries (Wilson 1999, 18) (Figure 49-49). Birley (1953a, 6) argues this name implies an important role within the frontier zone. A potential alternative could be *Brocara* ('foaming stream' – the nearby Carwinley Burn?), from the Ravenna Cosmography (*ibid.*, 31-32; Richmond and Crawford 1949, 26); more recently assigned by Frere (2001, 287) to Broomholm, further north along the Esk, and Fitzpatrick-Matthews (2013, 46) further north still, to around Ervine. Netherby's fort is assumed to have Flavian origins, given its intermediate position on routes north from Carlisle to early forts at Birrens and Broomholm. The first epigraphically-attested date is Hadrianic, Netherby being (re)constructed by *Legio II Augusta* as an outpost for the new frontier, while an altar from AD177 shows auxiliary occupation by *cohors I Nervana Germanorum* (a 500-strong infantry cohort, originating in northern Gaul/western Germania) (Oswald *et al*. 2015, 6). The third century has greater clarity afforded by inscriptions, with *cohors I Aeliana Hispanorum* in occupation (a 1000-strong, part-mounted unit (Jones and Woolliscroft 2001, 142), supported by

epigraphic mention of a 'riding school' or cavalry practice area), prior to or alongside the eponymous *Numeri Exploratores* (scouts). The reconstruction of buildings in AD222 suggests the presence (at least temporarily) of legionaries from York (*VI Victrix*) and Chester (*XX Valeria Victrix*) (Oswald *et al*. 2015, 6). The latest datable evidence is a coin of Gordian (AD238-244), though other outposts survived into the fourth century and it is likely Netherby also remained occupied in some form (Birley 1953a, 32-34). Though the chronology and nature of the site is thus relatively poorly-known compared to other forts regionally, it is clear from epigraphic and documentary evidence that the site's occupancy changed repeatedly throughout the Roman period, with associated changes in personnel, and thus local interaction (and identities involved), alongside transformations in built environment and nearby landscape.

Aerial survey added no further detail to the fort site, which survives largely as a rectilinear platform upon which the post-medieval stately home and attendant buildings are constructed, on high ground overlooking the River Esk and its floodplain (Figure 55). Though the Esk is relatively stable in course (Natural England 2015a, 9), there is evidence for local migration, particularly its confluence with Carwinley Burn – originally north-west of (below) Netherby Hall (potentially a reason for siting the fort) and now located further north (Oswald *et al*. 2015, 18-19). A large, curving ditch identified in evaluation work south-east of the hall (HER 44844; Figure 49-124) was OSL-dated to 690calBC, potentially enclosing the ridge on which the Roman fort was later constructed. Though its morphology and function remain unclear, it is possible the fort therefore occupied a site with a long history of activity. Another reason for the fort's position is that it controls where Liddesdale and Eskdale (natural upland routeways) enter the Solway lowlands, and thus various movement axes, as well as the river itself (Sainsbury and Welfare 1990, 139).



**Figure 55 - Aerial photographs: the Esk as it passes through Netherby Estate (left: RXB 3406_15 07-FEB-1986 ©HE); and a close-up of Netherby Hall, the probable site of Castra Exploratorum (NMR 12165_26 13-AUG-1991 ©HE).**

Despite various antiquarian reports indicating a large Roman site, including Leland's 1539 description of '*marvellous buildings indicated by grass-covered, ruined walls and rings for tying up ships*' (cited Birley 1953a, 6-7; Jones 2009, 129), only limited modern investigation of the Roman fort beneath Netherby Hall has occurred. This includes small-scale, exploratory work on the terrace west of the hall which uncovered substantial masonry foundations tentatively interpreted as a granary (Esmonde Cleary 1997, 415), and 2014 excavation of a military perimeter ditch (Wilson 2017, 338-339) along the edge of a platform subsequently shown by analytical field survey to comprise several perimeters – an initial square fortlet of 0.3ha and subsequent rectangular Hadrianic and/or Caracallan forts of 1.2-1.6ha/2.4-3.5ha respectively (Oswald *et al*. 2015, 2,7-9; Oswald *et al*. 2017),
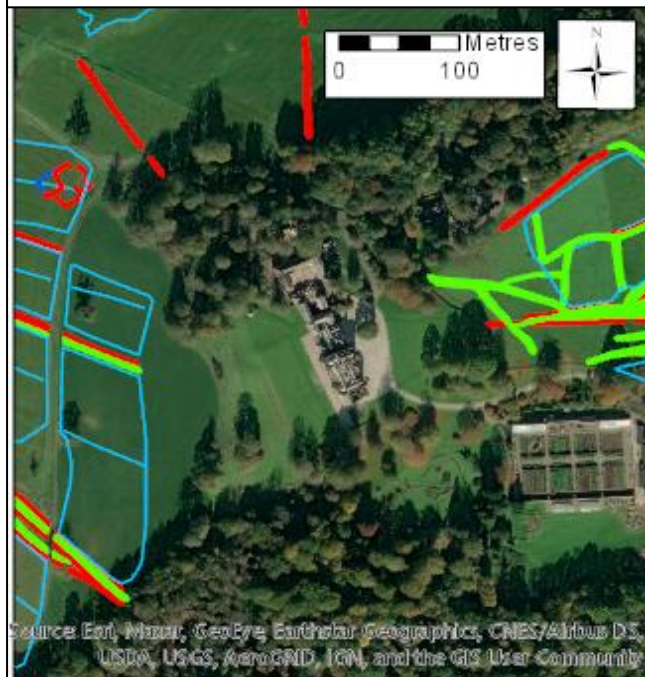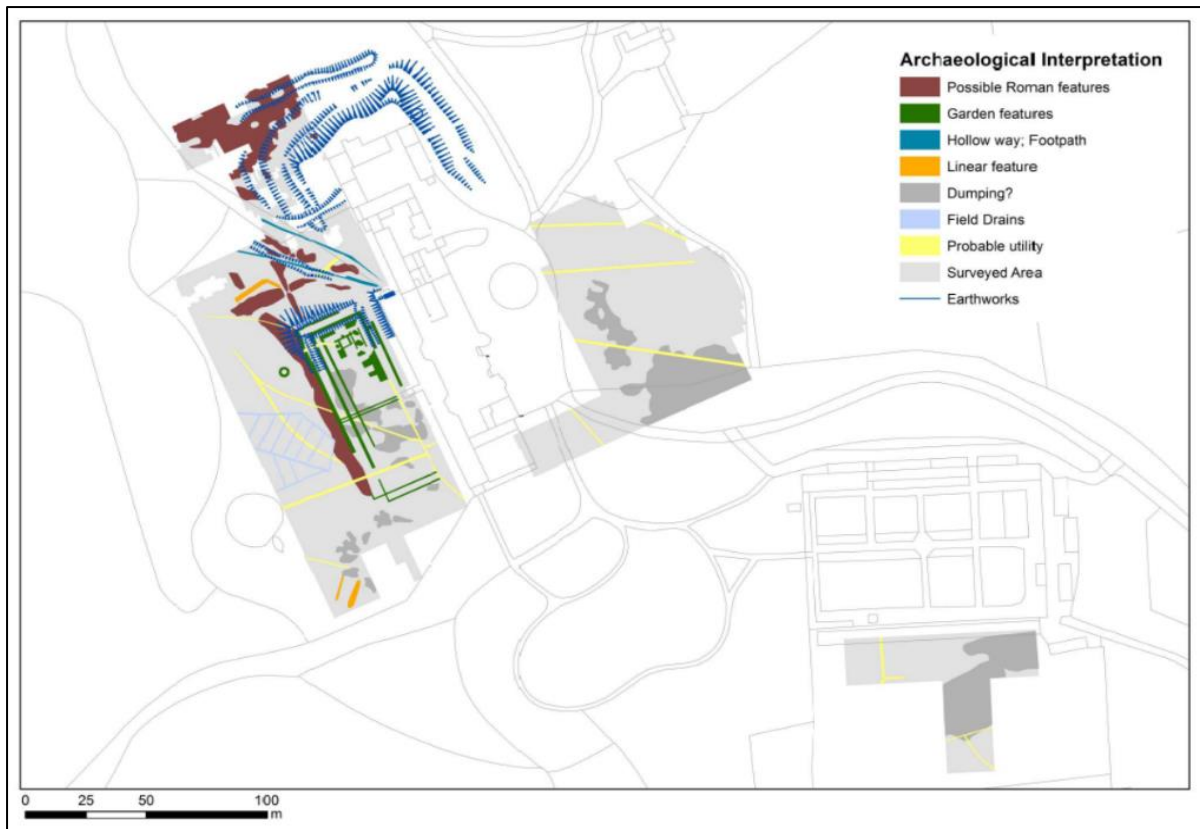
**Figure 56 - Earthwork and geophysical survey plans (Oswald *et al.* 2015) (above) and new aerial mapping (below) of Netherby Hall's environs, showing the fort platform, underlying magnetic and resistance anomalies and earthworks.**

geophysical survey hinting at broad subterranean anomalies indicating contemporary activity (Figure 56 (Oswald *et al*. 2015, 14-15)). Natural topography would however impose an unusually-elongated fort plan to accommodate these larger phases (*ibid.*, 25).

The external military bathhouse, located at the bottom of the slope immediately north-west, was identifiable as slight earthworks near a natural spring, mapped from lidar-imagery. Mapping confirmed both survival of the bathhouse and the antiquarian plan drawn by Baty in 1732 (Birley 1953a, 14-17), noted by General Roy (Roy 1793) (Figure 48-E, Figure 56). This location, undefended and external to the fort, is different from that at other outposts [5.2c/6.2], with interesting implications for local interactions. Despite antiquarian records of standing *vicus* settlement remains west of the fort, no evidence was visible in either aerial or ground survey other than broad terracing, augmented or constructed in laying-out the estate. Any trace of external settlement or harbour remains undetected beneath these terraces and post-medieval land improvement and circular tree stands (Figure 48-F/G) on the floodplain beyond. The river's banks and navigability were assessed by

Oswald *et al.* (2015, 20), finding no trace of wharves and deeming the Esk inaccessible to ocean-going vessels beyond its confluence with the Lyne, south of Longtown.

Finds shedding light on identity are predominantly sculptural, collected by the Graham family. One relief of a Romano-British deity carries a cornucopia (a Classical symbol) and large wheel (possibly indicating links to local British solar cults); another depicts a local hunting god, *Huetiris* (together with boar, tree and patera-disc iconography). Together with inscriptions to local *genii*, mother goddesses and cults of *Belatucadrus* and *Cocidius*, these indicate the influence of, or interaction with, local culture. Altars to *Fortuna* (from the bathhouse), *Jupiter Optimus Maximus* (associated with a parade ground) and *Silvanus* (household altar) indicate connections to central Roman belief systems. Dedication to *Magontius* may represent Germanic links from one potential garrison – *cohors I Vangionum* (a unit also attested at Risingham and High Rochester) (Aldhouse-Green 1983, 41-44; Birley 1953a). Together, these indicate the garrison (or associated civilians) comprised people with various beliefs and origins, including northern British, imported northern European and Classical Mediterranean. It must be noted however that some sculptures recorded at Netherby may come from surrounding sites such as Bewcastle (Ferguson 1886a, 322).

Isolated finds includes coins (first to third centuries AD), a female, lion-headed intaglio figure, funerary urns (Birley 1953a, 11-12,18-19) and small amounts of Roman pottery (Oswald *et al*. 2015, 2-3) – the usual assemblage of durable objects found on Roman sites regionally. Tombstones are final evidence for identity at Netherby – one high-status monument commemorates Titullinia Pussitta, a lady from Raetia (modern Bavaria), while another to Javolena Monime shows she likely originated in Italy, close to the Imperial core (Birley 1953a, 35-37; McCarthy 2002, 108). These indicate the presence (presumably long-term) of women within the outpost (and potential family implications), also adding to the varied places of origin of inhabitants.

A possible Roman site (1570141) (Figure 49-125), identified north of the fort beyond a meander in the Esk in recent aerial photography and newly mapped (Figure 57), is visible as cropmarks showing the right-angled, curving corner of a large, ditched enclosure on higher ground overlooking a potential river-crossing. The feature is possibly part of a Roman temporary camp, based upon morphology and location (a river-crossing on the route between Netherby and Broomholm). If so, this would be the first camp identified within the project area, outside Carlisle. If not military in origin, the site is likely a rectilinear Iron Age/Roman enclosure and its relative



**Figure 57 - Aerial photograph [NMR 28046_031 ©HE] showing the River Esk and the cropmarks of an early enclosure.**

proximity to the fort has interesting potential when examining relations between military and non-military.

Such places are clear evidence for Roman troops moving through the landscape, both short-term military exercises and long-term occupation. Given that Netherby is generally perceived an outpost of the established Hadrianic frontier rather than solely relating to early military expansion, it shows an interesting long-term relationship between Roman military activity and the landscape. The fort and potential camp are both located on high ground overlooking the Esk, with interesting implications for control of movement (local and military) along the river and its crossings, paralleled elsewhere (e.g. the Rhine (Hanson 1989, 57)) and hypothesised (Symonds 2021) for forts from the earlier Stanegate phase of activity in the region, and with associated increased visibility for indigenous people within the landscape. As mentioned above, navigability of the river here is debatable. Nonetheless, the river and its low-lying surroundings offer easy routes of movement, via both smaller, riverine craft and terrestrial transport. The only other major Roman sites within Blocks 1 and 2 are those located along the Roman border itself, c.14.5km south of Netherby – forts and settlements at Carlisle and Stanwix and the Wall infrastructure, discussed below [5.3].

Drawing together existing evidence and new survey data for later-Iron Age and Roman activity in the project area north of Hadrian's Wall, it is clear that military personnel (both the long-standing garrison attested at Netherby and the transient but regular movements of other units (and likely civilians) scouting, trading and otherwise operating within the outer frontier) would have been active within the landscape – it therefore looks increasing unlikely that the area immediately north of Hadrian's Wall was abandoned (voluntarily or enforced) for any great length of time following the border's construction. Evidence suggests existing networks of enclosed settlements within systems of arable and pastoral agriculture, some remaining occupied upon completion of the Hadrianic frontier to the south. What is also clear, discussed further in 5.2c (given lack of artefactual or ecofactual assemblages from these survey areas), is that this region saw not only cross-frontier interaction and movement, but also connectivity with surrounding lowland regions to the west and uplands to north and east, both riverine and terrestrial.

*5.2b – Contextualising the New Evidence: Existing Knowledge of Iron Age and Roman Period Landscapes North of Hadrian's Wall*

Having introduced the outpost fort at Netherby and surrounding lowland landscape of the lower Esk valley, covered by the primary survey data of the thesis, the wider regional context for this area north of the Roman borderland (Figure 58) – the outer frontier zone [Chapter 3] – now needs discussion. Much of this wider region falls within modern-day Scotland, with different national methodologies and programmes of archaeological work (particularly preference for site-based recording over largescale mapping), and thus much evidence discussed here will comprise site-based or more closely-defined thematic projects.

The low-lying terrain of the lower Esk valley resembles that immediately west from the project area: the coastal plain around the northern Solway Firth, extending up the broad valleys of Annandale and Nithsdale in Dumfriesshire (Figure 58). These valleys, together with the Esk and its tributaries, reach northwards into the southern uplands of Scotland, narrowing in higher topographies and offering natural routes of access northwards. Ascent to higher ground east of Blocks 1 and 2 involves similar changes in topography, rising to high moorland fells north of the Whin Sill natural boundary chosen as the Roman border, continuing the topographic east-west
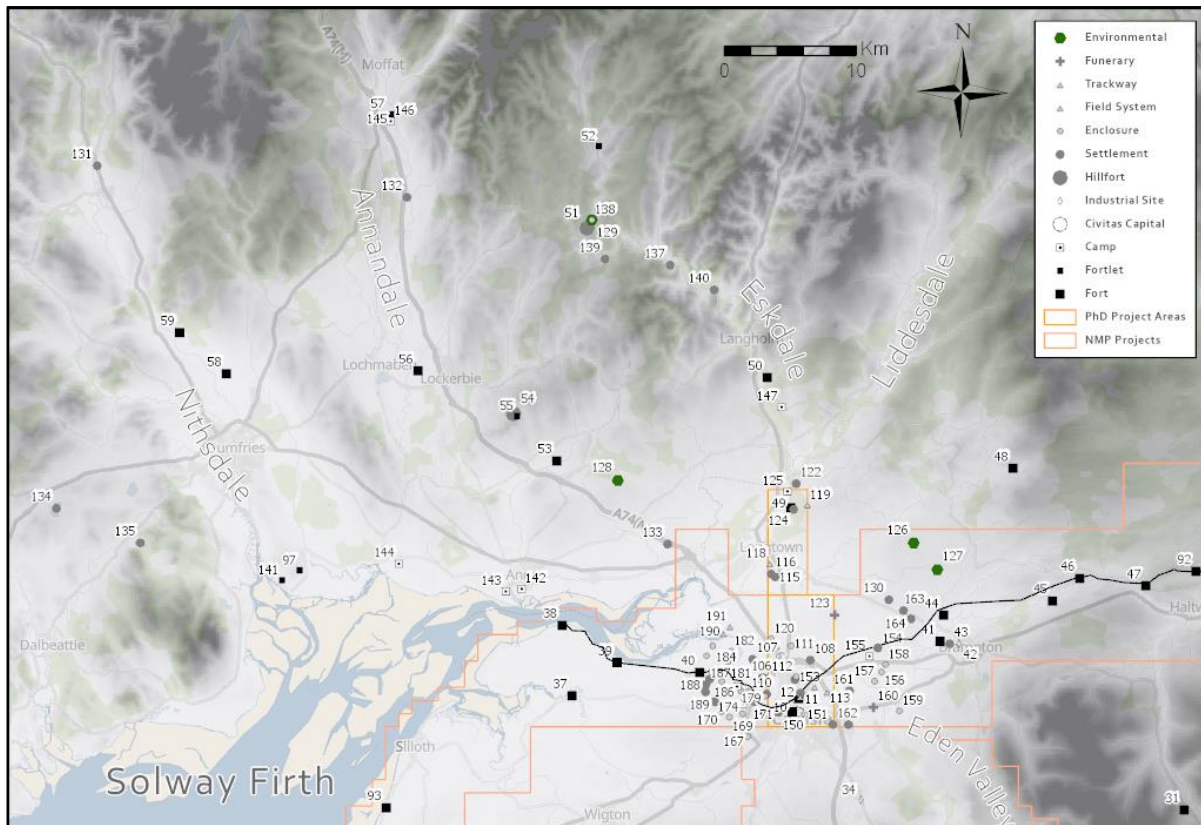
**Figure 58 – Later prehistoric and Roman sites mentioned in the text, located in the wider region north of Hadrian's Wall.**

'frontier' from the Pennines further south. Consequently, Netherby (Figure 58-49), located adjacent to a river at the head of lower-lying terrain north-east of the Solway, is ideally sited for surveillance, interaction, and control of local movement between lower and higher ground.

In terms of wider environment, there are several distinct broader landscapes. Eastward, the 'Border Moors' (western Cheviots) comprise extensive, sparsely-populated moorland plateaus with peat overlying limestone and sandstone bedrock, broken only by the Lyne and Irthing valleys (areas of surviving deciduous woodland and current farming), (Natural England 2013b, 3-8). Peat from Bolton Fell Moss (Figure 58-126), located on the edge of this area, suggests relatively wet climate in the Iron Age was followed by warmer and drier conditions in the second-seventh centuries AD (Dark and Dark 1997, 21), with early, small-scale woodland-clearance beginning in the Bronze Age (c.2300cal.BC) (McCarthy 2002, 40-41) and more extensive mid-late Iron Age deforestation, peaking c. cal.AD10-260 (though it is unclear whether this is due to pre-Roman activity or their arrival) (Dark 2000b, 107; Dumayne-Peaty and Barber 1998, 147-158). Walton Moss to the south (Figure 58-127; 3km north of Hadrian's Wall) saw clearance earlier in the Iron Age, peaking around c.110cal.BC-cal.AD80, but regeneration of woodland and a decline in open land in the early-mid Roman period is hypothesised as an impact of the frontier's establishment on local people's activities (Dark and Dark 1997, 34; Dark 2000b, 107; Dumayne-Peaty and Barber 1998, 147-158).

North-west of Blocks 1 and 2, the open, dynamic tidal flats and salt marshes of the Solway (Natural England 2015a, 3) give way to low-lying drumlin topography (well-drained, resulting in a modern mix of pasture and arable) in the broad lower Annan and Nith valleys (McCarthy 2002, 31), as in Blocks 1 and 2. Pollen sequences from Burnfoothill Moss in Annandale (Figure 58-128) show major woodland-clearance from c.110cal.BC-cal.AD90 alongside increases in grassland and some cereals (Dark 1999, 256; Dark 2000b, 64). North of Block 1 and north-east of Annandale, land rises

rapidly into Scotland's southern uplands. Palynology from Over Rig in upper Eskdale (site discussed below; Figure 58-129) shows early clearance in the Bronze Age (c.1800-1500cal.BC), similar to lowland sequences, followed by pastoral farming alongside settlement in the valley (though with the later-Iron Age part of the sequence missing (Halliday 2002, 95; Mercer 2018, 142-191).

Therefore, the broader environment north of Hadrian's Wall in the study period appears to have been a largely-cleared landscape of pasture and arable, similar to today, with small patches of woodland surviving. Closer to the Roman borderline, woodland regenerated in places upon the construction of Hadrian's Wall and its attendant installations, potential explanations including the need for strategic clearance to increase landscape visibility, and timber requirements for construction and maintenance.

Moving on to native settlement, the landscapes to the immediate east of Blocks 1 and 2 have had little previous archaeological investigation, though five Iron Age/Roman rectilinear settlement enclosures were mapped in lower-lying areas just north of Hadrian's Wall (between Carlisle and Birdoswald); that at Highberries (Figure 58-130) including a trapezoidal enclosure surrounded by likely-contemporary coaxial field-system, visible as cropmarks (Small 2008, 13-21). The Annandale and Nithsdale lowlands, easily accessible by both maritime and terrestrial movement, offer the best agricultural (particularly arable) land locally, along with droving connections to uplands (and corresponding larger areas of grazing), discussed by Stallibrass (2000; 2009; 2018). Consequently, extensive rural settlement and farming landscapes in these lowlands throughout later prehistory offer potential for greater social networking and hierarchical stratification of local populations. Iron Age/Romano-British enclosures, field-systems and settlements identified from aerial photography, initially thought of lower density than those south of the Solway and hypothesised as resulting from lack of direct Roman control (Jones and Walker 1983, 187-188) have been shown by ongoing aerial survey to indicate an equally-extensive settlement pattern: unenclosed settlements with large roundhouses, over 100 rectilinear enclosed settlements (defined by ditches and banks, as in Blocks 1 and 2; elsewhere by palisades) and even greater numbers of curvilinear enclosures, similarly diverse in perimeter-construction (Cowley and Brophy 2001, 47,60-63). Excavated examples of unenclosed roundhouses in Nithsdale gave first century BC/first-second century AD dates, while rectilinear enclosures range throughout the first millennium BC to the fifth century AD (one banked/ditched enclosure at Carronbridge (Figure 58-131) overlying an earlier palisaded example on the same plan) (*ibid.*).

There are also more intensively-investigated examples, particularly for eastern Annandale (from modern road improvements), adding much-needed site-based evidence for indigenous settlement which help contextualise similar sites in Blocks 1 and 2. The large, double-embanked enclosure of Warden's Dyke (Figure 58-133), a rare earthwork survival (surrounded by cropmark contemporary field boundaries), was confirmed by excavation to contain multiple phases (one main enclosure ditch giving an Iron Age radiocarbon date, 488-197cal.BC), ecofactual evidence indicating oak as the primary construction material and a general lack of arable agriculture locally (Banks 2004, 37,54-56). Meanwhile, the oval-shaped, multivallate enclosure at Woodend Farm near Johnstonebridge (Figure 58-132), close to a Roman road, contained several phases of super-imposed buildings (Figure 59), finds including worked stones and querns, and radiocarbon dates (270-180cal.BC through to cal.AD170-250) indicating initial construction in the late-Iron Age but continued occupation through to the mid-Roman period (Banks 2000, 223-224). Environmental sampling showed evidence of mixed woodland nearby (alder, hazel and oak), charred cereal grains and hazelnuts, and weeds of cultivated and grazing land, suggesting mixed arable and pastoral

agriculture (though acid soils prevented faunal preservation to confirm on-site consumption or processing of animals) (*ibid.*, 250,272). Such relatively grand, multivallate enclosures (when compared to cropmark evidence), indicate a long-settled farming landscape in Annandale, still occupied alongside Roman military sites in the valley. A general dearth of Roman artefacts from excavated sites, excepting occasional finds of consumption-related objects (conspicuous displays) was previously taken to indicate a lack of extensive trading, unlike settlements beyond the German frontier (McCarthy 2002, 124), potentially deliberate avoidance or alternatively showing that interaction took different forms. Indeed, apparent imbalances in material culture exchange are shown by only two out of nine excavated rural settlements in Dumfriesshire containing Roman-imported objects, while eight of nine



**Figure 59 - Excavation and survey plan of Woodend Farm settlement-enclosure, Dumfriesshire, showing superimposed roundhouses and multiple perimeters (Banks 2000, 231).**

Roman sites contained artefacts deemed locally-manufactured and styled (Wilson 2003, 119). Implications of this will be discussed further [Chapter 7].

Similar settlement patterns to that in Eskdale continue across lowland Dumfriesshire, with a couple of notable exceptions as one travels further west. Promontory forts, more heavily-enclosed settlements located atop river and coastal bluffs throughout northern and western Britain (and thus interpreted as indicative of particular cultural traditions), are found beyond Nithsdale, 16 having been surveyed along the north Solway coast (Toolis 2003) – the only parallel in the project area is that on the banks of the Eden at Cargo (10572) (Figure 58-106), identified as a 'hillfort' due to its multiple perimeter ditches rather than excavated evidence of status or function. Another major difference are six 'crannog' settlements, built upon artificial or enhanced islands within bodies of water (with radiocarbon dates ranging from 350-250cal.BC to cal.AD110-210), for example Milton Loch (Figure 58-134), (Henderson *et al.* 2006) and Loch Arthur (Figure 58-135), with evidence of significant resource investment in construction and cereal processing (emmer and rye), pastoralism (sheep/goat) and wild plants (fruit and herbal weeds) (Henderson and Cavers 2011). These are not found in Eskdale (though that landscape has fewer water bodies suitable) nor further south and east in the Solway lowlands. This could therefore either be due to suitable environmental opportunities further north-west or a real cultural difference between people there and those of the Solway,

meriting further investigation. Further argument for cultural difference is cropmark evidence for later-Iron Age monumental burials in western Dumfriesshire and Galloway: mixed irregular square and round barrows, the former with interesting parallels further north in Scotland and East Yorkshire (Cowley 1996), not paralleled in the area north of Carlisle, excepting two round barrows.

Documentary and epigraphic sources [5.1c] (with aforementioned issues of late dates and Romano-centrism) mention a possible local group known as *Anavionenses* (likely derived from the River Annan and possibly centred at Burnswark Hill or Castle O'er).These include a funerary commemoration to a census-collector for north-western Britain who surveyed the *Anavionenses* north of Carlisle, indicating both a local social grouping of that name and also some form of Roman control over the area under Trajan) (Woolliscroft 1988, 25-27) and also a military unit stationed in Germany whose name suggests their recruitment from this area. Previously, people of this region had been considered part of the wider *Brigantes* collective, although distinction of the *Carvetii* [5.1c] could indicate a different social group based around the fertile basin of the Solway, with Roman Carlisle based upon its tribal centre (McCarthy 2002, 65; Wilson 2003, 103-107). However, these claims are fraught with issues given their derivation from Roman literature alone [5.3/5.4]. Further west, and roughly coinciding with the differing forms of settlement and monument (crannogs, promontory forts and barrows), are people referred to by Ptolemy's *Geography* as *Novantae*, placed in Galloway (Wilson 2001, 73-86).

By far the largest site in Annandale is Burnswark Hill (Figure 58-54), a dramatic 7ha hillfort occupying a distinctive, flat-topped peak dominating the surrounding landscape, with ramparts making best use of steep natural slopes, four gateways and a protected spring (Barbour 1899, 237-242; Campbell 2003, 19; Reid and Nicholson 2019, 459-463). The hill was surveyed by General Roy (1793) (Figure 60), subsequent antiquarians focussing on Roman military activities at its foot (see below). Excavations under Jobey (1978a) revealed initial construction in the late Bronze Age or early Iron Age, with at least two subsequent phases of enlargement and fortification, and four superimposed roundhouses (the hillfort has room for over 150), finds indicating native activity alongside first/second century Roman pottery (though the site was likely abandoned prior to Roman
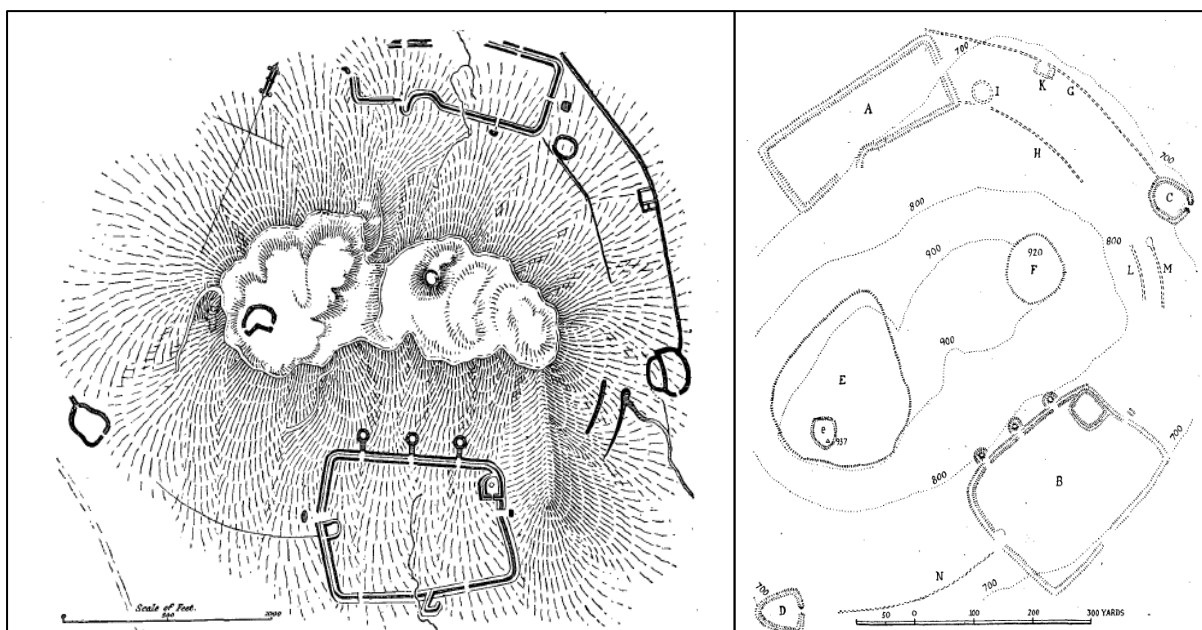


**Figure 60 - General Roy's 1750s plan (left) and 19th-century Ordnance Survey map (right) of Burnswark Hill hillfort and surrounding Roman military camps and 'siegeworks' (Christison 1899, 201,206).**

military activities, implying its pre-Roman role in the landscape was defunct by this period). Whether Burnswark was a permanently-occupied tribal centre for the *Anavionenses* (Wilson 2003, 107) or merely a stronghold for times of upheaval, it was clearly an important part of the local landscape in the late-Iron Age and into the Roman period (Campbell 2003, 30). The presence of permanent dwellings and structures, with multiple phases of development, indicate relatively long periods of occupation. Jobey (1971, 82-84) argued it the regional equivalent of Eildon Hill in Roxburghshire and Yeavering Bell in Northumberland [6.2b]. Though now not thought to have been permanently-occupied long into the Roman period (if at all), its ongoing role as an important place for local people is shown by its use in the Antonine period as either a defended strongpoint besieged by the Roman army, or a place at which the Roman army chose to demonstrate its power to local people during invasion (Reid and Nicholson 2019, 476-477) (see below).

North of Block 1 and east of Annandale, land rises into Scotland's southern uplands, with extensive moorland fells forming different opportunities for human landscape use (e.g. restricted arable but substantial open pasture). Here, major axes of both movement and settlement are restricted to valleys. The Esk and its tributaries form primary conduits, evidenced by high numbers of surviving later-prehistoric/Roman settlements in upper Eskdale and Ewesdale – an important contrast (in both surviving evidence and settlement form) to the former's lower reaches. The primary form of settlement here, as elsewhere in upland Dumfriesshire, are earth or stone enclosures defined by scooped interiors and often named 'birrens' (Jobey 1971, 79). Upstream of modern Langholm, there are



**Figure 61 - Jobey's distribution-map of different forms of later-prehistoric/Roman-period settlement-types in eastern Dumfriesshire (Jobey 1971, 80).**

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over 120 potential settlement sites from the study period. Nearly every valley spur has its own banked (sometimes ditched) enclosure, varying between 0.05-2ha in area and comprising a scooped downslope yard and several roundhouses or pens, with land-holding boundaries seemingly defined by natural ridges or burns (streams) (Halliday 2002, 92-95; Jobey 1971, 94-98; Mercer 2018, 40) (Figure 61).

Importantly, some of these settlements have been excavated, notably Boonies (Figure 58-137; Figure 62), located on a river terrace and with a scooped interior defined by earthwork bank and ditch, entered from the east and with evidence of interior paving, a lift-and-drop gate, and 13+ timber roundhouses comprising several phases (Jobey 1975, 120-127). Finds included locally-sourced rotary



**Figure 62 - Earthwork/excavation plan and topographic cross-section of Boonies enclosed settlement in middle Eskdale, Dumfriesshire (Jobey 1975, 123).**

querns and loom weights, seven sherds of native pottery, three sherds of first/second century Roman pottery and a glass bracelet and bronze penannular brooch of similar date and Roman style; radiocarbon dating gave dates of cal.AD70-110 for at least one structural phase, though occupation covered a much longer period (Jobey 1975, 122,133-138). This evidence, unusually detailed for this type of site, indicates a long history of permanent occupation and ongoing development (which may thus be applied, albeit cautiously, to other such sites regionally) with at least one phase in the Roman period showing evidence of interaction and trade with Rome but no substantial change of material culture overall. Whether lack of later Roman-period evidence is indicative of abandonment or lack of Roman contact is unclear given the lack of dateable chronology from either artefactual or scientific evidence beyond the mid-late second century AD.

The 0.25ha ovoid enclosure of Long Knowe, excavated 1976, contained 10 timber roundhouses, a palisaded precursor (showing such sites would have appeared differently over time), and faunal evidence for cattle, sheep and horse, but no suggestion of arable processing (Mercer 1981). Wider regional analysis of such enclosed settlements by Jobey (1971; 1975) and Kokeza (2008) show differences between examples in Dumfriesshire and further east from Northumberland, Berwickshire and Peebleshire, the latter containing predominantly stone-built roundhouses and

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multiple-phased perimeters (indicating either differences in building material or cultural influence, and more visible change through time).

Sites in upper Eskdale vary from these regularly-spaced, small settlements within the band of more productive land in the valley bottom (likely representing a single family/kin group, though not necessarily all contemporary) to larger, more heavily-enclosed sites (generally containing multiple hut circles and substantial enclosures). These could be central places, higher-status settlements, or perhaps sites of different function such as centralised stock management. Castle O'er (Figure 58-51), a multi-phase 'hillfort' founded as a palisaded enclosure in the early first millennium BC and gradually expanded into a stone-built structure containing over 27 internal structures by the Roman period, has a long history of study (Mercer 2018, xix, 14-73). This site (Figure 63), together with large annexes and extensive surrounding earthworks (trackways, linear boundaries, smaller settlements and large enclosures), has been interpreted (Mercer 2018, 209-234) as one such Iron Age high-status centre, adapted into a regional 'neutral' place for inspection and collection of livestock for Roman military supply, and social or cultural interaction between army and locals. If this hypothesis is correct, Castle O'er was a focal point in the landscape via control and movement of agricultural surplus locally and further afield in the southern uplands, connecting different settlements and parts of the landscape, and forming a bridge down Eskdale via Netherby (for both indigenous people and Roman military). Though no similar direct link with its environs has been established for Burnswark (Figure 58-54) in Annandale, its substantial nature and proximity of Birrens outpost fort (Figure 58-53) could suggest a similar socio-economic focus within this western



**Figure 63 - Aerial photograph of Castle O'er hillfort, upper Eskdale; showing the inner enclosure and outer annexes (Mercer 2018).**
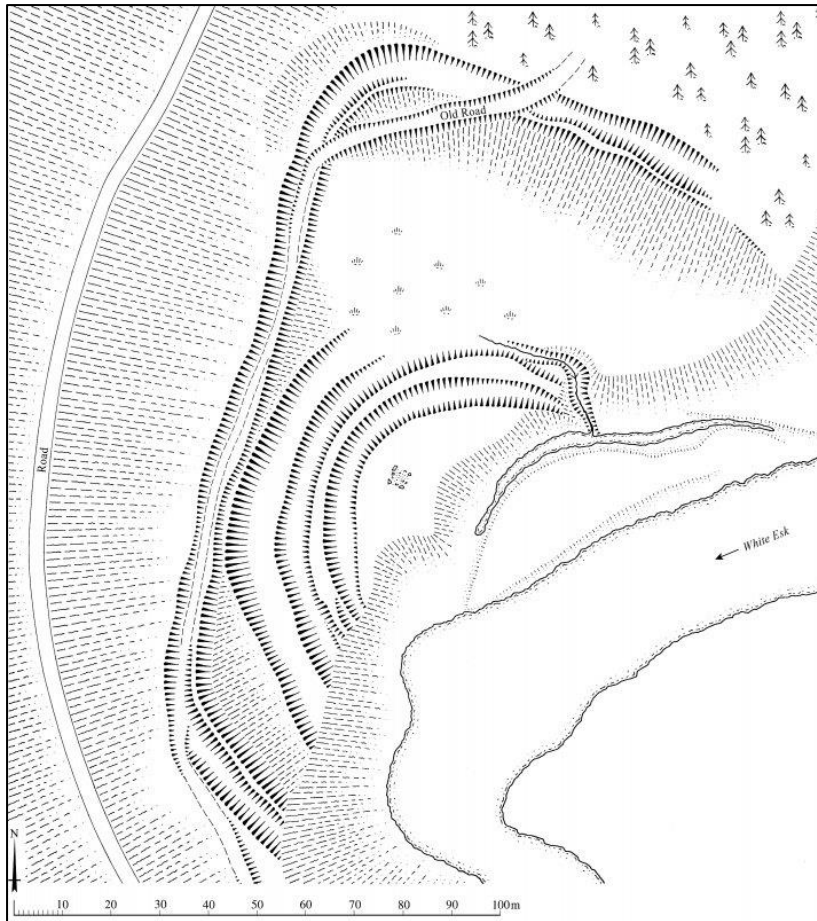
**Figure 64 - Earthwork survey of the unusual multivallate-enclosure of Over Rig (formerly Ring of Scaur), forming an 'auditorium' against the banks of the White Esk. Image: ©Canmore.**

valley. However, known Roman activity at Burnswark (see below) also indicates that this relationship changed in the mid-Roman period.

Baillehill, inter-visible to the south of Castle O'er (Figure 58-139), is smaller and with a different development history, but similar final form, including multiple houses and large annexes (Halliday 2002, 102; Mercer 2018, 51-54), while Little Hill, another large site in Eskdale (Figure 58-140), has 11+ visible hut platforms (Jobey 1971, 84). Meanwhile, the unusual enclosure of Over Rig (Figure 58-138), constructed in a hollow beside the River Esk close to Castle O'er and comprising triple external boundaries surrounding an interior

platform (Figure 64), has been interpreted as an auditorium space, likely associated with wider social activities around the hillfort (Mercer 2018, 130-132, 234-235). Whatever its function, it is certainly unique to the wider region, its morphology suggesting a meeting-place role. This variety of sites, together with more complete spatial organisation of the landscape and potential for discussing social stratification or hierarchy, is only hinted at within the mapping blocks (5.2a) and thus offers a useful parallel for analysis.

Beyond Blocks 1 and 2, information about later-prehistoric (and persisting indigenous) routeways through the landscape remains fragmentary and largely inferred. Such routes presumably respected and utilised natural topographic corridors for longer-distance communication, and traversed hillsides to connect upland seasonal open pasture with valley-floor grazing and settlement. In terms of Roman landscape movement, the network of roads and water-borne routes discussed [5.2a] extends north, west and east. The road north of Netherby (Figure 58-49) can be extended to Broomholm (Figure 58-50) via surviving earthwork sections and alignments preserved in more recent features, along with Gilnockie temporary camp (Figure 58-147) (Wilson 1999, 20-21). It then likely projects up the valley (though without proof of a metalled road) to Castle O'er (and the fortlet at Raeburnfoot beyond). The main north-westerly road reaches Birrens through the Solway lowlands (attested by substantial lengths of earthwork agger and regularly-spaced temporary camps) before extending up eastern Annandale to Burnswark then forts at Ladyward (Figure 58-56) and Milton (57), continuing into Clydesdale. An upland road climbs east from Ladyward's early fort, crossing

eventually to the Tweed valley via Raeburnfoot fortlet (Figure 58-52) (attested by sections of agger, terraces and cuttings), also extending west to Nithsdale (Mercer 2018, 16-18; Wilson 1999, 25-44).

Regarding Roman sites in the wider region, the most-permanent are outpost-forts forming, alongside Netherby, the outermost centres of Roman control, surveillance, and interaction with local peoples beyond the Hadrianic border. Bewcastle (Figure 58-48; [Appendix]) controls the uplands and Lyne valley east of Netherby and was occupied by various auxiliary-cohorts and occasional legionaries. More is known of this long-lived, multi-phased site, with an unusual irregular plan (Figure 65) possibly relating to its role in controlling local stock-management or ritual (*Fanum Cocidii* implying local worship of Cocidius). Evidence from limited field survey and excavations suggests a dispersed, small-scale settlement rather than formal *vicus*, possibly due to remote position, and limited indigenous activity. Both road and signal-towers (Figure 66) connect it to the borderland, and potentially west to Netherby (Austen 1991; Caruana 1988; Jones and Woolliscroft 2001; Richmond 1933; Sainsbury and Welfare 1990; Small 2008; Taylor and Biggins 2012; Woolliscroft 1988; Woolliscroft, Nevell and Swain 1989; Woolliscroft 1990). No similar signal-connections are proven between Netherby and the Wall, though are postulated (Wilson 1999, 18-19). The other outpost-fort is Birrens (Figure 58-53; Figure 67; [Appendix]), 14.5km north-west of Netherby near Burnswark Hill (Figure 58-54), controlling the Solway lowlands-Annandale interface (equivalent to Netherby's position for Eskdale). A well-researched turf/timber then stone fort with attached annexe and *vicus* and the name *Blatobulgium* ('flour sack'), containing four over-sized granaries, suggests either need for self-sufficiency or potential economic-role in gathering local agricultural-surplus (Christison 1896; Dark 1999; Dark 2000b; Frere 2001; Hunter and Scott 2002; Keppie 1994; Robertson 1975; Roy 1793). Garrisoned by Gallic/German auxiliaries and occasional legionary-detachments, artefacts attest imported and local identities (Classical gods alongside 'Brigantia', amphorae, ceramics, metal-
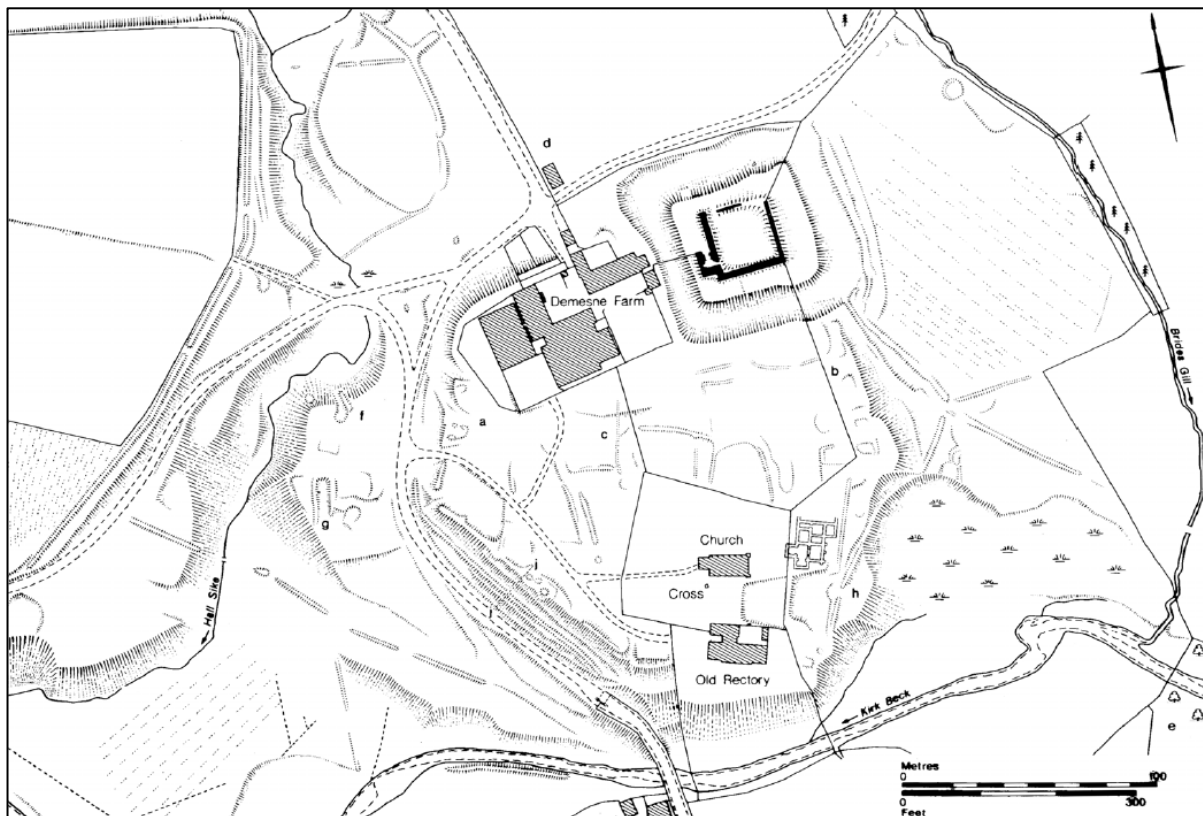


**Figure 65 - Earthwork-survey plan of Bewcastle Roman outpost-fort, overlain by the medieval castle, church and modern buildings (Sainsbury and Welfare 1990, 140).**
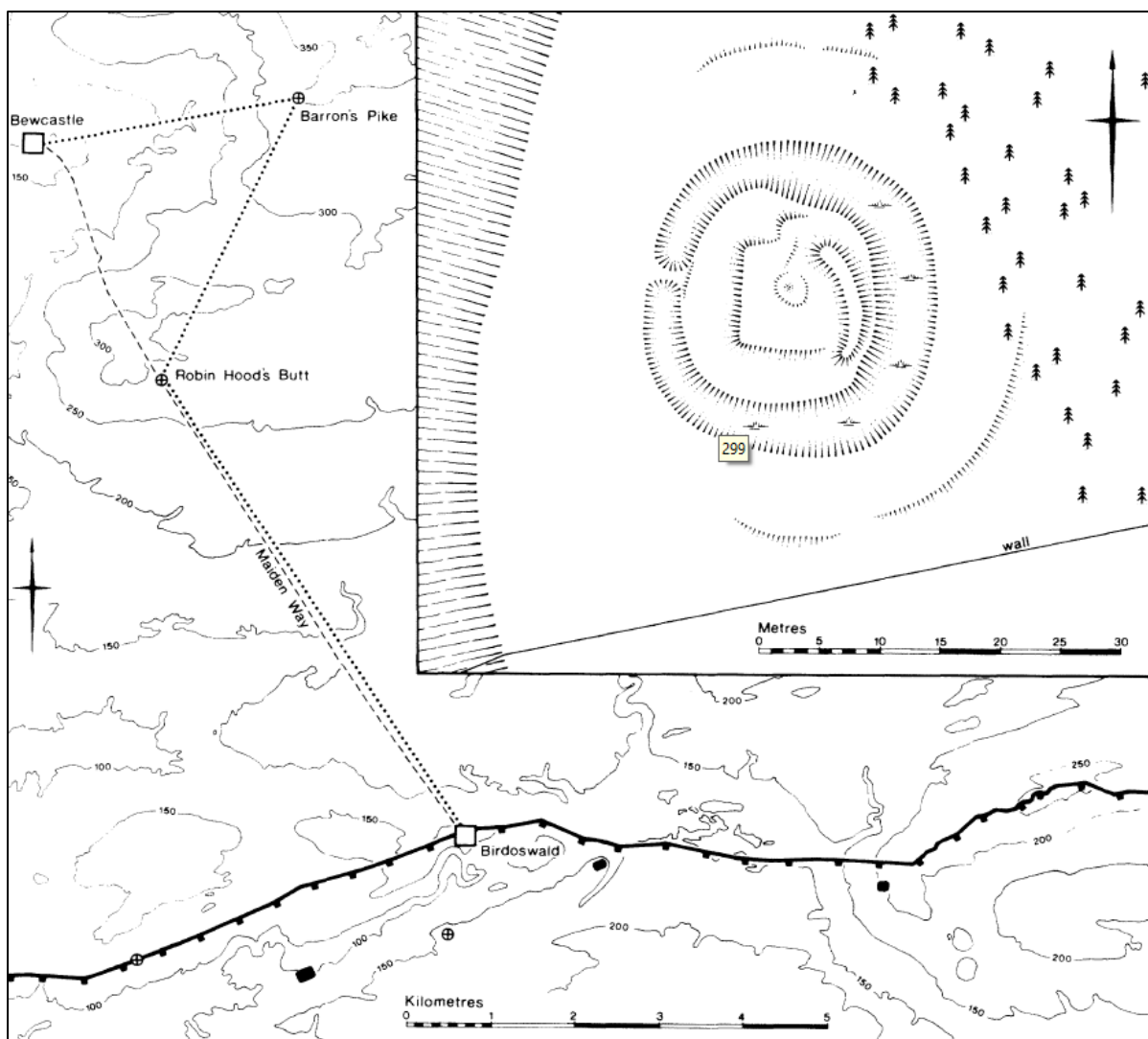
**Figure 66 - Earthwork survey of Barron's Pike signal-tower east of Bewcastle (inset) and map showing its inter-visibility with the outpost and Hadrian's Wall (Topping 1987, 299).**

work and glass-wares) while ecofacts indicate locally-sourced construction-materials, mixed environments including arable, and consumption of cattle, sheep/goat and pig alongside wild fauna. The fort, though rebuilt to an unusually-ornate standard with numerous ditches (possibly a politico-military statement) was seemingly demolished much-earlier than other outposts.

Alongside permanent outpost forts are many shorter-lived installations, located beyond Birrens and Netherby along Roman routeways in the region. These include temporary campaign-forts along Nithsdale (including the major Agricolan vexillation fortress and camp complex at Dalswinton (Figure 58-59) and the Antonine replacement fort at Carzield (Figure 58-58) (Hanson *et al.* 2019; Jones 2009, 118)) and Annandale (Ladyward and Milton, north of Birrens). These would have substantially impacted the landscape in the short-term, with large numbers of troops (and presumed civilian attendants, attested by external annexes and settlements) present for seasonal Flavian, Agricolan and Severan campaigns or the longer, but still ultimately temporary, Antonine occupation of southern Scotland.

Directly relevant is the early (Flavian/Agricolan) fort at Broomholm, north of Netherby in middle Eskdale (Figure 58-50) and connected by a probable military road (above). 1960s excavations and recent geophysical survey (Figure 68) show occupation over some time, with clear structures
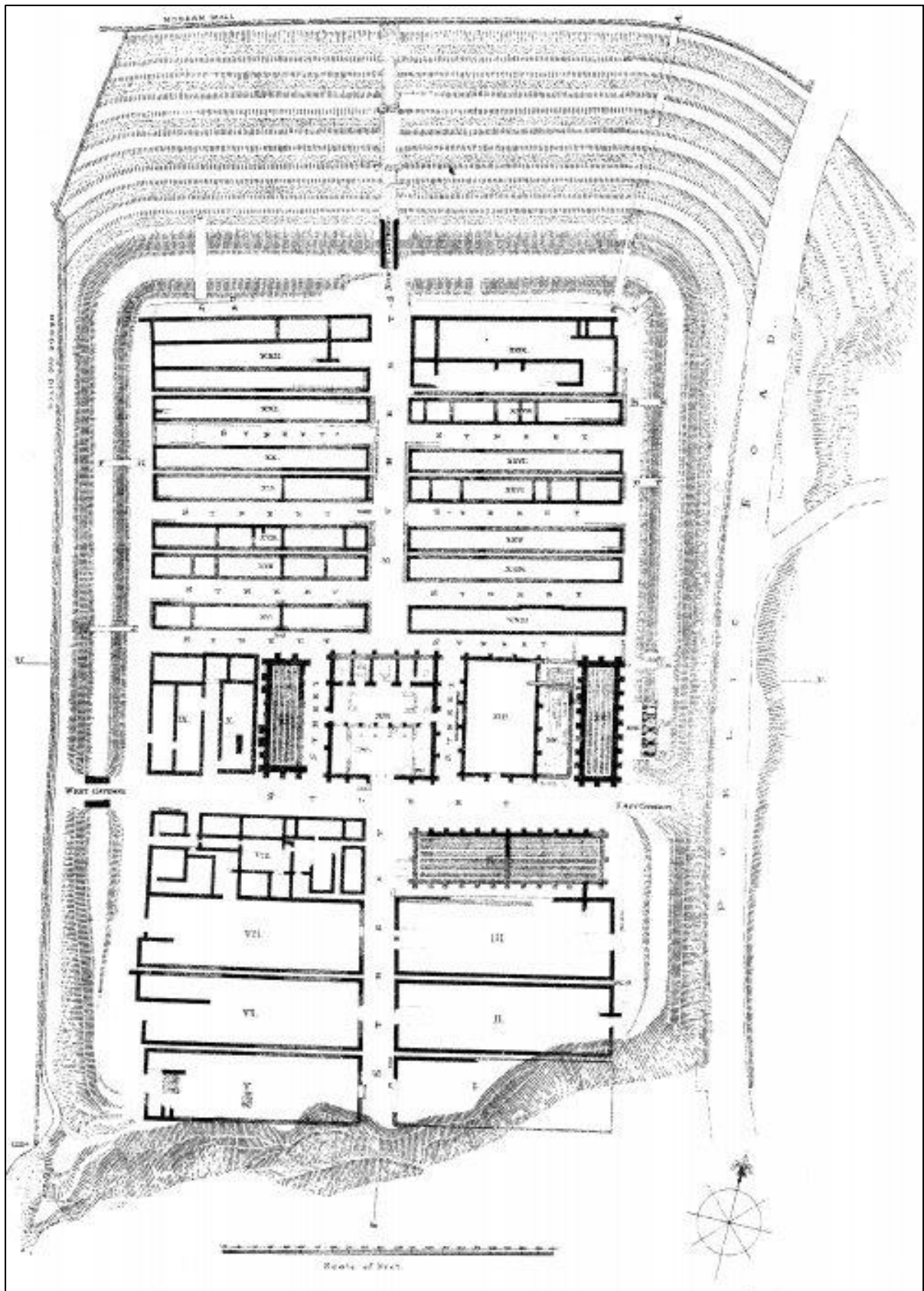
**Figure 67 - Antiquarian plan of Birrens outpost-fort by Barbour, showing internal layout and extensive defences, truncated by Mein Water. Image: ©Canmore.**

within the 1.8ha fort and large 0.7ha annexe (Hunter 2019, 414-415), limited finds indicating a possible smaller (0.8ha) fort on the site between AD117-138, but no proven occupation beyond the
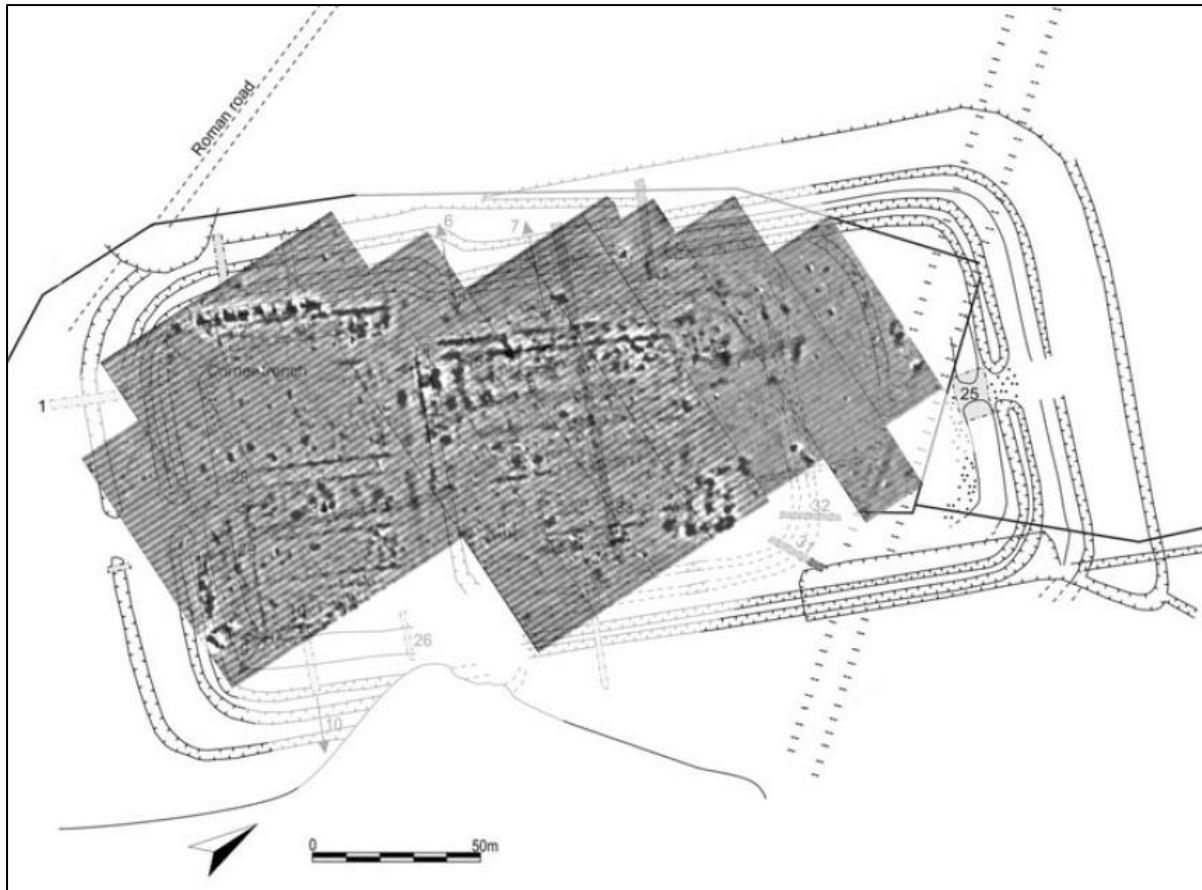
**Figure 68 - Magnetometry survey of Broomholm fort showing internal structures, overlaid on the fort plan (Hunter 2019, 415).**

second century (Mercer 2018, 16; Wilson 1999, 21).

Fortlets thought to be from the Antonine occupation (based on morphological comparison with a few dated examples elsewhere, including the Antonine Wall) are found at key locations such as below Burnswark Hill hillfort (Figure 58-55) (now-contested, see below), on the road 0.8km south of Birrens (Robertson 1975, 286), and at Lantonside at the mouth of the Nith (Figure 58-141) (Jones 2009, 119). The Raeburnfoot fortlet (Figure 58-52) controls the head of Eskdale and an upland road connecting western garrisons to Dere Street in the east, close to an earlier temporary camp – Figure 69 (Barbour 1898, 19; Jones and McKeague 2009) and linked to the potential Ewes Doors watchtower higher-up (Keppie 1997). Ceramics, glass and iron-objects indicate at-least semi-permanent occupation (Barbour 1898, 25).

More-ephemeral sites are temporary camps along lines of march in south-western Scotland, often later replaced with a temporary or semi-permanent fort nearby, comparable with the proposed camp on the Esk [5.2a]. Such camps form the only evidence for Roman military activity in some areas, as at Annan Hill (Figure 58-142), Annanfoot (143), Ward Law and Ruthwell (144), attesting coastal support for (presumably first century) campaigning north of the Solway (Jones 2009, 116-121; Keppie 1988; Rees and Gordon 2007, 57-59). At Beattock, near Milton fort, three temporary camps of different size (Figure 58-146) indicate different units and widespread dates (Flavian to Antonine) (Neighbour *et al*. 1994, 7-12), attesting physical persistence of such locations in the landscape and also the Roman army's knowledge-base. However, it must be noted for the majority of temporary camps that precise dating of their occupation is extremely difficult, with most sites assigned a period of use based largely on size (larger camps often being assigned, without

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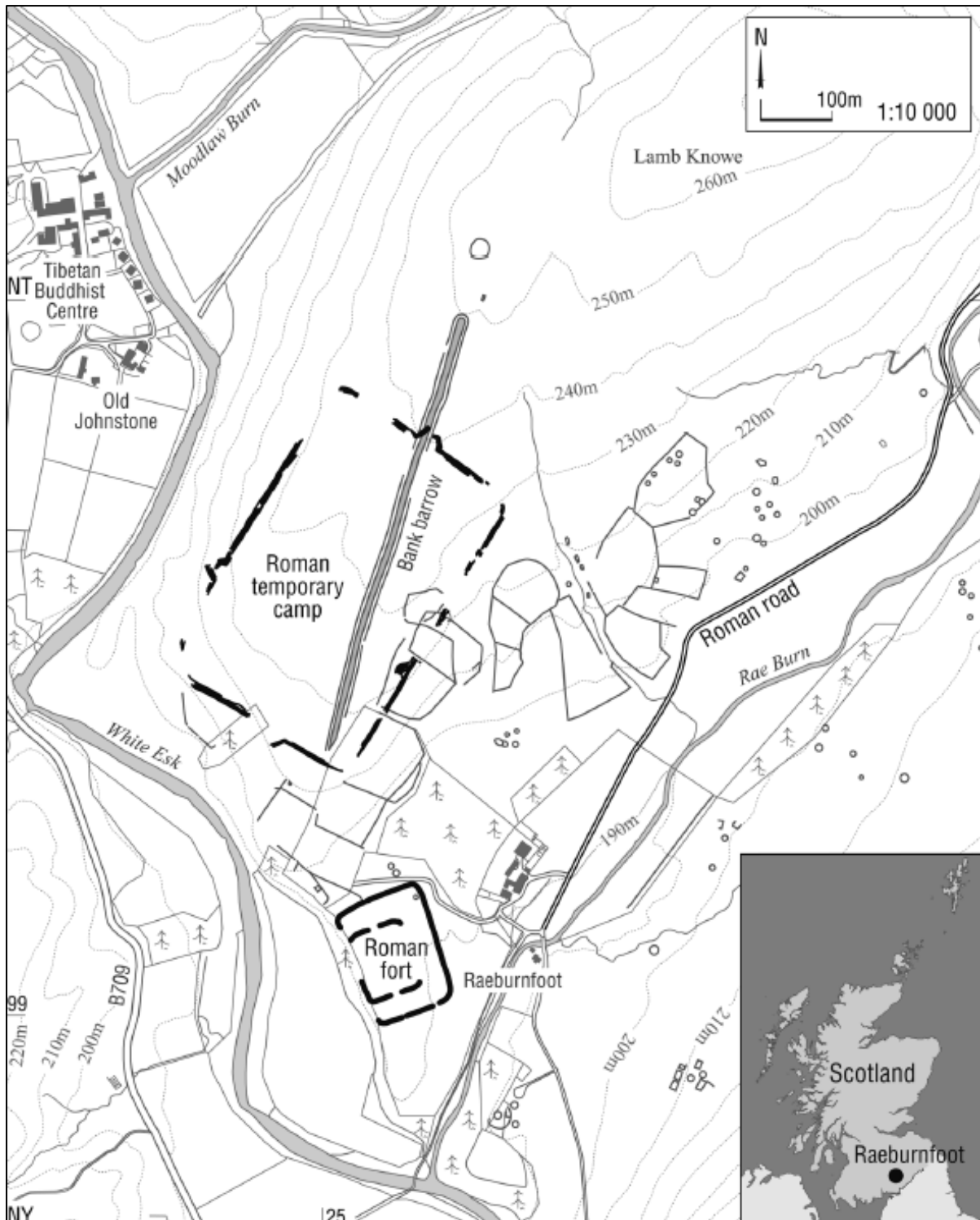
**Figure 69 - Aerial mapping of the Flavian/Agricolan temporary camp, military road and Antonine fortlet at Raeburnfoot (Jones and McKeague 2009, 124).**

proof, to specific legion units and thus campaigns, etc) or morphology of some components (for instance, the form of entrance-way defences). Whilst the timing of these sites' occupation is thus difficult to prove, they would nevertheless have impacted local people's landscape perceptions, via clearance of existing areas and features and imposition of substantial earthworks. Indeed, the large temporary camp fully-excavated at Kintore in Aberdeenshire shows evidence of at least two phases of use (the first/second and third centuries AD, artefactually and radiocarbon-dated), with evidence

for both a timber watchtower and multiple phases of field ovens and rubbish pits indicating the site would have been a substantial landmark when occupied (Cook and Dunbar 2008, 349-356). The immediate environs of the site appear to have been devoid of indigenous settlement beyond the late-Iron Age (though abandonment may pre-date Rome's arrival locally) and this avoidance of the area has been interpreted as potentially either due to decimation or enslavement of local populations hindering local socio-economic activity, or alternatively the site being seen as a no-go area for occupation due to its Roman connotations (with the potential threat for a Roman military return) (*ibid.,* 354-356).

A final interesting military site is the two large camps and associated earthworks located around the foot of the aforementioned major local hillfort at Burnswark Hill (Figures 60/70), recent non-intrusive survey (earthwork assessment and metal-detecting) and limited excavations suggesting (via artefactual evidence) a date in the early Antonine period, possibly during the initial advance north to establish the Antonine Wall (Reid and Nicholson 2019, 476-477). The southern camp encloses what was thought to be an earlier Roman fortlet (Figure 58-55), but which may in fact be a later rectilinear farmstead. Both camps have substantial ramparts, with entrances and projecting mounds (interpreted as ballista platforms) facing the hillfort above (Christison 1899, 201-202; Roy 1793). Whether the complex represents an active siege (the Roman army attacking a seat of local socio-economic power, with interesting repercussions for relations between locals and the military) (Campbell 2003, 30-31; Keppie 2009, 249), or a Roman military practice operation for siege-work techniques on a suitable (and presumably abandoned) target (Jobey 1978a) is debatable. The aforementioned recent work (Reid and Nicholson 2019, 476-477) suggests the spread of military projectiles to indicate the former as more-likely. Also of interest is the evidence for paved roads and a culverted water source in the south camp (indicating semi-permanent occupation) (Barbour 1899, 230-232), while the denuded hillfort ramparts at this time of Roman military activity (Jobey 1978a, 98-99) may indicate that the site was not permanently-occupied by this period, but rather formed a defensible, central location for local peoples. Roman finds include military pottery, iron weaponry, tools and horseshoe, bronze and shale ornaments, glassware and dozens of sling-bolts and ballista-



**Figure 70 - Aerial photograph showing Burnswark Hill [left/centre], with Roman temporary camp and 'ballista platforms' visible [right]. Image: Trimontium Trust.**

balls (embedded in the hillfort's lower slopes) (Anderson 1899, 243-249). Whatever the exact circumstances, this is a rare regional example of a specific Roman-period activity and the army undertaking an active role in the landscape.

This section shows that the landscape around the Roman outpost at Netherby cannot be taken in isolation. As discussed [5.2a], Netherby stands at the point of interaction between various routes of communication and forms of landscape, observing and controlling movement north and north-west of the Roman frontier, a situation emulated in other outposts at Bewcastle and Birrens. The wider region represents an existing zone of interaction between peoples occupying upland landscapes and farmers of the Solway Firth lowlands, including potential different socio-cultural groupings (differing occupation forms such as promontory forts and crannogs, and Roman written references to diverse peoples including *Brigantes*, *Carvetii* and *Anavionenses*). As discussed [3.2b], identities are often defined at peripheries of social, cultural, economic or political groupings and this region, with its variety of landscapes facilitating different types of agriculture, major natural boundaries, evidence for different indigenous site-types, and the proximity of Roman imperial power immediately south, is therefore one in which we might expect formation, redefinition and evolution of such identities. Whilst overall material culture at rural sites is limited (partly due to lacking excavation and also preservation issues) some patterns can be seen when examined regionally. Lack of Roman material culture at some sites and use of Roman ceramics at others, alongside suggestions of movements of economic surplus to and from key locations such as Castle O'er and Birrens, indicate complex, and locally specific, patterns of indigenous-Roman interaction, seemingly limited to specific places. Rome thus appears to have a focussed, directed influence over specific economic functions such as livestock supply, rather than an omnipresent cultural impact.

In terms of landscape dynamics, the lowland, agrarian and settled landscape of Blocks 1 and 2 works in tandem with the upland, pastoral regimes of the western Cheviots and Scottish southern uplands, connected by river valley routeways to alternative (and well-preserved) forms of later-prehistoric settlement. The natural environment thus heavily defines local and regional human activities and interactions throughout the period. Netherby also sits within broader Roman military networks, not just the long-term frontier garrison concentrated to the south for which it served as a forward-post, but also shorter-term, but no less impactful, military campaigns northwards at various points throughout the period. The impact of this frontier activity on existing landscapes will be assessed in Chapters 7 and 8.

## 5.3 – Boundary and Borderland: The Military Zone and its Impact

*5.3a – The Iron Age and Roman Period in the Study Area: Updating the 'Hadrian's Wall National Mapping Programme' and Previous Research*

Existing interaction and movement around the Solway Firth, discussed for north and east of the estuary [5.2], also presumably flowed southwards into Cumbria. However, the Roman period saw the establishment of a formal, man-made boundary cutting across this zone, changing landscape dynamics locally and regionally. Other than Netherby's outpost-fort, the major Roman sites within Blocks 1 and 2 are thus those situated upon this Roman border-line, c.14.5km south of Netherby. These are the early fort at Carlisle, developed from the second century AD into a permanent base and large civil settlement, and also the later Hadrian's Wall-fort at Stanwix, located north-east of Carlisle on higher ground above the Wall's crossing of the River Eden. Both sites are better

understood than Netherby, subjected to regular excavations (particularly central Carlisle) in past centuries, including large redevelopment projects. Artefactual and ecofactual assemblages here (with good-quality preservation from waterlogging) have high potential for addressing issues around landscape utilisation and identity. This entire 'borderland' [3.1] is covered by aerial survey from the Hadrian's Wall NMP (Oakey 2009), updated with lidar and the latest photography for this project [4.2/5.1a].

The landscape here comprises Natural England's 'Solway Basin' National Character Area: low-lying coastal plain south and east of the major inlet of the Solway Firth, surrounded by gently-undulating, low hills, with higher uplands in all directions (Natural England 2015a, 3). Underlying geology is predominantly Triassic sandstones and mudstones, shaped by glacial and post-glacial deposition and then alluvial action from the various rivers flowing into the estuary, most importantly the Eden (flowing through Carlisle from the east) and its tributaries, which form a natural corridor for movement heading south-east. The modern landscape is dominated by pasture with some arable agriculture on higher ground, woodland confined to valleys, and coastal areas characterised by intertidal flats, beaches and salt marsh (*ibid.*, 3-7) (Figure 71). Open grassland with small copses of alder and hazel is attested in environmental samples from the Roman *vicus* at Stanwix (Hall and Huntley 2007, 68-69; Zant and Town 2013, 61-62) suggesting this cleared landscape predated the Roman arrival north of the Eden. Meanwhile, environmental sampling of Iron Age and Roman levels from central Carlisle is unparalleled regionally (Hall and Huntley 2007, 63), giving a clear vegetational landscape picture locally and further afield – the fort annexe beneath Castle Street revealed taxa from pastoral and arable agriculture, waste ground (likely within the settlement itself), wetland areas (Carlisle's three rivers; the Solway coastline) and small areas of woodland or scrub, all likely brought in with food or stabling materials from the wider region around Carlisle (McCarthy 1991b, 56-59). Timber used in the earliest Roman construction phases is dominated by oak (presumably from managed local woodland following Iron Age clearance), alder (abundance of use throughout



**Figure 71 - Aerial photograph showing the mouth of the River Eden on the Solway Firth, with landscape of pasture, marsh, and tidal flats. Source: https://www.visitcumbria.com/evnp/rivereden/**

suggesting wet woodlands along the local rivers), hazel and birch (likely local but used on a smaller scale) (Dark and Dark 1997, 40; Groves 1990, 38; Huntley 2009, 117; McCarthy 1991a, 9-11,57; McCarthy 1991b, 63-64). During later prehistory and the Roman period therefore, this lowland landscape offered substantial opportunities for exploitation of natural resources (for construction and other uses), as well as more mixed forms of agriculture than surrounding uplands.

Much of the Roman borderland and Eden valley is located beneath the modern urban sprawl of Carlisle and its suburbs (Figure 72), hindering recording from aerial sources (though with resultant increased excavation potential). The major topographic feature defining the city is the River Eden, flowing westward towards the Solway via large meanders, joined from the south by the rivers Caldew (confluence north-west of the city centre) and Petteril (further east). The Roman fort and town dominated higher ground between these (Figure 73). The NMP, alongside other spatial datasets and publications, identify several prehistoric and/or Roman-period native sites, shedding light on non-military Iron Age and Roman landscape activity here.
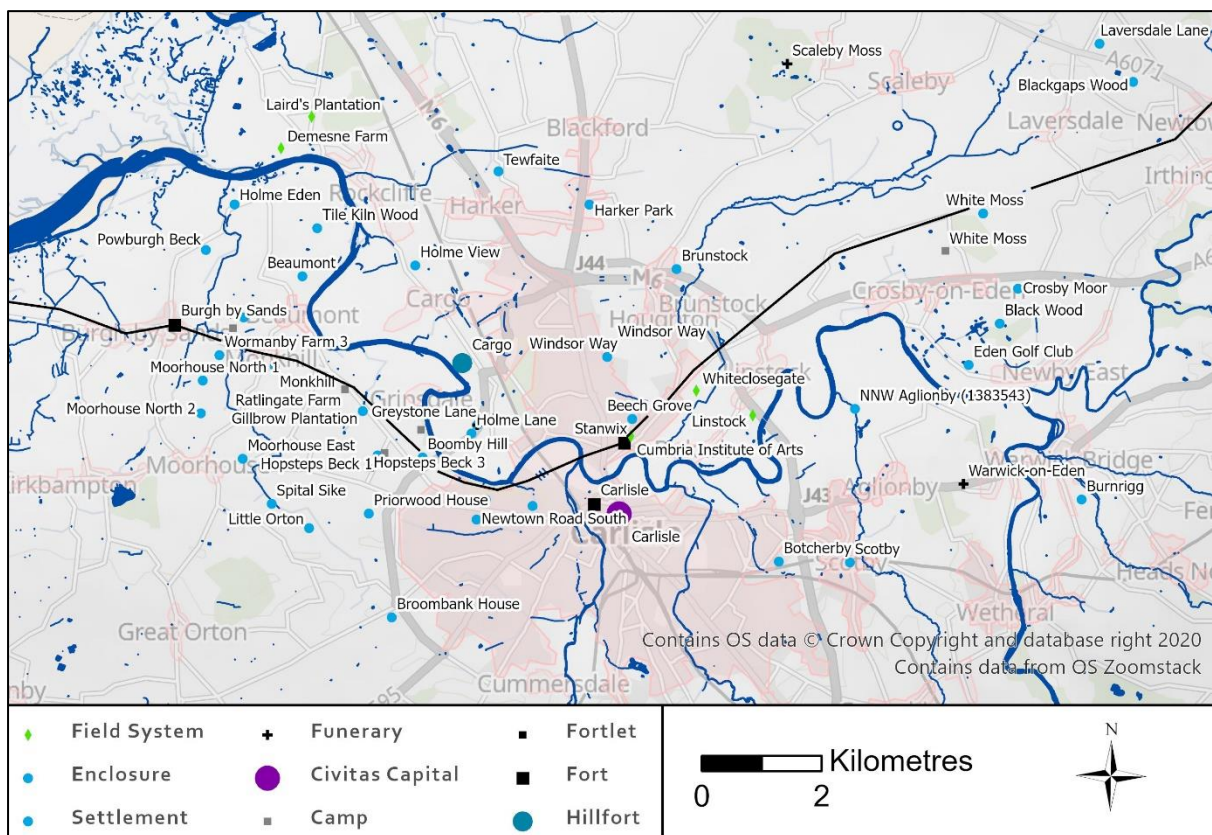


**Figure 72 - Topographic map showing the urban environs of Carlisle and its relationship with the Eden, Petteril and Caldew rivers, including the sites named in this section.**

South of the Eden and west of the Caldew, two curvilinear enclosures (1383230) and a rectilinear enclosure (1383226) are visible as ditched cropmarks on historic photography, close to the line of Hadrian's Wall and the Vallum (whether they remained in use contemporary with the Roman border is unclear without dating evidence). Atop a low hill (40m OD) near Burgh Road, west of Carlisle (close to the above cropmarks), excavations (Kirby 2010) revealed a substantially-ditched rectilinear enclosure (35x30m; Figure 74), interpreted as either a Romano-British farmstead (despite lacking internal structures) or a small military fortlet. Roman pottery revealed several phases over the first to third centuries AD (originating prior to Hadrian's Wall but remaining in use throughout its

**Figure 73 - Aerial photograph (NMR 17712/18 12-MAR-2002 ©HE) showing Carlisle Castle and Cathedral, overlying the Roman fort and settlement.**

construction and operation). Ceramics also indicate links with the wider Roman world (imported Samian, Spanish amphorae, and mortaria from Warwickshire and Raetia (Switzerland)) suggesting close links between the rural population and Carlisle (Kirby 2010, 110-112). Similarly, excavations at Cumberland Infirmary (RRS-41005), another hilltop 1km west of the Roman town and 300m south of Hadrian's Wall, revealed two periods of settlement. Five roundhouses formed undated, unenclosed settlement (proposed Iron Age despite lacking artefacts), replaced by a multi-phased settlement of rectangular buildings and yards, enclosed by palisades and ditches, with finds indicating on-site grain-processing and imported Roman pottery, dated first-second centuries
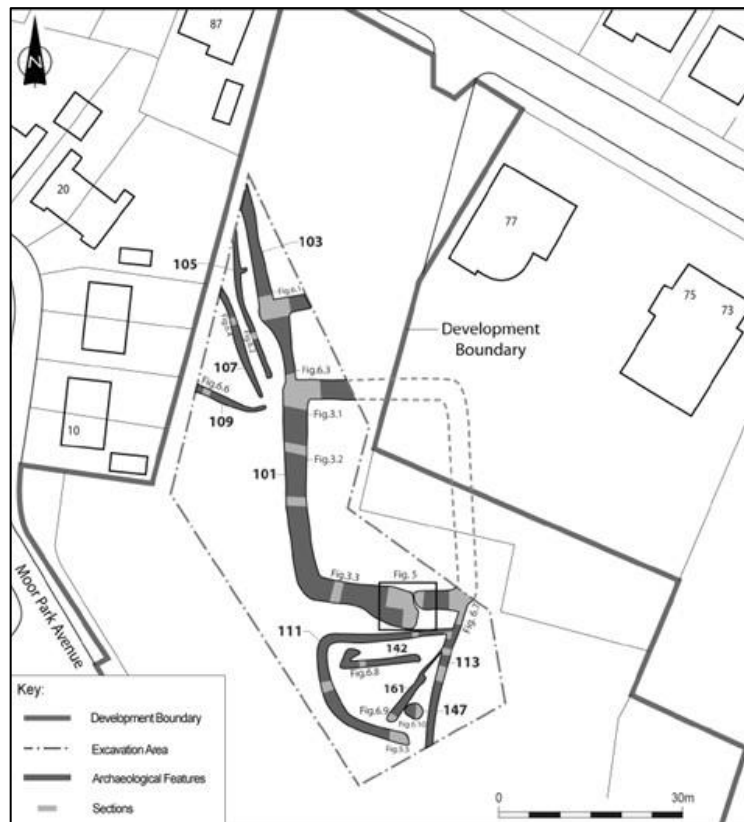


**Figure 74 - Plan of the excavated Roman-period field-system and later enclosure at Burgh Road (Kirby 2010, 105).**

AD (McCarthy 2002, 100-101). Excavations therefore show longevity (or reoccupation) of some settlements (Burgh Road) from later prehistory into the Roman period, regardless of the nearby Roman border, together with arable cultivation (Infirmary), with implications for dating and understanding the function for undated enclosures visible from the air nearby. The presence of imported pottery at both sites suggests close interaction with the military and/or urban population.

Limited evidence for pre-Roman occupation beneath central Carlisle is provided by excavation rather than aerial survey, with initial Roman levels directly overlying Iron Age field-systems (Hodgson 2009b, 29) evidenced by plough-marks (Charlesworth 1979, 146-147; Zant 2009, xv,5) and metalled trackway beneath early Roman timber buildings at The Lanes (McCarthy *et al.* 1982, 81). Settlement is attested by the roundhouse beneath Old Grapes Lane (8.5m in diameter, built of timber and with hand-made Iron Age pottery – located beneath first century Roman buildings (*ibid.*, 82)). It has long been suspected that the Roman fort, atop a defensible promontory overlooking the Eden-Caldew confluence, was built upon an existing Iron Age settlement or 'hillfort', though only geophysical anomalies beneath the fort support this (McCarthy 2002, 46), hinting at concentric ditches enclosing the hilltop (Zant 2009, 445).

Heading south-east from the city centre, further indigenous settlements (Figure 75) within the current project area are found east of the Petteril, including a palisaded enclosure (1383514) of probable Iron Age date with associated pits and ditched boundaries, overlain by a Roman-period boundary ditch, showing as excavated features on aerial photography. A nearby curvilinear enclosure (1383228) likely forms part of a wider network of native sites focussed just outside the current project area but mapped in the Hadrian's Wall NMP [5.3b]. Again, these show longevity and continuity of settlement in and around Carlisle, though with site-based differences between pre-Roman and Roman period rural activity.
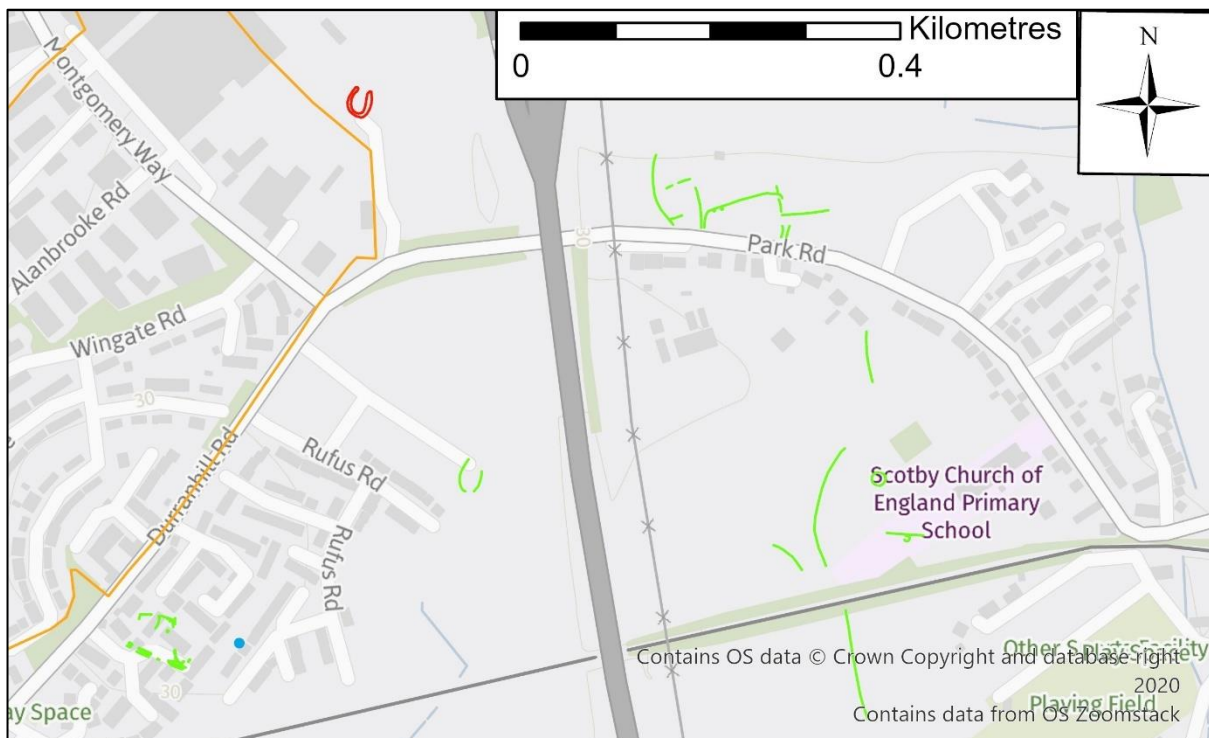


**Figure 75 - Aerial-survey mapping of south-eastern Carlisle, showing surviving patches of later-prehistoric/Romano-British rural settlement close to the city.**

North of the Eden, around Stanwix, indigenous settlement beyond Hadrian's Wall has been discussed [5.2]. Non-military features along the second-century borderline have also been recorded
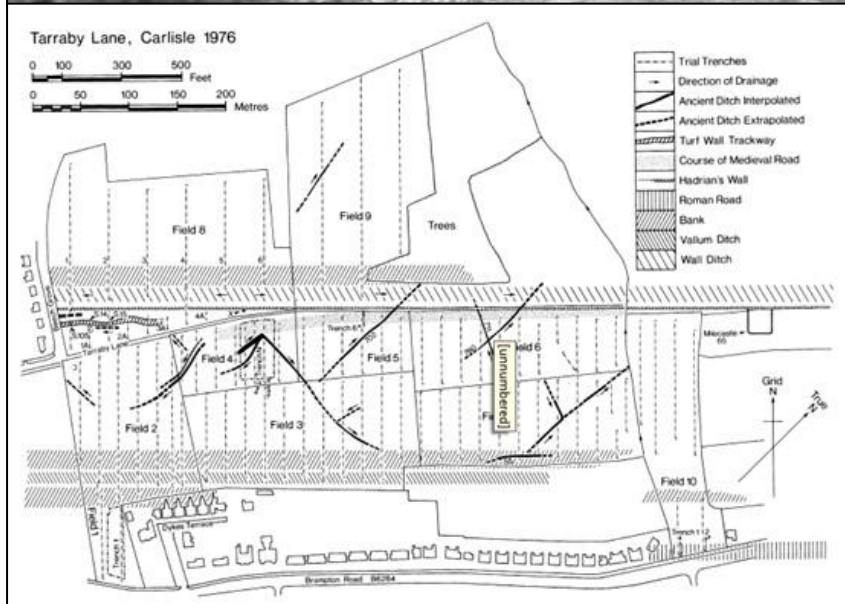
**Figure 76 - Photograph of excavated plough-marks beneath buried surfaces (Zant and Town 2013, 60) and plan of 1970s-excavated pre-Roman ditched system at Tarraby Lane, Stanwix (Smith *et al*. 1978, 21).**

within the project area. An irregular, rectilinear field-system visible as cropmark ditches (1383198) shows later-prehistoric and/or Roman agriculture north of the river, though definitive dating is needed. The only direct interaction between Roman frontier works and existing landscape visible from the air is an Iron Age or early Roman curving boundary ditch (1384779), cut through by the Vallum.

The main evidence for the impact of the construction of Hadrian's Wall on local landscapes therefore comes from excavations at Tarraby Lane (Smith *et al*. 1978, 19,35-37), showing a pre-Hadrianic system of drainage ditches (Figure 76) associated with both pasture and cereal cultivation (pollen evidence), and the Cumbria Institute of the Arts at Stanwix (RRS-41009), 500m north-east of the Wall-fort between Hadrian's Wall and Vallum, with buried plough-marks and contemporary ditches revealing an extensive system of arable fields predating construction of the Roman border, sealed by an earth/clay spread deposit (possibly a parade ground) associated with military actions (Esmonde Cleary 1997, 415; Zant and Town 2013, 57). These show the direct impacts of the imposition of the military frontier upon local people, taking arable land out of use (and ownership) during the creation of the military zone (McCarthy 1995, 492).

As mentioned, Carlisle is located on several natural routeways facilitating movement throughout later prehistory. The Eden and its tributaries lead inland to south and east, and west to the Irish Sea via the Solway. Alongside riverine and maritime links, the coastal plain southward and westward is easily accessible, while the broad valleys of the Petteril and Eden form lowland access corridors south-east, connecting good areas of arable land with surrounding uplands [5.4]. The River Irthing accesses the eastward corridor of land (the 'Tyne Gap') between the upland north Pennines and Cheviots. Access north into the Scottish uplands via Annandale and Eskdale has been discussed

[5.2]. Though the nature of Iron Age routeways means they are rarely identifiable on a landscape scale, these geographical routeways likely defined main axes of movement.

For the Roman period, the project area includes a junction of several major roads, following these topographic routeways (Figure 77), hence the density of Roman military and civilian activity here. Alongside maritime access via the Solway, the main Roman route from the south (and the permanent north-western legionary fortress at Chester (*Deva*)) follows the Eden valley between the upland Cumbrian Fells and North Pennines. Several roads access the region north of Carlisle via Netherby and Birrens [5.2], having crossed the Eden just north of Carlisle. This bridge's location is disputed (Hogg 1952, 134,155) but thought close to the later bridging points due to road alignments
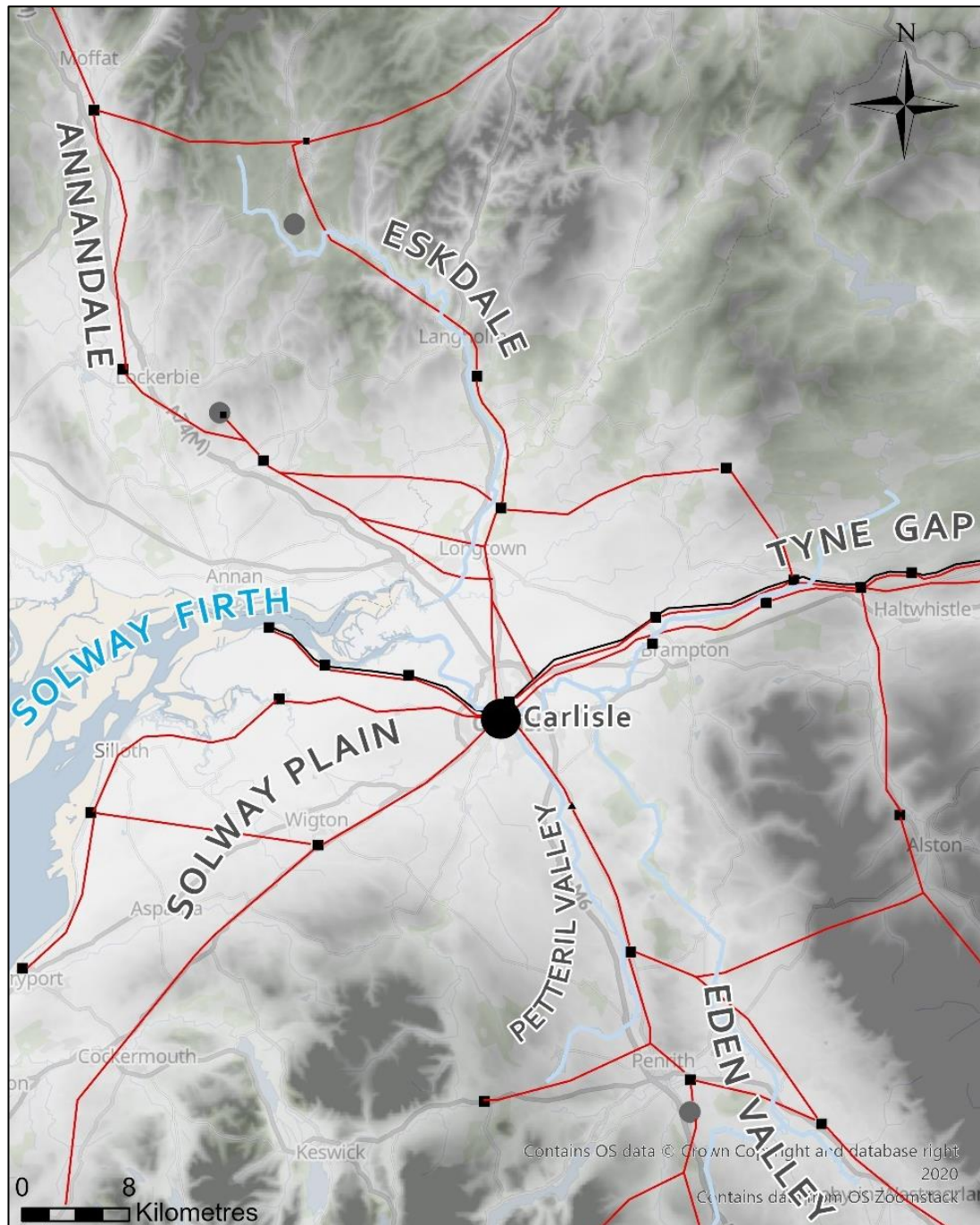


**Figure 77 - Topographic map of the region around Carlisle, showing the natural routeways in all directions and the overlain Roman road network.**

**Figure 78 - Photograph of a carved stone deity (a river god?), thought to be from the cut-water of the Roman bridge across the Eden (Caruana and Coulston 1987, 46).**

north and south, alongside finds including structural stones and a carved stone depicting a river god (Figure 78, paralleled elsewhere along Hadrian's Wall) (Caruana and Coulston 1987, 43-50). The main east-west Roman road (the 'Stanegate') traverses the Tyne Gap from the east, connecting with the major military site of Corbridge, and thence York. It is then generally projected westward to the coast, and an early fort at Kirkbride. This east-west route was roughly followed by Hadrian's Wall and its adjacent communications route now called the 'Military Way', though using defensible geography such as the Whin Sill escarpment and the Solway Firth's southern coastline.

As across northern Britain, initial Roman military sites locally comprised temporary camps associated with troops arriving and moving through the landscape. Chances for identifying such features in this heavily-urbanised area are rare, though evaluation at Etterby, north-west of Carlisle and just beyond the line of Hadrian's Wall, revealed V-profiled military-type ditches and a possible *clavicula* guarding an entrance, suggesting a camp (Esmonde Cleary 1997, 415). Military ditches interpreted as further encampments from different phases beneath Carlisle were identified at Spring Lane Gardens, Botchergate and The Lanes (east and south of the city centre), while a large (4ha) temporary fort has been postulated at Cummersdale, south-west of the city (Zant 2009, 9).

The main Roman settlement regionally is located at the junction of the aforementioned routes, controlling the northward-crossing of the River Eden. This is of course Carlisle (Roman *Luguvalium*: epigraphically/documentary-attested), sited on high ground controlling the Eden's confluences with the Caldew and Petteril, and probably accessible for maritime trade, via further transport along the river. Urban-development and academic-interest has led to an extensive research-history [Appendix] (Dumayne-Peaty and Barber 1997; Ferguson 1893b; Hill and Miket 1974; Hogg 1964; McCarthy *et al*. 1982; McCarthy 1984; McCarthy 1991a; McCarthy 1991b; McCarthy 1997; McCarthy 2002; Phillips 1976; Ross 2012; Tomlin and Annis 1989; Tomlin 1998; Zant 2009). The site is almost-entirely hidden from aerial-photography by modern urbanisation. A first-century auxiliary-fort (beneath the later castle: Figure 73) and annexe gave rise to substantial extra-mural settlement and later a large town with zoned military industrial-activity, official socio-political functions, Roman-style public-buildings and major local environmental-engineering, occupied into the post-Roman period and hypothesised as *civitas Carvetiorum*. Arrays of resultant identities have been identified from epigraphic/documentary (Figures 79/80), funerary, and artefactual (included waterlogging-preserved organic) evidence. This included all four British-garrisoned legions, Gallic auxiliary-cavalry and myriad civilian groups of varying status and occupation: men, woman and children; elites, political-operatives, merchants, traders, craftspeople, families and slaves. Attested origins range from local to central and eastern Europe, the Mediterranean and North Africa; deities including most of the Graeco-Roman pantheon alongside eastern, military-associated cults and local
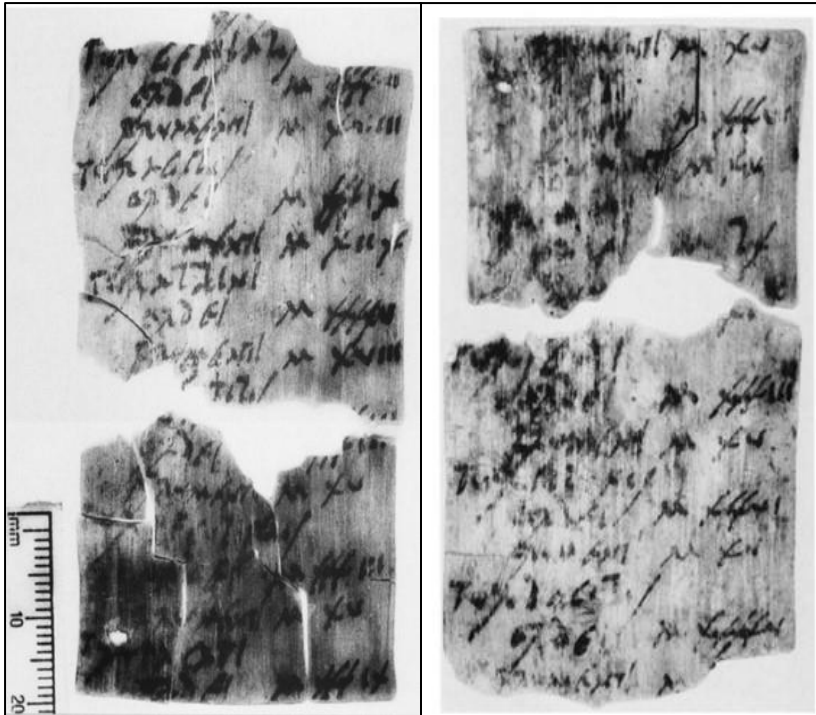
**Figure 79 - Photographs of early-Roman writing-tablets from the timber/turf fort at Carlisle (Tomlin 1998, 84,85).**

deities. This huge variety of identities at play, changing greatly over time, would likely have tremendously impacted the wider-region through interaction with local traders and producers [see 5.4a for local landscape-change in the hinterland]. There is also clear evidence for ethnogenesis or syncretism in local adaption of Roman-style motifs. Environmental evidence (Hall and Huntley 2007; Huntley 1989b; Huntley 1989d; Huntley 1989e; McCarthy 1991a; McCarthy 2002; Stallibrass 1993a; Stallibrass 1993b; Zant 2009) indicates extensive local-sourcing of construction materials, bedding, fuel, arable-products and domestic and wild animals (though with unexpected lack of fish), alongside imported goods including exotic flora attesting Roman cultural-traits, all fitting into wider military and indigenous patterns.

With Carlisle controlling the western road network and early 'Stanegate frontier' [3.3b] from the late first century, further major Roman landscape change involved the construction, following Hadrian's visit to Britannia in AD122, of the formalised Roman politico-military border now called 'Hadrian's Wall'. The general nature of the border has been discussed [3.3b], and the courses of Hadrian's Wall, its outer ditch and the Vallum are relatively well-known throughout Block 2 via past excavations in urban areas, and field surveys and Hadrian's Wall NMP elsewhere. Lidar and modern digital imagery (Figure 81) in the current survey thus added to existing knowledge
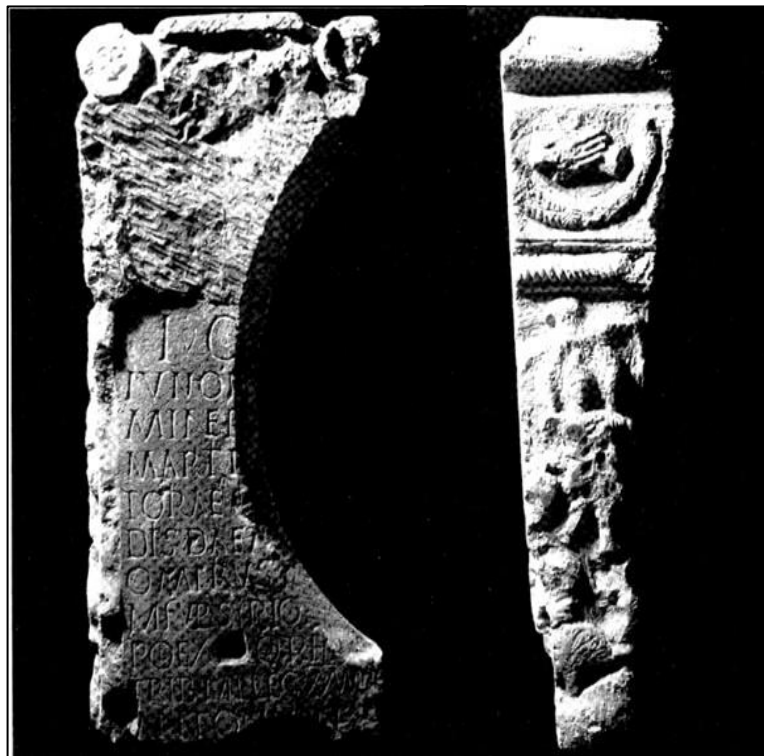


**Figure 80 - A Roman altar incorporated into Carlisle Castle, with inscription from Tribune Syrio to Jupiter and Mars, and carved figure (Ganymede?) being carried off by an eagle (Tomlin and Annis 1989, 79,83).**

only by revealing sections of the Roman border not previously identified from earlier aerial photographs.



Figure 81 - Aerial photograph (NMR 20777/13 13-MAY-2008 ©HE) showing the line of Hadrian's Wall (visible in tree/hedge-lines (bottom right to top centre) through the modern landscape north-east of Stanwix).

The Wall here is not sited to dominate local topography (unlike central borderland sectors atop the Whin Sill) but rather to connect the boundary to a suitable river-crossing over the Eden (proof of such limited to river-moved sandstone blocks and associated Hadrianic inscription (Hogg 1952, 131,150-151), downstream of the earlier Roman road bridge north of Carlisle). Whether the existing fort and town were a positioning-factor is unclear, given the similarly-early eastern site at Corbridge [6.3] being left miles behind the Wall in favour of better topographic position. Excepting the stretch running parallel to the Eden immediately west of Carlisle (Simpson 1933, 276) (before it arcs north-west toward Burgh-by-Sands on the Solway), the Wall therefore created a new barrier locally, rather than augmenting an existing natural one, controlling movement in the lowlands west of the Pennines, to either side of (and along) the major River Eden. North of the Eden, the Wall follows the edge of higher ground around Stanwix before running north-east for c.4.5km to Walby. Lidar shows the Wall-ditch as earthworks north-east of Stanwix fort, adding to counter-scarp bank cropmarks mapped previously, present-day boundaries aligned upon them (Figure 81). The longest continuous stretch visible within Block 2 is further north-east, new imagery filling gaps in NMP mapping, followed by a 1.1km gap until the Wall-ditch is next visible, east of Walby. Excavations at Drawdykes confirm the structural sequence for the Roman border here, with the stone wall (rubble core with red sandstone facings and stream-culverts) directly overlying the earlier turf wall, and Milecastle 64 (originally a gateway through the boundary but with its north gate blocked in the later-Roman period) (Caruana and Gladwin 1980, 17-21).
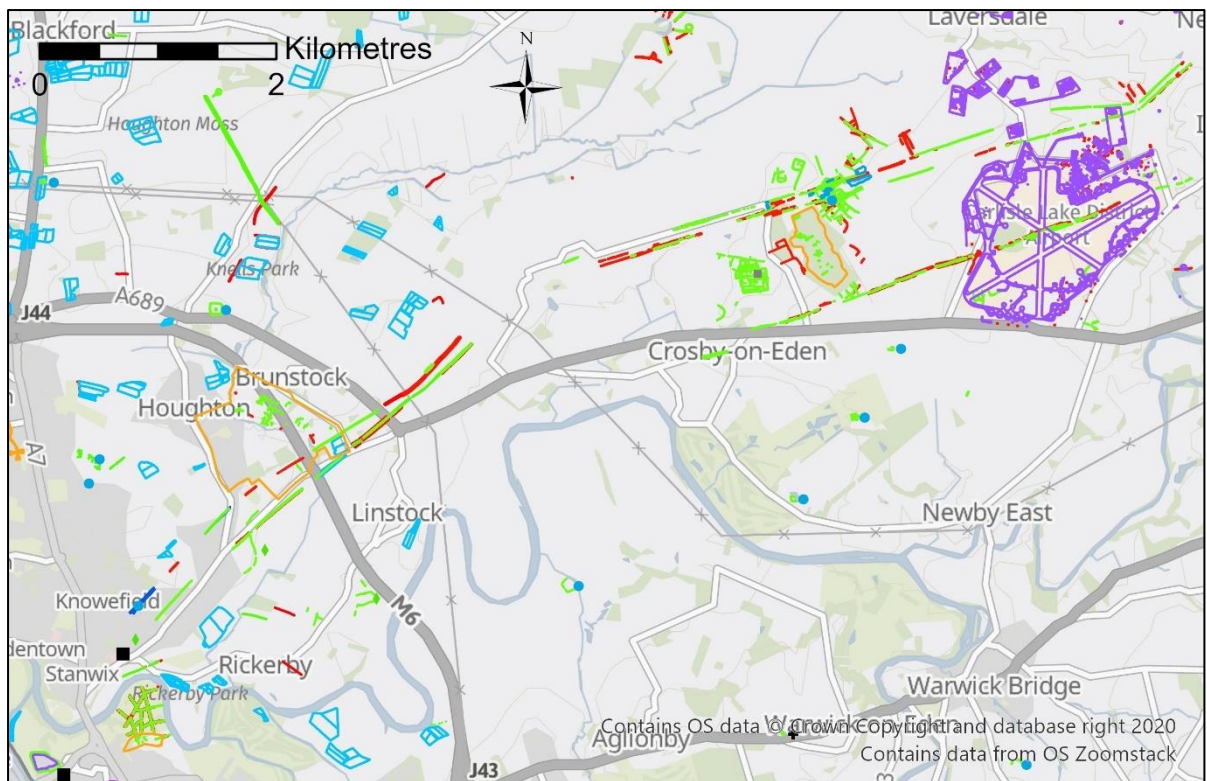
**Figure 82 - Aerial-survey mapping showing visible elements of Hadrian's Wall and the Vallum north-east of Stanwix.**

The Vallum follows the same general route as the Wall, often with better archaeological visibility than the main Wall-curtain (Figure 82). It appears straighter in alignment than the Wall, resulting in the distance between them changing from c.150m near Stanwix (accommodating the Wall-fort's width), to c.250m at its widest point and only 45m further north-east. East of Walby, where both Vallum and Wall-line survive, the gap remains more consistent (around 85m apart). The longest visible segment of Vallum also shows its complete cross-section (central ditch flanked by broad earthwork banks). The nature and function of the Vallum is much-debated [3.3b], generally considered an early demarcation of a military 'zone' behind Hadrian's Wall (overlain in places by later-Roman changes to the border-system). Within Block 2, regularity of the Vallum (particularly in comparison to zig-zagging of the Wall) suggests it may have been one of the first features of the new frontier-works, laid out similarly to the military road system. The Wall, with greater structural and time investment (and increased need for adaption to topographic variations) could then have been laid out from this initial line. The zone between the Vallum and the Wall is thought to have been controlled exclusively by the Roman army, therefore enforcing major changes upon the landscape: restricting movement, taking agricultural land out of production, and presumably altering farm-holdings (above).

The auxiliary fort at Stanwix (*Petriana*, initially *Uxellodunum* (Zant 2009, 8)) was built as part of the mid-second century Hadrianic border system, one of the largest forts on the Wall and known (*Notitia Dignitatum*) to garrison (and renamed for) the elite *ala Petriana* cavalry unit (Jones 2009, 130; Jones and Woolliscroft 2001, 117). Consequently, it possibly functioned as the headquarters for the entire borderland, secondary only to the legionary fortress of *Eboracum* (York). Stanwix fort is situated in an elevated position north of the river, land falling away on all sides except west. As with Carlisle, extents of the fort are known only through ground-based investigations due to modern settlement coverage (Figure 83) – geophysical surveys revealed little due to modern disturbance and
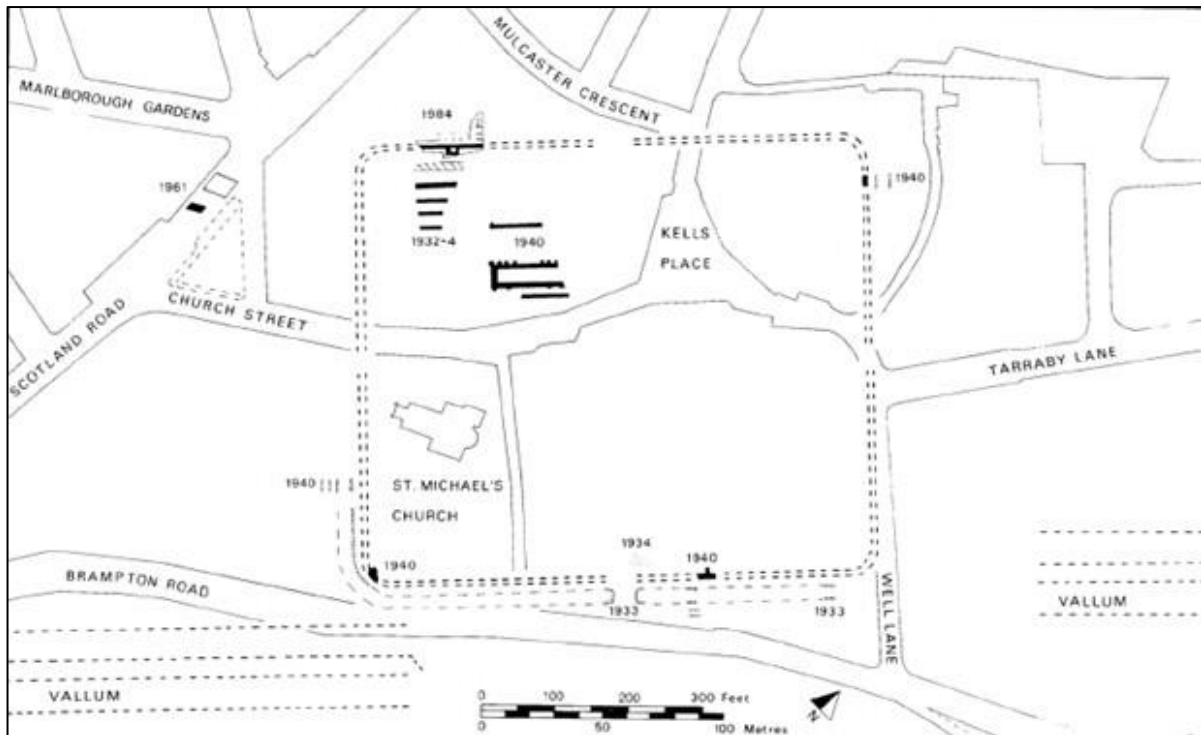
**Figure 83 - Plan of the fort at Stanwix in relation to the modern village (Dacre *et al*. 1985, 54).**

excavations show severe truncation of Roman-period deposits (Biggins and Taylor 2000, 279-280). However, 1930s/80s excavations (Dacre *et al*. 1985; Simpson 1933; Simpson and Hogg 1935) show the large (3.96ha) stone fort was likely a second phase, extending beyond the original line of Hadrian's Wall; the Vallum arranged here to enclose a smaller fort. Excavations confirmed two phases within a large *vicus* settlement west of the fort (comprising buildings, roads, yards and ovens) on the main north-south road from the Eden bridge to beyond the Wall (Caruana 2000, 74-76). This road is visible either side of Hadrian's Wall, and is assumed to have passed through the border in a similar form to the Dere Street Portgate above Corbridge, though this is unconfirmed (Bidwell 2009, 50). High-status objects and valuable coins support long-held suppositions that the larger fort's garrison was the elite, 1000-strong cavalry unit, *ala Petriana*; the earlier fort presumably holding a different, smaller auxiliary force: an early-second century bronze hoard and cavalry tombstone suggest this too was a mounted unit. The assemblage comprises the usual imported fine and British coarse wares (including regionally, from Wilderspool and Carlisle), fine glassware, metal brooches from the Rhineland and leather objects, representing a vibrant community strongly-connected to the Roman world and north-western provinces in particular (Caruana 2000, 74-76).

Overall, this discussion shows that aerial sources (particularly lidar) are useful for increasing archaeological understanding within this lowland landscape, as with Blocks 1 and 2 further north [5.2]. However, Carlisle is heavily-urbanised and comparison of aerial- with ground-based works, primarily excavation, is essential to understand the Iron Age-Roman landscape of the lower Eden valley. The large artefactual and ecofactual assemblages also provide further information on local environment, dating and phasing of sites, and identities at play in the cosmopolitan setting of the two forts, major town and closely-linked rural surroundings (indigenous farmsteads surviving in the Roman period to within a mile of *Luguvalium*).

*5.3b – Contextualising the New Evidence: Existing Knowledge of Wider Iron Age and Roman Period Landscapes Along Hadrian's Wall and Around Carlisle*

Having discussed the area covered by updated mapping within this project, neighbouring parts of the Hadrian's Wall borderland zone will be considered, to better contextualise the area around Carlisle, which is the only large modern urban area covering the Roman frontier zone west of the Pennines. Broader environmental components of landscapes in this east-west zone have been covered above [5.3a] and will not be repeated here.

West from Carlisle, the landscape of low-lying coastal hills descends into marshland and then tidal flats around the Solway Firth, Hadrian's Wall heading north-west to the Solway. This landscape was covered by the original Hadrian's Wall NMP survey (Boutwood 2005). Coastal changes in this landscape are localised, with erosion in some places and deposition in others, resulting in a similar overall coastline to the present (Clare 2004, 50). Palaeoenvironmental evidence is limited to palynology from Glasson Moss, generally mirroring wider regional patterns [5.1c] of woodland-clearance and increasing cereal cultivation from the middle Iron Age. However, open-land decline and woodland-regeneration from c. cal.AD70-320 is interpreted here as Roman frontier establishment hindering native landscape management (Dark and Dark 1997, 34; Dark 1999, 254).

Isolated ditched enclosures of varying form survive as cropmarks (Figure 84) in arable and improved-pasture, hinting at broader patterns of settlement located on drier ridges and knolls; limited excavations suggesting rectilinear elements are likely
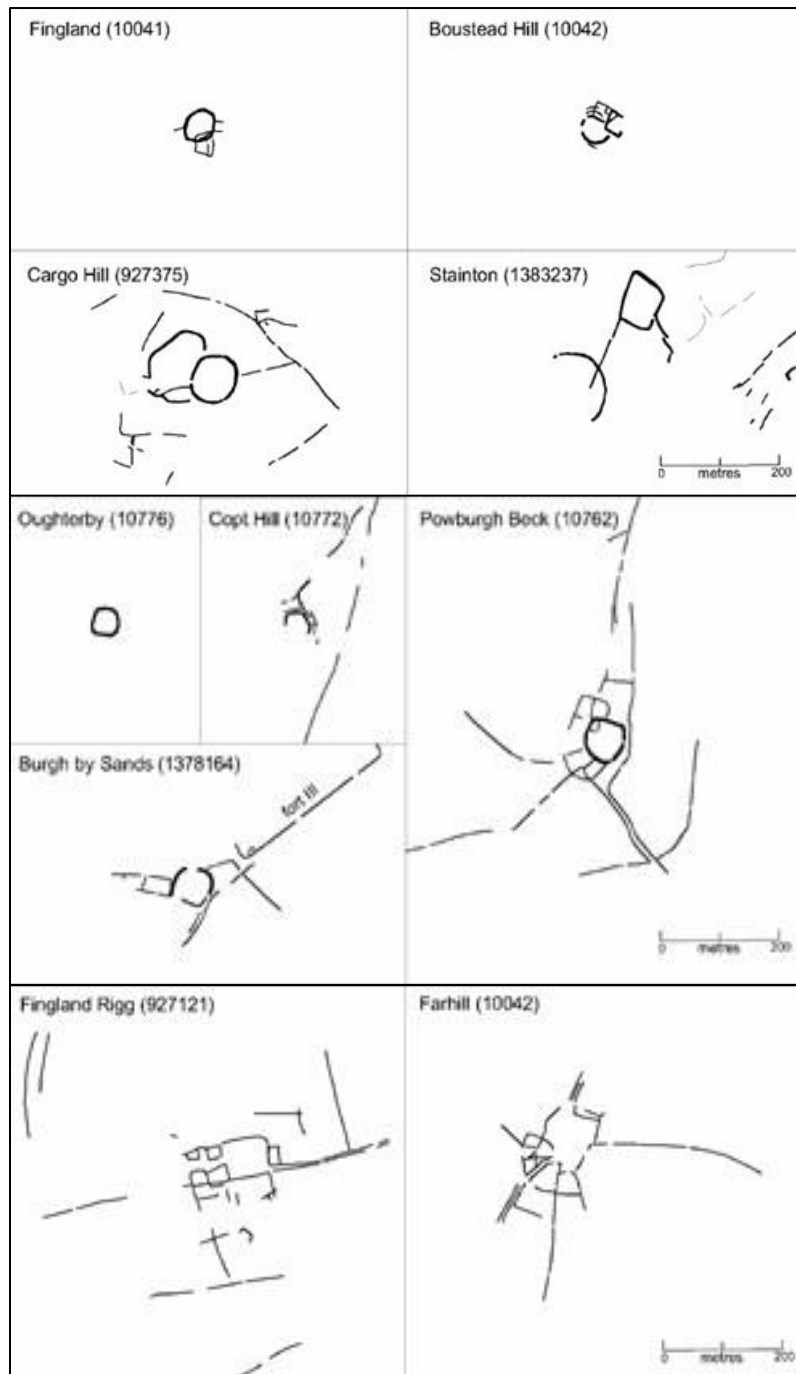


**Figure 84 - Aerial-survey plans of cropmark settlement enclosures west of Carlisle, showing variations in form (Boutwood 2005, 6-8).**

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Roman-date (Boutwood 2005, 5-7). Patches of ditched boundaries also show later-prehistoric and/or Roman field-systems and trackways around settlements, often with at least two phases shown by differing boundary alignments. Earthworks on Boomby Hill and cropmarks further south, immediately west of the Vallum, show several rectilinear enclosures (interpreted as Iron Age or early Roman), some overlain by a later linear field-system thought mid-late Roman. No features align off the Vallum or Hadrian's Wall but exact contact points between field-system and border are not visible to confirm the relationship. Elsewhere, just outside modern Carlisle's western extent, a multi-phased later-prehistoric field-system (1383139) is overlain by a Roman temporary camp, indicating military imposition on the indigenous landscape.

The most extensive Iron Age/Romano-British field-system (1383125) visible from the air comprises c.59ha of fragmented linear ditched boundaries (cropmarks, Figure 85) immediately west of the Eden, north-west of Carlisle. These form several large fields, smaller enclosures, trackways and broader droveways (Boutwood 2005, 8-11), likely extending to conjoined rectilinear enclosures (1383121) near Gillbrow Plantation, west of the Vallum. The system is overlain by two Roman temporary camps close to the river (interpreted first or early-second century AD due to positioning outside the frontier, though possibly associated with construction of the borderline or later troop deployments). The boundaries are also cut through by the Vallum. Further rectilinear field-systems with associated enclosures, trackways and droveways survive as isolated cropmarks north-east and south-east of Burgh-by-Sands, at least one substantial settlement including multiple perimeter ditches. The low-lying hills and coastal plain west and north-west of Carlisle therefore formed a later-prehistoric landscape of fields (likely arable, given local soil quality, and also pastoral, given droveways present) and farmsteads, impacted by construction of Hadrian's Wall and military sites.

The Roman border (primarily identifiable via the Vallum, with surviving elements of Wall-ditch showing variable width in the military-controlled zone) runs north-west from Carlisle, closely
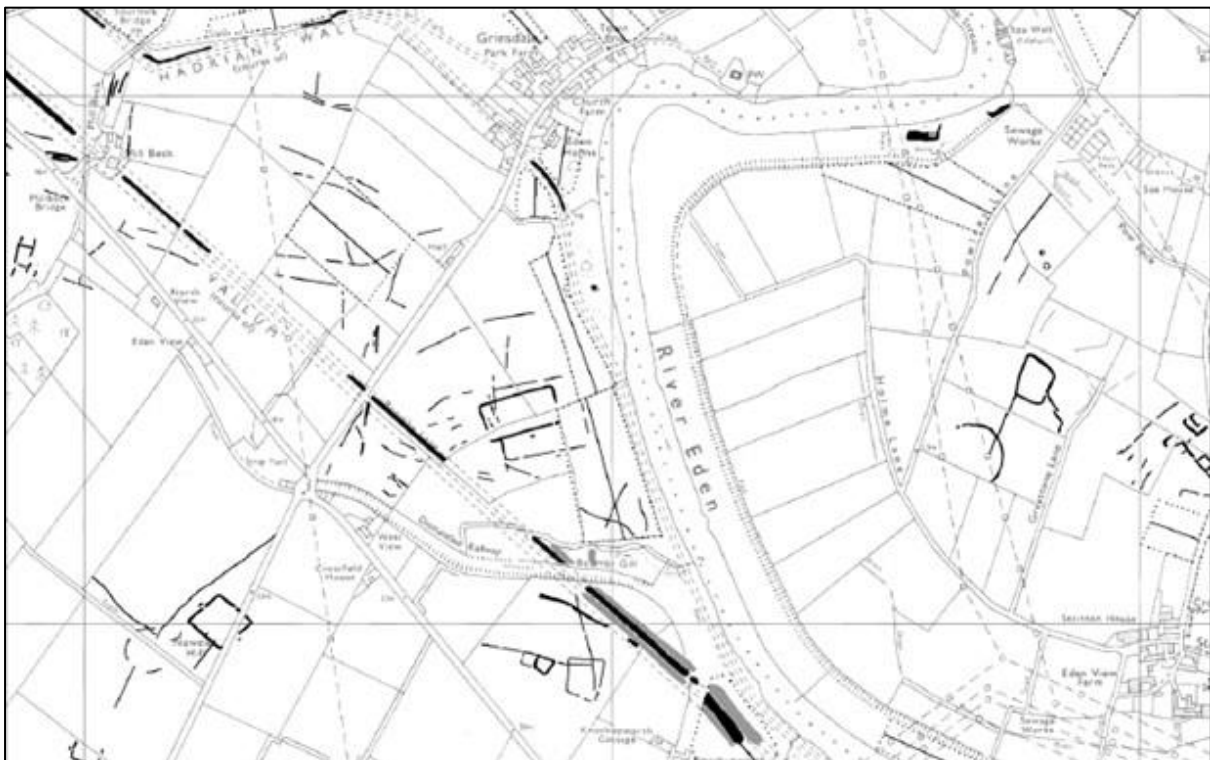


**Figure 85 - Aerial-survey plan showing the most-extensive area of later-prehistoric/Romano-British landscape-divisions west of Carlisle, including Roman temporary camps (Boutwood 2005, 10).**

following the lower reaches of the River Eden before curving north-west, maintaining the edge of higher ground to cut off the modern meander and floodplain and reach forts at Burgh-by-Sands, Drumburgh and finally Bowness-on-Solway. There the formal Wall ends and is replaced by regularly-spaced coastal installations [3.3b]. Temporary camps (around eight) between modern Carlisle and Burgh-by-Sands attest the extensive disposition and movement of troops, the majority likely early Roman (though possibly reused, excepting those on the borderline itself). These, together with the fort(s) at Burgh itself, show the importance of this routeway, connecting Carlisle to routes across the tidal flats (the Sandwath and Peatwath (Jones and Woolliscroft 2001, 62)) which bypassed the bridging points at the Roman town. The earlier Stanegate likely projected more directly westward however, terminating at the early fort at Kirkbride (Jones and Woolliscroft 2001, 34-35).

The 3.4ha Wall-fort at Burgh-by-Sands (*Aballava*) is visible from the air, as are two smaller, earlier (Agricolan and Trajanic) auxiliary forts further south (Jones 2009, 123-124; Jones and Woolliscroft 2001, 63-65). Roman buildings and roadways associated with the Wall-fort show as cropmarks east from the present-day village (confirmed by geophysical survey and excavations). The fort aligns with Hadrian's Wall as it turns west-south-west from higher ground overlooking the Eden's mouth, excavation showing two divergent routes followed by the Wall itself: the southern running beneath the fort's centre, used by the primary 'turf wall'; and later realignment of the stone wall, connecting with the fort's north-east corner to prevent it projecting beyond the border's outer-line. Extra-mural settlement east of the fort was discovered in the 1980s excavations: buildings fronting onto the main east-west road, bathhouse debris and quantities of slag and charcoal indicating metal-working. This settlement likely extended south of the fort. An inscription suggests the late second/early third century garrison to be *cohors I Nervana Germanorum* (a 1000-strong auxiliary infantry unit) (Jones and Woolliscroft 2001, 118).

East of Carlisle, the Roman border remains north of the Eden and Irthing valleys, climbing rolling foothills of the central uplands to forts at Castlesteads and then Birdoswald, towards the Tyne Gap. With freely-draining, slightly acidic soils, this area has long-standing mixed agriculture and rural settlement, preserved as both cropmarks and earthworks (Small 2008, 6-7). This zone was covered
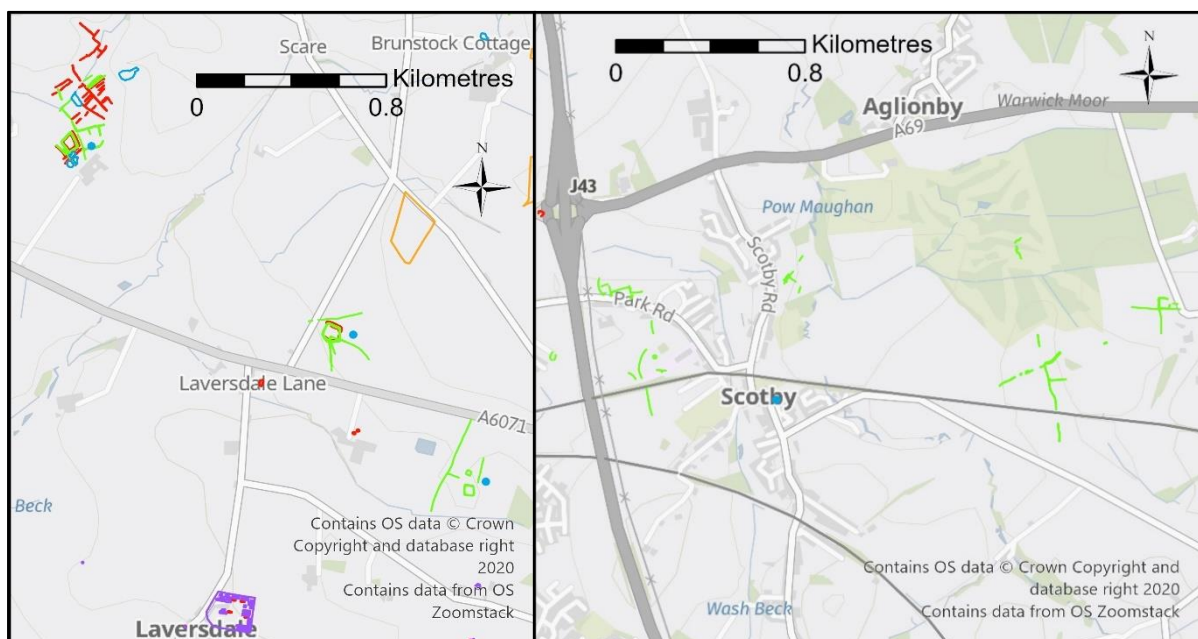


**Figure 86 - Aerial-survey mapping from Hadrian's Wall NMP, showing native rural settlements and field-systems north of Carlisle Airport (left) and around Scotby (right).**

by Hadrian's Wall NMP (Oakey 2009), the area east of Brampton reported-on in greater detail by Small (2008).

Within this landscape of rising hills, numerous later-prehistoric or Romano-British settlement enclosures, like those from the project area [5.2/5.3a], are visible. The enclosures are generally isolated, with square, rectilinear, or curvilinear forms; located either side of Hadrian's Wall, and generally visible as banked and/or ditched cropmarks. Enclosures north of Carlisle Airport (11636, 927802, 1452067) survived as earthworks on historical photography (since levelled), located within (and overlying in places) a multi-phase field-system of ditched boundaries and trackways, visible only as cropmarks (Figure 86). A concentration of ditched cropmark features also surrounds modern Scotby (mapped during the Hadrian's Wall NMP and Eden-Petteril-Caldew Transect projects), showing another coherent later-prehistoric or Romano-British landscape of ditched boundaries forming a rectilinear field-system with associated pits, trackways, three roundhouses and a defined, square, 0.18ha enclosure. This shows the potential locally for the survival of rural landscape features whose visibility is hindered by modern land-use limiting cropmark formation, providing more extensive parallels for some of the area-limited features in Block 2.

An interesting complex of features mapped around White Moss near Carlisle Airport (Figure 87) includes a series of later-prehistoric and/or Roman-period rectilinear enclosures and fields forming a complex land division system (of multiple phases) on a north-west/south-east alignment. These lie beneath the Roman borderland, from north of Hadrian's Wall to south of the Vallum, overlain by the military features (Small 2008, 23-24). Within this complex are ditched enclosures containing internal sub-divisions, connected with wider boundaries, surviving as earthworks on historic photography
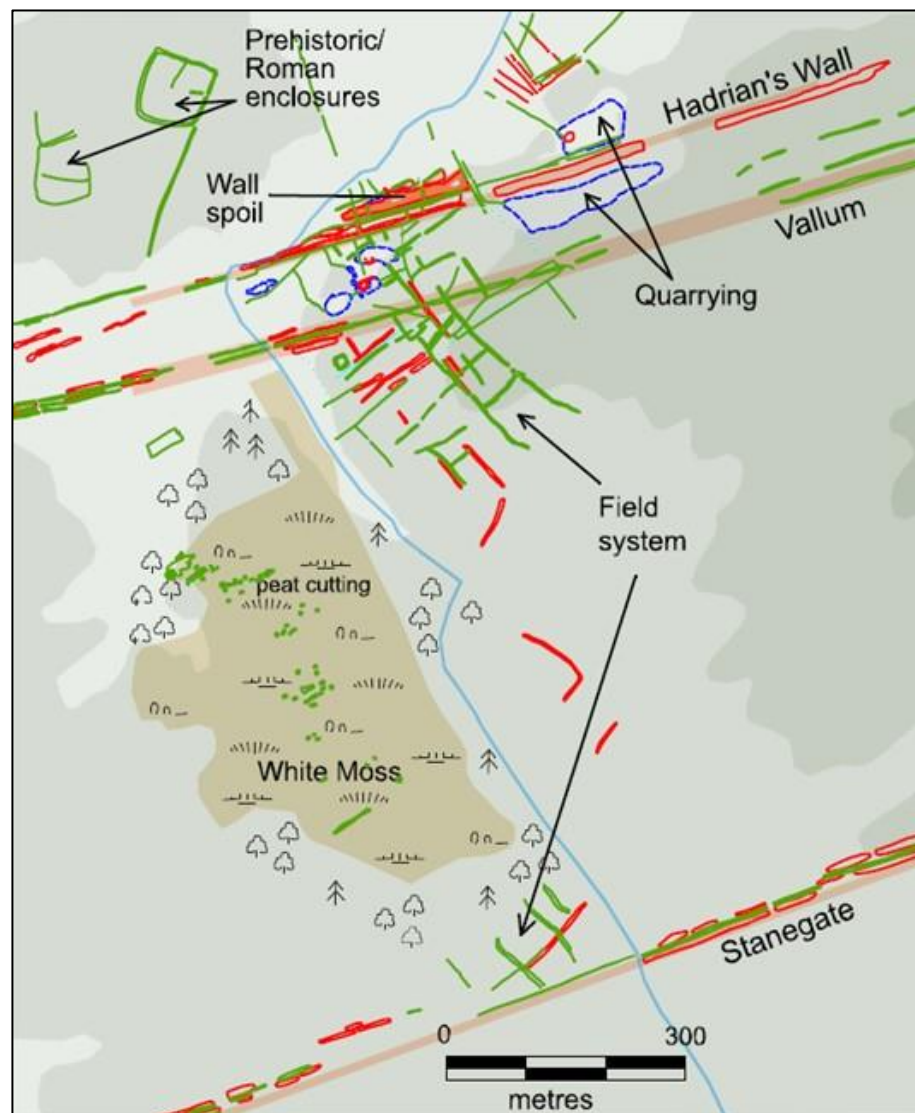
Figure 87 - Aerial-survey mapping from Hadrian's Wall NMP, showing the lines of Hadrian's Wall, Vallum and Stanegate, overlying existing Iron Age/Romano-British agricultural landscapes at White Moss (Small 2008, 24).

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but since levelled. Hadrian's Wall survives as a broad earthwork bank with its ditch to the north, and associated construction quarries beyond that, all overlying the field-system. Similarly, the Vallum survives as an earthwork cutting through the field boundaries. The Stanegate road is visible, running parallel to the Wall c.850m to the south-east, also post-dating the field boundaries. This imposition of Roman military features onto the native agricultural landscape has similarities with the more fragmented evidence north of Carlisle, showing the immediate impacts of construction of military infrastructure on a wider landscape.



**Figure 88 - Aerial photograph (NMR 12761/05 15-AUG-1995) and survey-mapping of Roman temporary camps at White Moss (Small 2008, 30-31).**

West of the field-system are cropmarks of at least six phases of Roman temporary camp (Figure 88), located between Stanegate and Vallum atop a plateau (Small 2008, 8,30-32). The camps are of different sizes and alignments, cutting through one another and thus showing multiple phases of military activity close to the main east-west road. The largest (909916) covers 3.84ha, defined by ditches and with external traverses guarding entrances, internal pit alignments revealing positions of tents. A later annexe or secondary phase (1.07ha) adjoins to the north, reusing the larger camp's northern defences, again with internal pits. A later, less regular camp (1453609) of 1.23ha is centred further north-west on a different alignment, cutting through both previous camps, three further phases (11626, 1453631, 1456041) also intersecting. The number of phases of activity and quantity of features visible within the camps thus suggest them to have been significant landmarks locally, with substantial impacts on the indigenous landscape, as with the excavated Kintore example [see 5.2b]. Ditched rectilinear (1456042) and curvilinear (11642) enclosures nearby are either associated with the camps, or, more likely, part of the pre-Roman landscape. Evaluation (RRS-41041) west of the camps showed Neolithic and Bronze Age activity followed by ditches, post-holes and potential roundhouses (likely Iron Age or Romano-British). Fourth century AD pottery found in the vicinity attests late Roman activity.

Throughout this landscape, east of modern Walby, Hadrian's Wall survives as a fragmented, denuded earthen bank (levelled in places), with the outer ditch to the north surviving more consistently. The Military Way forms an even more ephemeral bank running behind the Wall to the south, veering between it and the Vallum across the rolling topography. The Vallum runs generally parallel c.45-85m south, with varying degrees of survival for its banks and ditch. South of the narrow border-zone, the Stanegate takes a more directly-eastward route (early forts along this subsequently behind the border).

Reaching the Pennine uplands proper, the Wall runs north of the Irthing Gorge, with the Wall-fort at Castlesteads replacing an earlier Stanegate fort at Old Church Brampton. It is also in these hills that we have evidence for Roman landscape exploitation in the form of sandstone and limestone quarries, supplying the Wall and its installations with construction material. The most famous are Coombe Crag (west of Birdoswald and recording names of troops involved and the fact that they were reluctant quarriers) and Gelt (south of Brampton, with its 'Written Rock' also attesting names, including a detachment from *Legio II* in AD207) (Higham and Jones 1985, 116-117). Beyond these hills, the border runs along the Whin Sill escarpment towards the east [6.3].

At Brampton, excavation (RRS-41038) of a hilltop farmstead c.770m south-east of the fort revealed a curvilinear palisaded/ditched enclosure containing rectangular structures. Finds of largely native pottery with lesser (though still copious) amounts of Roman wares, querns, coins, lamp, brooch and figurine of Mercury indicate continuation of indigenous production and supply alongside interaction with the Roman world, dating the main phase to late-third and fourth centuries AD (Blake 1959, 3-6). Brampton also has a well-known military tile-production site found in 1960s excavations (RRS-41032) (Bellhouse 1971, 35,40), with eight kilns linked to the fort, clearly indicating Roman military-rural interactions beyond solely food production. Roman timber buildings further north may represent associated settlement (Zant 1998).

The Hadrianic fort at Castlesteads (*Camboglanna*), intermediate between Stanwix and Birdoswald and positioned on an escarpment overlooking the Cam Beck, is actually 400m south of Hadrian's Wall. Though constructed as part of the second-century border, the fort was situated on the projected borderline while topographic concerns forced the Wall itself further north (Biggins and Taylor 2007, 15). Long-recorded by antiquarians, both fort and external bathhouse have been partially excavated, revealing an initial turf-timber phase aligned north-south to fit within the Vallum, and a later stone-built phase realigned to face east (*ibid.*) – similar phasing to Stanwix. Two altars from Castlesteads indicate the Hadrianic or later Antonine garrison was *cohors IV Gallorum* (an auxiliary part-mounted/infantry unit), with *cohors II Tungrorum* attested from mid-third century inscriptions (Stephens and Jarrett 1985, 77-79). Important here are extensive geophysical surveys (Biggins and Taylor 2007, 20-29), which confirmed the site of the fort, Vallum (kinking southward to incorporate the fort) and the detailed plan of the *vicus* (Figure 89). Several roads connect the site to wider field-systems (also visible, showing potential Roman boundary reorganisation nearest the settlement) and Roman road networks. Details include a potential cremation cemetery, multiple enclosures suggesting heavy involvement in stock-management, industrial features such as a kiln and a central potential marketplace. These details from magnetometry (only hinted at by earthworks) shows the potential for this technique, and the complexity of extra-mural settlements associated with forts, in this case thought to have been founded on an existing native settlement (*ibid.*, 28-29).

Fragmentary aerial evidence alongside the excavation detail from Block 2, around Carlisle, have thus been compared with the wider borderlands of Hadrian's Wall to west and east.
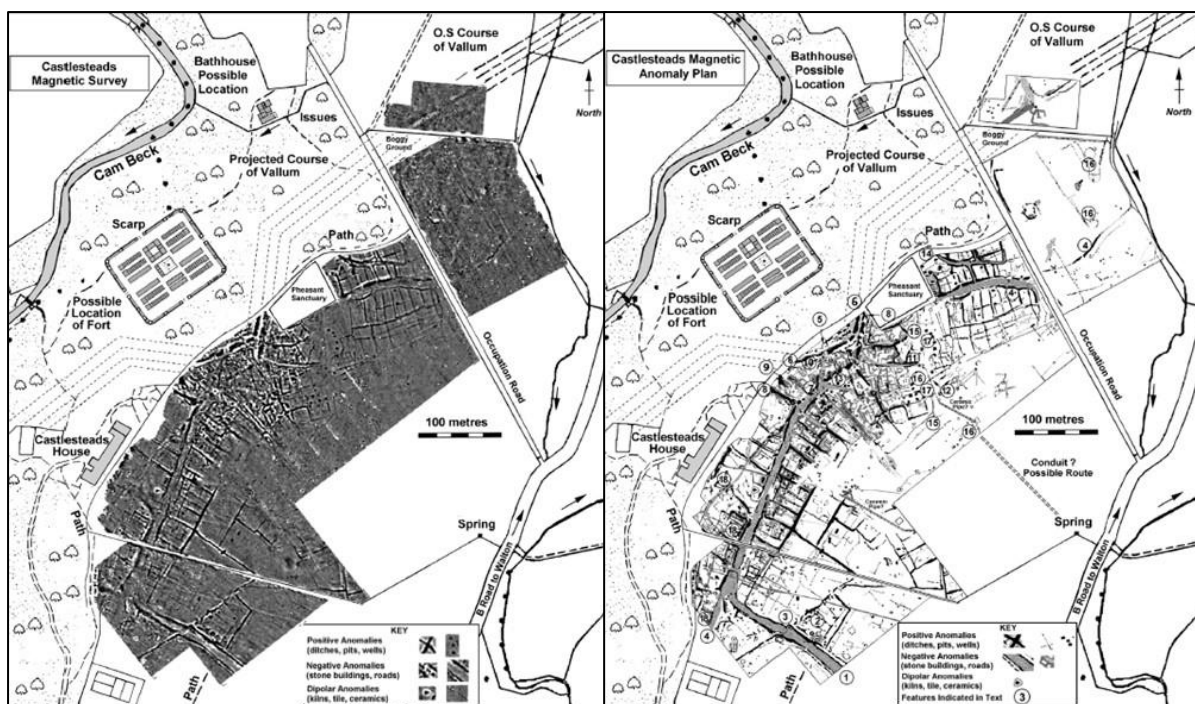
**Figure 89 - Magnetometry plot / interpretation-plan of Roman settlement at Castlesteads, showing complexity of the vicus and associated field-system (Biggins and Taylor 2007, 18-19).**

Interpretations from the newly-surveyed area include indigenous rural settlement and agriculture continuing in form and nature close to both the urban margins of *Luguvalium* and the Roman border, only impacted directly in their immediate environs, alongside complexity of Roman military activity beyond known forts, Wall and camps. They therefore appear generally consistent with more-extensively visible landscape features outside the mapping block. This borderland landscape consequently reveals more complexity and detail around Iron Age and Roman-period activity than landscapes further north. However, regarding the indigenous landscape, this is likely due more to combination of modern land-use (greater land improvement and arable than Eskdale) and a more sustained archaeological focus (both aerial and ground-based survey) along the known line of Roman military remains (further benefitted via ongoing redevelopment work in urban Carlisle), than any real difference with native landscapes further north. Evidence to the north, across and south of the border is sufficient to suggest a continuous, agriculturally-rich landscape of isolated farmsteads within extensive field-systems and trackways around the Solway, as far as the surrounding uplands. Greater levels of archaeological excavation, similar to that conducted north of Newcastle at the eastern end of the frontier (Hodgson *et al.* 2012), might further elaborate this interpretation. Ongoing native rural landscapes also extended well into modern Carlisle, to the periphery of the Roman town and cemeteries, with close integration between urban and rural landscapes, as visible at better-understood Roman towns elsewhere in the empire.

Moving beyond the fragmented evidence from the survey area, the increased visibility of field-systems identified during the Hadrian's Wall NMP allows further suggestion of phasing of activity within the rural landscape over time. The main authors of these landscape changes are difficult to ascertain from aerial survey alone. In some locations, these originate with externally-imposed Roman activity: for instance, the need to sustain large garrisons and urban populations (particularly Carlisle); changes to land-ownership and access caused by construction of the defined Hadrian's Wall 'military zone'; ephemeral, short-lived Roman activity via many temporary camps

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(with re-use of sites and changes in form/size and function); increased intra/inter-regional communication via constructed roads. In other cases, particularly rural sites across the area, indigenous decision-making will have continued (adoption or avoidance of new material culture, land-use, etc) but is much harder to distinguish without site-based evaluation. Finally, the two military sites and large settlement at Carlisle (unique in this part of the empire [Chapter 3]) are shown to operate within the context of the longer Roman border – integral to the northern frontier, but also foci for the socio-economic landscapes of the north-west. Carlisle furthermore offers differing forms of evidence to that available elsewhere in the western transect – notably a long, substantial excavation record and associated artefactual and environmental assemblages.

## 5.4 – Hinterlands: The Southern Frontier Zone

Southward from the immediate borderland of the Roman frontier around Carlisle is the 'inner periphery' of the Roman Empire – the 'hinterland' of Hadrian's Wall. Based upon wider theoretical discussions [3.1], natural environment [2.3] and archaeological landscapes [3.3] this can be observed (west of the Pennines) to comprise the region of uplands and valleys south from the Roman borderland to around Greater Manchester, a region with little Roman urban development beyond forts' extramural settlements, with permanent direct military occupation, contrasting with areas further south. The limit for this transect is Ribchester in the Ribble valley. While there is little evidence for Roman zonal distinction within this broader hinterland, the transect can be divided into two clear topographic areas which influenced Iron Age and Romano-British activity: the Eden valley, flowing north-west to Carlisle, and its environs; and the Lune and Ribble valleys flowing south-west (and surrounding uplands). The discussion will thus be split into 'immediate' [5.4a] and 'wider' hinterlands.

### 5.4a – The Immediate Hinterland: Aerial Survey and Wider Archaeological Investigation of Iron Age and Roman Period Landscapes in North-Eastern Cumbria

The area immediately south of Hadrian's Wall comprises lowlands running from the Solway Plain south through the Eden and Petteril valleys, and surrounding uplands (Figure 90). Low-lying, heavily-settled and agriculturally-viable natural corridors focus human activity: the Eden and Petteril valleys flowing north-westward to the Solway, draining from and surrounded by environmentally-marginal upland areas (north Pennines to east and south-east, Orton Fells further south and Cumbria High Fells to the west) (Natural England 2013c, 3). These valleys form the regional nucleus for later-prehistoric socio-economic activity, alongside routes for communication between more difficult terrains, connecting to peoples further south and south-east. This led to subsequent concentration of Roman military, social and economic activity, with numerous roads, forts and settlements controlling and utilising these landscapes.

The Eden and Petteril valleys comprise fluvio-glacial deposits overlying limestones and sandstones, creating fertile soils which facilitate extensive arable and improved-pasture on the wide valley-floors, generally cleared of woodland today (Natural England 2013c, 3,5-6). For surrounding uplands (Natural England 2013d; Natural England 2014a), altitude, steep topographies, underlying bedrock (limestones and millstone grit to the east, volcanics and limestones in the west) and thinner, acidic soils has led to greater reliance on rougher pasture and extensive moorland, settlements and
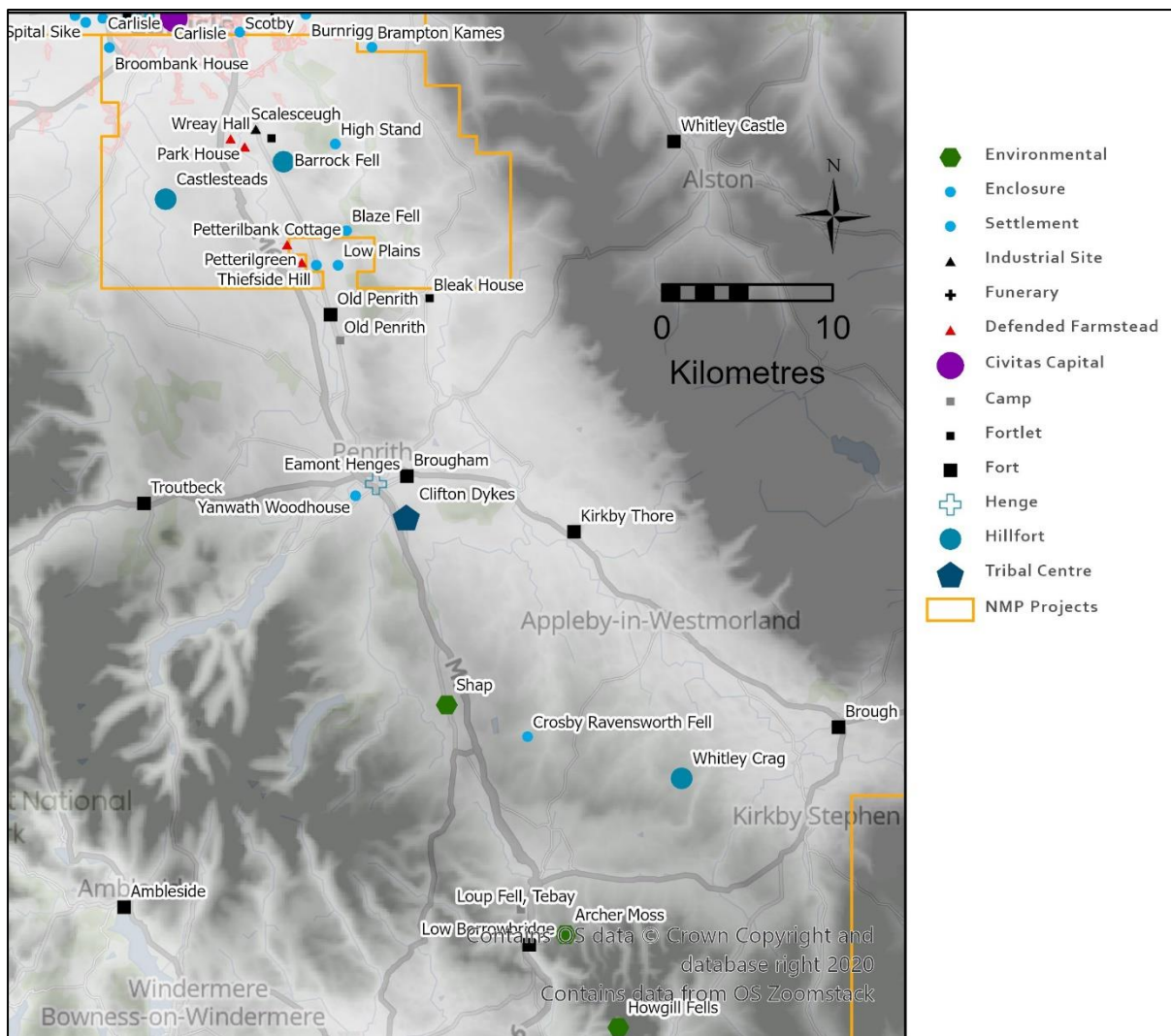
**Figure 90 - Topographic map showing the region south of Hadrian's Wall's borderland and west of the Pennines, including major aerial-survey projects and sites mentioned in the text.**

arable limited to valleys. South of the Eden valley, the project transect crosses the limestone plateau of the Orton Fells (c.180-412m OD, lower than neighbouring uplands but still dominated by open grassland and heath, sharp valleys draining to north (into the Eden) and south (towards the Lune)), and with a general lack of land-improvement which has enabled earthwork survival (Natural England 2013f, 3-8,21). Palaeoenvironmental evidence for vegetational change in north-eastern Cumbria mostly comes from surrounding uplands rather than these major valleys, nonetheless attesting expected patterns of widescale clearance and increased grazing and cultivation in both lowland and upland environments in the last few centuries BC (Hodgson and Brennand 2006, 58; Philpott 2006, 61; Wells 2003, 72-75).

Within aerial survey areas of the Cumbria Minerals and EPC Transect projects [5.1a], later-prehistoric landscapes survive as isolated settlement enclosures and patches of field-system, visible as cropmarks where taphonomic processes and geology combine to form them, and earthworks in areas subjected to less subsequent land improvement. This consequently offers only a fragmentary record of the total Iron Age / Roman landscape, something which could potentially be addressed in future via other forms of archaeological investigation. For the Cumbria Minerals project, the Brampton Kames area of moorland fringe and pasture (south of the Hadrian's Wall NMP) contained several rectilinear settlements with associated stock-enclosures and roundhouses, and long, ditched,

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coaxial boundaries forming a cohesive Iron Age/Romano-British field-system (Deegan 2013a, 7-8). The lowland landscape around Low Plains (Eden valley) contained many more traces, including hilltop enclosures defined by ditches (most cropmarks, though one on Blaze Fell (11356) surviving as earthworks preserving more detail including perimeter ditch and bank, and internal sub-divisions). Further fragmented cropmarks suggest a dense pattern of farmsteads, long linears across Thiefside Hill and Blaze Fell indicating widespread, irregular systems of ditched boundaries (some forming double-ditched trackways). This reveals organised agricultural landscapes in later prehistory, surviving into the Roman period, centred on the usual enclosed farmstead settlement-type (Figure 91) (Deegan 2013a, 8-10). However, as with all other aerial survey projects, visibility of smaller, more-ephemeral features such as unenclosed roundhouses is limited due to lessened survivability under later activity and the fragmented nature of cropmark formation locally. The survey block around Cardewmires, south-west of Carlisle, repeats this similar rural field-system and settlement pattern (Deegan 2013a, 10-11).
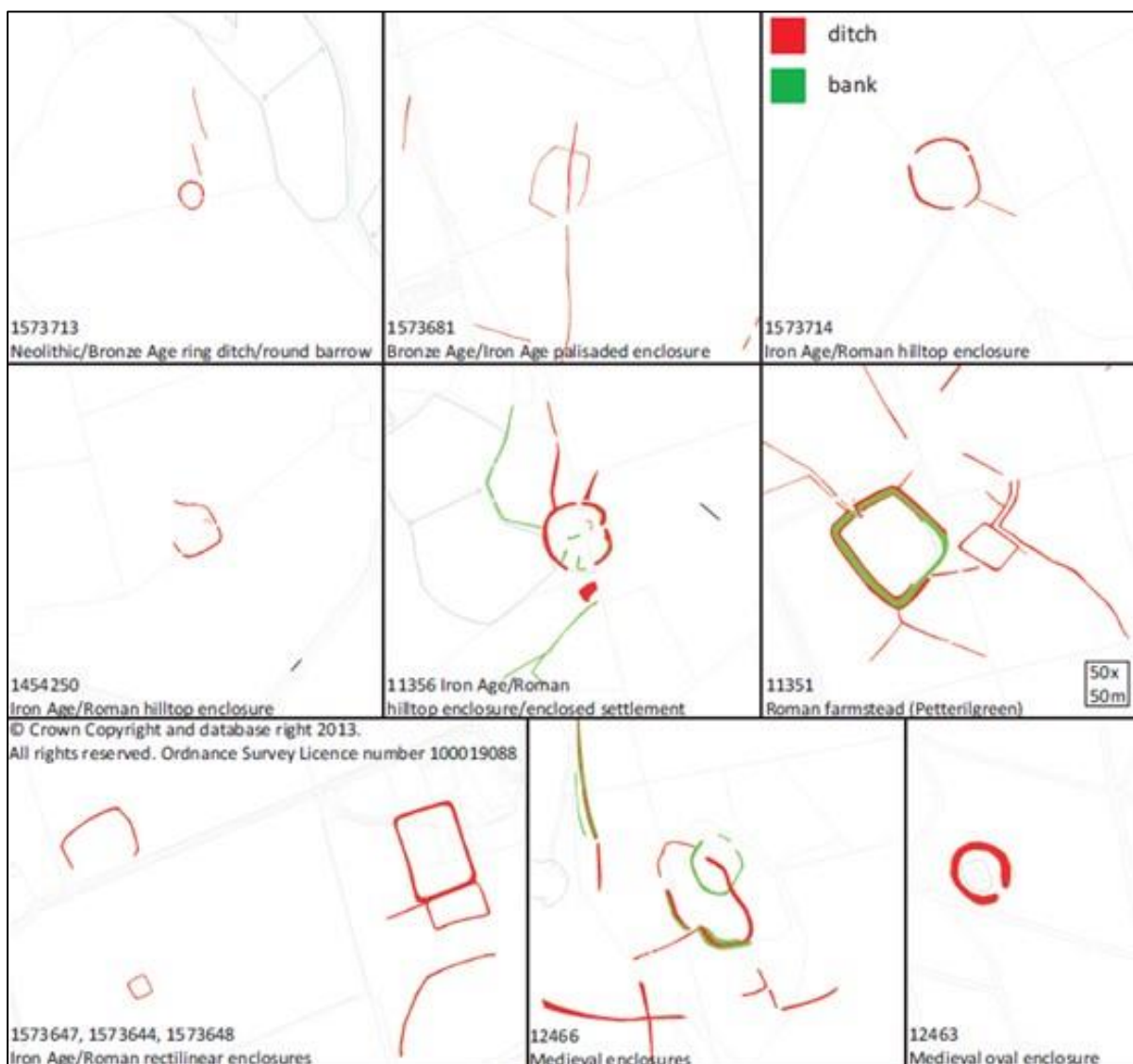


**Figure 91 - Mapped Iron Age/Roman enclosures from the Cumbrian Minerals aerial-survey project (Deegan 2013a, 30).**

Linking these three Cumbria Minerals survey-blocks is the EPC project, a more extensive area covering the rolling, lowland landscape between the Solway Plain (north-west), north Pennines (east) and Lazonby Fell (south). Cropmark formation is high on low-lying tills and riverine deposits,
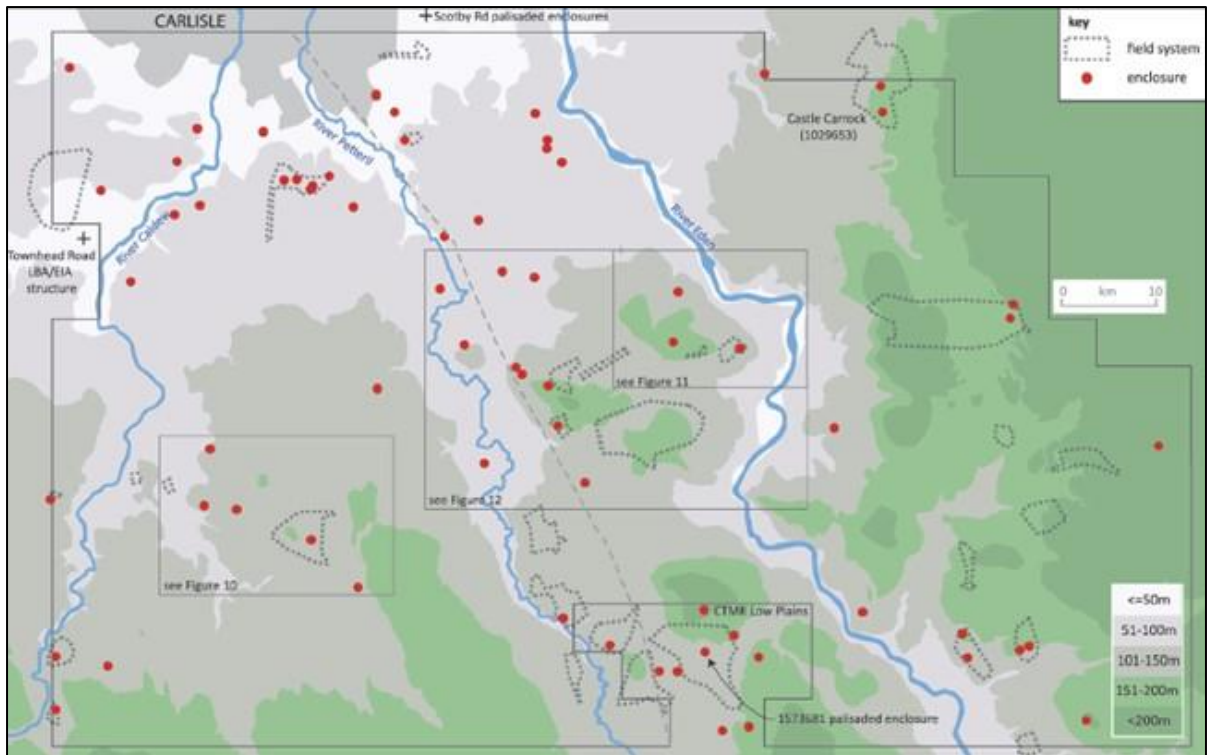
**Figure 92 - Distribution map showing locations of later-prehistoric/Roman-period enclosures and field-systems in the Cumbria Minerals and EPC Transect projects (Deegan 2019, 20).**

while earthworks survive on pasture-dominated hills (Deegan 2019, 4-9). The project recorded over 70 possible Iron Age/Romano-British enclosures and field-systems (Figure 92), with concentrations
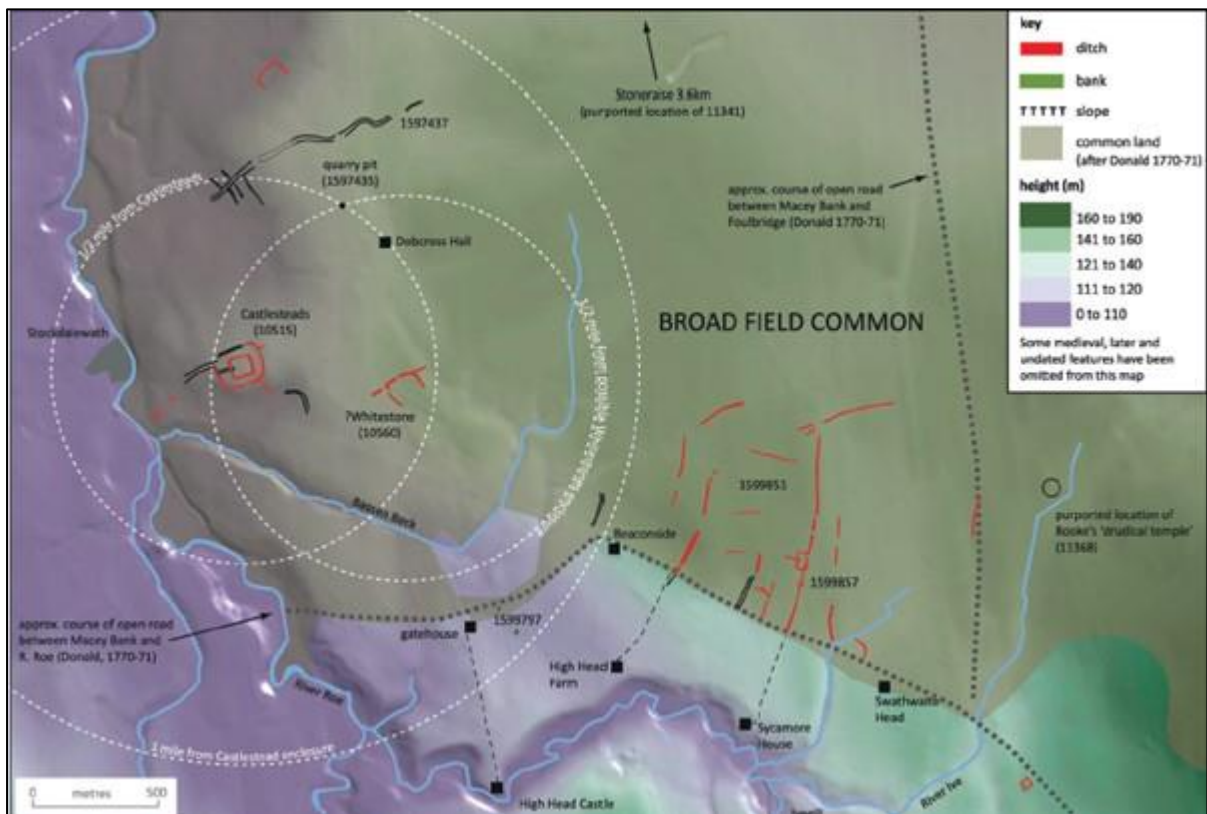


**Figure 93 - Mapping of the archaeological landscape around Castlesteads, including several enclosures and extensive areas of linear banked boundaries (Deegan 2019, 23).**

closer to Carlisle and between the Eden and Petteril due to favourable geology and land-use for cropmark formation, alongside increased aerial reconnaissance (Deegan 2019, 19-21). The distribution therefore appears closely-linked to modern taphonomic visibility variables rather than real concentrations of activity.

One group of features is around Castlesteads (10515, Figure 93), a 0.5ha rectilinear, banked enclosure with eastern entrance (excavations providing Roman dates) surrounded by a larger 2.5ha rectilinear perimeter (late-Iron Age), showing a distinct temporal change in site form (Higham 1981). Two enclosures were reported by antiquarians within 1km, alongside several long boundaries aligned perpendicular to the River Ive (Deegan 2019, 21-24). Meanwhile, higher ground between the Eden and Petteril contains the archaeological landscapes of High Stand and Barrock Fell (Figure 94), with hilltop enclosures (c.0.5-0.85ha) surrounded by banked and ditched perimeters, some containing internal roundhouses, and surrounded by connecting trackways or droveways, smaller fields (likely arable) and larger boundaries delineating pasture (Deegan 2019, 24-32).
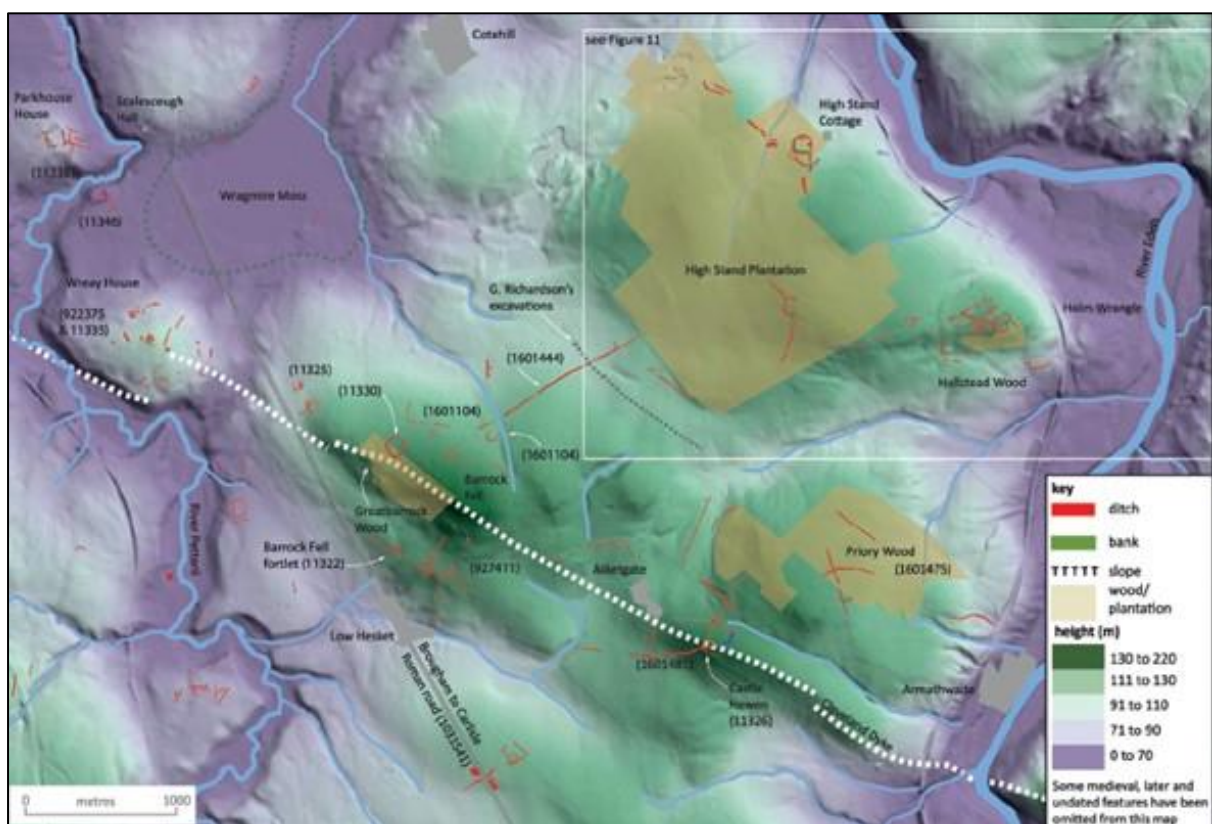


**Figure 94 - Mapping from the EPC Transect project, showing later-prehistoric and Romano-British features around High Stand and Barrock Fell, between the Rivers Petteril and Eden (Deegan 2019, 29).**

These projects therefore add to the overall picture of a rural farming landscape dominated by pasture on higher slopes and mixed arable/pasture in lower-lying areas, connected by trackways and droveways and covered by dispersed isolated farmsteads, each housing a single extended-family group, mirroring that around and north of the Roman border [5.2/5.3] and on the Solway coastal plain further north-west (Bewley 1994; Jones and Walker 1983). Several sites, like Greatbarrock Wood on Barrock Fell (Deegan 2019, 30-32) and Whitley Crag in the Orton Fells (Fell 2009) appear larger and more substantial, either serving a different function or representing a higher status of site, with interesting implication for identities manifested in the landscape. At Whitley Crag, the

small, multi-vallate 'hillfort' of several roundhouses appears sited around an earlier barrow (Fell 2009, 17), potentially linking back to earlier communities or cementing a land claim.

Sites identified as Iron Age or Romano-British largely remain unexcavated, interpretations based upon morphology and parallels elsewhere. Only two, Castlesteads and Castle Hewen, were excavated to give Iron Age dates, with ongoing occupation into the Roman period (Deegan 2019, 32). Excavations at settlements beyond the aerial survey areas, such as Jacob's Gill south-west of Carlisle (Blake 1959, 6)  indicate enclosures visible only as ditched cropmarks can contain other boundaries of timber or stone. Both native and Roman pottery have been discovered at these sites, indicating either longevity of occupation across the broader period in multiple phases, or adoption of new alongside continuing material culture, perhaps reflecting merging identities. Higham (1982, 117-119) showed that all fifteen then-excavated native settlements produced imported Roman glass, metalwork and pottery (black-burnished ware from southern Britain and Samian from the Continent), indicating extensive trade with Roman supply networks in the hinterland. However, construction material and the presence of round or rectangular buildings do not necessarily reflect phasing, with some sites containing both forms of construction alongside one another in a single phase (Clare 1982, 44-46).

Another important case-study for rural settlement is Crosby Ravensworth in the Orton Fells – located at the far end of this part of the transect from the aerial-survey projects, in an upland environment allowing extensive earthwork survival. Closely-spaced rural settlements were excavated and surveyed in their wider landscape context (Figure 95), the spacing reminiscent of that found in south-east Northumberland's lowlands (Hodgson *et al.* 2012; Hodgson 2017). The largest settlement is Ewe Close (Figure 96), excavations revealing multiple well-built phases in various yards and over ten buildings (one with furnace), a large central roundhouse (c.15.5m internal diameter) seen as higher-status, and an associated later-prehistoric field-system. The eastern village extension incorporates rectangular and round structures (both
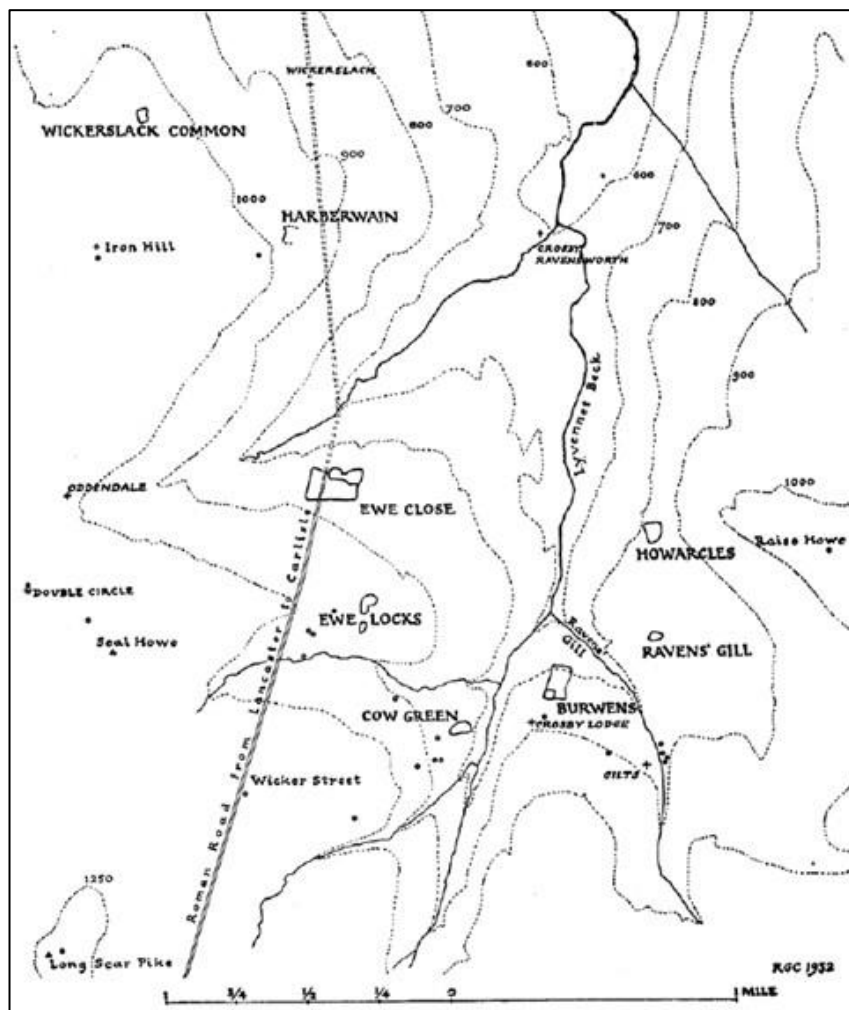


Figure 95 - Map showing distribution of later-prehistoric/Romano-British settlements on Crosby Ravensworth Fell (Collingwood 1933, 203).

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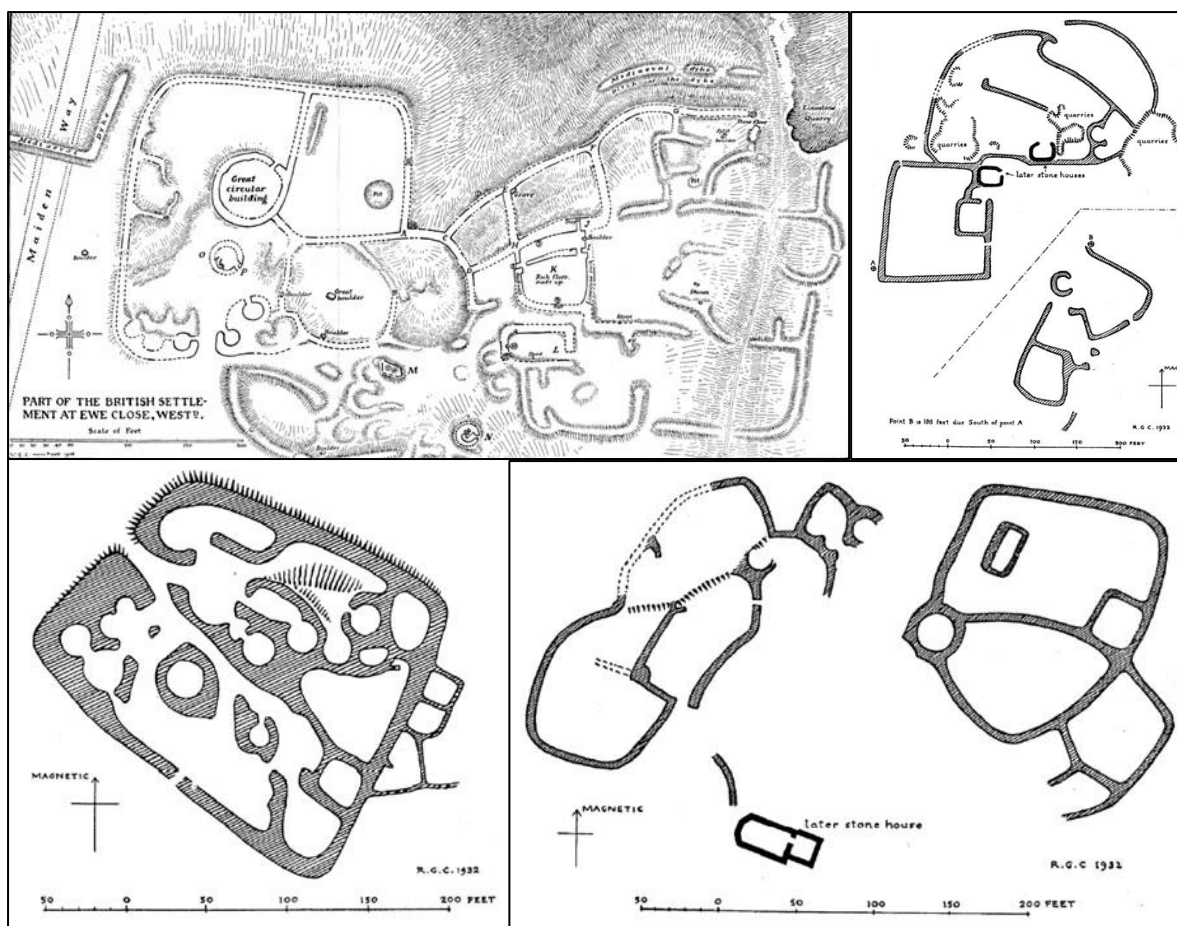
**Figure 96 - Survey/excavation plans of the Ewe Close settlement, Crosby Ravensworth (Collingwood 1909) and other nearby sites at Ewe Locks, Cow Green, and Burwens (Collingwood 1933, 208,210,213) [clockwise].**

settlement and field-system showing continued occupation into the post-Roman period). Finds include imported and regionally-produced Roman pottery, metalwork and glass, querns and faunal evidence for cattle, sheep/goat and horse (Collingwood 1908, 360-368; Collingwood 1909, 295-309; Collingwood 1933, 204-206). The main Roman road between the Eden and Lune valleys runs just west of the settlement as an earthwork (Collingwood 1908, 356), apparently following a more difficult, less straight course in order to pass the settlement (Collingwood 1933, 204,206), suggesting the site was of ongoing importance into the Roman-period landscape.

Further settlements of varying form at Ewe Locks, Cow Green, Burwens (Figure 96) and four other sites also show construction complexity, multiple phases, and directly-associated field-systems, generally located on flatter areas halfway-up slopes rather than hilltops (Collingwood 1933, 207-218). Field-systems have both smaller, local fields interpreted as crop-growing, and larger stock enclosures. The two largest settlements at Ewe Close and Burwens appear to be villages housing several family-groups and with greater complexity of pens/yards, while remaining sites are smaller farmsteads, indicating a local hierarchy or differential functions in the landscape (Collingwood 1933, 224). Webster (1971, 68-72) categorised more-defined, single enclosure sites as initial 'pioneer sites' to oversee pastoralism, with the larger, agglomerated sites growing over time: secondary sites in an already 'colonised' landscape. It could alternatively be that the larger sites are situated in better locations (for access, agriculture, etc) or that preservation differs between sites and only the more-substantial elements survive at many (Hingley 2021, pers.comm). Further small structures of Roman date indicate activity beyond the main settlements (Ellwood 1981, 158). Manifestation of communal

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identities in the landscape is further emphasised by small round barrows located close to settlements, thought direct links between a single community and its dead, with larger, skyline barrows reserved for the two larger settlements, suggesting higher-status identities being displayed (Collingwood 1933, 218-223). Indigenous settlement and field boundaries survive across the Orton Fells (Crosby Garrett, Ravenstonedale and Waitby), attesting the widespread nature of small, upland communities practising mixed agriculture (Higham and Jones 1985, 83-88).

In summary, Iron Age/Romano-British enclosed farmsteads and widespread rectilinear field-systems are found throughout the Eden lowlands and extending up the lower slopes of surrounding fells (and across the uplands due south), indicating a common indigenous landscape focussed on familial, agrarian identities. Further, less-heavily defined or unenclosed settlements undetected by large-area aerial surveys, as found elsewhere in England (e.g. Hodgson *et al.* 2012), could potentially add greater density to this pattern. Most excavated non-Roman finds on known sites are associated with domestic activities rather than linking to specific cultural or status-based identities, potentially due to preservation bias. Nevertheless, other site-types hint at pre-Roman hierarchy within the settled landscape. This has often been linked with Roman-derived group identities, e.g. Brigantes and Carvetii [5.1c], the latter thought represented by a later *civitas* centred on Carlisle, referred to by milestones (Figure 97) from the Eden valley (Birley 1958a, 88-92; Edwards and Shotter 2004; Edwards and Shotter 2005) and further south (Birley 1953b) but with any pre-Roman centre unknown. However, given that the Carvetii are only referenced later in the Roman period, this social grouping may have originated under Roman influence, rather than during the preceding Iron Age, meaning that any evidence for earlier social hierarchy may not be directly related.
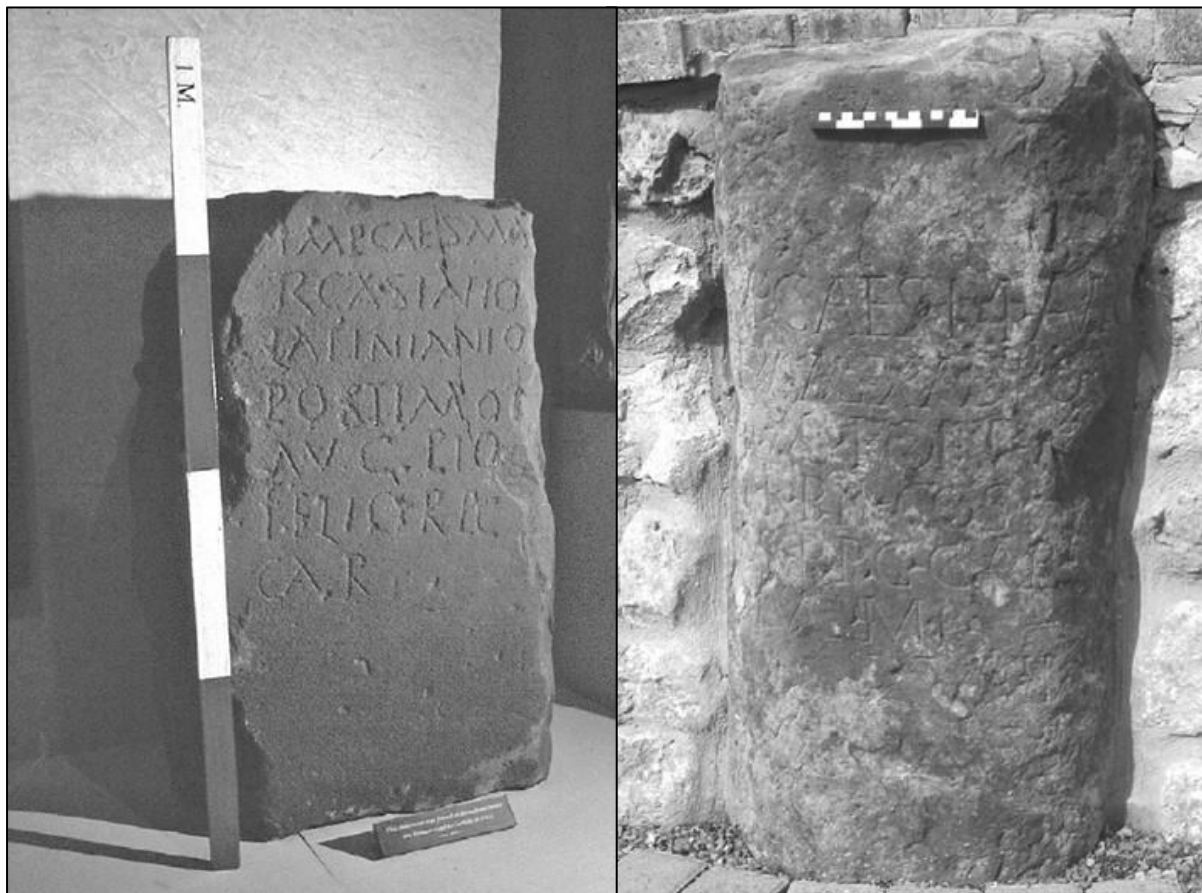


**Figure 97 - Photographs of the Frenchfield Farm (left, c.AD 260s) and Langwathby (right, AD223) milestones, giving distances to Luguvalium and referring to civitas Carvetiorum (Edwards and Shotter 2005, 66,69).**

The aforementioned (Deegan 2019, 21-24) Castlesteads Iron Age enclosure, enclosing a smaller, second century AD farmstead c.10km south of Carlisle, is unusually large (Higham 1981, 1-6; Higham 1982, 105). However, the even larger, more substantially-enclosed and morphologically-unusual 3ha site at Clifton Dykes near Penrith has most commonly been identified as a potential tribal or cultural 'capital' (Higham 1982, 105; Higham and Jones 1985, 6-7; Jones and Walker 1983, 185-186), similar to the proposed 'oppidum' enclosures at Stanwick [6.4], closely-linked across the Stainmore Pass to the east. Arguments supporting this include its central position in the most agriculturally-viable land in north-eastern Cumbria, attested by extensive later-prehistoric field-systems and settlements in the vicinity (Figure 98), studies at Yanwath Woodhouse and Crosshill showing these had later-prehistoric origins with continuing activity into the Roman period, also evidencing mixed arable/sheep-farming economies (Higham 1983, 50-57; Higham *et al*. 1983, 45-56; Higham and Jones 1985, 81-82).

This area also contains an earlier spiritual focus or meeting place: three substantial 'henges'



**Figure 98 - Map showing later-prehistoric/Romano-British rural activity around Penrith, including the sites of Clifton Dykes and Yanwath Woodhouse, and the Roman fort of Brougham (Higham 1983, 51).**

(unique locally) near the River Eamont (Mayburgh Henge, King Arthur's Round Table and the Little Round Table – Figure 99) (Higham and Jones 1985, 4; Topping 1992, 249-263). Furthermore, Roman inscriptions from around Brougham indicate the area was central to worship of Belatucadrus (Cool 2004, 4; Higham and Jones 1985, 9-11), suggesting another spiritual focus for the region. Combining this evidence suggests the area around Penrith as a potential core for later-prehistoric society – with implications for how people identified themselves within this definable lowland region.

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**Figure 99 - Earthwork survey of three substantial earthworks near Eamont Bridge, Penrith – only King Arthur's Round Table forms a conventional 'henge', though Mayburgh Henge is more-impressive © RCHME (Topping 1992, 251).**

Regarding movement within the landscape, the transect largely follows the most important communication route through north-eastern Cumbria, connected to the Solway lowlands [5.3], i.e. the Eden valley (and its westward tributary, the Petteril – separated by sandstone hills). These rivers and their low-lying valley floors form a natural conduit connecting with the easiest route across the north Pennines (the Stainmore Pass, south-east) and the Lune valley (south, via the traversable Orton Fells). The cluster of settlements and unusual site forms around Penrith throughout later prehistory is centred on a natural junction for these wider connections with northern England, another potential argument for it being a local central-place, with resultant implications for wider group identities being defined with relation to this part of the region. Radiating from agricultural heartlands of the valley-floors, movement continues up lower slopes of surrounding uplands between improved-pasture and moorland common, likely seasonal, transhumant situations reflected in settlement patterns reaching to a generally-consistent altitude.

This existing, nature-defined routeway network was exploited under Rome, articulated by the system of military roads following these connections. The Stainmore Pass shows the main link from the east (originating in the legionary headquarters at York and passing close to the major late-Iron Age central site of Stanwick [6.4]) – a maintained major road lined with forts from the first to fourth centuries AD crossing the Pennines here before turning north-west to follow the Eden then Petteril to Carlisle. Aerial photography shows that various sub-routes were followed, with a more-

direct road between Kirkby Thore and Old Penrith (Collins 2019, 421) bypassing the earlier road-junction and fort at Brougham (Edwards and Shotter 2005, 72-74). The other major route connecting to the wider province of Britannia crossed the Orton Fells to reach the Lune valley (again lined with forts), heading south for Ribchester and thence Chester. Less-important roads connected with further hinterland forts to the east: the Maiden Way north from Kirkby Thore (Richardson 2008, 2) and a second route east from Penrith (Richardson 2004), both requiring significant engineering (Figure 100), head to the well-preserved fort in the central north Pennines at Whitley Castle (*Epiacum*), likely sited to control lead-mining (Went and Ainsworth 2013). Other roads connect to western forts which controlled the Lake District's rugged terrain (Richardson 2008). More rapid communication appears to have been needed along parts of this road system, for instance the fortlet at Maiden Castle and line of signal stations along the western Stainmore Pass from Roper Castle at the summit to Bleak House north of Brougham, with a potential watchtower at Middleton Hall near Sedbergh suggesting similar systems elsewhere (Drury *et al*. 1998, 120; Higham and Jones 1975, 23-24; Higham and Jones 1985, 45-51).



**Figure 100 - Roman bridge (lower stonework) crossing Ricker Gill on the Roman road from Alston towards Penrith, near Haresceugh on the Pennine edge (Richardson 2004, 255).**

Several substantial rural settlements located with good access to both the Roman road and River Petteril were interpreted in the EPC Transect survey as potential Roman-controlled farms occupying fertile land, designed deliberately to supply Carlisle and the fronter (Deegan 2019, 32). Wreay Hall's 0.5ha ditched enclosure (11346), previously interpreted as a military site (Bellhouse 1953, 49-51) sits across the valley from the purported Park House fort. Excavations at the latter uncovered a military-style ditch, inner rampart, cobbled roadways, gatehouse and timber buildings containing window glass (Bellhouse 1954, 9-15). Both were reinterpreted as Iron Age rural settlements redeveloped into Roman-period sites, designated 'defended farmsteads' based on the military-type, rectilinear perimeters (Deegan 2019, 31). Petterilgreen on Thiefside Hill (8km south) and Petterilbank Cottage are further substantial Roman-period sites, with broad ramparts and double-ditches, surrounded by associated fields and trackways, located close to both river and road

(Deegan 2013a, 8-10; Deegan 2019, 31-32; Spence 1933). Meanwhile, at Scalesceugh, a military pottery and tilery identified through magnetometry and excavation, with substantial ceramics marked for *Legios VI* or *IX* (dependent on interpretation) and *XX* (Bellhouse 1971, 35-40; Higham and Jones 1985, 114; Richardson 1973, 79-88), 8km south-east of Carlisle, hints at Roman industrial exploitation of natural resources and distribution [see 6.3b]. Together, these sites show reorganisation of the landscape (and people within it) close to the road system, connected to supply of food and materials for the frontier.

Roman temporary camps are little-identified in this part of the transect (likely due to their ephemeral nature and subsequent activity obliterating remains). Known examples are found near forts, showing longevity of military activity and focus at such sites (including three cropmarks near Old Penrith (Poulter 1982)). A small camp at Little Barrock hill (922375), identified in the EPC project close to a late-Roman fortlet (below) (Deegan 2019, 30-31), and a large camp above Tebay [5.4b], show importance of this route throughout the Roman period.

The major, permanent Roman military sites locally are the line of forts along the Stainmore-Carlisle road, all with known extra-mural settlements: Brough, Kirkby Thore, Brougham and Old Penrith. Brough (*Verterae* of the Antonine Itineraries and *Notitia Dignitatum*), survives as earthworks partially overlain by a medieval castle atop a ridge overlooking a tributary of the Eden. Chance finds and excavations of the 1.1.ha fort and its rubbish tips have dated its occupation (first to fourth centuries AD) and confirmed the site's structural layout. Artefacts have also attested the fort's role in controlling movement of lead from the North Pennines, via a collection of military seals (similarities with examples from York suggesting connections with *Legio VI* (Wright 1954)). They also reveal something of the inhabitants' identities, with several auxiliary units originating from various provinces around the empire and several legionary detachments at different times, alongside varied epigraphy-attested civilians such as the son of a merchant or procurator, whose Greek epitaph shows the settlement's connections to the wider empire (Birley 1958b; Woolliscroft and Lockett 1996).

Kirkby Thore (*Bravoniacum*), though known since antiquarian reports, has seen relatively little investigation, small-scale excavations showing multiple phases of activity commencing in the first century AD (Hudleston 1953). A tombstone in Algeria (Licinius Agathopus, a veteran Numidian cavalryman who returned home upon retirement) attests his promotion at Kirkby Thore, indicating the presence of cavalry from as far afield as Africa here (Mann 1993). Metal-detecting has produced some evidence of inhabitants' identities, with copper-alloy figures of Minerva and Mithras (deities associated with the Roman military , the former as goddess of wisdom and strategy, the latter imported from the eastern empire and known for worship amongst soldiers), lead seals of *Legio VI*, a ring marked with a Chi Rho symbol (potential evidence for Christianity), furniture fittings and personal ornaments of relatively high status (Richardson 1997, 63-75).

The auxiliary fort at Brougham (*Brocavum* of Antonine Itineraries), partially-overlain by a medieval castle, is located overlooking the confluence of the rivers Eamont and Lowther (Figure 101) at the aforementioned junction between various routeways (Simpson 1958, 69), close to the Clifton Dykes pre-Roman focus and Eamont Bridge henges (see above). Excavations from the fort (Williams *et al*. 1992) date definitive occupation to the second to fourth centuries AD (likely commencing earlier, given its position between first-century Ribchester and Carlisle). Extra-mural settlement is predominantly identified from aerial reconnaissance, showing dispersed settlements, associated field-systems and ribbon development along the Roman road north through Frenchfield – relatively spread-out, unlike *vici* elsewhere (Cool 2004, 2-6; Higham and Jones 1975, 24-27).
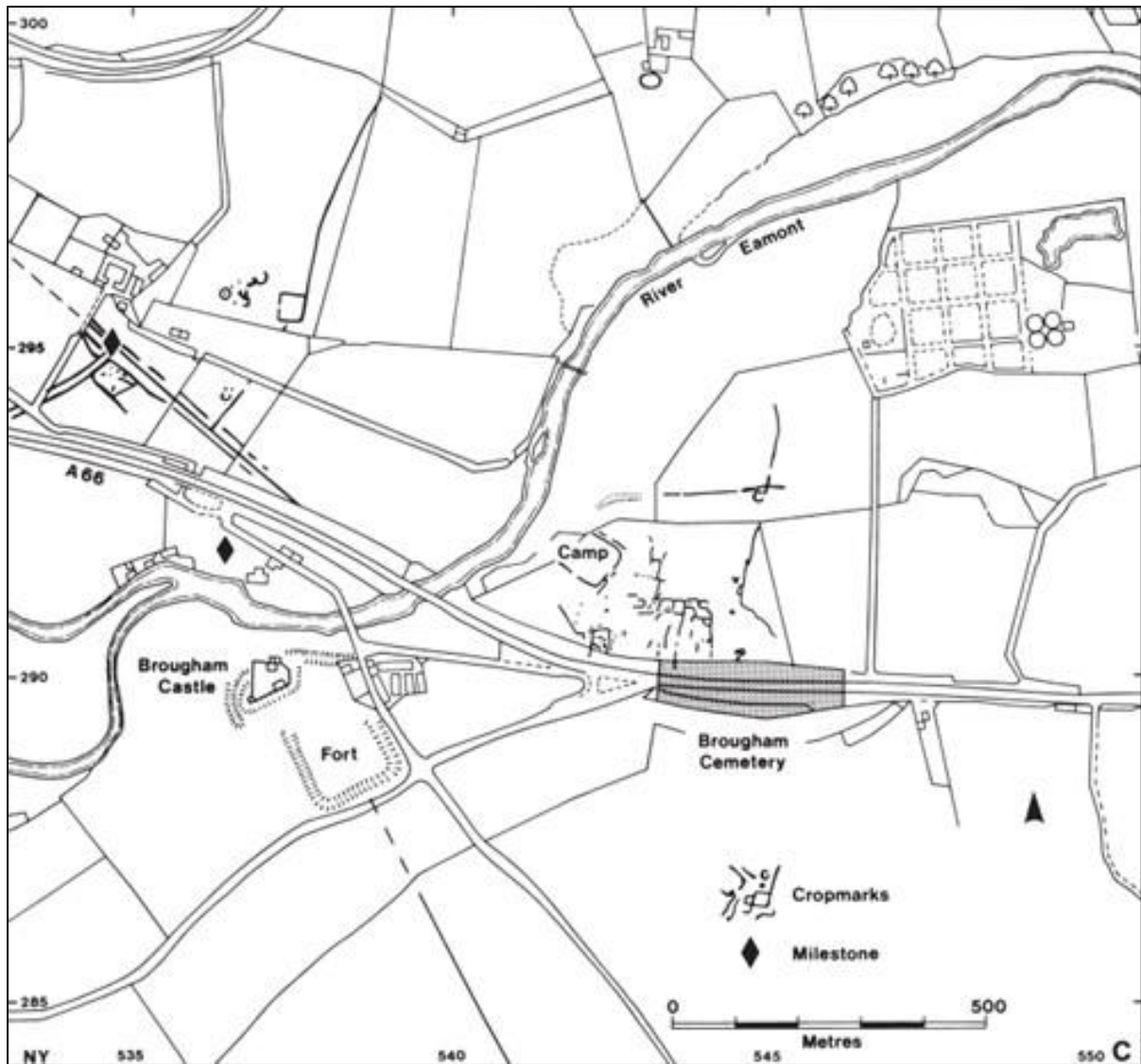
**Figure 101 - Map of modern-day Brougham, showing locations of the fort, settlement, and cemetery-site (Cool 2004, 3).**

The site is useful for understanding Roman-period identities due to well-published study of its cemetery (Cool 2004), excavated in the 1960s. Due east of the fort, the cremation cemetery sits atop a low hill (dominant on the local skyline, with stone markers and monumental tombs), dated by pottery to c.AD220-310 (time-specificity and location suggesting deliberate segregation between this period's burials and former garrisons') (Cool 2004, 25-31,463-464). Analysis of remains indicate a population of mixed sex and age (from infants through to elderly) (Cool 2004, 291). The range of pyre goods included with burials (Figure 102 – glass and metal vessels, pottery, jewellery, military equipment and animals including horses, dogs and food-stuffs) indicate individual identities (more goods for adults than children, specific goods related to gender and age) but, together with evidence for bone-inlaid cremation byres, horse-inclusions, specific iron-bucket pendants and gold-red/blue beads, and epigraphic references, also suggest the community as a whole originated in the Danubian area (including from beyond that frontier) – likely the *numerus equitum Stratonicianorum* from Pannonia and their families (limited Celtic and Germanic names suggesting recruitment or interaction locally and en-route) (Cool 2004, xxiii-xxiv,39-40,464-466). Thus, this cemetery shows expression of identity for a specific cultural grouping within the wider Roman military-civilian dichotomy, presumably unique to this settlement. Differing ethno-cultural identity signatures might

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**Figure 102 - Cremation burials under excavation at Brougham (Cool 2004, 16-17).**

thus exist for other units and associated civilian populations at different fort sites, though there are few cemeteries excavated to prove this.

The final fort on the main north-south road is Old Penrith (*Voreda*), occupied from first to fifth centuries AD, with a large, defended annexe to the south and substantial *vicus* settlement with cemeteries. Indications of civilian population stability (ongoing development throughout the period) suggest an importance unrelated to the various unit redeployments in the fort. Connections with rural surroundings are shown by farmsteads and field-systems extending from the settlement margins onto Lazonby Fell (Austen 1991, 327; Higham and Jones 1985, 20,60-64), while three temporary camps nearby indicate ongoing troop movement through the landscape, excavations at one showing use in the second century rather than just the initial conquest (Poulter 1982, 52-58).

These hinterland forts are sited to dominate core areas of local agricultural and social activity (Higham 1982), particularly Brougham, located near earlier henges and Clifton Dykes at a cross-roads in the existing communications network. This positioning shows close management and interaction with local rural people and the landscape, with implications for the creation of local socio-economic and cultural identities. Further late Roman installations were added to the Roman military landscape on hilltop sites west and south of Carlisle, possibly related to signalling associated with coastal defence, including the fortlet on Little Barrock hill (11335) (Collingwood 1931, 111-116; Deegan 2019, 30-31), dated by fourth century pottery.

As seen from this part of the transect, aerial survey, where applied, is useful for showing settlement patterns and organisation with the landscape, such as discovery of the new type of Roman defended farmstead. Elsewhere, knowledge is limited to site-based field survey and excavation. Though these have greater potential for studying wider identity and landscape activities (beyond field layout) in this less-defined part of the Roman frontier, they do not offer the same large-scale view. Aerial survey is limited to northern parts of the Eden and Petteril valleys and its application to areas further south might better elucidate wider societal implications of sites like Clifton Dykes and its heavily-settled and farmed environs, better showing the nature of social organisation prior to Roman arrival, and subsequent relationships with military-imposed sites such as roads and forts.

*5.4b – The Wider Hinterland: Aerial Survey and Wider Archaeological Investigation of Iron Age and Roman Period Landscapes in South-Eastern Cumbria / Northern Lancashire*
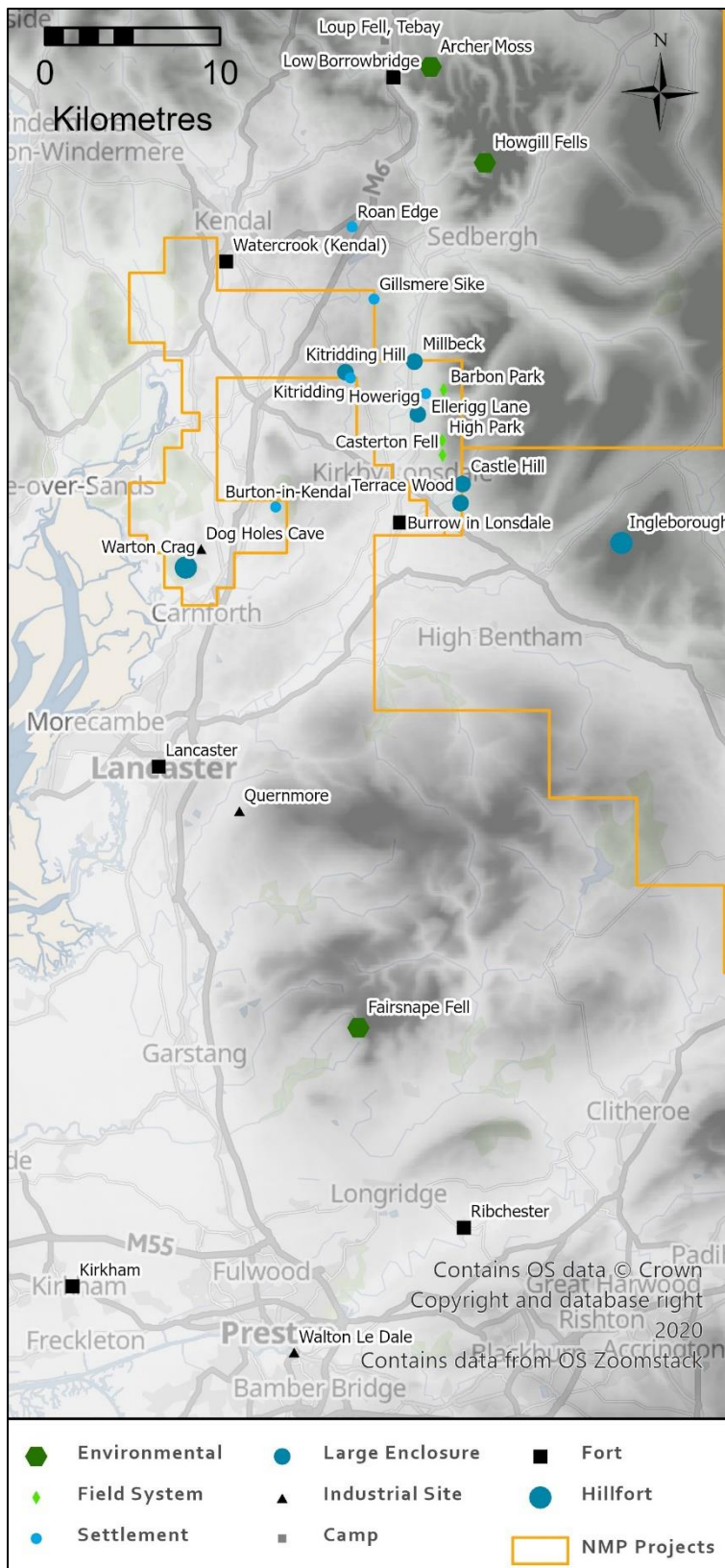


**Figure 103 - Topographic map showing the southernmost part of the transect west of the Pennines, including major aerial-survey projects and sites mentioned in the text.**

The final part of the western transect comprises the frontier hinterland further south (the inner imperial periphery): modern south-eastern Cumbria and northern Lancashire. Well within the established Hadrianic border of the Roman Empire, indigenous settlement patterns and landscape organisation nonetheless persisted, overlain by Roman road and fort network. Two recent aerial-survey projects [5.1a] are found here – the 'NAIS: Upland Pilot' in the central Lune valley (Oakey *et al*. 2015) and a single 'Cumbria Minerals' project block, just north (Figure 103). As above, further sites are discussed using previous archaeological works.

The landscape here comprises two distinct topographies. South from the Orton Fells [5.4a], the Lune valley forms a natural north-south corridor, flanked eastwards by the Howgill Fells (high, dome-like sandstone hills with poor soils, exposed grassland and heath, surrounded by enclosed rough pasture (Natural England 2014b, 3-5)) and Yorkshire Dales (high limestone and millstone-grit moors and dramatic 'karst' landforms separated by wide glacial valleys, comprising rough pasture and moorland (Natural England 2015e, 3-7,11)), both distinct elements of the Pennines. West of the Lune are the South Cumbria Low Fells: lower, gently-undulating mudstone hills, with more-fertile soils

supporting limited arable, semi-improved pasture and denser settlement (Natural England 2015d, 3-11). Where the Lune arcs west towards the coast, the transect continues south to cross the Bowland Fells (west-projecting limestone/gritstone Pennine offshoots, with moorland summits surrounded by improved-pasture and hay meadows, woodland surviving in radiating valleys (Natural England 2015i, 3-5; Natural England 2015j, 3-6)). It then reaches the lowland Ribble and Calder valleys, fertile post-glacial and alluvial riverine environments now largely urbanised due to post-medieval extractive and textile industries (Natural England 2013h, 3,9). These contain the transect's southern terminus. East of the Bowland Fells rise the higher Pennines, while westward the Lancashire coastal plain comprises lowland, very fertile mixed farmland (much reclaimed in the post-medieval period) (Natural England 2014d, 3,11).

Local palynology (including the North-West Wetlands Survey (Dark 2000b, 55)) suggests later-Iron Age woodland-clearance alongside increasing pasture and cereal cultivation in both lowlands (peats around coastal Over Wyre and inland at Shap) and uplands (lower Cumbrian fells, Howgill Fells and Forest of Bowland), this dual-process of clearance and agriculture intensifying into the Roman period (Dark and Dark 1997, 36-37; Dark 1999, 256-258; Mackay and Tallis 1994, 571-579; Philpott 2006, 61; Wells 2003, 73-74). Such vegetational change also links to geomorphological change (extensive hill-slope gullying) in the Howgill Fells, overlooking Lunedale (Chiverrell *et al.* 2008, 41), contemporary with increasing settlement (both indigenous and Roman) (Wells 2003, 74; Wimble *et al.* 2000, 17,28). At Fairsnape Fell, woodland-regeneration commenced from the third century AD (Dark 1999, 258; Mackay and Tallis 1994, 579), whilst at coastal Over Wyre and Archer Moss above Lunedale, reversion to woodland occurred in the very late Roman period (Dark 2000b, 100; Wells 2003, 80). Contrastingly, environmental samples from the excavations at Ribchester indicate local woodland-regeneration and agricultural decline in the late-Iron Age immediately prior to the Roman fort's construction, indicating potential local societal or economic change (or alternatively managed regeneration for timber supply). Presence of barley, spelt and emmer wheat and oats in Roman levels, alongside stabling materials/fodder from presumably-local grassland and heathland and wetland taxa (Buxton and Howard-Davis 2000, 24,99-100; Hall and Huntley 2007, 62) show a similar vegetational mixture to Carlisle's environs [5.3a], indicating late-Iron Age declines in clearance to have been reversed.

Later-prehistoric and Romano-British rural settlement in the Lune valley between Kirkby Lonsdale and Middleton has been well-studied, with aerial and analytical field survey covering the area (followed by site-based geophysical surveys and excavation) as part of NAIS (Hardwick 2017, 23; Oakey *et al.* 2015), building upon earlier studies of well-preserved settlements and field-systems on the eastern side of the valley (Lowndes 1963; Lowndes 1964; Jecock 1998). Bronze Age or early Iron Age settlement has been postulated in the form of unenclosed hut platforms, under-represented generally due to their ephemerality [see 5.4a] but identified at High Park (Jecock 1998), though similar examples excavated near Ullswater in the Lake District have been radiocarbon-dated to 365cal.BC-cal.AD65 (Loney and Hoaen 2000, 89-103), showing the difficult in ascribing settlement morphology to chronology.

The most common settlement-type identified in NAIS was the ubiquitous late-Iron Age/Romano-British enclosed settlement, with 37 in total (22 curvilinear and 15 rectilinear, between 0.11-0.42ha, Figure 104). These are generally around 400m apart (Figure 105) (clustering 100-200m together at High Park), located near springs in various topographic positions across the valley. Generally containing one to three huts and several yards or pens (though phasing is unclear from aerial survey), they are enclosed by embanked perimeters (excepting one defined solely by
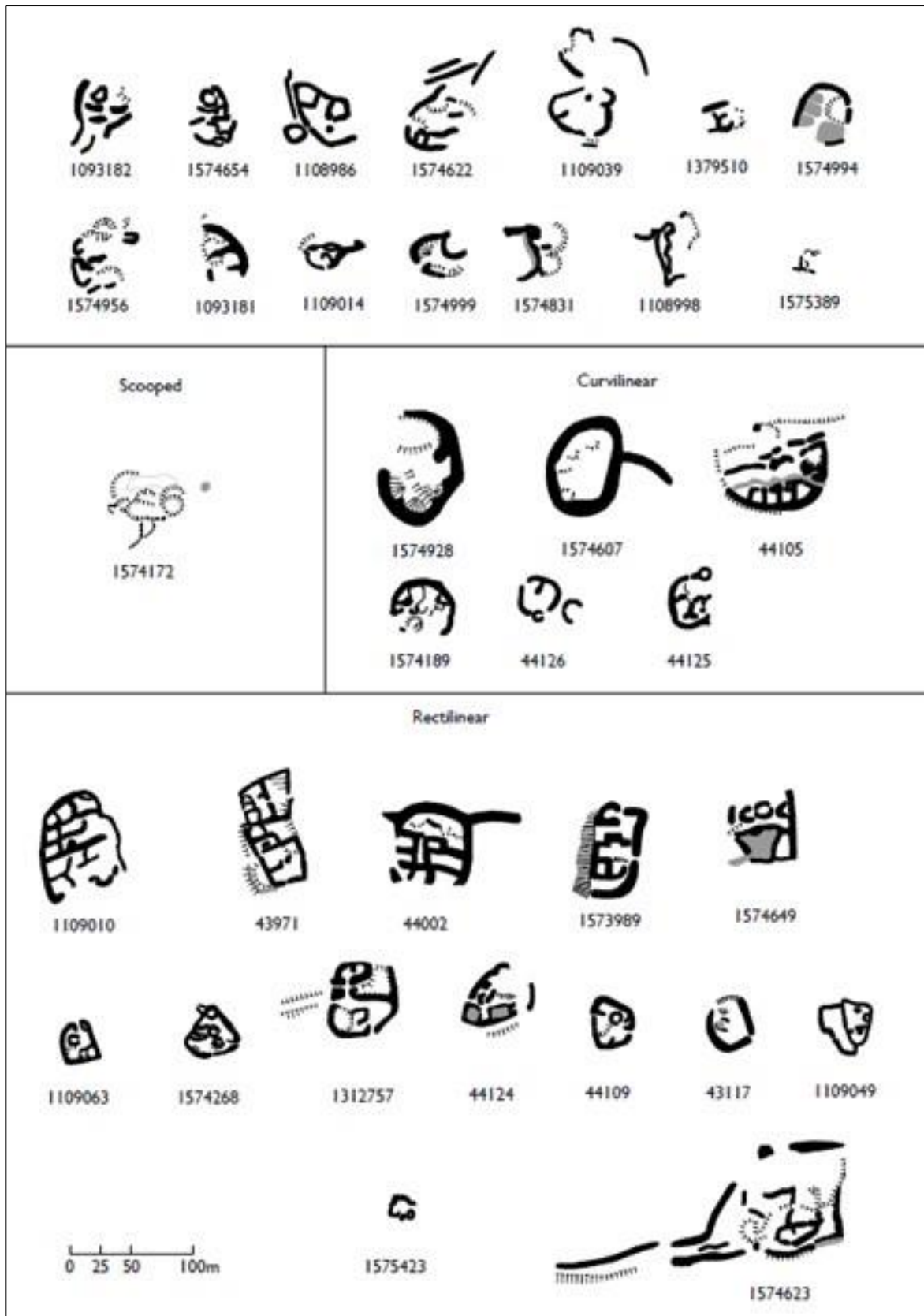
**Figure 104 - Scaled plans of later-prehistoric/Romano-British enclosed-settlements in the Lune valley, mapped from aerial-imagery: black represents banks and grey ditches, hachures showing slopes (Hardwick 2017, 30).**

scooping) (Hardwick 2017, 37-39). Geophysical surveys (caesium magnetometry and ground-penetrating radar) and analytical field surveys by Historic England (Linford *et al.* 2013a; 2013b;
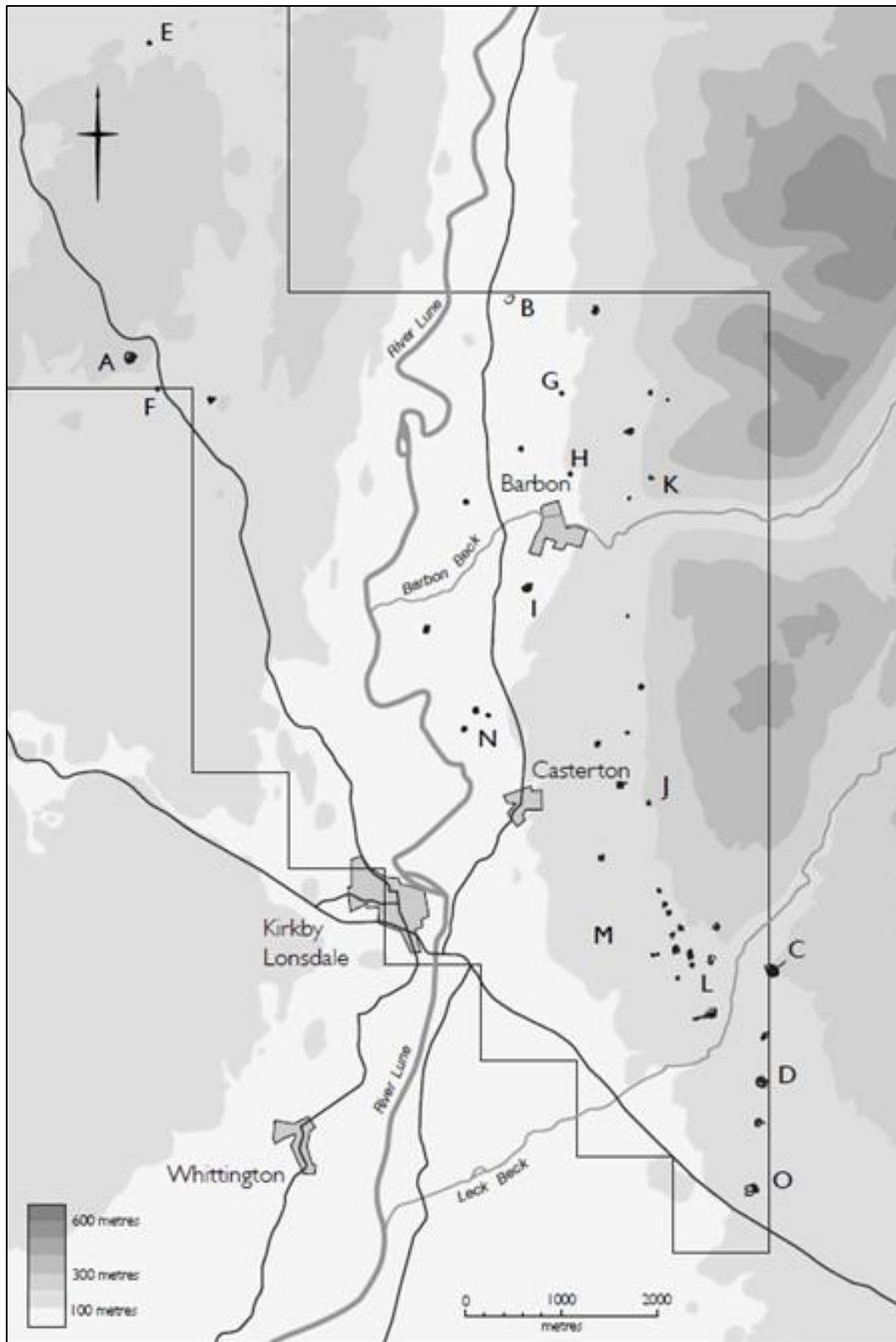
**Figure 105 - Map of the eastern NAIS, covering the middle Lune valley, showing topography and modern settlements (outlined grey areas) alongside later-prehistoric/Roman-period settlements (black) (Hardwick 2017, 25).**

2013c; 2013d) targeted specific sites, revealing extra detail. Such settlements survive across both the valley-floor (heavily-denuded earthworks or cropmarks, e.g. Ellerigg Lane, Millbeck) and foothill slopes (earthworks and structures, e.g. Casterton Fell in east, Kitridding Farm and Gillsmere Sike to west) (Figure 106) (Hardwick 2017, 33-40).

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Alongside this pattern of small, enclosed farmsteads, extensive coaxial field-systems survive at High Park, Barbon Park and Casterton Fell on higher Pennine-fringe slopes (Figure 107). Such boundaries likely extended across the valley, and have been removed by subsequent activity but survive in places as buried features (Linford *et al*. 2013a) and modern boundary-alignments (Hardwick 2017, 39). At High Park, a one sq.km area on the valley's eastern upper slopes, progressively surveyed by Lowndes (1963), RCHME (Iles 1998; Jecock 1998) and NAIS (Oakey *et al*. 2015), shows a sequence of activity beginning with Bronze Age barrows, small fields (areas cleared of stone, forming lynchets) and seven unenclosed hut-platforms. A coaxial field-system (thought mid-Iron Age) was superimposed over the earlier landscape, and then late-Iron Age/Romano-British enclosed settlements laid-out on top of, but continuing to use, the coaxial boundaries (Iles 1998, 11-13; Jecock 1998, 30-31). One farmstead excavated by Lowndes (1964) revealed Roman-period pottery and two phases of differing construction techniques – initially curvilinear features of large stones mixed with cobbles; later rectilinear structures with undressed stone facing and rubble cores). Lowndes (1963, 90-91) suggested the rectilinear fields were likely arable (barley, given local climate and altitude), while the settlements clearly imply stock management (suggesting nearby pasture): a mixed, subsistence agriculture with potential further markets in Lunedale's Roman forts.

Wider distribution of later-prehistoric and Roman features identified by the NAIS varied (Figure 108), with very few beyond the Lune valley; almost certainly due to post-Roman land-use (Oakey *et al*. 2015, 26,43-46). On the project's far side, near Burton-in-Kendal, extensive medieval changes ensure the only remains of earlier landscapes are a potential cropmark



**Figure 106 - Earthwork surveys at Ellerigg Lane (top), Kitridding Farm (middle) and Gillsmere Sike (bottom) settlements, showing variations in form and modern survival (Hardwick 2017, 34-36).**

enclosure (43077) and ruined stonework enclosures at Russell Farm (43011), which were Scheduled as Iron Age but are now thought medieval (Hardwick 2014, 5-6,14,33). North of NAIS is the Cumbria Minerals project block on Roan Edge [5.1a], revealing a single small, embanked, ovoid enclosure (1576797), together with several patches of later-prehistoric cord-rig [3.3b] and two possible isolated hut-platforms (Deegan 2013a, 18), attesting settlement and agriculture continuing onto higher hills west of Lunedale. Further contemporary settlement survives beyond surveyed areas, including the Bowland Fells (settlements and field-systems protected by medieval Royal Forest

**Figure 107 - Aerial survey (drawing upon previous fieldwork) of Barbon Park (top) and High Park (bottom) field and settlement systems, interpreted Iron Age/Romano-British (Oakey *et al*. 2015, 47).**

preventing post-Roman farming) (Natural England 2015j, 9,26), although these are relatively under-studied compared to aforementioned upland areas.

Of particular interest (compared with elsewhere in the transect), beyond surviving density of settlement, is the potential evidence for site hierarchy around the Lune. One settlement, Howerigg, relatively large (0.42ha) and of unusually complex form, interpreted as Iron Age/Roman and adjacent to the valley's Roman road (Linford *et al*. 2013c), may have served slightly different functions to the usual farmsteads (Hardwick 2017, 29), as with the example at Ewe Close [5.4a].
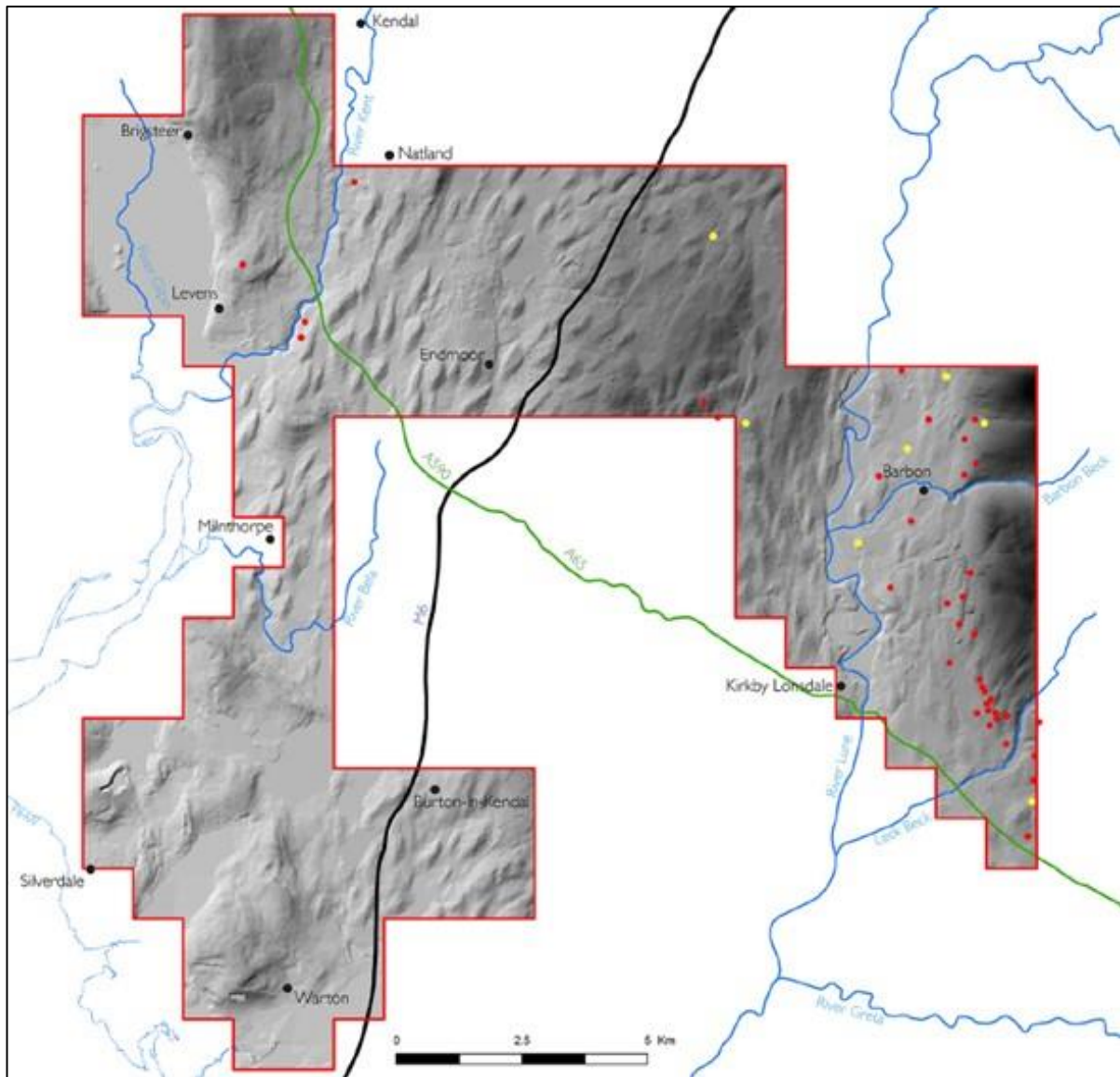
**Figure 108 - Topographic map of NAIS project-area showing overall distribution of later-prehistoric/Romano-British sites (Oakey *et al*. 2015, 44).**

Furthermore, four much larger enclosures (0.56-0.67ha) are spaced throughout the valley: Kitridding Hill (west of the river; magnetometry revealing a differently-shaped phase to the earthworks – Figure 109 (Linford *et al*. 2013d, 6)), Millbeck (on a low knoll above the eastern flood plain), Terrace Wood and Castle Hill (higher slopes to the south-east, Figure 110). Excepting Millbeck (visible only as cropmark ditch, confirmed by magnetometry (Linford *et al*. 2013b, iv)), these enclosures consist of stronger ditched and multiple-banked perimeters (though not overtly defensive) and more intensively-used interiors. Issues of chronology (between one another and smaller farmsteads) hinder interpretation though, if contemporary, these sites have interesting implications for local society, potentially forming socio-economic central places of higher status and/or differing function (Hardwick 2017, 38-39).

Larger still, the most impressive indigenous site regionally is the hillfort on top of the dramatic peak of Ingleborough on the Yorkshire Dales' edge. This was surveyed in 1988 (Bowden *et al*. 1989, 267-270), which revealed stone-built ramparts of unusual construction (3-5m thick, c.3m-high externally, local gritstone with orthostats on interior and outer drystone-build, with small through-gaps every 2m proposed for drainage or walkway movement) enclosing the summit plateau

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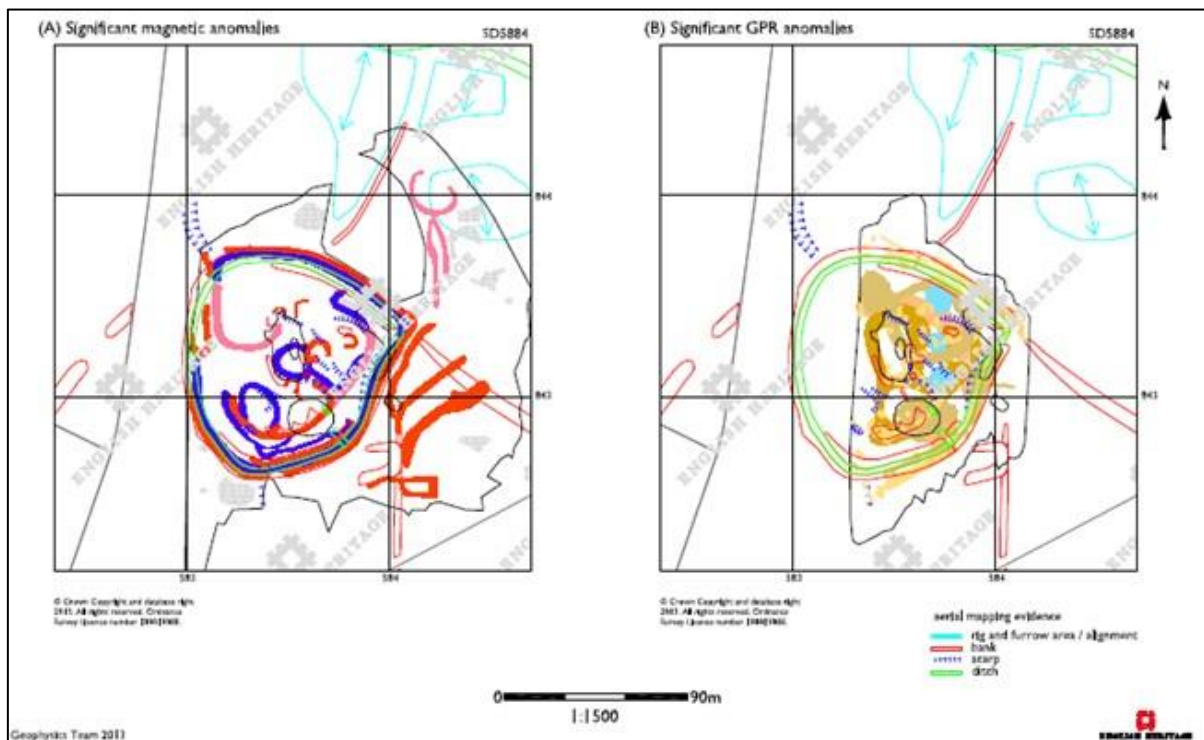
**Figure 109 - Magnetometry and radar plots of Kitridding Hill enclosure, overlain by aerial-survey mapping to show differences in form from the earthworks (Linford *et al*. 2013d, 20).**

and around twenty stone roundhouses of c.5-5.8m diameter, with a probable north-eastern entrance (Figure 111). The construction technique is unique to England (only paralleled on Anglesey), while the site's exposure makes it likely that it was only seasonally-occupied (either for transhumant agriculture or particular cultural or ritual events), datable finds limited to an Antonine coin and pot-sherd (not associated with structures) (Bowden *et al*. 1989, 270). Another, unusual hilltop site is Warton Crag, a prominent limestone hill overlooking the Lancashire coastline, defended by steep slopes but on the northern approach by three concentric, stone-rubble banks 40-60m apart, the innermost enclosing 3.2ha (though with no structures visible on recent lidar (Figure 112) (Grice and Martin 2018, 20). Recent survey suggests a high-status rather than defensive role for the banks, reinterpreting the site as a Bronze Age maritime-oriented meeting-place, rather than later hillfort. A late-Iron Age-type sword suggests it remained active in some form however (*ibid.,* 24-27).



**Figure 110 - Photograph (NMR 28364/001 11-DEC-2012) of Castle Hill larger 'defended enclosure' (Oakey *et al*. 2015, 5).**

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**Figure 111 - Photograph (left) and survey-plan (right) of Ingleborough hillfort. Source: https://thesummitisoptional.com/guided-walk-in-yorkshire-ingleborough/; Bowden *et al.* (1989, 268).**

Moving on to landscape interactions, the Lune valley forms the natural routeway in this part of the transect, between steeper topographies of the Pennines to the east and the less-rugged (but still difficult) low fells of Cumbria to the west. From a narrow gorge in the north near Tebay, it broadens to c.2-3km in the NAIS study-area, widening further and arcing south-west to meet the sea beyond Lancaster. The other natural routeway presumably utilised throughout later prehistory is the coastline beyond the South Cumbria Low Fells (both maritime transport and easier terrestrial routes along the coastal plain and Kent valley). These join at the Lune estuary, continuing south-west onto the Lancashire Plain.

Southward of the Lune valley is the natural movement obstacle of the Bowland Fells, most-easily passable across their lower, eastern hills. Beyond Bowland, the Ribble and Calder valleys connect south-west to the Cheshire lowlands and north-east to Airedale and Wharfedale, providing access eastwards (Natural England 2015i, 9; Natural England 2013h, 10). Beyond short lengths of trackway and droveway visible in upland field-systems such as High Park, connecting individual settlements, it is likely the main Iron Age routeways through the wider region generally followed these lower-lying corridors.
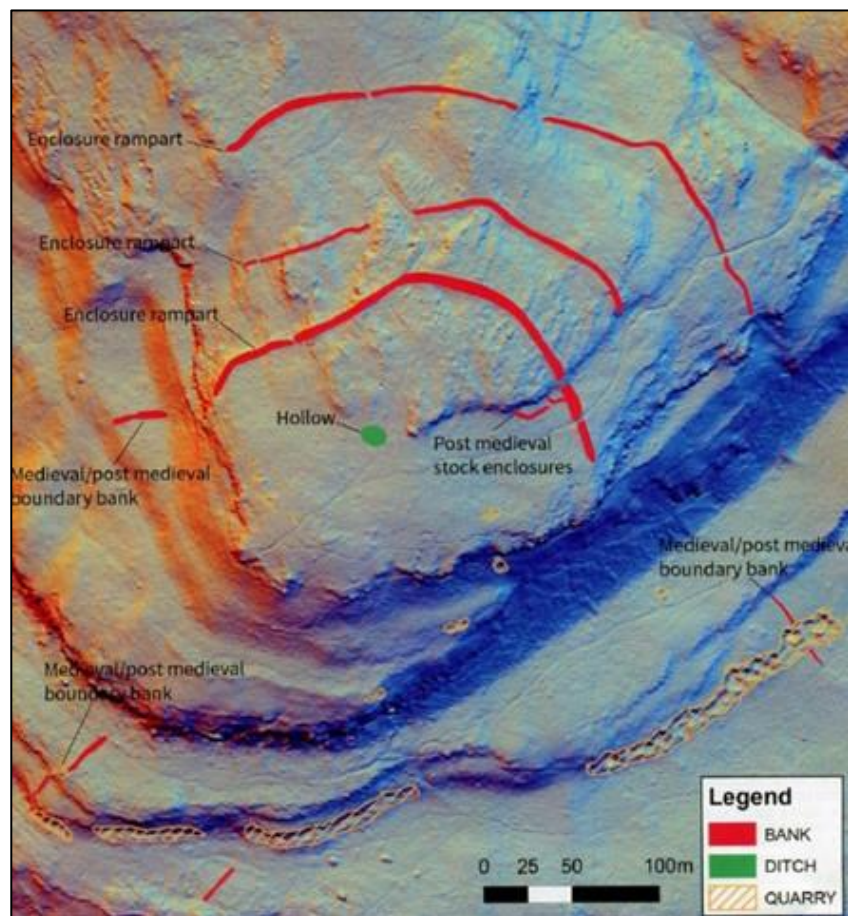


**Figure 112 - Processed 16-directional lidar showing Warton Crag, overlain by Historic England mapping (Grice and Martin 218, 26).**

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When the Romans occupied this landscape, the main northward military road from the Chester legionary fortress was constructed to cross the Ribble at Ribchester (below). This is where it enters the survey transect of this project. It then traverses the aforementioned lower hills of eastern Bowland (Edwards 2000, 4) before joining the Lune valley and following that corridor (along the valley-floor east of the river, its course mostly-known, with some gaps filled by lidar survey (Wilson 2017, 341)) northwards to the Orton Fells (Toller 2014) [5.4a]. The milestone discovered at Middleton on this route (Birley 1953b, 52-59) gives a distance of 53 miles: presumably to Carlisle and showing the importance of that site in administering the wider hinterland. This route is less-well understood than the Carlisle to Stainmore via Brougham road, given the difficulties interpreting place-names from *Iter X* of the Antonine Itineraries (Birley 1946): a road which appears to deviate from the Lune valley to cross into the Lake District. A probable secondary road joins the Lunedale route from Lancaster's coastal fort (Entwhistle 2009, 11; Potts and Hudson 1994), connecting the primary inland road to maritime supply, before continuing south-eastward towards York, via Airedale/Wharfedale.

As with elsewhere in the transect, temporary camps attest the localised, short-term impact of the Roman army on the landscape, though few examples are visible on aerial sources. An example recently identified is a large (15.2ha) camp (capable of holding two legions) straddling the main Roman road on Loups Fell near Tebay in the upper Lune valley (Gethin *et al.* 2014). Regarding the smaller military installations, signal stations (found elsewhere along Cumbrian military routes [5.4a]) are generally absent, though whether due to preservation bias or actual absence is unclear. The Lunedale road has auxiliary forts arrayed along it, though less closely-spaced than the Eden valley (potentially reflecting less need for landscape control, socially or economically, or alternatively due to other factors such as supply difficulties).

The most well-known military site within this final part of the transect is at its southern terminus – Ribchester (*Bremetenacum*), a heavily-investigated [Appendix] auxiliary-fort guarding the Ribble's crossing (now partly-eroded by that river, Figure 113) at a Roman cross-roads (Buxton and
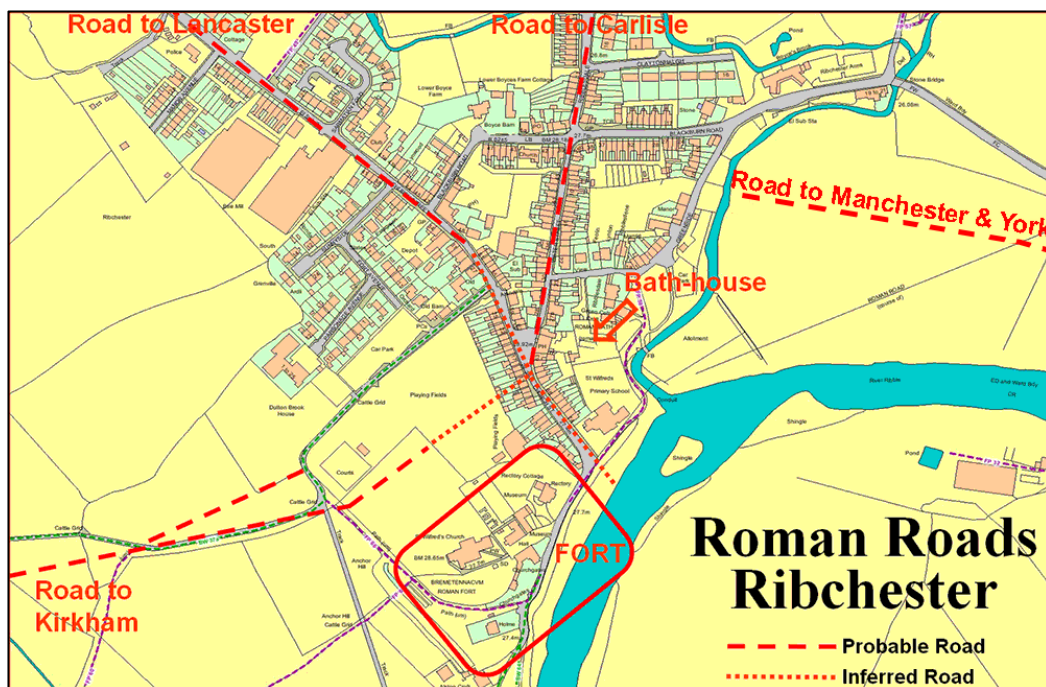


**Figure 113 - Plan of Ribchester fort, showing known remains against the modern village. Source: http://www.romanroads.org/gazetteer/M72a.htm**

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Hodgkinson 1993; Buxton and Howard-Davis 2000; Edwards and Webster 1985; Edwards and Webster 1987; Edwards and Webster 1988; Edwards 2000; Hawes and Saunders 2011; Olivier 1982; Olivier 1987). The long-lived fort of timber then stone was accompanied by an extensive settlement including military stabling and *fabrica* (workshop), and intriguing combination of indigenous timber-working techniques (methods of splitting and joining timber found on late-Iron Age sites of sufficient preservation) on Roman-style rectangular buildings. Spanish and Hungarian cavalry-units, along with legionary construction-detachments, are identified from a large assemblage, along with evidence for the usual, changing mixed military-civilian population, artefactual and environmental regional-trends. The site has interesting implications for local impact on both landscape and identity: an early high-status phase, large civilian settlement and locally-sourced animals and crops, evidence for local military-veteran settlement and an unusual regional-administrative role for the fort-commander suggest arrival and imposition of Roman identity-components and world-views, with extensive grazing surrounding the cavalry-depot defining interaction; meanwhile there is little indigenous material in the fort/settlement suggestive of two-way exchange.

Lancaster was another Roman centre, with an auxiliary-fort (a Flavian turf-timber phase rebuilt in stone, enlarged and reoriented from east-facing to north-facing under Trajan (Shotter 1995; Zant *et al.* 2016)) guarding a river-crossing and probable port. Garrisons included two different Gallic cavalry units: *ala Augusta Gallorum Proculeiana* (first and second centuries), *ala Gallorum Sebosiana* (third) attested by inscriptions and stamped roof-tiles (and a well full of stable-sweepings), and a later *numerus barcariorum* (related to riverine transport) (Shotter 2007b, 10). An early-Roman cavalry tombstone of local stone (and craftsmanship) gives insight into Treveran origins (modern Trier) of the early garrison and includes a depiction of a rider decapitating an enemy (Figure 114). This has been postulated as potentially linking-back to pre-Roman tribal identity from the unit's place of origin, where head-hunting was practiced prior to Roman military recruitment (Shotter 2007a), though images of Roman cavalrymen committing similar brutal acts are found throughout the empire's frontiers and this could also pertain to the life-story of the individual or unit, as suggested by Tomlin (2018, 63-67). Whatever the origin and/or military service of the cavalryman, the quality of the stone and carving itself indicate the individual's wealth and family-connections (Shotter 2007a). The fort seems to have been transformed in the fourth century into a coastal 'shore-fort' (like examples further south) to deal with new, maritime threats, with late Roman-type defences and a location nearer the river (Jones 2009, 126-127; Leather 1994, 39-41). Knowledge of the adjacent town (Penney 1982; Shotter 2011) and cemeteries (Chandler 1982; White 1997) is similarto Carlisle in terms of fragmentary, limited evidence, though nonetheless suggests the presence of a mixed population of soldiers and civilians of all ages and status,



Figure 114 - Drawing of the Roman cavalry tombstone from Lancaster (Shotter 2007a, 24).

with a large courtyard building (with bathhouse) potentially a local official's residence or mansio (Jones 2009, 126-127; Shotter 2001, 5; Shotter 2007b, 8).

Much less is known of the three remaining auxiliary forts in the transect here, due to less investigation. The 1.6ha fort at Watercrook (*Avalana*) near Kendal guards the river Kent and access to the eastern Lake District (first century timber phase replaced by Hadrianic stone fort) with a *vicus* south-east on the approach road from Lancaster, and further settlement outside other gateways, visible through aerial survey and excavations (Jones 2009, 130; Shotter 2000b, 8-9), thought part of a late-first century phase of hinterland-forts controlling previously-circumvented uplands following the withdrawal from Scotland (Shotter 2000b, 6).

The road along Lunedale has two forts – Burrow-in-Lonsdale in the south and Low Borrowbridge where it narrows to a gorge further north. The former, within grounds of Burrow Hall, postulated as *Calacum* from the Antonine Itineraries (Birley 1946, 126), is sited (unusually) several miles from the junction of roads north from Ribchester to Carlisle and east from Lancaster to Yorkshire. It was recorded by antiquaries from inscriptions and other finds, identified properly in the late 19th century and excavated in the 20th, revealing perimeter ramparts (with ovens), ditches, south gateway, north-west angle-tower, and a potential cobbled parade-ground (Birley 1946, 126-134; Hildyard 1954, 66-84; North and Hildyard 1948; North 1953). The fort (usual sequence of Flavian and intermediate timber/turf then second-century stone phases, with fourth-century reorganisation) was large (1.9ha), aligned east-west on a river-crossing. Finds comprised the typical small number of coins (early), fine and coarse wares from Continental and British sources, and domestic metalwork (Hildyard 1954, 87-97; North 1953). Only with recent lidar-imagery has potential extramural settlement been identified, visible west of the fort astride a road heading for the river crossing (Collins 2019, 421). Epigraphy gives insight into the inhabitants, with dedications to Contrebis (a local deity, only otherwise attested at Lancaster), Apollo and Hygia (the god of medicine, suggesting a local doctor), all by civilians without military rank and presumably high-status (with ability to afford altars and tombstones). Metalwork finds include a gold amulet and bronze bowl-ornament of Celtic-styled bull (Birley 1946, 135-144). Meanwhile, Low Borrowbridge fort, further north in the Lune valley beyond the NAIS, was identified by antiquarians and confirmed by 1880s excavations (with usual focus on defences and gateways, confirming these) finding locally-sourced stone construction, several phases of occupation with extra-mural buildings to the south, and severe plough-damage truncating the interior (Ferguson 1886b, 2-5).

As with areas further north [5.3/5.4a], further Roman landscape impact is shown by a small number of sites not directly-related to forts. One is the pottery production site at Quernmore, north-east of Lancaster on the inland-heading road (Hudson 1993, 23). Another is evidence for ironworking using local haematite deposits around Warton Crag (above), the actual workings now lost but deposits from Dog Holes and Fairy Hole caves (alongside Roman-period domestic items) implying local production (Penney 1983, 59-61). The final Roman-period site deserving discussion is Walton-le-Dale, downstream and south-west of Ribchester. The site appears to have been a major industrial centre and supply depot, located on a major road and the Ribble estuary (allowing tidal beaching of ships). The settlement appears highly-organised from the late-first century, with uniform plots containing timber warehouses and metalworking complexes (Figure 115). Following conflagration, a later-second/third century phase followed the same layout, comprising ironworking, tannery, and pottery industries. Organised layout and a ceramic assemblage mirroring those of nearby auxiliary forts suggest Roman army oversight of the complex (Iles 2011, 38-42; Jones 2009, 138). Buildings directly overlie later-prehistoric plough-marks, indicating Roman impact on indigenous landscape,

**Figure 115 - Excavation plans of the Walton-le-Dale site, showing organised layout of two phases of differently-constructed rectangular timber buildings either side of the Roman road (Iles 2011, 41).**

though contemporary circular buildings and Iron Age-type twin-hearths may indicate local involvement in industry here (Iles 2011, 42-43). The organisation and scale of the site suggest an important role in Roman production and supply networks throughout Lancashire, and probably the whole of this side of the frontier, as-yet unparalleled within the western transect. Walton-le-Dale and Ribchester are located at the interface between urbanised, more traditionally 'Romanised' landscapes of south-eastern Britain and the military-controlled region to the north/west, as argued for nearby Cheshire (Matthews 1999, 33), hence their selection as the transect's southern end.

In summary, this area, relatively sparsely-populated today and with little agriculture beyond pastoralism, appears to have operated a relatively densely-settled, mixed arable-pasture economy in later prehistory and the Roman period, likely utilised under Rome to support the garrisons of the local hinterland forts and potentially further north. The southern part of the transect is one of connection, a hinterland linking the heartland of the Roman province (and fortresses at Carlisle and York) to the frontier zone, such communication channelled along the coastline and valley-floors (hence the preponderance of Roman sites there).

## 5.5 – The Western Transect in Summary

### 5.5a – The Frontier in Full: Discussion of the Western Transect

Having discussed each different zone within the western transect, the over-arching themes emerging from the data will now be summarised, prior to detailed discussion and comparison with the eastern transect [Chapter 7]. The transect covers the breadth of the northern frontier of Roman Britannia, from its outpost forts and outer periphery of influence in the north, through its

intensively-militarised and occupied borderland running east from the Solway, and then traversing the inner hinterland which remained under military domain throughout the period, covering a broad range of environments, topographies and resulting landscapes.

The area north of Hadrian's Wall [5.2] comprises the low-lying Esk and Annan valleys, surrounded by uplands (a situation mirrored around the Solway Firth to north and south). This landscape continues across the Roman border [5.3], located here along the lower valley of the River Eden, extending around the southern Solway and south-east into the middle Eden and Petteril valleys [5.4a]. Generally, these landscapes have similar underlying geology, post-glacial/fluvial deposits, topography (low, rolling hills around valley-floors) and a mixture of predominantly improved-pasture and some arable, generally cleared of ancient woodland. Only in urbanised Carlisle has the landscape been heavily-altered. The surrounding uplands offer different, pastoral, and unenclosed landscapes on steeper topographies [5.2c/5.3b]. The remaining transect [5.4a/5.4b] follows similar lowland, glaciated landscapes centred on rivers (the Eden and then the Lune), though more heavily-constrained by steep, upland landscapes of the Pennines and Cumbrian Fells, a situation mirrored in southern Scotland (Eskdale and Annandale [5.2b]). These valleys generally provide opportunities for mixed agriculture along their flood-plains and the lower hill-slopes, surrounded by rougher pasture on higher fringes and then open moorland. Only in the Orton Fells between the Eden and Lune, and the Bowland Fells further south towards the Ribble, does the transect cross natural barriers to these riverine, agricultural landscapes: both comprise upland environments (albeit less rugged and climatically-challenging than the Pennines or Lake District to east and west).

Later-prehistoric and Roman environmental evidence across the transect generally shows an overarching trend of woodland clearance beginning in the Bronze Age and peaking by the late-Iron Age, associated with increasing levels of pasture and arable (similar in spread to today's mixed agriculture, though extending further onto the upland fringes – perhaps linked to warmer climatic conditions in later prehistory). There is some variation locally in the precise timings of clearance and/or agricultural intensification (hindered by broad date-ranges for pollen-core changes). Roman occupation in the north-west thus extended into a largely already-cleared and farmed landscape. This vegetational pattern was generally maintained throughout the Roman period regionally, with increasing intensification of these processes under Rome limited to a few small areas.

The rural settlement pattern appears consistent across the entire transect, both north and south of the frontier – defined primarily by enclosed farmsteads and associated rectilinear field-systems. Variations in identification of such sites, used in the past to argue for increasing activity under Rome compared with areas beyond its direct control [5.2/5.3], can be seen across these different aerial-survey areas as more likely the result of post-Roman activity removing surface evidence in some areas, combined with local geological and climatic conditions limiting archaeological site visibility from the air. This is notable in areas like Block 1 (where only cropmark fragments hint at such a later prehistoric/Roman landscape).

Greater preservation of sites in areas of less-intense modern agriculture and urbanisation (upper Eskdale, the Tyne Gap, the Petteril-Eden interfluvial hills, Crosby Ravensworth and the Lune valley) give a better understanding of the nature and distribution of settlements, due to better earthwork and structural survival. Such areas also provide evidence for different site-types in later prehistory, ranging from major regional centres (Clifton Dykes) and hillforts (Burnswark Hill, Castle O'er, Ingleborough) to mid-ranging local centres (the four large enclosures along Lunedale), slightly-larger and more-complex sites than the usual single-family enclosures (e.g. Dobcross Hall, Ewe Close,

Howerigg) and sites of unusual, differing function (Over Rig in the north; Warton Crag in the south). These hint at a greater hierarchy of sites in the indigenous landscape, only partially-visible along this transect from surviving archaeological remains.

The major visible landscape impacts upon Rome's arrival appear focussed on areas of direct politico-military control, e.g. the Hadrian's Wall borderland (taking agricultural land out of use), forts acting as outposts or controlling the border and hinterland (and their associated settlements), and major towns such as Carlisle. Other areas of clear impact result from industrial exploitation and processing (potteries at Scalesceugh, Brampton and Quernmore; Walton-le-Dale and Ribchester depots; iron-working evidence at Warton; and lead-mining in the northern Pennines) and adaption (or exploitation) of the existing farming economy (from outer-periphery sites such as Castle O'er to new defended farmsteads along the road south from Carlisle, and clear connections between *vici* and surrounding rural landscapes, as at Castlesteads on Hadrian's Wall and around Ribchester's cavalry depot). Woodland-regeneration in a few limited areas suggests changing land-use associated with Roman intervention, as near Hadrian's Wall's western end. It is important to note however that much of this distribution of evidence is a result of the past focus in archaeological investigation on known, well-preserved sites (particularly forts, towns and along Hadrian's Wall) while other areas where Roman impact may have occurred as intensively or differently have seen little study. This influences modern interpretation.

Overall, cultural and economic interaction across the region appears imbalanced, focussed on newly-founded settlements (which nevertheless included large numbers of indigenous people) rather than rural settlements (whose form did not generally change, though limited amounts of Roman material culture did percolate to them). This is very different to areas further south and east in England, which saw new forms of indigenous rural (and urban) settlement, as will be discussed for the eastern lowlands in the second transect [see 6.4]. As shown, native material-culture is found on Roman sites throughout the transect, though in small quantities. This relationship needs further investigation, given investigation biases throughout the region [5.5b] and lack of preservation of organic materials (which formed much trade between rural and urban/military sites) except at a few key sites such as Carlisle of Ribchester.

The other noticeable impact throughout the transect is the Roman road-system. These roads appear to have utilised existing, topography-defined routeways in the region (the easily-accessible Ribble, Lune, Eden-Petteril, Esk and Annan valleys), and passes between higher ranges (as at Crosby Ravensworth and Stainmore). With evidence for existing Iron Age communications limited to the fragmented evidence for localised trackways and droveways between settlements and farmland, or lowland field-systems and upland common, alongside presumed later prehistoric maritime and riverine transport, the new Roman roads likely re-used prevailing long-distance connections in the landscape, but in a more engineered, directed approach, facilitating higher speeds of connectivity between the disparate lowland nuclei of activity in north-western England and southern Scotland. This network thus operates at a higher spatial level, as might be expected from a larger, cohesive political unit, and will be addressed in Chapter 7.

*5.5b – Addressing Gaps in the Knowledge Base*

The main issues with the knowledge base shown by this transect are the disparities in spatial information between areas covered by large-area aerial survey and those not; and/or variation

between areas with high levels of ground-based investigation (e.g. palaeo-environmental work, field and geophysical surveys, excavation) and those without.

The mapping from this project, combined with the Hadrian's Wall NMP and Cumbrian Minerals and Eden-Petteril-Caldew Transect projects, form a broad swathe of aerial survey covering the immediate environs of the Roman border to north and south, while the NAIS project has shown the potential of such survey in previously under-studied landscapes further south. Within these areas, broader spatial patterning in Iron Age and Roman features has been identified, with differences in archaeological survival and/or visibility forming the most major impact on the mapped archaeological distributions. Even in areas of lessened visibility, there are however hints of potential remains surviving both above- and below-ground, allowing the targeting of further ground-based investigation. Therefore, areas with high potential for increasing knowledge of these later prehistoric and Roman landscapes, such as the Eden valley (and its questions of regional centrality in the late Iron Age) would benefit greatly from cohesive survey-mapping.

Conversely, questions around environmental, socio-economic, and cultural interactions are best-addressed with artefactual and ecofactual assemblages from excavated sites. In this transect, largescale, intensive excavations are generally limited to urban development works (e.g. Carlisle or Walton-le-Dale) or targeted research projects on Roman installations (notably in the Hadrian's Wall zone, Ribchester, and Birrens) resulting in a bias of archaeological knowledge towards major Roman sites at the expense of smaller Roman and indigenous settlements (and particularly other landscape features such as field-systems). Excavations underpinning infrastructure projects in Scotland and England and within Carlisle's environs show the potential for understanding phasing and material-culture at such rural sites, though are still generally difficult to interpret and thus need a wider resource-base of comparison studies to improve understanding. Furthermore, sites of unusual morphology need targeted investigation to understand what makes them different from the usual farmstead-enclosures found throughout the transect.

# Chapter 6: The Roman Frontier East of the Pennines: Transect 2

## 6.1 – Introducing the Eastern Transect: An Overview

*6.1a – The Setting of the Eastern Transect and its Aerial Survey Projects*

The project's second transect, east of the Pennines, parallels the first, running north from York's legionary fortress (frontier-headquarters) along the major military-road now called Dere Street (Mothersole 1927, vii-viii), later-named for its route through the Northumbrian kingdom of Deira (Mason 2019, 12). This route (Figure 116) traverses the northern Vale of York before crossing the Tees valley, County Durham, and River Tyne to reach Corbridge (a major Roman settlement). Crossing the Hadrian's Wall borderland, the transect then follows the River Rede's valley into the Cheviot hills and southern Scotland. The transect-terminus is the outpost-fort at High Rochester, the most-northerly, permanently-occupied fort: Dere Street continues into Scotland, but with sites only
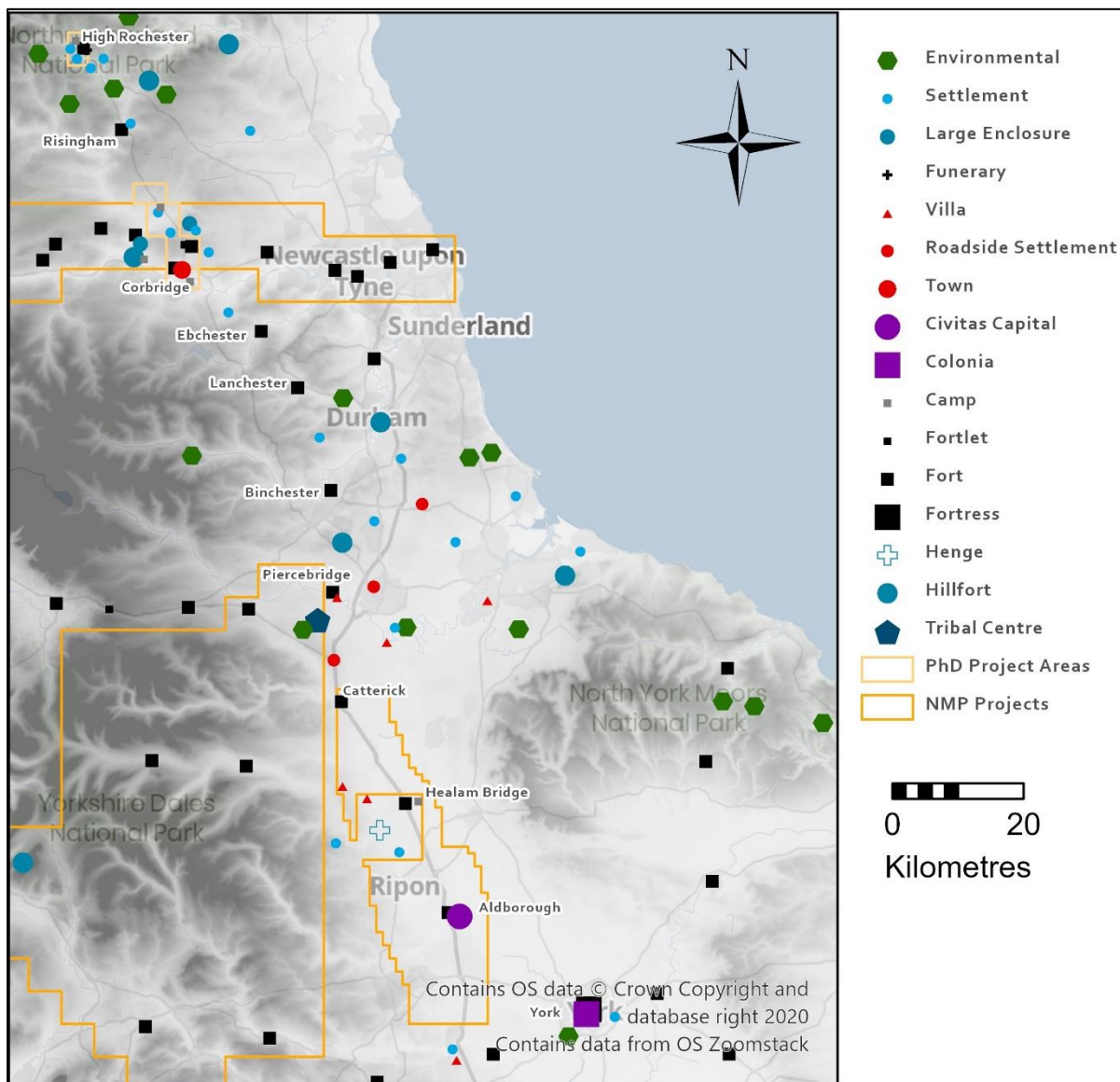


**Figure 116 - Map showing the sample transect (line of named sites) east of the Pennines, including Iron Age/Roman sites alongside aerial-survey mapping-areas.**

occupied during shorter-lived military advances. The transect crosses different environments and topographies, and as with Block 1, evidence from surrounding areas will help with contextualising the evidence.

As with Section 5.1, spatial and temporal introductions to the transect are needed, building upon the broader history of study [3.3], and palaeoenvironmental trends [2.3c] discussed prior. Table 2 [4.2a] lists existing aerial-mapping projects within the transect. Completely-new mapping is limited to a single 15sq.km area around the key outpost of High Rochester in north Northumberland: 'Block 3' (Figures 40/116), discussed within wider contexts north of Hadrian's Wall [6.2 below]. As with Transect 1, a 50sq.km block of the existing *Hadrian's Wall NMP* (Oakey 2009) was planned for reassessment using updated aerial imagery, around the Roman borderland and key site of Corbridge. However, due to Covid-19 related delays, new mapping was not undertaken, and the existing data has therefore been assessed as completed in 2008, alongside other previous archaeological investigations [6.3]. South of the River Tyne, the wider frontier 'hinterland' along Dere Street is covered by several aerial-surveys of varying age (orange, Figure 116), and differing aerial-imagery sources:

- 'Durham Limestone Aggregates Levy Sustainability Fund project', covering 725sq.km of County Durham in two phases, over areas threatened by extraction. This mapping covers the low hills between Tees and Tyne valleys (Hewitt *et al.* 2007; Radford and Pallant 2008);
- 'Yorkshire Henges NMP', a recent aerial-assessment of 586sq.km of the northern Vale of York, undertaken as contextual-mapping for the original 'Thornborough Henges' project (Deegan 2013b);
- 'Thornborough Henges Aggregates Levy Sustainability Fund project', covering 100sq.km of land threatened by extraction in the north-western Vale of York (Deegan *et al.* 2005);
- 'Vale of York NMP', aerial-survey of 1675sq.km in the transect's south, undertaken by RCHME/EH from 1998-2000 (Kershaw 2001).

Though these surveys cover comparatively-greater amounts of Transect 2 than those in Transect 1 did [Chapter 5], they are (excepting 'Yorkshire Henges') older projects, with issues of less-modern sources and less attached-data. However, more modern research-led investigations (indigenous sites like Stanwick (Haselgrove 2016) and Roman forts such as Binchester (Ferris 2010), alongside development-guided work such as the A1 road-upgrade) mitigates this somewhat. Neighbouring areas of more-recent aerial-survey such as the 'Pennine-Dale Fringe NMP' (Deegan 2015) and 'Lower Wharfedale NMP' (Deegan *et al.* 2004) will also aid contextualisation.

The transect between Hadrian's Wall and York generally follows lower-lying terrain east of the Pennine uplands, crossing the major valleys of the Tyne, Wear and Tees (and the hilly plateau of County Durham between them) before crossing into the broad lowland Vale of York corridor between the North York Moors and Pennines, following this to York. Auxiliary forts are spaced regularly along Dere Street, generally with associated civil settlements, many with long histories of archaeological-study. Other key sites include the late-Iron Age centre of Stanwick in North Yorkshire and the Roman *civitas*-capital of Aldborough (*Isurium Brigantium*), which seems to have replaced it as the major civilian centre locally at some point in the late first century AD. As with the western transect, this chapter is divided into distinct areas north-south (beginning with the newly-created data) along Dere Street: landscapes beyond Roman direct-rule [6.2], the Hadrian's Wall borderland along the Tyne valley [6.3] and the proposed 'frontier hinterland' to its south, sub-divided into the

immediate zone of military-control (southern Northumberland, Tyne and Wear, County Durham) [6.4a] and lowland areas further south which exhibit differing settlement-forms and material-culture (the Tees valley and North Yorkshire), leading to York itself [6.4b]. This is then synthesised [6.5]. Each section discusses indigenous late-Iron Age landscapes and their development into the Roman period, including routeways and interaction, before looking at new Roman sites and changes they represent regionally. As with Chapter 5, well-known Roman sites have had more-extensive relevant detail removed to the Appendix.

*6.1b – Archaeological Landscapes of the New Survey Area*

Before assessing Iron Age and Roman landscapes, general results from Block 3's aerial-mapping (undertaken to AIM standards) will now be discussed. The survey-area comprises 15sq.km centred-on the Roman outpost-fort of High Rochester (*Bremenium*), attendant civil-settlement and cemetery; chosen because it represents Dere Street's northernmost segment within England, containing various Roman military features alongside indigenous settlements (Figure 117). The site is c.33.5km from Dere Street's *Portgate* crossing-point on Hadrian's Wall, more-distant than its
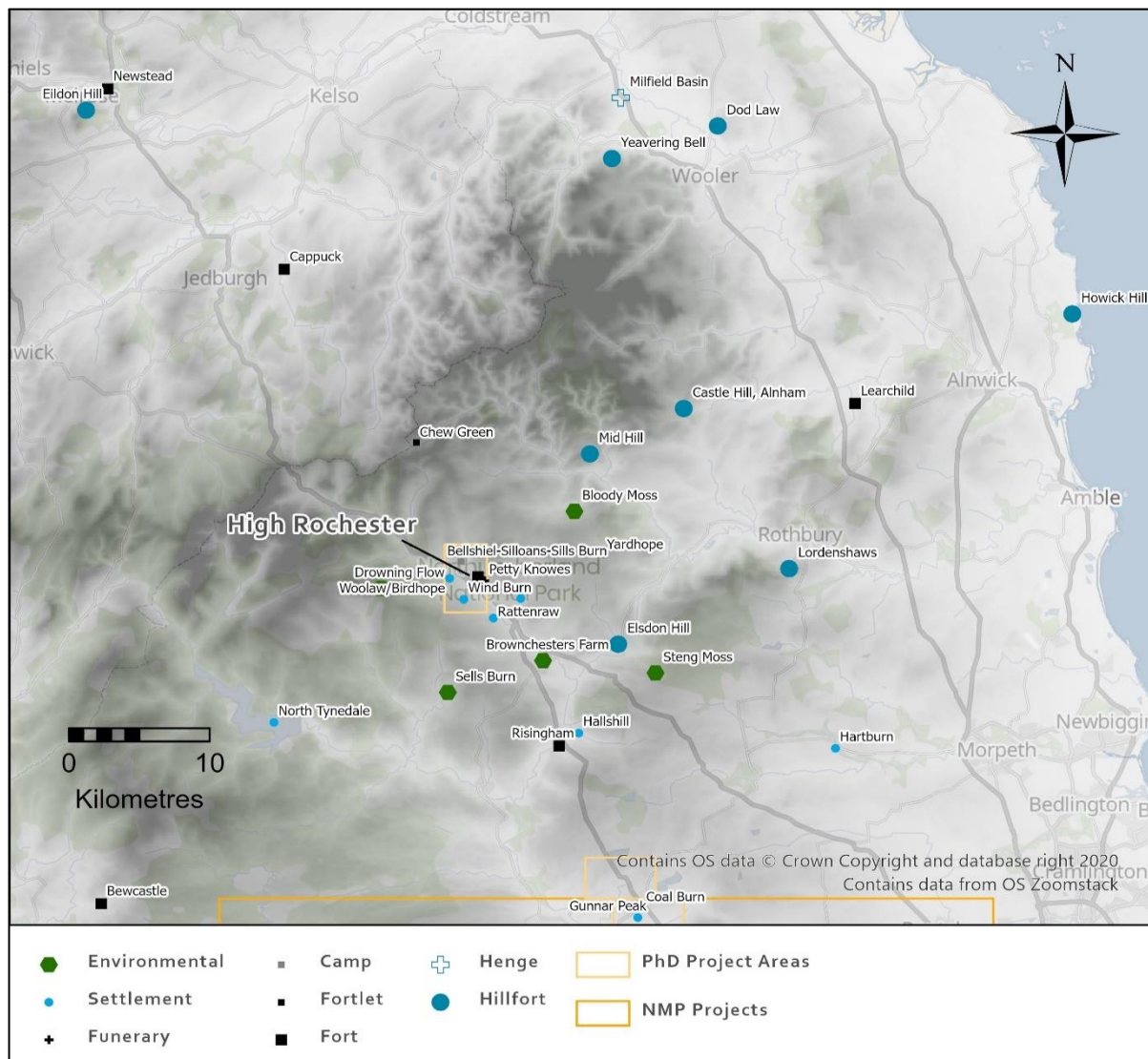


**Figure 117 - Map showing the area north of Hadrian's Wall's central-eastern sectors, including major Iron Age and Roman sites and aerial-survey mapping areas.**

**Figure 118 - Aerial photograph of the upland landscape north-east of Redesdale; High Rochester fort in foreground-right, looking towards the Cheviot hills (NMR 20463_18 ©HE).**

western equivalent (Netherby). As with Transect 1, the Hadrian's Wall research-framework (Symonds and Mason 2009a; 2009b) identifies a need for further research north of Hadrian's Wall to understand the wider frontier. Block 3 is within Northumberland National Park.

Block 3 is located within the extensive upland 'Border Moors', framed north and east by the higher Cheviot Hills (Figure 118) and south by the Whin Sill escarpment occupied by Hadrian's Wall. Wide valleys of the North Tyne and Rede (rising further north) flow south-eastward through this
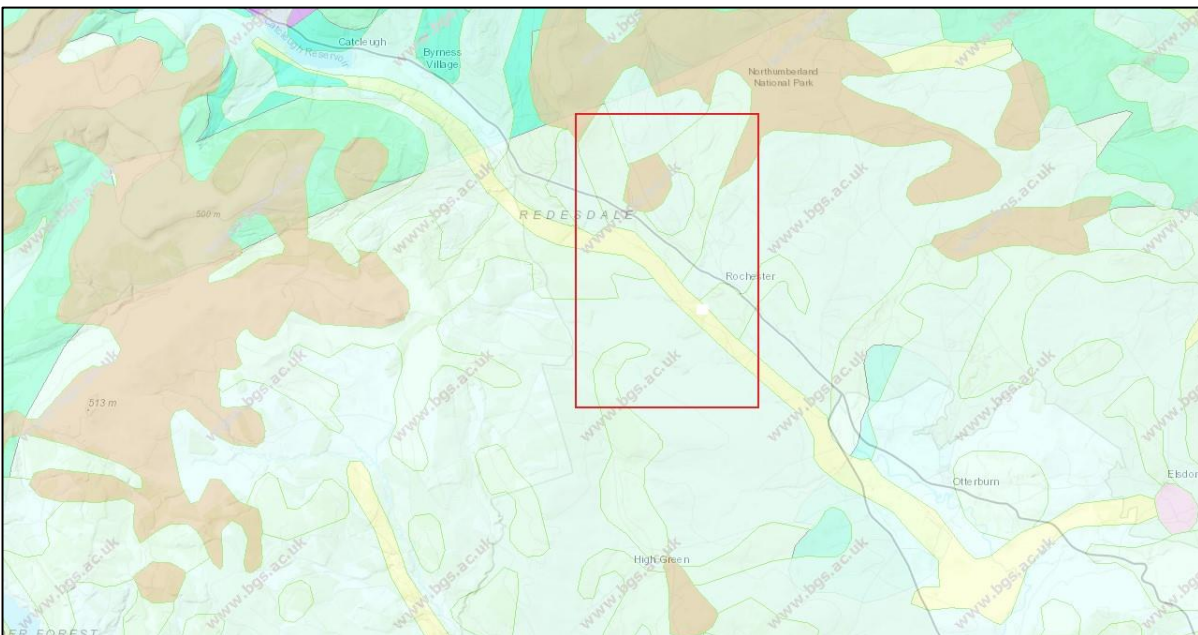


**Figure 119 - BGS superficial-deposit mapping around Block 3. Yellow = fluvial/alluvial deposits; White = Devensian till; Brown = peat.**
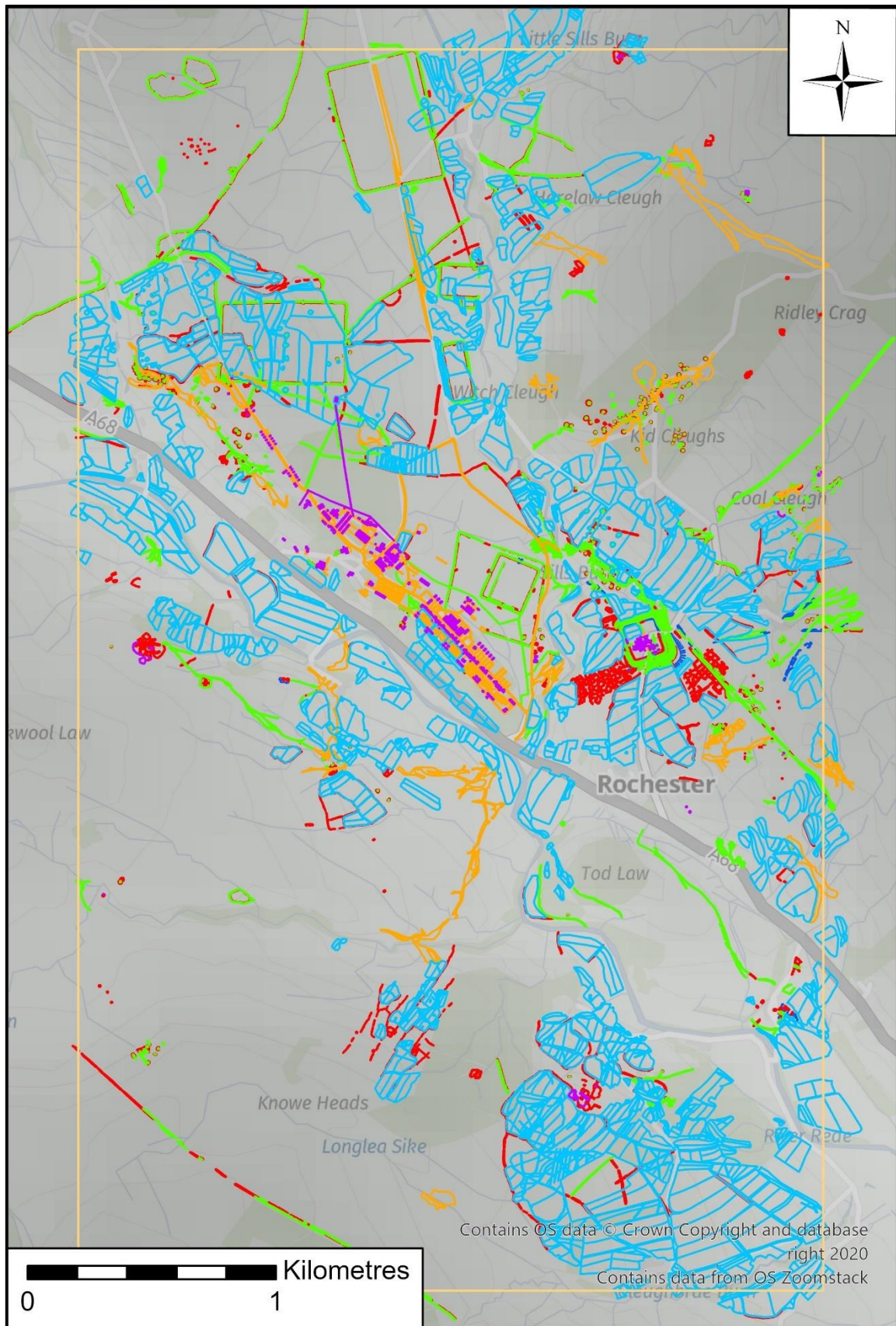
**Figure 120 - Mapping Block 3's newly-created aerial-survey data in the 15sq.km area around High Rochester.**

moorland, joining to form the River Tyne (Natural England 2013b, 3-5). The project-area is situated near the head of the easternmost valley – Redesdale. Geology comprises Carboniferous sandstones

and limestones, with linear outcrops including coal-measures, overlain by riverine sands and gravels in valley-bottoms and glacial till on higher slopes, with some significant peat deposits, forming generally wet and acidic soils (Figure 119, British Geological Survey mapping 2021).

Upland topography and geology, together with climate and other factors, resulted in modern landscapes of exposed moorland and mire on higher plateaus either side of Redesdale (including 20th-century conifer plantations), with semi-improved pasture in the main valley and narrower tributary-burns (reaching onto lower slopes where modern farmsteads and the village of Rochester are located). The current field-system results from 18th/19th-century enclosure (Natural England 2013b, 3-8). Archaeological features within this landscape are visible on historic vertical- and specialist oblique-photography and lidar-imagery [4.2b] almost entirely earthworks or structures, with only small areas of cropmark-visibility. The results (Figure 120) show features clustered on lower, grassland slopes along Redesdale, seemingly the long-standing primary band of settlement. Evidence for other activities extends onto moorland to the north-east (following the Sills Burn and other tributaries). Less archaeological remains are visible on open fell south-west of the valley, potentially indicating an area less-heavily utilised in the past.

The landscape of earlier-prehistory is dominated by funerary monuments, generally on top of the higher moors. Bellshiel Law, north-west of Rochester, has a Neolithic long cairn (263) including cup-marked carvings and possible cist-burial, with further rock-art on nearby moorland (HER 27900-27903) and views across Redesdale (Frodsham 2004a, 15). Its local importance continues with 27+ possible Bronze Age round-cairns or barrows (276, 17266, 1200-1202) extending from the summit onto lower, southward slopes. Further isolated mounds were mapped throughout the project-area, largely on upper fells to north (majority) and south of Redesdale, potentially Bronze Age funerary monuments built for landscape-visibility or alternatively relict clearance-features. Settlement and associated features of this early landscape were not identified, possibly due to ephemeral nature or a location on lower slopes obscured by later activity. The Iron Age and Roman-period landscape are discussed in detail below [6.2a] but indigenous and Roman military sites, boundaries and routeways were identified throughout the block, native settlement and agriculture presumably building upon earlier patterns. Roman activity is clustered along Dere Street, north of the Rede, while indigenous settlements and field-systems survive most-commonly on the south side (perhaps indicating division of activity during this period).

Post-Roman activity is limited to small-scale changes, e.g. 'longhouses' overlying Birdhope (17256) (Figure 121). However, the most-obvious medieval landscape-change are the open-field systems of ridge and furrow, focussed around settlements at High Rochester (the fort re-used as defensible settlement) and Evistones (now deserted (17349), Figure 122)). This ploughing survives as extensive earthworks along lower slopes (presumably the most agriculturally-viable land since late-prehistory), compounded by widespread post-medieval



**Figure 121 - Mapping of the Birdhope Iron Age/Roman settlement-complex, showing post-Roman 'longhouse' structures overlying the existing enclosures and roundhouses, implying ongoing/re-use of the site.**

**Figure 122 - Aerial photograph of Evistones DMV and bastle-houses west of the Rede, surrounded by ridge and furrow (TMG 1373/18 ©Tim Gates).**

land-improvement across Redesdale and tributary-valleys, leaving only higher moorland free of medieval and later remains. Enclosures, boundaries, and stack-stands associated with medieval mixed arable-pastoral and later pasture-dominated agriculture are found across the landscape, evidencing seasonal grazing on fell-tops, separated from lower-lying crops and improved-pasture. Some of these re-use Roman military perimeters or roads as boundaries. Others form major territorial boundaries dividing the landscape. Continuing importance of Redesdale's arable-production is attested in high numbers of water-mills reported in the 1604 Border Survey (Charlton and Day 1982, 149-150).

Hollow-ways and trackways (incised and braided, or embanked to navigate wetter terrain) criss-cross the uplands, most-visible at stream-crossings and valley-slopes. Whilst visible evidence likely dates to medieval and later movement, many likely-used earlier routeways. One hollow-way (HER 8140) following the upland edge south-west of the Rede between Evistones and Birdhope also passes close to several Iron Age/Roman settlements. The major routes of Dere Street (Figure 123) and other Roman roads [6.2a] were utilised into later periods (evidenced south-east of Rochester by droveways either side of the original causeway).

Rochester village's nucleus has shifted south from the medieval settlement around the fort, towards the modern A68 (the only principal-road through the region (Natural England 2013b, 5)), with a chapel and two mills on the Sills Burn (HER 8121, 8156) and Rede (HER 14771). This has preserved the earthworks around High Rochester itself, the defences re-used to protect medieval settlement and two post-medieval bastle-houses (17287). The other medieval settlement at Evistones (17349), free of modern development (Figure 122), reveals the nucleated village-plan, overlain by bastles. Dispersed farmsteads comprise Block 3's remaining settlement, most continuing into the present, earlier phases visible as adjoining earthwork enclosures and buildings. Some

represent shielings for seasonal-agriculture (Natural England 2013b, 9; Charlton and Day 1979, 207-209) whilst others are more defensible, together with bastles and pele-towers along Redesdale attesting the landscape's ongoing frontier-nature within the medieval Anglo-Scottish borderland (and subsequent 16th/17th-century border-reiving) (Natural England 2013b, 10), an interesting comparison for the Roman-period.

The other dominant archaeological remains belong to the period following borderland-instability. Coal-mining, visible as bell pits (Figure 123) and associated structures and trackways following burns and across open moorland (e.g. Bellshiel and Huel Crag), covers large areas north of Redesdale, including environs of High Rochester, obliterating earlier features. Such coal-mining, together with local limestone-extraction (and a mapped kiln) appears fuelled by local post-medieval agricultural-improvement rather than industrial pressure (Day and Charlton 1981, 270-290). Ironstone-mining at Harelaw Cleugh (HER 343) and small-scale quarrying along outcrops (e.g. Huel Crag and near the A68) have similar impact. The northern third of the project area also falls within the Otterburn Military Training Area (Natural England 2013b, 3), firing-ranges across higher moors



**Figure 123 - Aerial photograph of Roman Dere Street surviving as a linear earthwork (centre) and Petty Knowes Roman cemetery mounds (bottom left), alongside post-medieval coal-mining pits (centre right) (TMG 14741/51 ©Tim Gates).**

north of Redesdale (Charlton 2004; Gates 1997), including many Roman temporary camps. An obvious aspect of this military landscape was Redesdale Camp (Figure 124) active from the early 20th-century and mapped from 1945 photography (now largely-demolished). This site is close to several Roman camps in an interesting convergence between past and present. The line of Dere Street north of High Rochester is preserved beneath paved modern army-roads.



**Figure 124 - Aerial photograph of the Redesdale Artillery Practice Camp in 1936, adjacent to the Birdhope multi-phased Roman temporary camps (CCC 9154/ORACLEA4 ©HE).**

*6.1c – North-East England and South-East Scotland in the Late Iron Age and Roman Period*

As stated, the eastern transect follows the major north-south Roman road of Dere Street, commencing in the Vale of York, a large lowland-plain around the River Ouse and its tributaries, travelling north-west/north along a natural corridor which supports rich mixed agriculture. Crossing the gap between Pennines and North York Moors into the Tees valley, it traverses mixed hilly and lowland-riverine environments in County Durham: fertile, intensively-farmed landscapes supporting relatively-dense settlement through past and present (Stallibrass 2018, 49). While the upland Moors and Pennines form natural boundaries, lowlands of north-eastern England are well-connected, via valleys (Ouse, Tees, Wear, Tyne) traversed by the Roman road, and the North Sea coastal-plain.

While nominally-similar to the Solway and Lancashire lowlands of Transect 1, hill-ranges dividing valleys are generally less-high, creating a more inter-accessible region. It is not until the

Hadrian's Wall borderland north of the Tyne that substantial uplands are encountered: the Pennines (west) joining the Cheviots (north). Here, Dere Street largely follows a natural route along the River Rede's valley to penetrate the higher uplands and reach southern Scotland, encountering environments of subsistence agriculture and pastoralism, with much sparser settlement. Directness of this route (rather than the easier-going but longer coastal-plain) (Petts and Gerrard 2006, 47) has implications for Roman military knowledge/strategy.

Climatically, this transect is mild (with resultant drier, warmer weather) due to the Pennines shielding it from Atlantic weather-systems. This increases potential arable production, reflected in lowland farming landscapes. Haselgrove (1984, 9-10) argued that the lowland valleys/coastline and 'lowland uplands' (County Durham, Pennine foothills, Dales valley-floors) had late-Iron Age climate and vegetation mirroring those of the Midlands, distinguished only by heavier boulder-clay soils. Palaeo-environmental evidence, though biased towards upland samples (Dark 1999, 258), shows widespread arable-cultivation alongside pasture (Huntley 2009, 108), with van der Veen (1992) assessing prehistoric/Roman regional-variation in a way not possible for Transect 1. Her studies of archaeobotany alongside settlement evidence suggested clear divisions in social organisation prior to Rome's arrival. Small-scale, intensive emmer-wheat and naked-barley cultivation north of the Tyne contrasts extensive arable-expansion cultivating spelt-wheat and hulled-barley in lower-lying areas further south (van der Veen 1992, 152-156): local environmental constraints alongside societal decision-making creating variation which potentially impacted subsequent Roman regional perceptions (including siting of the second-century borderland). However, the aforementioned recent excavations [3.3] on Northumberland's coastal plain north of the Tyne have suggested that spelt wheat and barley are found on farmsteads here too, pushing the divide in agricultural practice further north and west (perhaps forming an upland-lowland divide rather than one based on the Tyne) (Hodgson *et al*. 2012, 203), with the earliest Roman boundary now proposed as following this topographic division via the Devil's Causeway road (*ibid.*, 212; Hodgson 2017, 47). Overall, palynology and excavated faunal and floral assemblages suggest similar second/first centuries BC agricultural-expansion accompanied by increased woodland-clearance (and settlement-growth) in many areas (Anderson 2012, 356-357; Dark 2000b, 58; Turner 1979, 285-288; van der Veen 1992, 12), explanations including climatic amelioration and socio-cultural drivers such as nearing influence of Rome or the so-called 'Brigantian *landnam*' (Branigan 1984, 30; Tipping 2018, 61).

As with Transect 1, the 'Hownam Sequence' (Piggott 1949; 1950) long-influenced interpretation of later-prehistoric settlement-development, now critiqued (e.g. Kokeza 2008) following investigation of upland settlements in Northumberland, and lowland sites in County Durham, Tees valley and North Yorkshire, supported by aerial-photography and major mapping-surveys RCHME/EH [3.3a]. Several up-to-date assessments of broader patterns of Iron Age/Roman settlement in north-eastern England have been undertaken using environmental, artefactual and settlement-construction evidence (see Anderson 2012; Ferrell 1997; Ross 2011).

There is some variation along the transect. Isolated, enclosed farmsteads for single family-groups dominate uplands (Ferrell 1997, 233), surviving as earthworks and stone structures, with small arable-areas and larger field-systems for livestock. The major central, ceremonial hillfort of Yeavering Bell and elaborate boundaries of the Cheviots were taken by Anderson (2012, 355) to indicate local, independent communities. This is distinctly-different from landscapes in coastal Northumberland, Teesdale, lowland Durham and Vale of York, with varied settlements connected by lanes and field-systems, with visible site-hierarchies, distinctive cultural material-groups (ceramics, metalwork) and larger, imported cattle breeds (Anderson 2012, 328-330; Ferrell 1997, 233; Ross

2011, 67,78-79,11). The late-Iron Age lowland-scape is identifiable predominantly through cropmarks, hindered by usual visibility issues (later land-use, alluviation and flooding; underlying geology and thick glacial-deposits; lessened-visibility of ephemeral site-types e.g. unenclosed roundhouses) resulting in some areas (northern County Durham and western Vale of York) seeing less investigation (Haselgrove 1984, 10; Ross 2011, 97-99). Nevertheless, overall intensive archaeological evidence is used to suggest these lowlands as heartlands for the Brigantes [3.3.b] (the confederation of smaller groups whose name means 'high/hill people', suggestive of either regional overlordship, or upland-dominated territory (Ross 2011, 42)). The Romans thus arrived in as socially- and economically-complex a landscape as those in southern England, though generally without evidence for the centralised ideological or cultural groupings which easily-facilitated Roman societal- reorganisation (Haselgrove 1984, 22). The only potential exception to this might be the core area of Yorkshire / Teesdale, centred on the major site of Stanwick, often interpreted as a northerly example of a late-Iron Age *oppidum* (Haselgrove 2016).

Several sites within this transect are noted by Ptolemy's *Geography* as within territory of the *Brigantes* (Binchester, Catterick, Aldborough, Tadcaster, York) or on *Iters I* and *V* of the Antonine Itineraries (from High Rochester to York) (Mothersole 1927, xi; Ross 2011, 33-35). Inscriptions to Brigantia found further north (Corbridge, South Shields) and south (Castleford, Adel) (Breeze 2008, 64-66) potentially indicate this group's territorial-influence, or alternatively movement of troops identifying with them. Of particular note are the Yorkshire sites of Stanwick and Aldborough [6.4], both in aforementioned lowland landscapes of denser, connected settlement (Anderson 2012, 357- 359). Other 'tribes' described for the transect include *Gabrantovices* ('horse fighters' (cavalry?)), thought somewhere on the east coast, due to Ptolemy's 'Good Harbour' reference) (Ross 2011, 45) and *Votadini* (north of the *Brigantes* around the modern Anglo-Scottish border) (Breeze 2008, 63,65,69; Ross 2011, 46). Other groups of unknown form: *Lopocares* (Ravenna Cosmography) and *Corionototae* (epigraphy from nearby Hexham) were possibly around Corbridge (Ross 2011, 46-47).

The arrival of Roman forces in Transect 2's region is better-understood than that for the north-west, although part of the same northwards-advance. Tacitus' historical account details the military-advance into (initially pro-Roman, under Queen Cartimandua) northern Britain, following the actions of anti-Roman Venutius (Cartimandua's ex-husband). Subsequently, the permanent legionary fortress of York (*Eboracum*) was founded in AD71, with military campaigns under Governor Cerialis reaching into southern Scotland (also founding Carlisle [5.3]) (Mothersole 1927, 4-7; Ross 2011, 36-41). High-status, monumental indigenous activity at Stanwick (Figure 125) is used to support this narrative (Haselgrove 2016). Though the finalised Dere Street may be later-first or second-century, it likely followed the initial military-route of incursion or supply (Hingley and Allason-Jones 2009, 165; Mothersole 1927, v), laid-out on several different long-distance survey- alignments (Figure 126, Poulter 2009; Poulter 2014) and connected to cross-Pennine routes (e.g. Stainmore Pass). As with the north-west, maritime communication was crucial, attested by siting of York at the confluence of rivers, at tidal-limits connected-to the Humber Estuary (Jones 2009, 53), an important supply base at South Shields (Jones 2012, 78) and riverine-locations for many forts along Dere Street (though, curiously, few forts are within 20km of the coastline, excepting late Roman signal-stations (Jones 2012, 84-85)).

Initial incursions into northern England were followed by Agricolan campaigns reaching north-eastern Scotland, then withdrawal to the Tyne-Solway isthmus [3.3b]. The major site on the eastern transect here is Corbridge, quickly-developing from early supply-fort into major 'town' [6.3]. Other forts along Dere Street (Roecliffe, Catterick, Piercebridge, Binchester, Lanchester, Ebchester),
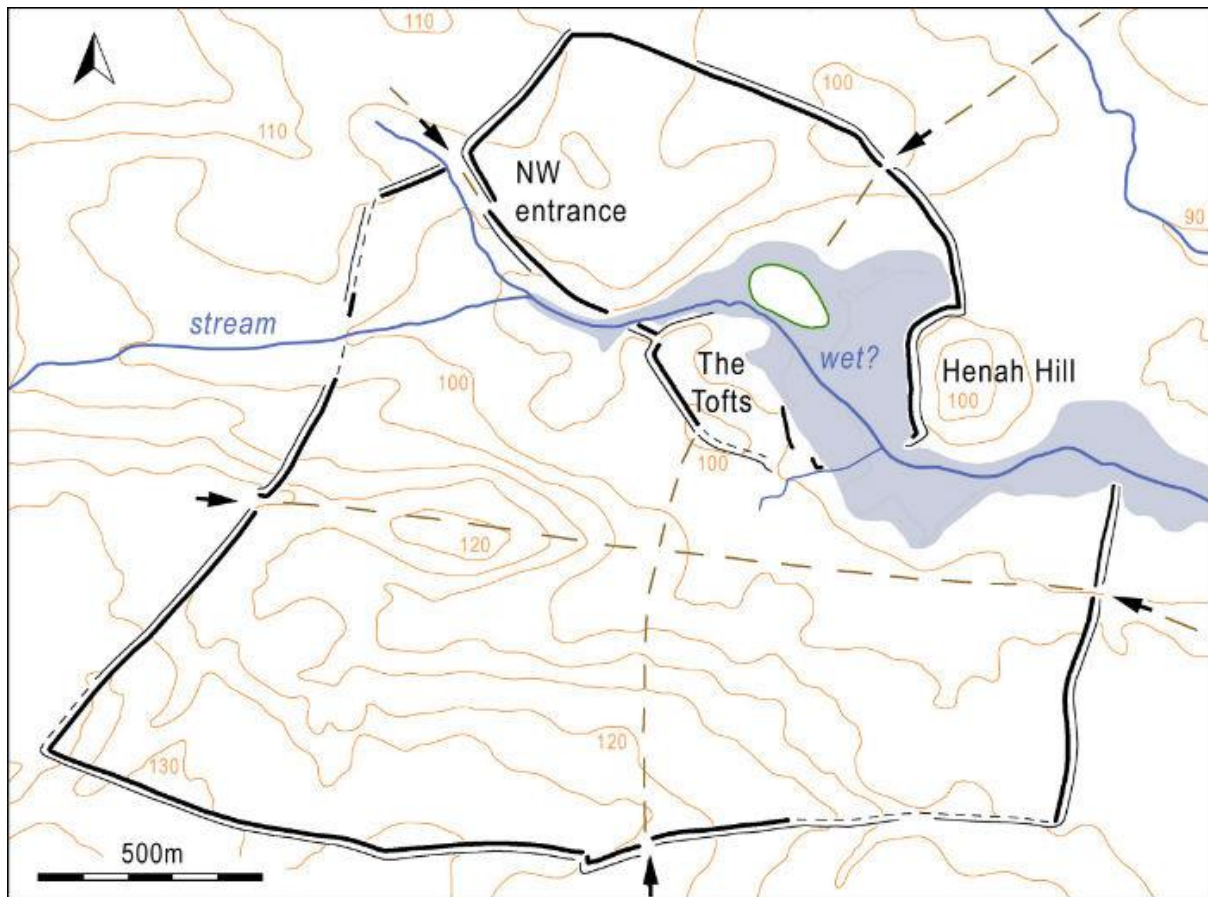
**Figure 125 - Map of late-Iron Age Stanwick: enormous boundaries enclose 300ha (interpreted as status-enforcing over defensive) with an inner-enclosure at The Tofts containing high-status first-century AD activity (Haselgrove 2016).**

and elsewhere regionally, represent either first-century garrisons, or later 'hinterland' in-fill sites following consolidation of the Hadrian's Wall borderland. Such forts were catalysts for associated civil settlements, as across much of northern Britain [Chapter 5], even at outposts beyond the border. Parts of this transect also see new urban and rural settlement-forms [6.4] including roadside 'towns', 'villa'-type sites, and the socio-political centre of Aldborough (Anderson 2012, 359-363).

Following Roman withdrawal from Scotland, York was rebuilt in stone (one gateway c.AD107-108 by inscription (Bennett 1984, 35), the remaining dates difficult to confirm (Ottaway 2004, 62-64)), maintaining its role as fortress for *Legio IX Hispana* and then *Legio VI Victrix*, and becoming the headquarters for the entire frontier under study. *Eboracum*'s military-oriented *canabae* settlement grew into a far-larger *colonia*-status city, capital of the new province of *Britannia Inferior* from the late-second century (Bennett 1984, 37). Socio-political and economic changes accompanying these developments mirrored those further south (and earlier) in Britannia, but within different spatial and temporal contexts, resulting in notably-different outcomes which exacerbated regional variation between lowlands and uplands (Jones 1984, 41-42). York's importance continued throughout the Roman period, with two emperors dying there a century apart (Septimius Severus and Constantius Chlorus), showing its role as the main focus for military campaigning further northwards (Ottaway 2004; Parker 2019). For the late-Roman period, the *Notitia Dignitatum* places it central to fourth-century military-command and evidence indicates activity continuing here (and at other military sites) into the fifth/sixth centuries (Dark 2000a, 83-84). Overall, for southern parts of Transect 2, Rome's various impacts upon existing landscapes are more immediately-apparent archaeologically. This discussion will therefore compare these lowland areas

of significant change with more-northerly parts of the survey-area, showing less-definitive changes, to assess the entirety of the frontier region.
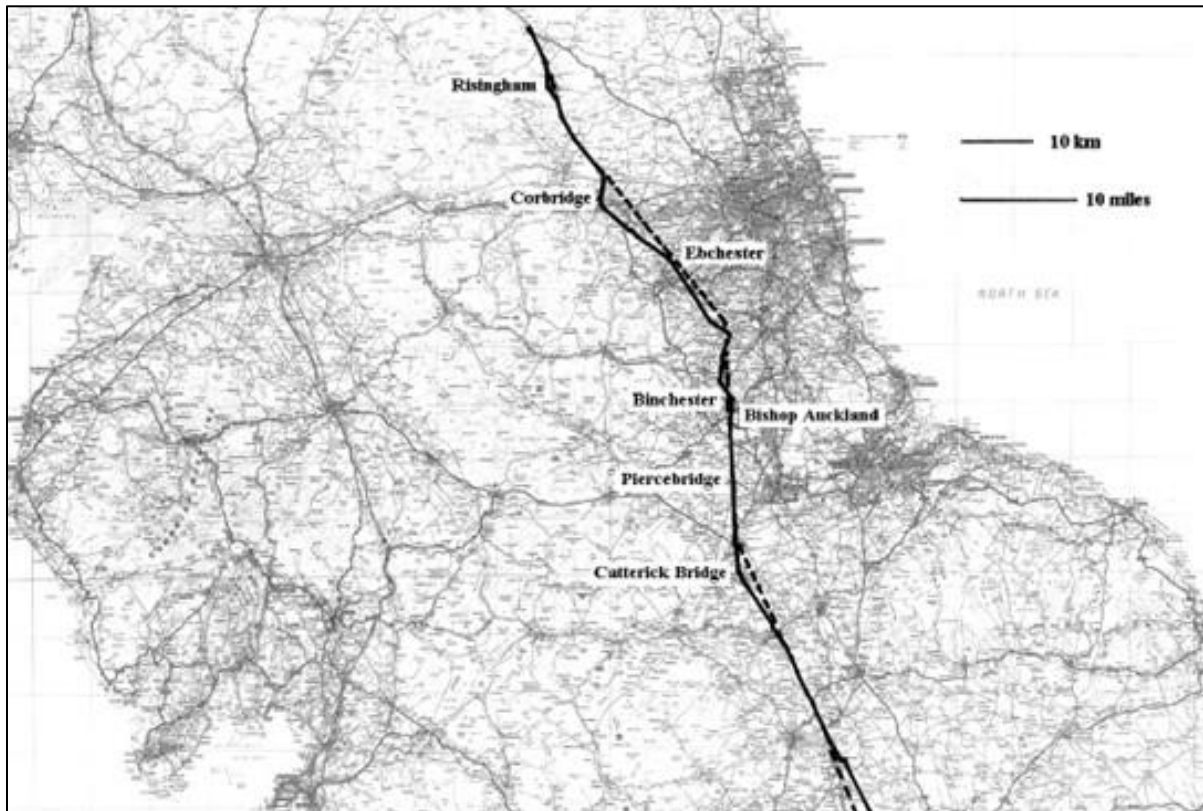


**Figure 126 - The final route of Dere Street, showing deviations from initial Roman-surveyed planning (Poulter 2009, 11).**

## 6.2 – North of the Roman Border: Outposts and Indigenous Society

*6.2a – The Iron Age and Roman Period in the Study Area: New Aerial Survey Mapping Results and Previous Research*

The eastern transect's sample-area examining areas north of the Roman borderland comprises the aforementioned [6.1b] environs of High Rochester in Northumberland (Figure 127). The natural landscape of this upland-region between Pennines and Cheviots, and the corridor for agriculture and communication formed by the River Rede's valley, has had clear effects on human activity here. Palaeo-environmental evidence from Bloody Moss above Otterburn (east of Block 1), Drowning Flow (west of Redesdale) and Sells Burn (further south-west) indicate increasing heathland and pasture alongside woodland-clearance through the Bronze and Iron Ages, accompanied in lower-lying areas (Brownchesters Farm) by arable-intensification continuing until c.cal.AD685 without local woodland-regeneration (Moores 1996; Moores 1998, 218-247; Moores and Passmore 1999, 24; Moores *et al.* 1999; Young 2004, 157-167).

As mentioned [6.1b], the only pre-Iron Age features identified from aerial survey were Neolithic and Bronze Age funerary monuments, dotted across higher-topographies above the valley-sides and clustered in places, suggesting foci for human landscape-perception. Early settlement and small-scale fields associated with Bronze Age woodland-clearance and agriculture are extremely difficult to identify and were not found within Block 3, though indigenous settlement found across the valley indicates a settled and farmed landscape by the late-Iron Age in Redesdale. Enclosed
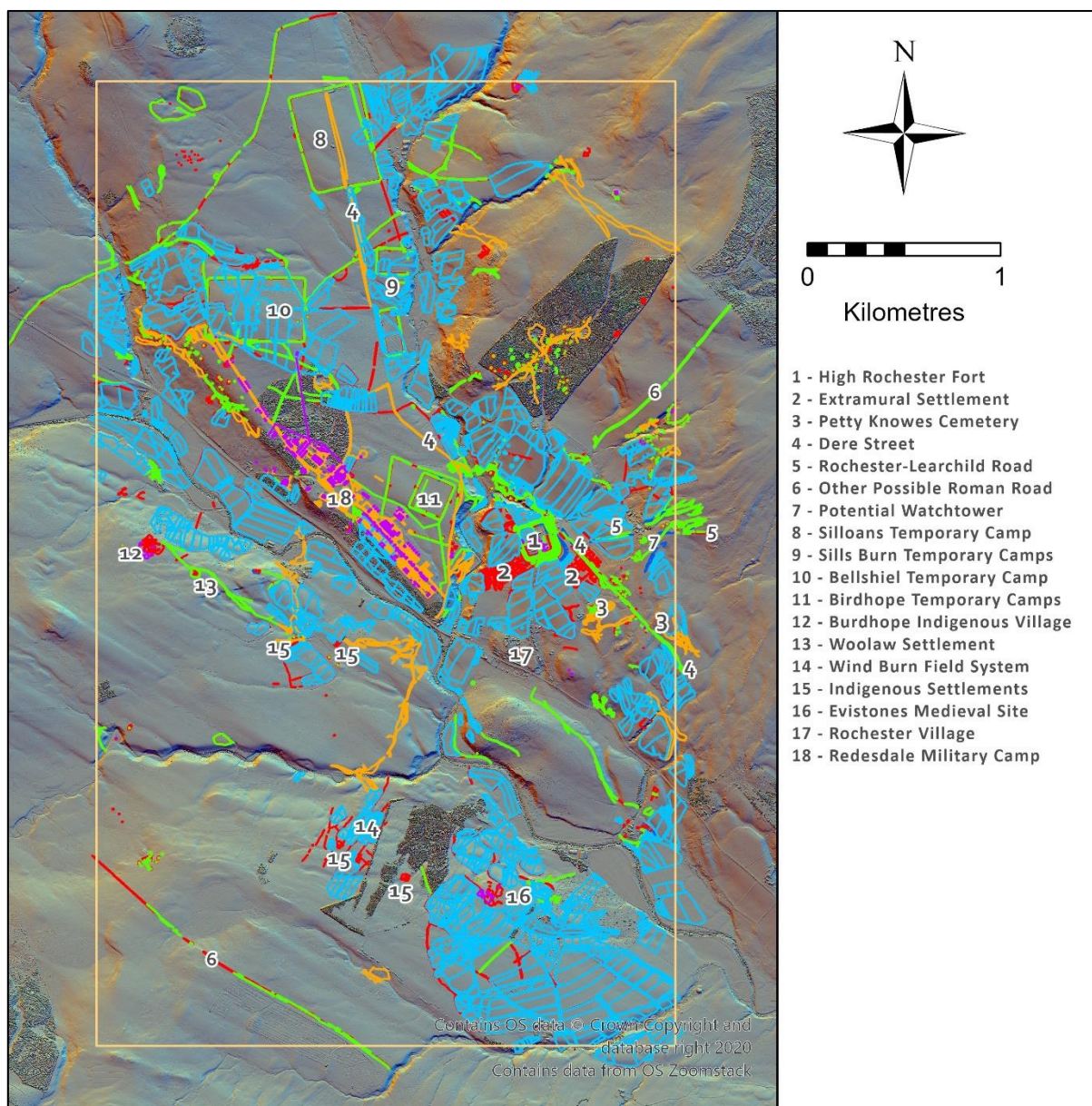
**Figure 127 - Mapping Block 3, showing topography and sites mentioned in the text.**

settlements, generally interpreted as Romano-British, are probably built upon earlier timber-constructed sites, as found at excavated examples in North Tynedale (the valley to the west), where radiocarbon dates of initial timber phases are c.200cal.BC-cal.AD100, rebuilt and enlarged in stone (Carlton 2019, 10; Frodsham 2004c, 60-61).

Across North Tynedale and Redesdale, few unenclosed sites have been identified (Gates 1983, 107; Tynedale Archaeology Group 2019a, 4). Only one distinct 'unenclosed' settlement (17375) was mapped by this project, comprising three roundhouses (two visible as earthwork banks and one as scooped hollow) alongside several larger scoops, potentially yards, within an outcropping rocky area atop the scarp-edge south of the Rede near Woolaw. This 'scooped settlement' differs in form from most local later-prehistoric settlements, though potentially due to survival rather than actual morphology. Two isolated roundhouses (17332) were also surveyed within a prehistoric field-system (below, Figure 130) on higher slopes south-west of Redesdale. Though without directly-associated enclosures or yards, these are c.100m from an enclosed settlement (17337) and may be

contemporary rather than earlier. Resultingly, it is not possible to confirm whether unenclosed later-prehistoric occupation predates enclosed farmsteads or merely represents a different aspect of settlement.

The most common Iron Age/Romano-British settlements identified throughout the project area were generally-rectilinear enclosures, predominantly on higher-upland margins west and south-west of Redesdale. Most were previously identified by extensive field surveys (Charlton and Day 1978; Charlton 1996), covering large swathes of the valley and flanking uplands. They distinguished rectilinear enclosures like those in North Tynedale (morphologically-grouped by Jobey (1960); dated to the second/third centuries AD via pottery (Frodsham 2004c, 60-61)), from smaller numbers of curvilinear enclosures more-like those in the Cheviots to the north-east, and also unenclosed roundhouses opening onto enclosed forecourts (Charlton and Day 1978, 72-83, Figure 128). Woolaw (17273) (Figure 129), on the upland scarp-edge descending into Redesdale (c.265m from the above 'scooped settlement'), is visible as rectilinear, banked enclosure (external ditch in places), sub-divided by four roundhouses running north-south through its centre, with a further bank dividing the eastern half into two distinct yards, each with entrance. This confirms the 1977 excavation plan (Charlton and Day 1978, 61-63), which also revealed three phases of occupation (initial earthen
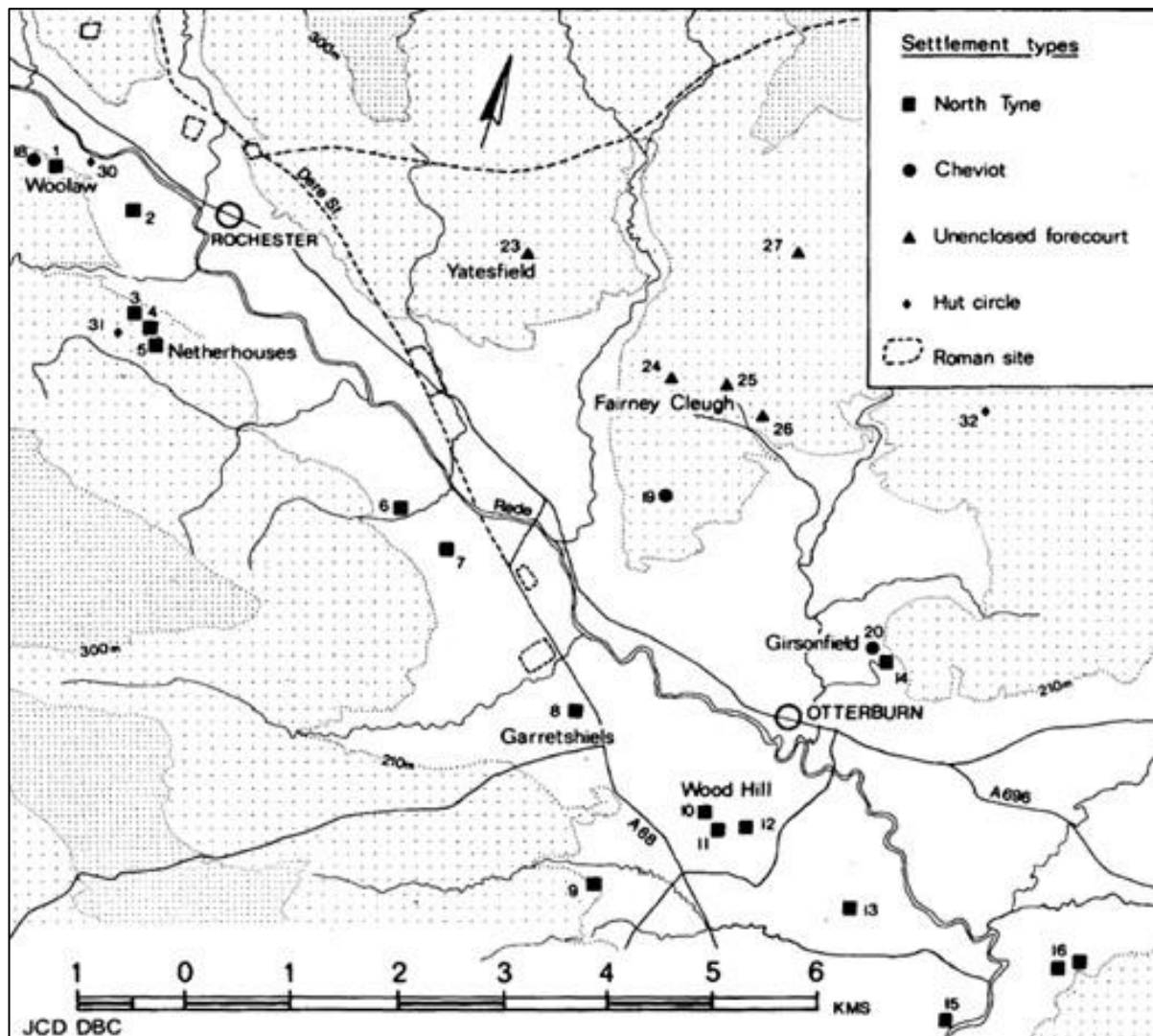


**Figure 128 - Map showing distributions of different Iron Age/Romano-British settlement-forms throughout Redesdale (Charlton and Day 1978, 84).**

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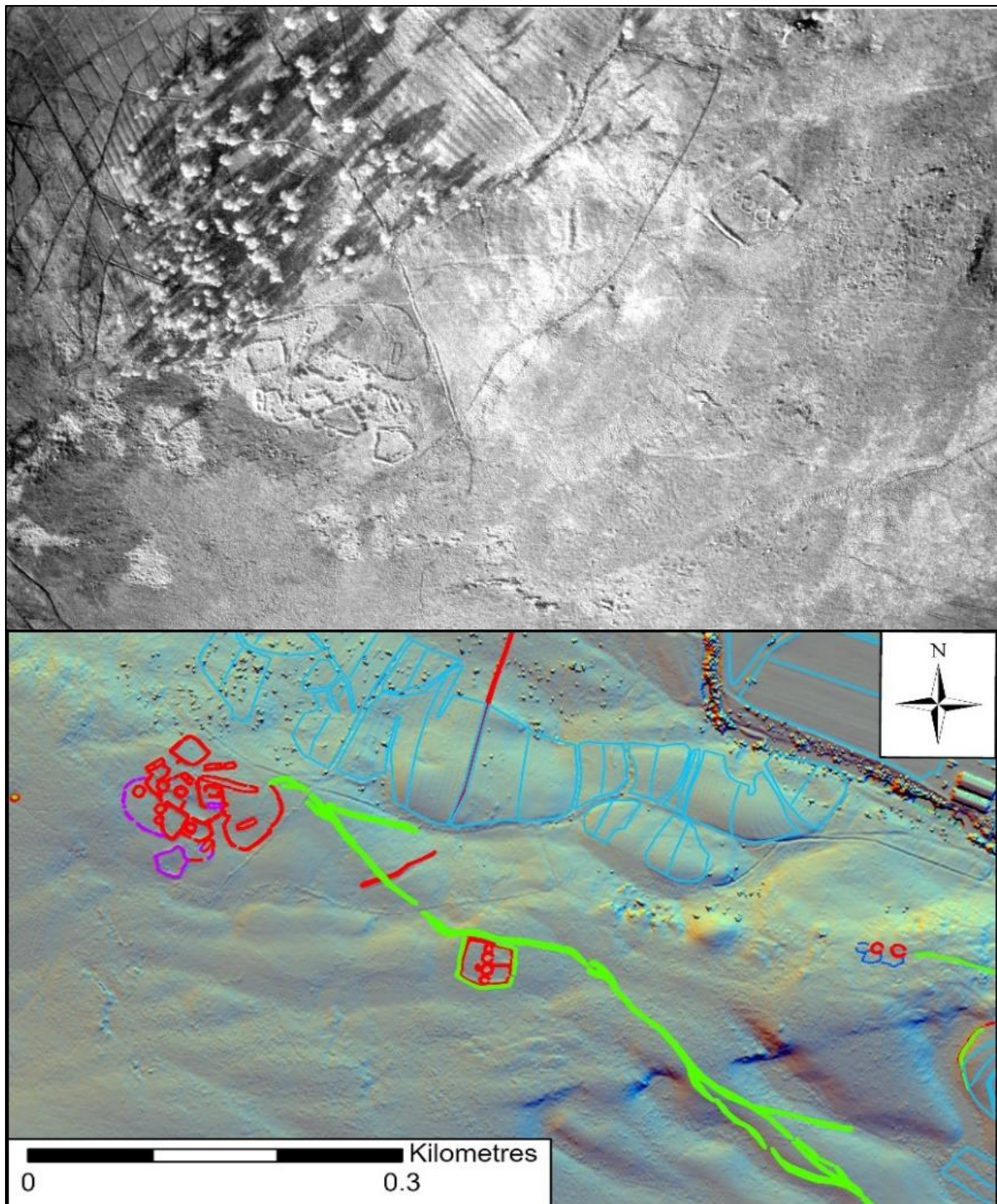
**Figure 129 - Aerial photograph (top) of Romano-British enclosed-settlement at Woolaw and the more-complex village-type site at Birdhope (TMG 1373/35 25-MAY-1978 ©Tim Gates); Corresponding survey mapping (bottom) from this project overlain on lidar model.**

enclosure and timber structures, replaced in stone and with additional houses, the latest dated to the second-century AD) and both indigenous artefacts – 'native' pottery, Cheviot-sourced rotary-quern, flints, ironstone-cinder – and Roman glass bangle and jet bead, from within the houses and yard surfaces (*ibid.*, 69-72).

Two further, less well-preserved rectilinear enclosures south-east of modern Woolaw survive as earthworks c.185m apart (17378), both with at least four round structures, and possible contemporary cord-rig cultivation just north, between them. Nearby irregular rectilinear fields,

delineated by banks and associated with medieval or later ploughing, may also have earlier origins and association with these settlements. Together with the scooped and enclosed Woolaw settlements c.380/c.580m north-west, this forms a cluster of later-prehistoric and/or Romano-British settlement and agriculture. Evidence from the eastward Cheviots (Frodsham 2004c, 59) and the newly-published 'Revitalising Redesdale' lidar survey (Frodsham 2020, 18-20) corroborates such clustering, suggesting each to represent a potential local kin-based group. Further supporting this cluster-theory is the routeway, in places surviving as hollow-way (HER 8140) or braided trackway, running close to most of the above settlements along the upland fringe – generally interpreted as medieval or later, connecting later phases of Birdhope settlement (below) with Evistones for transhumant droving, but potentially with origins in later prehistory given proximity and connection with these settlements.

A similar area of settlement (Figure 130) is found c.1km south of the 'Woolaw' group, incorporating two above-mentioned unenclosed roundhouses (17332) and two rectilinear enclosures 100m apart (17337, 17340) with sub-dividing banks and multiple roundhouses. These are located within (and connected to) an extensive system of coaxial field boundary banks, in places containing visible cord-rig ploughing, located on slopes descending north-east to the Wind Burn. An isolated enclosure (17343) and nearby boundary surviving as denuded earthworks (damaged by 20th century plantation) c.230m east likely represent continuation of this 'group'.
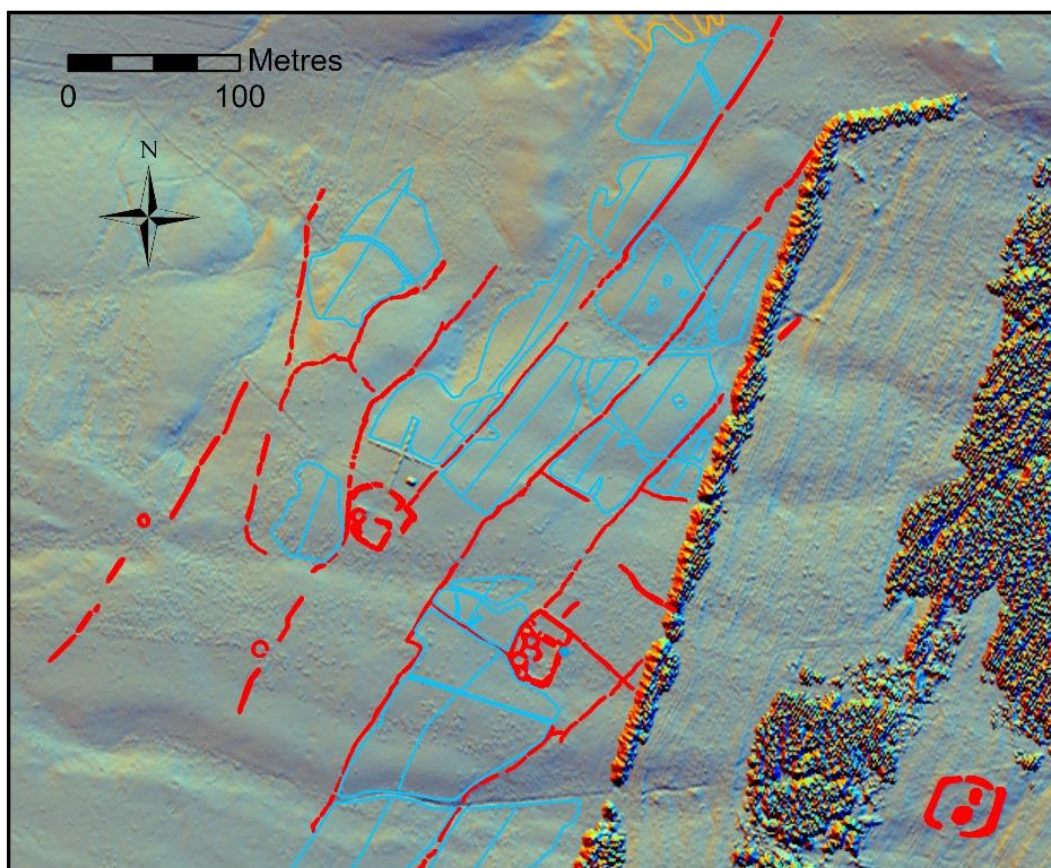


**Figure 130 - Aerial-survey mapping showing two rectilinear settlements and two unenclosed houses within a likely-contemporary field-system of coaxial boundaries and cord-rig; with a further settlement in woodland to the east.**

An important recently-investigated parallel for the rectilinear enclosures is Rattenraw, c.2km south of the project area: a second case study alongside Woolaw's excavations. The site (Figure 131) was identified in field-survey (Tynedale Archaeology Group 2018; 2019b) close to two further multi-
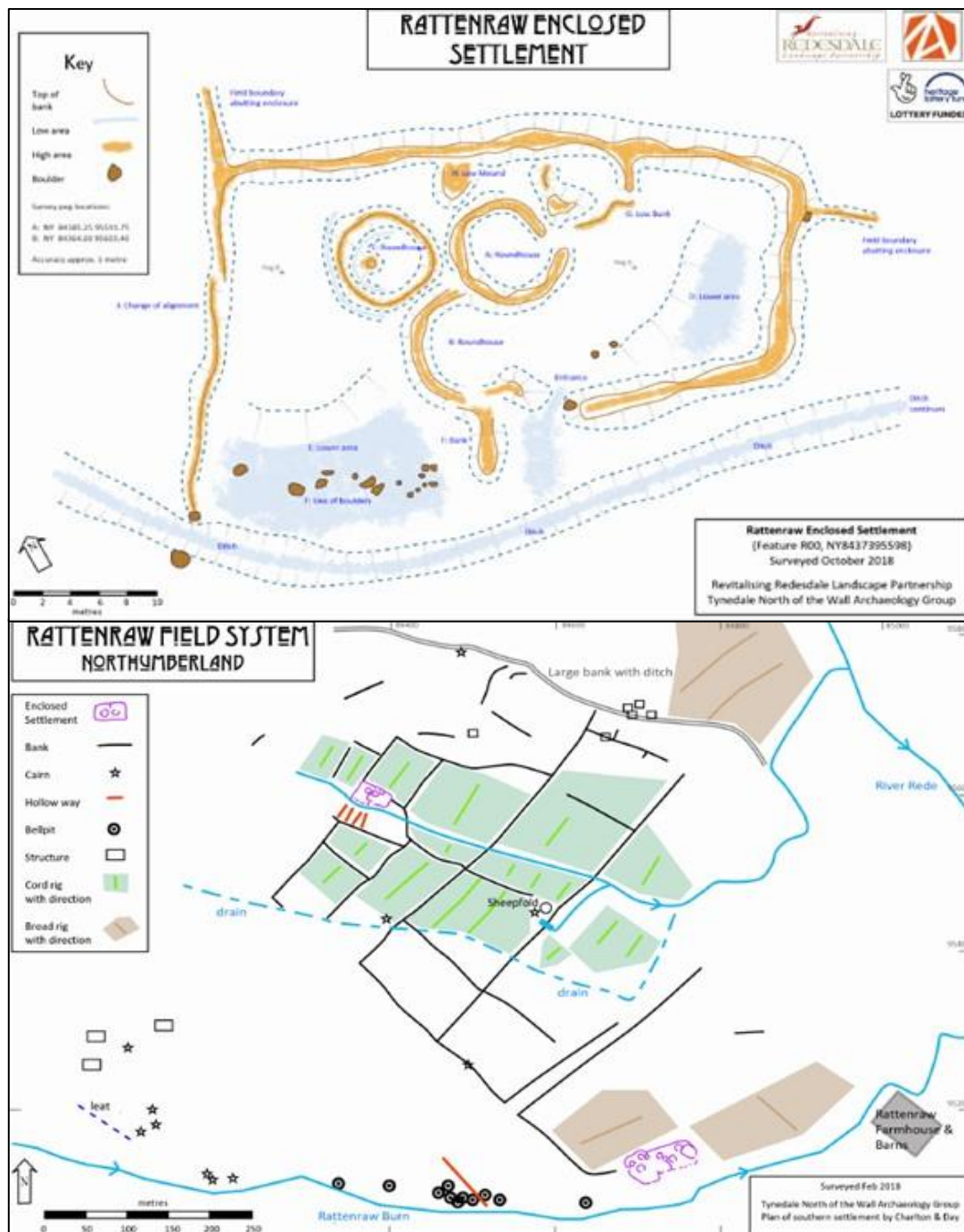
**Figure 131 - Survey plan of Rattenraw native settlement (left), and wider field-survey of surrounding contemporary field system (right) (Tynedale Archaeology Group 2018, 22,24).**

phased rectilinear settlements identified by Charlton and Day (1978) and comprised three stone-founded roundhouses with scooped entrance yard, within a rectilinear stone enclosure (Tynedale Archaeology Group 2018, 10-13). Subsequent excavation identified two phases in both roundhouses and rampart, distinguished by differing construction-techniques, the earliest dated Iron Age (coarse pottery, beehive-quern) and the latter Roman (58 glass beads), with associated flagstone-resurfacing of initially-sunken yards (Carlton 2019, 7,50). Activities attested included domestic (cooking, pottery-making) and agricultural (flour-milling, stock management) (*ibid*.). An extensive field-system (Figure 131) surrounds the site, earthwork boundaries forming rectilinear fields (adjoining and thus contemporary with the settlement) containing cord rig (Tynedale Archaeology Group 2018, 14-15).

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The other major indigenous site mapped is Birdhope (17256, Figure 129), c.200m north-west of Woolaw. The site is very different in character to other settlements: a village-like cluster of rectilinear and curvilinear enclosures, mostly earthworks or stone-walled. Some pertain to ongoing post-Roman and medieval settlement (several rectilinear structures and a definite 'longhouse'), though at least six, south-east-facing roundhouses form the initial nucleus, with enclosures or yards adjoining some of them directly. Excavation or detailed field survey is needed to distinguish Iron Age/Roman from later phases. The site is the northern terminus for the above hollow way (HER 8140), located again at the interface between lower valley and higher slopes. A similar settlement at Yatesfield c.3km south-east of Rochester, with associated field-systems (Charlton 2000; Charlton 2004, 328-329) is just outside Block 3. Their different, larger forms suggest either a specific purpose or larger societal grouping, potentially directly-associated with surrounding 'conventional' enclosed farmsteads and driven by local dynamics (indigenous meeting-place for agricultural management or consolidation of surplus), or alternatively response to the Roman military's arrival, e.g. Frodsham's hypothesis (2004c, 59; 2020) that indigenous settlements along Redesdale were involved in food-provision for outpost garrisons.

From sites visible on aerial imagery, indigenous settlement (whether Iron Age or Roman date) appears to survive generally west/south-west of the river, predominantly at the valley-floor/higher slopes margin. Parallel sites east/north-east of the Rede may be obscured by later settlement; indeed, a large enclosure identified via geophysical survey immediately west of High Rochester fort (beneath an associated annexe, Figure 137) is proposed (Charlton 2000; Crow 2004, 216-217; Hancke *et al.* 2004) as a locally-important pre-Roman site occupied by the Roman military. Nevertheless, the pattern throughout the project area is distinct enough to show an apparent native occupation preference for the southern/western side of the valley here. Charlton and Day's (1978) identification of Jobey's (1960) 'North Tynedale'-type rectilinear settlements alongside 'Cheviot'-type curvilinear sites throughout Redesdale may also suggest the valley formed a 'frontier' between two distinct social-groupings – another potential reason for the settlement pattern identified, though the latter site-type was not found in Block 3. 'Hillforts' (more-substantial, defensible hilltop-enclosures) are not present in northern Redesdale, though are found several kilometres south-east (around Elsdon, Figure 132) and are common throughout the Cheviots and
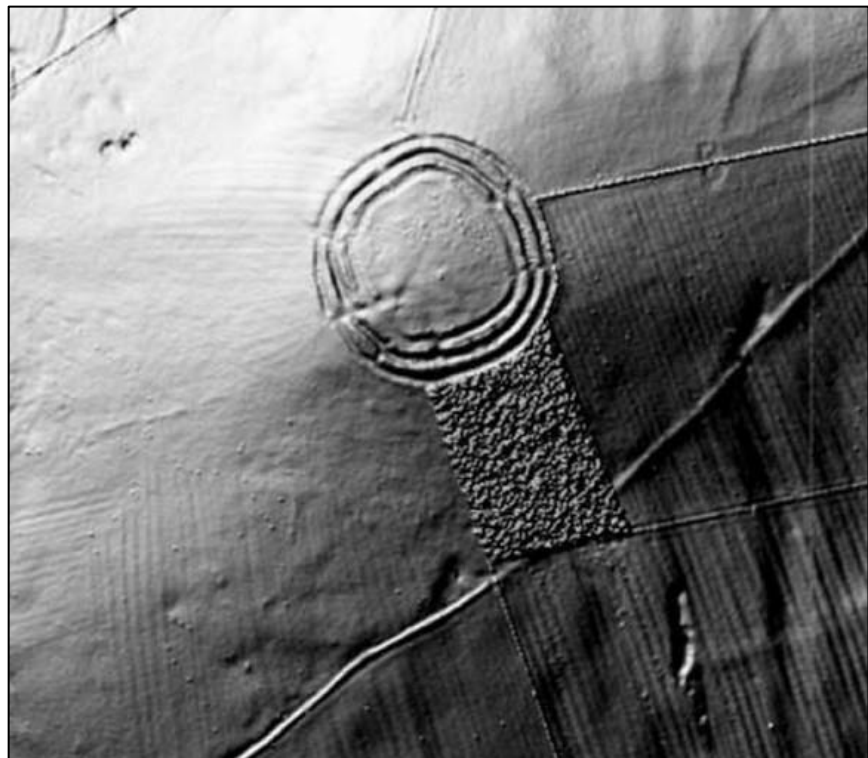


Figure 132 - Processed lidar-image of the multi-vallate hillfort at Camp Hill between Otterburn and Elsdon, recorded in the 'Redesdale Lidar Landscapes' project (Frodsham 2020, 30).

Coquetdale (east of Block 3) (Frodsham 2004b, 44; Frodsham 2020, 18, Figure 131), often-interpreted as heartlands of the *Votadini* cultural grouping which became a literature-attested frontier 'client kingdom' of Rome (Frodsham 2004c, 49). This could support the theory of Redesdale being on the margin between this and other social units, the north-eastern limit of rectilinear-dominated farmsteads.

Agriculture associated with these settlements is shown by the fragmented patches of coaxial field boundaries, rectilinear systems and cord-rig ploughing identified nearby (see above). Cord-rig is generally identifiable on aerial photographs (which are usually focussed on such settlements) but not 1m-resolution lidar (which has insufficient clarity to show the small ridges) – there is thus likely to be greater survival than represented in the aerial mapping. It represents hand-dug or ploughed small fields of cereal or vegetable cultivation (Frodsham 2004b, 46). Areas of later ridge and furrow occupy terrains likely suitable for earlier agriculture and thus further obscure cord-rig. Nonetheless, the survey does reveal a mixed agricultural regime with field-systems including arable or vegetable cultivation in the vicinity of settlement, and probable seasonal pasture moving between lower slopes and upper moor-tops (as throughout history). Cultivation of wheat, barley, oats and flax, along with weeds of both pasture/waste and cultivated land is attested in Redesdale since the Bronze Age, proven by excavations at Hallshill south of Block 3 (Frodsham 2004d, 27; Gates 1983, 116). Other landscape activities leaving far-less substantial evidence are attested by excavation, as with the shallow pit filled with burnt material including hazelnuts (radiocarbon-dated 790-430cal.BC) thought to represent cooking on Bellshiel Law (such activity invisible from the air) (Hale 2007, 41). Nearby, two well-constructed earth/stone cairns atop a buried surface dated 43cal.BC-cal.AD60 may indicate Romano-British clearance, perhaps associated with new or increasing cultivation (Saunders 2020, iii,28).

With Blocks 1 and 2, local communication networks could only be hypothesised, due to the fragmentary nature of aerial evidence. In Block 3 however, surviving hollow ways and braided trackways connecting upper and lower slopes and crossing the valley and its tributaries attest local seasonal transhumance and stock-droving throughout the medieval and later periods. Proximity of some routeways to earlier settlements at this interface suggests that these trackways likely followed long-standing, existing networks probably laid down in later prehistory. Additionally, the Rede forms a natural corridor through the moorland region, with potential for both easier terrestrial and riverine transportation, and multiple crossing-points attested by current bridges and fords.

This natural accessibility through an otherwise remote, upland region is why Dere Street follows the valley, the Roman military utilising an existing corridor for both movement and agriculture to align its road heading north from the Tyne lowlands. After initial advance into Scotland along this route in c.AD79 under Agricola (Frodsham 2004c, 49), the finalised road deviates from initial alignments to consider terrain and river-crossings, as shown by Poulter (2009, 14-16,27; 2014, 10,16). Crossing (either bridge or ford) of the Sills Burn immediately north of High Rochester is lost beneath medieval ploughing, trackways and later coal-mining, though alignments from north and south allow its approximate location to be identified. The road's course (Figure 133) has long been known (Maclauchlan 1852; Margary 1973), and is visible as clear earthworks through much of Block 3. Running north-westward along the eastern side of Redesdale, it crosses moorland near Petty Knowes where it survives as earthwork agger and ditches (in places overlain by later droveways following it), then a denuded bank through fields south-east of the fort, visible on lidar. North of High Rochester, Dere Street is followed by modern paved military roads (in places visible as parallel earthworks) north-north-west through the Otterburn Training Area (OTA) across the remaining
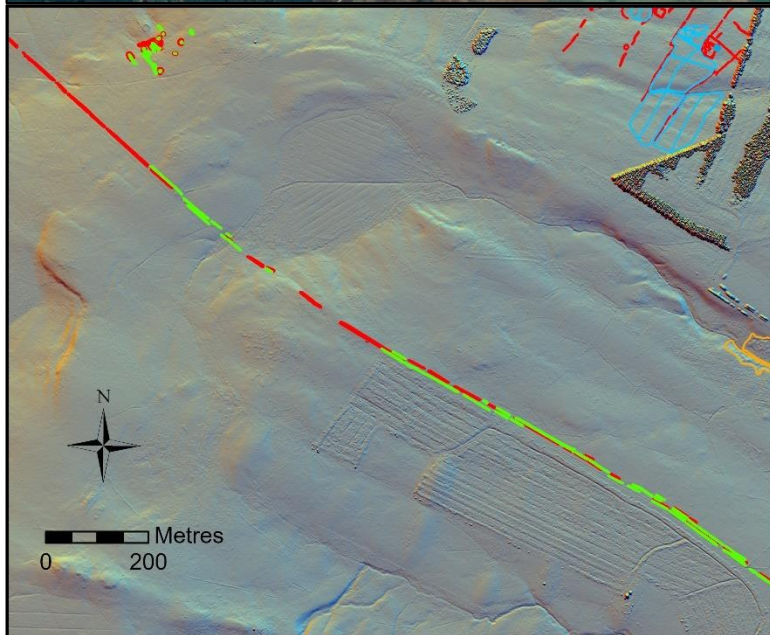
**Figure 133 - Google Earth orthophotography showing the proposed Roman road-network in Block 3 and surrounds (left); mapped alignment of the western linear, possibly a Roman road (right).**

1.75km of the project area. From there it continues to climb towards the ridge marking the Anglo-Scottish border and the Roman fortlet and camps at Chew Green (Charlton 2004, 332; Frodsham 2004c, 49-50). The road remained the main highway between England and Scotland until the late 18th century when it was replaced by the 'New Line' turnpike, now followed by the modern A68 (Charlton 2000; Lawson 1971). 20th century excavations prove its Roman provenance, showing local variation in construction: clay agger with shale surface north of Rochester, and more-complex sandstone-block construction, with metalling and kerbing, nearer the fort, and surviving wheel-ruts (Hale 2007, 47-49).

A long-known secondary military road (1325607) runs east from Rochester, climbing the moor and passing Dykehead Farm – eventually reaching the outpost fort at Low Learchild on the Devil's Causeway (a road heading from Corbridge into lowland north-east Northumberland). This is again visible as clear agger and flanking ditches, reused as a boundary and trackway more-recently. A third substantial routeway is visible as an unusually straight hollow- or bridle-way, running from north-east of High Rochester straight towards the fort (before the alignment is lost under ridge and

furrow) – this may represent an as-yet-unidentified Roman military routeway into the higher uplands. Finally, on the far side of Redesdale, in the south-west corner of Block 3, a straight linear feature is visible as lengths of earthwork bank running south-east to north-west across higher moorland, in places flanked by ditches. Whilst this may be a later boundary or routeway, wider orthophotography (Figure 133) suggests the alignment is preserved (either in this form or current boundaries or trackways) for many kilometres before disappearing into modern forestry to the north-west, near Catcleugh Reservoir. If confirmed, this would be the first suggestion of a Roman route following the western side of Redesdale.

Roman movement through the landscape is attested by the well-known series of temporary camps, of differing size and form (and thus potentially different units, periods and function – campaigning, practice or road/fort-construction). All examples within the mapping are located north-east of the valley, along Dere Street, with several close to 20th-century Redesdale Artillery Practice Camp. A favoured location is flattish ground at Birdhope, beyond Sills Burn north-west of High Rochester fort (Figure 134), used for three phases of temporary camp (17308, 914187, 914267) south of the Dere Street burn-crossing. One, much larger and enclosing the others, forms a slight trapezoidal shape to best-use the local topography, with an internal western clavicula. The others are square, the most prominent with external traverses on entrances: clearly showing three different phases of activity for differently-sized units. 600m north, between Dere Street and the burn, are two rectilinear, smaller camps (250, 17315), with the far larger (18.9ha) Silloans camp (241) flanking the road and thus thought of early date (Charlton 2004, 332), holding a legion-sized force. The similarly-large (17ha) camp of Bellshiel (17259) is located west of the road, linked by a causeway and occupying the breadth of moorland-ridge, surveyed by MacLauchlan (1852) and RCHME (Welfare and Swan 1995), excavations showing rampart-construction of local sandstone, clay and turf (no artefacts),lying on top of buried heathland soils with evidence for managed grazing (burnt lenses), mirroring palynology



**Figure 134 - Aerial photograph showing High Rochester fort (above-centre), separated from the Birdhope temporary camps (foreground) by the Sills Burn (NMR 20456/22 16-SEP-2005 ©HE).**

from Bloody Moss (Hale 2007, 41-46). A right-angled ditch with unusually-precise rounded corner c.720m south of High Rochester at Tod Law could be the first camp identified in this direction from the fort. These camps attest the major impact on the local landscape of the Roman army's various units (occupying flat land and lower slopes on the moorland fringe: the parallel zone to that favoured by indigenous settlement on the other side of the valley), alongside longevity of this activity and its role in Roman regional military perception.

The major permanent Roman site locally is of course *Bremenivm* ('place of the roaring stream', thought to be Sills Burn (Charlton 2000)) fort at High Rochester (17287), attested in the Vindolanda Tablets (c.AD100), Ptolemy's *Geography* (Crow 2004, 214,216) and later Ravenna Cosmography (Frere 2001, 291), occupied from at least Agricolan advances into Scotland (Frodsham 2004c, 49) through to c.AD340 based upon numismatic (Casey and Savage 1980, 75-80) and ceramic evidence (Charlton 2000; Crow 2004, 222-223). Units known at the site from inscriptions are *cohors I Lingonum equitata* (northern France) and *cohors I Dalmatorum* (Balkans) in the second century, *cohors I Vardullorum milliaria equitata* (northern Spain) and *numerus exploratores Bremensienses* (specialist-scouts) c.AD238-244, with detachments from *legio VI Victrix* (based in York), *legio XX* (Chester)*, cohors IV Gallorum* (nearby Risingham) and *cohors II Nerviorum* (Wallsend), representing troops from all over the empire, both cavalry and infantry (Charlton 2000; Charlton and Mitcheson 1984, 19; Crow 2004, 214,222). Isolated metalwork finds indicate links with the Rhineland (Corder 1990, 230). Excavations (below) revealed the usual sequence of earthwork/timber early road-fort rebuilt in stone in the mid-second century as a Hadrianic outpost and with early-third century reorganisation (Charlton 2000).

The fort survives as a 2ha platform (Figure 135) dominating the immediate topography and protected from north-east, north, and west by the Sills Burn and its tributary; with extensive views across Redesdale and up the burn northwards (Charlton 2000; Jones and Woolliscroft 2001, 137). The outer defences are the most prominent earthworks, with multiple banks and ditches surviving to south, east and (beneath ridge and furrow) north. The fort itself survives as a raised rampart, with standing masonry in places, notably the west gate and southern interval tower. Though the interior has been levelled by medieval and later occupation (including two post-medieval bastles), it was extensively-excavated in the 1840s (Crow 2004, 214,220), giving an almost-complete plan of later phases of Roman occupation (Figure 136), with further



**Figure 135 - Aerial photograph showing High Rochester fort from the north-west, surviving as rectangular platform surrounded by defensive and later agricultural earthworks (NMR 20457/7 16-SEP-2005 ©HE).**

**Figure 136 - Plan of Bremenivm fort, showing excavated barracks, stables, internal bathhouse, granaries, headquarters and praetorium (Charlton 2000).**

investigation of the defences in the 1930s showing two successive turf and three stone ramparts, the earliest phase within a landscape of mixed grassland, heath and limited woodland (Richmond 1936, 170-174,196-197; 1940). Geophysical survey of fort and environs confirmed the 1852-55 excavation plan (to within 0.5m) while limited excavation suggested the *principia*'s hypocaust was last-fired c.AD190 via palaeomagnetic dating (Crow 2004, 214,220). Internal buildings (or trenches following them) are visible as faint earthworks on aerial photography, matching recorded antiquarian plans. Evidence suggests substantial reorganisation of buildings, presumably related to housing the larger third-century garrison of two units (Richmond 1936, 179-181). As with Birrens [5.2b], four (rather than usual two) granaries indicates larger grain-holding capacity for the outpost, possibly due to later garrison-size (Jones and Woolliscroft 2001, 137). Interesting alternative
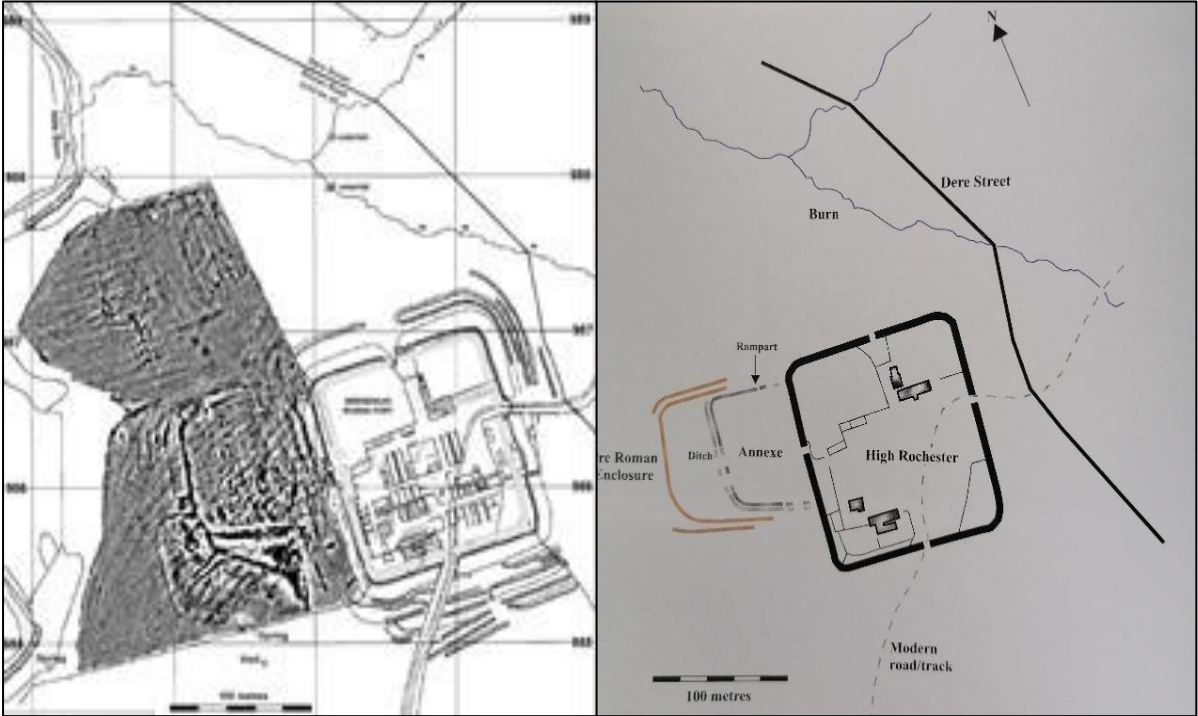


**Figure 137 - Magnetometry results west of fort alongside earthwork-survey, left (Hancke *et al.* 2004, 39); interpretation plan showing position of the annexe(s) and earlier enclosure, right (Crow 2004, 216).**

landscape-implications here include either the need for a large, protected grain-supply (suggesting hostile environs) or the fort's role in gathering local arable-surplus (interesting given the many farmsteads locally). Geophysical survey of the flatter field west of the fort (Crow 2004, 215-217; Hancke *et al*. 2004, 35-44, Figure 137) revealed a multiple-phased annexe (defences confirmed by trial-trenching) housing substantial buildings and industry, potentially a defended extra-mural military area or settlement.

Antiquarian excavations of the fort revealed sculptural and epigraphic evidence for various aspects of identity, including Roman spiritual beliefs - Venus and Minerva (Charlton 2000, Figure 138), Silvanus, Hercules, Roma, Victory/Peace, the Emperor and Standards; those from the east (Sol Invictus) and indigenous cults (horned gods, three 'Celtic' mother goddesses and Matunus/Mountes) (Charlton and Mitcheson 1983, 152). Tombstone inscriptions and artefacts also indicate late-Roman Christian influences at the site (Frodsham 2004c, 62-63).
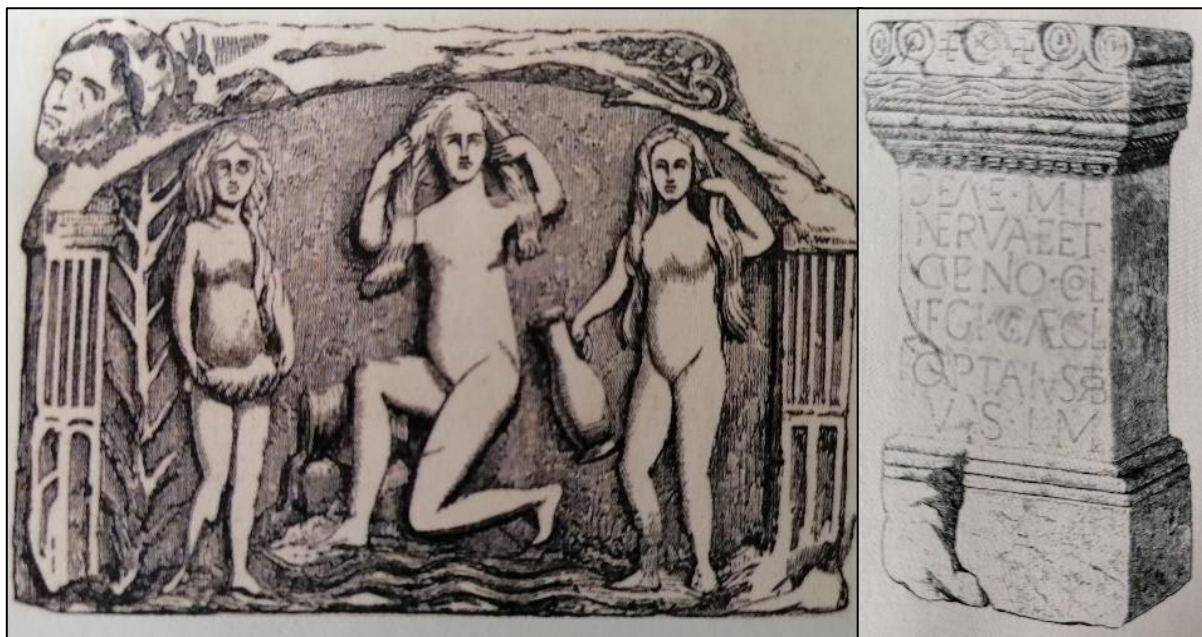


**Figure 138 - Drawings of finds from Bremenivm, including sculpture of 'Venus with attendant nymphs' and altar to Minerva found in the principia's strong-room (Charlton 2000).**

In terms of Roman settlement evidence from the survey, fields south-west and south-east of the fort both show large areas of confusing banked earthworks on lidar which may represent buildings, yards, or roads from the associated civil settlement. The confusing south-western mass of small rectilinear features (Figure 139), flanked north and south-east by medieval ploughing which conceals its extents, will hopefully be elucidated by forthcoming excavations. Indeed, settlement appears to have extended north and south of the annexes (above) on geophysical results; including water management features and a large building complex thought either *mansio* or bathhouse, and with adjoining fields north-west of the fort (Hancke *et al*. 2004, 40,46-47). The earthworks in fields south-east of the fort form more-regular rectangular plots (Figure 140), perpendicular to either side of the line of Dere Street (visible as a more-substantial bank and flanking ditches approaching the fort's east gate from the south-east). The road's course and construction was proven by 1990s excavation (Crow 2004, 218) which dated the ditches to second-century AD, and confirmed nearby contemporary cultivation (via sampled seeds) though found only cobbled areas and pits to either side, despite geophysics suggesting structures. Substantial rectilinear, embanked enclosures north-west of the fort and north of the annexe defences may represent further Roman-period activity or

**Figure 139 - Aerial photograph of High Rochester fort from the north-east, showing potential settlement earthworks (directly above the fort) and hints of the annexe (field to right) (TMG 14741/24 18-MAY-1993 ©Tim Gates).**

alternatively later reuse of the site as a defended settlement [6.1b]. Meanwhile, the 1990s survey confirmed the fort's connection to its surroundings via an aqueduct crossing the defences to connect the internal bathhouse with springs at Petty Knowes to the south-east (Crow 2004, 220).

Of particular interest regarding identity of inhabitants of *Bremenivm* is the cemetery at Petty Knowes (Figure 141), located prominently on moorland south-east of the fort, near Dere Street – an unusually well-preserved and large cemetery for northern Britain, surveyed in the 1970s (Charlton and Mitcheson 1984). The cemetery comprises several distinct parts across a wide upland area: stone-built tombs adjacent to Dere Street itself, the most prominent a circular stone base (possibly for an earthen barrow) with carved *bucranium* (ox) and
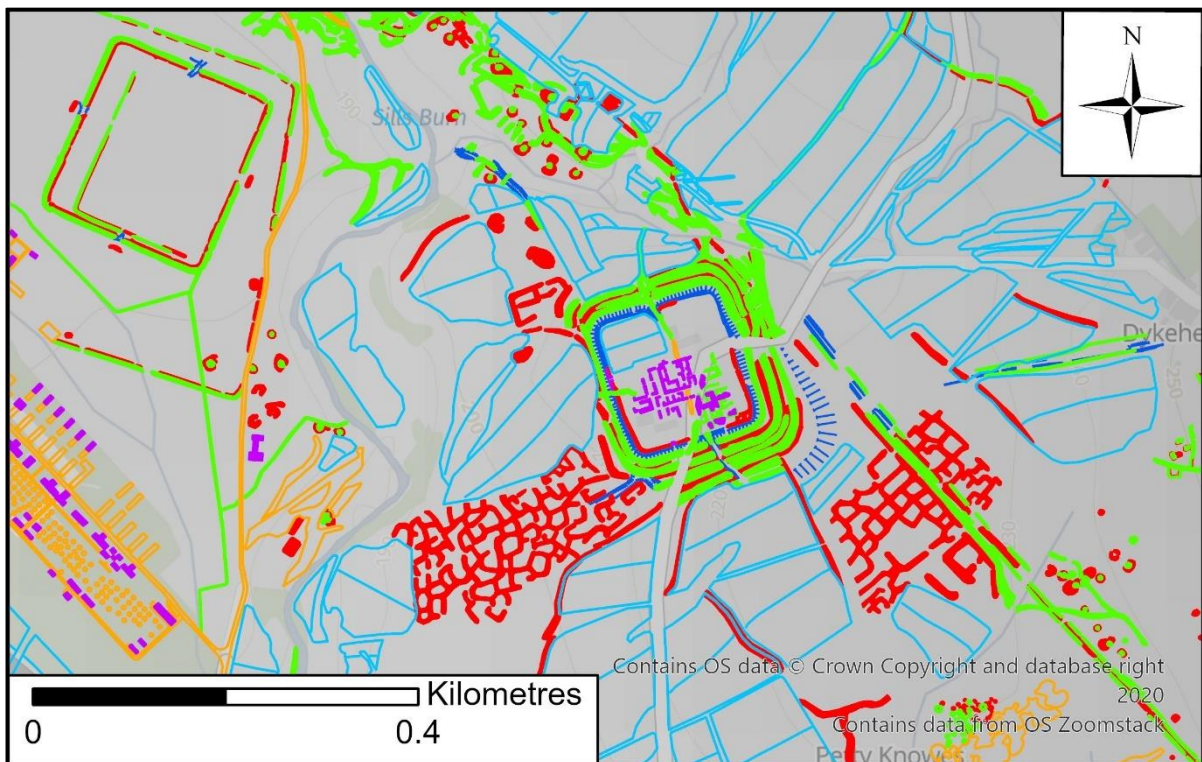


**Figure 140 - Aerial-survey mapping showing the visible earthworks of High Rochester fort and surrounding fields, including the two areas of potential settlement (bottom left, bottom right).**

**Figure 141 - Aerial photograph of Petty Knowes Roman cemetery from the west, with a large cluster of earthwork burial-mounds (foreground-centre), the line of Dere Street (centre-left to top-centre) and the stone-built tomb to the road's right (top) (TMG 2735/114 01-JUN-1985 ©Tim Gates).**

pinecone (known Roman funerary symbols) with three adjacent square mausolea and three earthen mounds (Charlton and Mitcheson 1984, 1; Hingley and Allason-Jones 2009, 162; Wilson 2004, 25-29); and 90+ earthen barrows scattered across the moorland in distinct groups. The largest group comprises 75 monuments (Charlton and Mitcheson 1984, 1) (though less were visible from aerial sources), generally circular earthen mounds surrounded by ditches and containing cremation burials – similar examples have been found associated with different units at Halton Chesters and Great Chesters on Hadrian's Wall (*ibid*., 19-20). Further small groups across the moor hint at the wider cemetery extent, located to dominate the skyline on the closest-suitable land (beyond the settlement and subsequent marsh) (*ibid*., 1, Figure 142). Excavation of the mausolea (1850) and 15 mound-burials (1978-79) revealed few grave goods (four coins, military-boot hobnails (attesting soldiers), three cremation vessels and glass bottle) dating early-second to early-fourth centuries. Tombstones nearer the fort reveal more detail about identities of those buried, including fort-
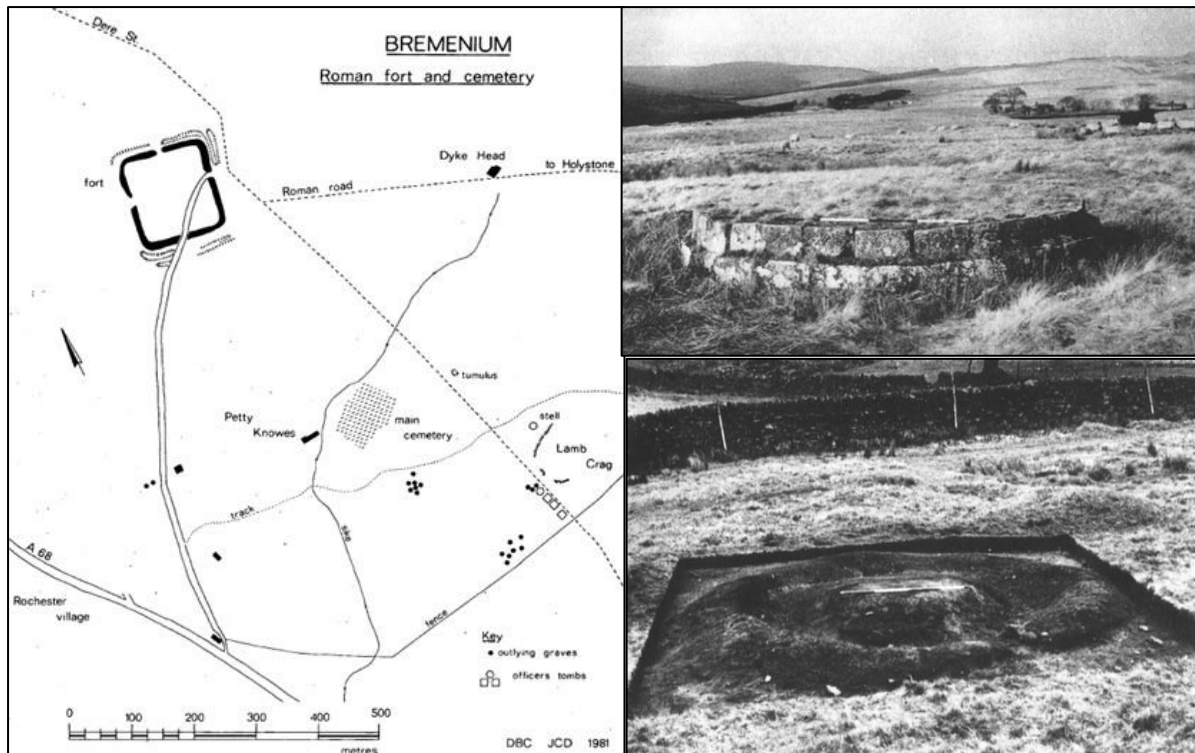
**Figure 142 - Plan of 1970s-surveyed tombs in relation to fort (left); photographs of circular mausoleum near Dere Street (above right) and mound under excavation (below right) (Charlton and Mitcheson 1984, 2,3,7).**

commander, ordinary-soldier, woman, freedman and tribune's foster-child, supported by the limited skeletal evidence – most undetermined, one adult male, one female juvenile and one child (Charlton and Mitcheson 1984, 18-19; Wilson 2004, 31-32).

A spiritual site just beyond the project area, but relevant, is the small shrine near the Rochester-Learchild military road and associated temporary camp above upper Coquetdale: a square, rock-cut chamber carved out of the outcrop, with offering shelf, flue for pyres and carved male warrior deity (Figure 143) (Charlton and Mitcheson 1983, 143-146). Proximity to camp and road argue for association with Roman soldiers moving through the landscape, though the depiction and style of the carving suggest a local god – possibly Cocidius (as at Bewcastle), Belatucadrus (attested from Netherby) or another *genius loci*, potentially linked to Mars or Silvanus (as with a sculpture near Risingham in southern Redesdale) (*ibid.*, 147-152).

Regarding Roman landscape perception and observation, a site with potential as a fortlet or watchtower like those around Bewcastle [5.2b] has been identified east of Rochester, close to the eastern military-road to Learchild, at the summit of a natural rise blocking the fort's view in that direction. The



**Figure 143 - Carved male deity from the rock-cut shrine near Yardhope in the Otterburn Training Area, east of High Rochester (Charlton and Mitcheson 1983, 154).**

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feature (17325) (Figure 144) projects from beneath later enclosures associated with Dykehead Farm but is of different form, comprising a rectilinear enclosure of broad bank and outer ditch, surrounding a square hollow feature recorded previously as a 'tumulus' but resembling a Roman watchtower from the air. If proven, this would address a weakness in the surveillance-position of High Rochester, providing visual communication along the road system.



Figure 144 - Aerial photograph of Dykehead Farm. The Roman road is visible as subtle lines in the field left of the modern buildings, while the potential watchtower is immediately below the largest cluster of trees (below the farm), different in character to the later turf/earth boundaries (bottom) (TMG 14741/53 18-MAY-1993 ©Tim Gates).

In terms of Roman impact on the existing natural and cultural landscape, the positioning of Dere Street and the adjacent camps may have removed existing settlement and prime agricultural land north/north-east of the valley, as discussed above. The potential large enclosure identified by geophysics beneath the annexe supports this, mirroring the siting of Netherby's western outpost fort atop a native site. The suggestion (Frodsham 2020) that the high number of native farmsteads provided a local agricultural supply to the fort garrison represents a further social impact, changing economic dynamics within Redesdale under Rome, despite being beyond the official political border of Hadrian's Wall. Complete coverage by lidar for surrounding higher-slopes, but no settlements beyond the valley support the importance of Redesdale. Small quarries on outcrops at Petty Knowes are postulated (Frodsham 2020, 20-21) as Roman (differing in scale and form to post-medieval quarries nearby), attesting environmental exploitation (presumably for construction of Dere Street and *Bremenivum* itself). Local turf and timber also saw use in earlier fort phases and the numerous

camp defences along the road. Peat from the extensive nearby heathland used as fuel and fodder is also likely, though the site lacks the environmental samples to prove this. Alongside the obvious ideological impact of a permanent, stone-built fort and large military garrison in an area beyond Hadrian's Wall, smaller-scale impacts are shown in siting of the cemetery at Petty Knowes on a prominent ridge overlooking Redesdale, reflecting earlier prehistoric burial monuments (but potentially due more to the site's local visibility rather than any focussed attempt to emulate the past, given that barrow cemeteries are found elsewhere in Roman military contexts). There is also the role of the well-constructed road network itself, forming corridors of Roman movement (including military and trade) in an otherwise remote, rural landscape.

Overall, the nature of this upland project area (including lack of modern arable ploughing or development, preserving earthworks and structures), together with complete 1m-resolution lidar coverage and numerous specialist aerial photographs (including particularly-good imagery from Tim Gates) has allowed many Iron Age and Roman landscape features to be identified across Block 3, allowing much-more detailed assessment of the environs of High Rochester's outpost fort than was possible for Netherby in Block 1. While the lidar offered more-comprehensive landscape-coverage, photographs were of greater use for identifying small-scale features such as cord-rig cultivation, which would otherwise have been missed. This has been reinforced by a greater number of site-based investigations, on both Roman military features and, crucially, native settlements, allowing definite dating. As a result, the following section will concentrate on surrounding regional patterns, rather than alternative excavated parallels [unlike 5.2b] to contextualise this sample-area.

*6.2b – Contextualising the New Evidence: Existing Knowledge of Iron Age and Roman Period Landscapes North of Hadrian's Wall*

The region immediately north of Hadrian's Wall has a long history of archaeological study, investigating patterns and forms of indigenous later-prehistoric and Romano-British indigenous settlement across Northumberland (primarily stemming from the work of George Jobey), and also the Roman outposts and infrastructure beyond the military borderland. This complements studies of Iron Age/Roman settlement and interaction in southern Scotland.

In terms of archaeological evidence for the period's natural landscape and vegetational patterns from the wider region, broader evidence has already been discussed [6.1c]. Block 3 sits in the heart of the broad, remote upland band dominating the modern Anglo-Scottish border, in the area known as the Border Moors (Natural England 2013b) rising gradually northwards, between the Pennines to south-west and higher Cheviots to north-east. Redesdale is one of two major valleys penetrating this massif – the other being North Tynedale to the west (Natural England 2013b, 3,5). Further valleys east of the project area flow either east/south-east to the Northumberland coastal plain, or north-east into the Tweed-Till basin, divided by similarly sparsely-settled sandstone hills of Simonside and Harbottle (Natural England 2013a, 3,5,10). Surrounding lower-lying plateaus connect these uplands to the lowland coastal plain and arc south-west to join the higher uplands of Block 3 to the Whin Sill occupied by Hadrian's Wall (Natural England 2015c, 3), linking to the aforementioned valleys which form the nuclei for human settlement and agriculture throughout prehistory, enabling more rapid communication than higher slopes and summits.

Palaeoenvironmental evidence from the project area itself has been discussed [6.2a]. The other major palynological evidence therefore comes from Steng Moss to the south (north of Corbridge), revealing sustained major deforestation and associated cereal cultivation in the region

from the early Iron Age, peaking alongside increasing pasture and heather moorland in the late-Iron Age and/or early Roman period (Dark and Dark 1997, 34; Dark 1999, 256; Dark 2000b, 61), woodland-regeneration occurring within a century of the end of Roman occupation (Davies and Turner 1979, 783). The excavated roundhouse at Halls Hill, east of Woodburn in southern Redesdale, revealed cultivation of emmer (and lesser amounts of spelt – the earliest regionally) wheat, six-row barley and flax, dated 1100-900cal.BC (Gates 2009, 43,77-83), similar to cereal assemblages from the 210-10cal.BC timber and later stone phases at Murton High Crags near Berwick (Jobey and Jobey 1987, 195) and from pits and beneath the rampart of Dod Law hillfort near Wooler (both wheats and barley alongside hazelnuts) (Hall and Huntley 2007, 44-45). Meanwhile, the Bowmont Valley project in the northern Cheviots provides evidence of local environmental change which provides a parallel for human impact applicable to the wider region: concerted late-Iron Age major woodland-clearance resulting in widespread soil erosion (deposited in Yetholm Loch) (Tipping 2010, 182-183). All of this supports the trends discussed for Block 3 [6.2a], revealing a cleared, mixed-farming landscape by the time of the Roman arrival, even into the uplands.

In terms of late-Iron Age and Romano-British settlement patterns, the long history of aerial and field surveys and excavation across Northumberland has identified countless examples of unenclosed and enclosed farmsteads, together with field-systems (initially small-scale and defined by clearance cairns, later extensive rectilinear systems) and cord-rig cultivation (Fowler and Strutt 2005, 12-18; Gates 1983, 110-112; Topping 1989, 161- Figure 145). Only Brands Hill in the northern Cheviots and Tower Knowe in Tynedale have confirmed relationships between settlement and fields (Gates 1982, 22), though the general pattern appears one of agricultural fields immediately surrounding sites and seasonally-cycled lowland/upland pasture beyond (*ibid*., 33-35). Unenclosed roundhouses are often found in close proximity to enclosed sites (Jobey 1972, 77-80), mirroring those in Block 3 near Evistones, and potentially contemporary rather than earlier (Jobey 1983, 16; Jobey and Jobey 1987, 176). Enclosed settlements such as Hartburn near
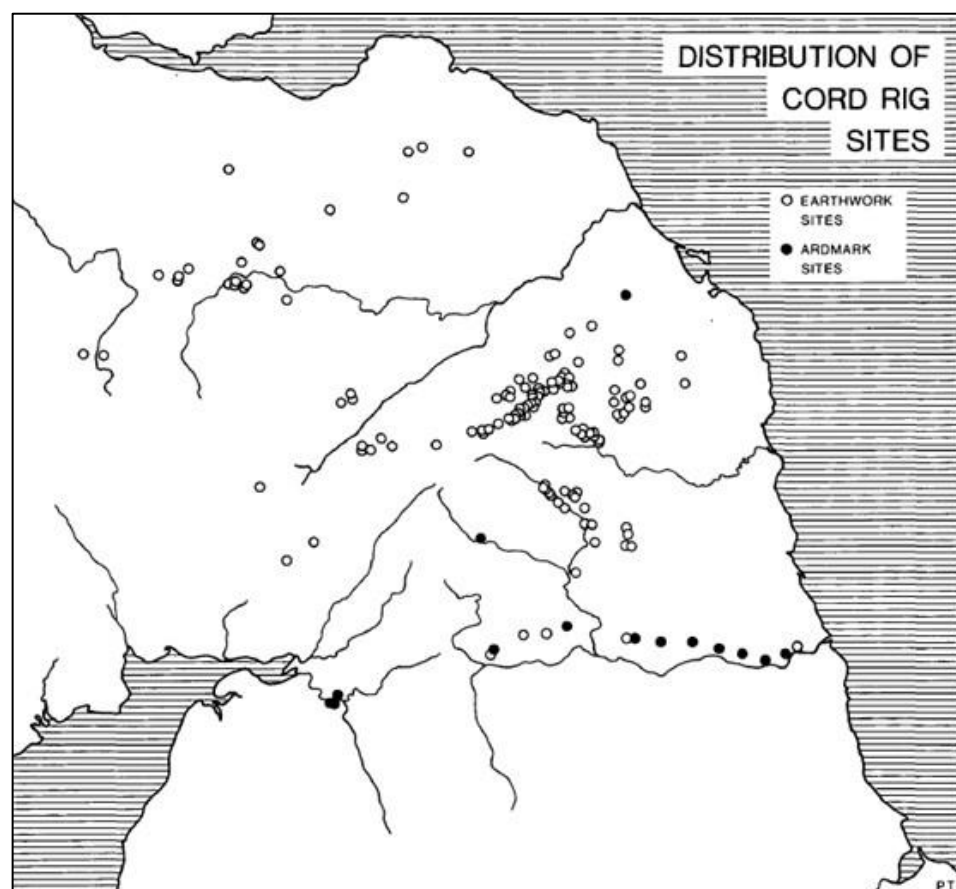


**Figure 145 - Distribution of identified cord rig earthworks and excavated 'ard-marks' attesting arable/vegetable cultivation in the region (Topping 1989, 162).**
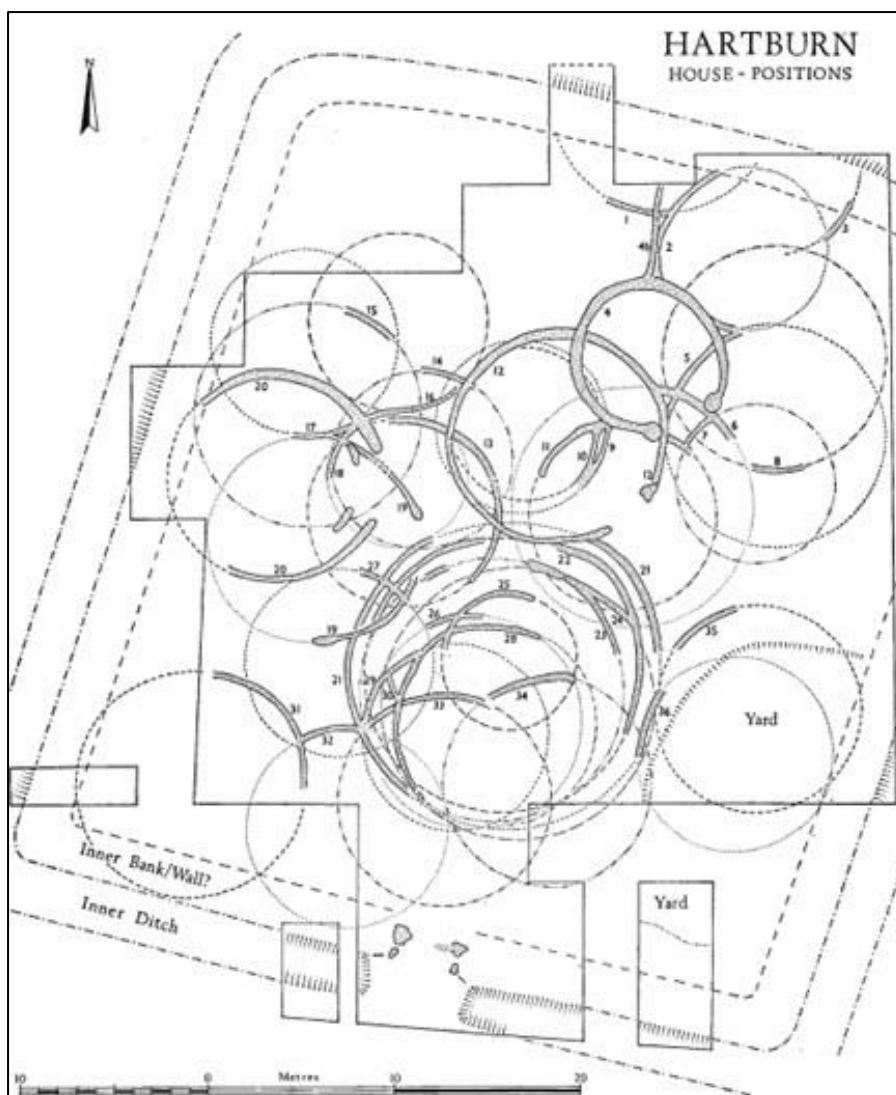
Figure 146 - Excavation plan alongside outlines of earthwork perimeters, showing the multiple overlapping phases of roundhouses at Hartburn, Northumberland (Jobey 1973a, 30).

the Devil's Causeway (below) were shown by excavation (Jobey 1973a, 11,47-48) to have extremely long and complex occupations – Iron Age pottery (sixth/fifth centuries BC) through to Roman ceramics and glassware (third century AD) and over twelve replacement timber phases (Figure 146) followed by stone reconstruction (though whether occupation was intermittent or continuous is unconfirmed).The later phases of most settlements contain second- and third-century Roman artefacts, indicating that the region was not depopulated upon establishment of the Roman frontier (Jobey 1974); many sites appear in fact to have expanded in size via addition of extra roundhouses (Jobey 1982, 12).

A major 1970s programme of works in North Tynedale in advance of Kielder Water's construction excavated numerous such settlements (Harbottle and Newman 1973, 137-138; Harbottle and Newman 1977, 121; Jobey 1973b; Jobey 1977; Jobey 1978b; Jobey and Jobey 1988), identifying several commonalities of morphological development (not seen at every site but found at many) (Harding 1982, 189). These include palisaded enclosures and timber-built houses in earlier phases (generally radiocarbon-dated to early-mid first millennium BC (Gates 1983, 103; Jobey 1973b)), replaced by stone-built or earthwork settlements which remain extant in the present (Charlton and Day 1974, 40; Jobey 1975, 119; Jobey 1977, 33), such development taking place from the later-Iron Age through to the third century AD, confirmed by Roman-period native and imported pottery and metalwork/glass (Jobey 1959, 251-254,268) as well as radiocarbon dates (Jobey 1977, 34; Jobey 1978b, 24). North Tynedale thus acts as a similar corridor of later-prehistoric indigenous activity to Redesdale, with important implications for Block 3.

These projects, and other investigations locally, identified the final regionally-dominant surviving form in the uplands (Figure 147) of 0.13-0.4ha rectilinear enclosures containing two-five roundhouses and two east-facing yards divided by a bank (perimeters stone where geology supported/forced this, ditches present where till underlies (Jobey 1977, 35-36; Jobey 1982, 7)), located on low ridges and river-spurs. Such sites dominate Redesdale's western side in Block 3 (Jobey 1960, 2-21), stretching south down into lower Redesdale (Jobey 1963; Jobey 1981) and as far south-east as the upper Wansbeck valley (Jobey 1959, 217; McCord and Jobey 1968, 51-52). This contrasts, however, with the greater variety, size, complexity and construction-materials of sites identified in the coastal lowlands to the east (Hodgson *et al.* 2012). The evidence for different forms of site there (Figure 35) [3.3] could indeed imply that more-ephemeral sites were present in the neighbouring uplands, and are just not preserved and/or visible to remote-sensing surveys. Alternatively, the evidence could show important distinctions between upland and lowland landscapes and communities, [see Chapter 7].
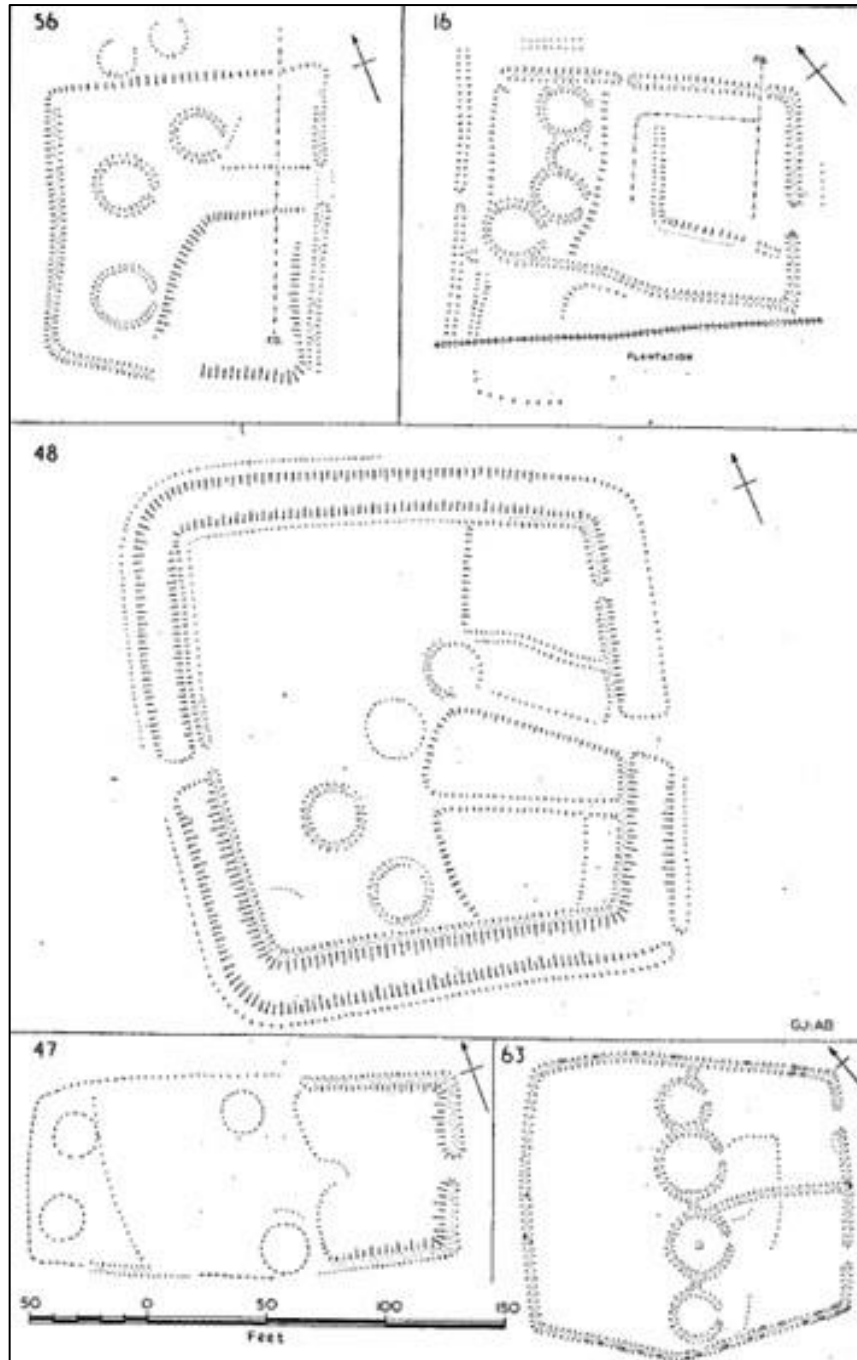


Figure 147 - Survey plans of rectilinear enclosed settlements from Northumberland, showing the common features at many such sites (Jobey 1960, 3).

As discussed, these enclosed upland settlements contain material evidence of interaction with the Roman Empire into at least the second-third centuries AD. Excavations at Gunnar Peak (Jobey 1981, 66-73) revealed a stone-built rectilinear farmstead with no timber predecessor, a particularly rich assemblage (native pottery alongside Samian and other fine-wares, black-burnished ware, mortaria, amphorae, glass, querns and leather) attesting greater-than-average trade with

Rome (possibly via nearby Dere Street). This interaction parallels that from coastal Northumberland (Hodgson *et al.* 2012; Hodgson 2017) though may actually continue after the mid-late second-century abandonment of those lowland sites (a potential strand for future research beyond the scope of this project). Though three sites in the region contain later rectangular buildings, these may be post-Roman in date (Jobey 1960, 14-15).

The preponderance of rectilinear farmsteads in southern and western Northumberland contrasts the curvilinear settlements and hollowed-forecourt sites of the Cheviots further east/north-east (Ferrell 1997, 230; Jobey 1960, 26; Jobey 1962a, 47-55; Jobey 1964a, 41-47; Jobey 1982, 7) and the central Scottish borders northwards (Wilson 2010), perhaps representing different socio-cultural groupings (e.g. *Votadini* for the Cheviots and *Selgovae* for central-southern Scotland, distinct 'tribes' from the *Brigantes* to the south, referred to in Roman literature (Jobey 1964a, 60; Wilson 2010, 1)). While we must be careful when applying Roman-defined tribes (Moore 2011 [2.2a, 5.1c]), these morphological differences in settlements may suggest different social groupings and/or activities in higher upland areas. Nevertheless, all settlement-types contain 'yards' for livestock management and evidence for mixed agriculture, indicating similar broader economies regardless of form. Intrusive settlement types from further north (e.g. brochs and souterrains) only occasionally appear in the Cheviots – these could represent social/cultural integration or emulation (Jobey 1982, 17). Such settlements are more common in the Scottish borders, used by Wilson (2010, 44-46), alongside several largescale linear earthwork boundaries not paralleled in Northumberland at this period, to further define the proposed territory of the *Selgovae* (again relying overly on Roman-defined terminology rather than possible indigenous group characterisations).

Alongside the different form of upland curvilinear enclosed farmsteads dominating the Cheviots north-east of Redesdale is the aforementioned predominance of 'hillforts' in the pre-Roman Iron Age (Figure 148), varying in size and amount of defensive earthworks (with only a few rivalling the large hillforts of southern England or Scotland). These appear to be permanent settlements rather than temporary refuges or gathering-places (Jobey 1965, 55-56), such sites reaching as far as the north-east coastline of Northumberland at Howick Hill (Bacilieri *et al.* 2008, 17). These Cheviot hillforts were subjected to widescale aerial and field survey in the 1990s and 2000s, resulting in increased understanding of form, development, and function (Oswald *et al.* 2008, 31-34; Topping and Pearson 2008; Topping 2008). They appear to have been largely abandoned by the Roman arrival locally, perhaps reflecting internal social or economic changes – few sites have evidence for earthwork-slighting suggestive of strife (Oswald *et al*. 2008), though would have continued as prominent landscape features and thus could have remained important for social gatherings or specific activities (Hingley 2021, pers.comm). Evidence for permanent settlement generally moves down-slope to the valley spurs (similar topographically to those in Redesdale). However, some larger hillforts were also re-occupied by much smaller settlements (some within newly-built enclosures e.g. Lordenshaws, Mid Hill, Alnham Castle) and incorporated into field-systems of cord rig cultivation and extensive stock management enclosures (Jobey 1964a, 52; Oswald *et al*. 2008, 16-25,35-38, Figure 149; Topping 1993, 19-21). In the Breamish valley, regularly-planned coaxial field-systems and terraces (suggesting overarching landscape control and organisation), supporting village-like agglomerations of settlement enclosures, appear to originate with or focus upon, earlier hillforts, hinting at a potential change in community hierarchy display, supported by agricultural wealth (supported by environmental evidence for contemporary arable intensification and woodland-clearance (Topping 2008, 360). Attempts to date the terraces are
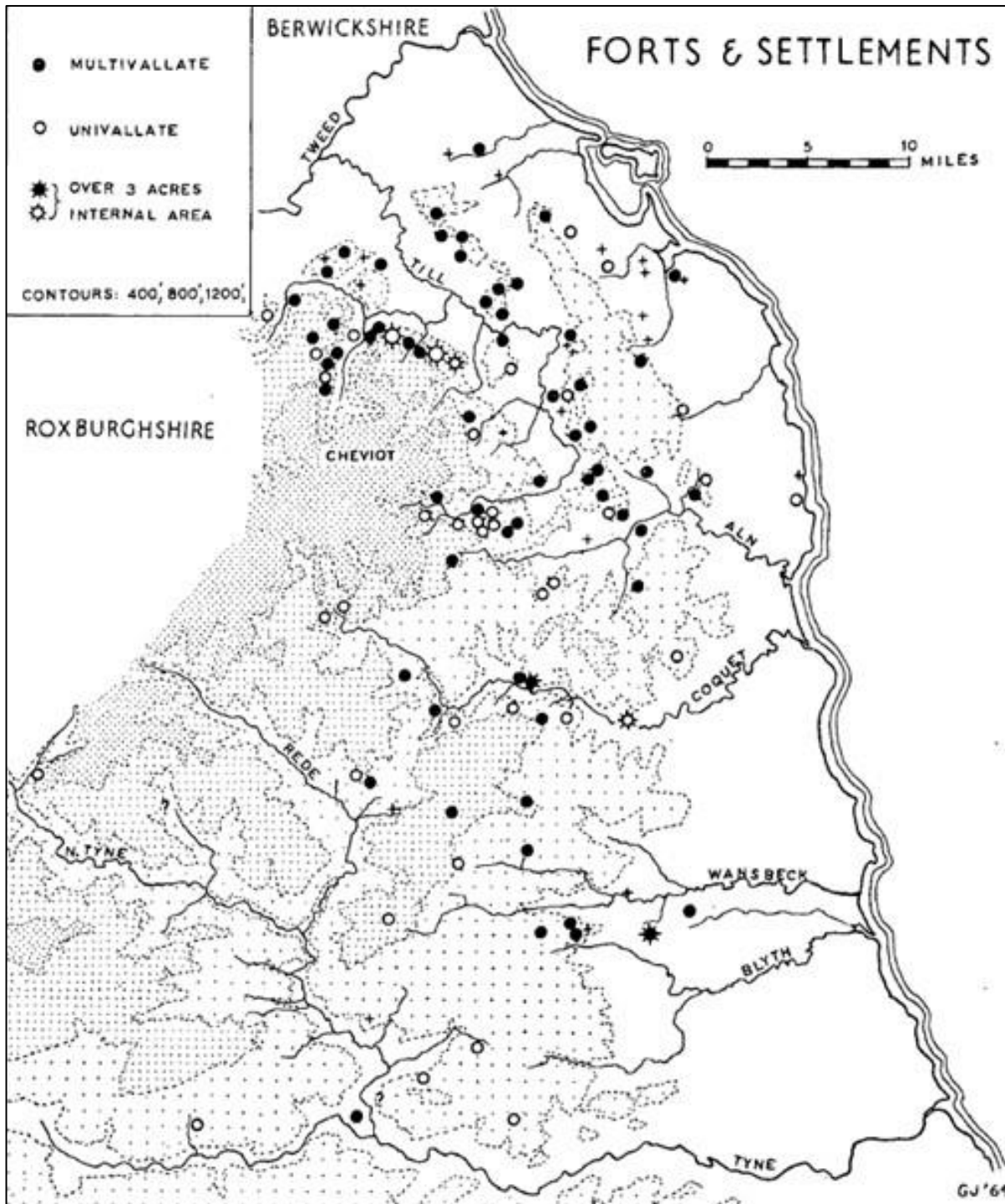
**Figure 148 - Distribution map showing hillforts in the Cheviots, divided by form and size (Jobey 1965a, 56).**

ongoing (Archaeological Research Services Ltd 2021). This landscape change thus occurred prior to Rome's arrival (Topping and Pearson 2008, 72-73).

The major site of Yeavering Bell (Figure 150), likely Roman-recorded *Venutio* (with finds of Samian ware and fourth-century coins indicating some ongoing Roman interaction or presence (Frere 2001, 291)) stands out as a particular regional focus. Its 5.6ha size and 125+ roundhouses (including two much larger structures interpreted as higher-status), have led to hypotheses that is represented a cultural or economic centre for the *Votadini* (Jobey 1965, 31-32; Oswald *et al.* 2006, 96-97).Parallels have been drawn between Yeavering Bell and the major hillforts of Eildon Hill near
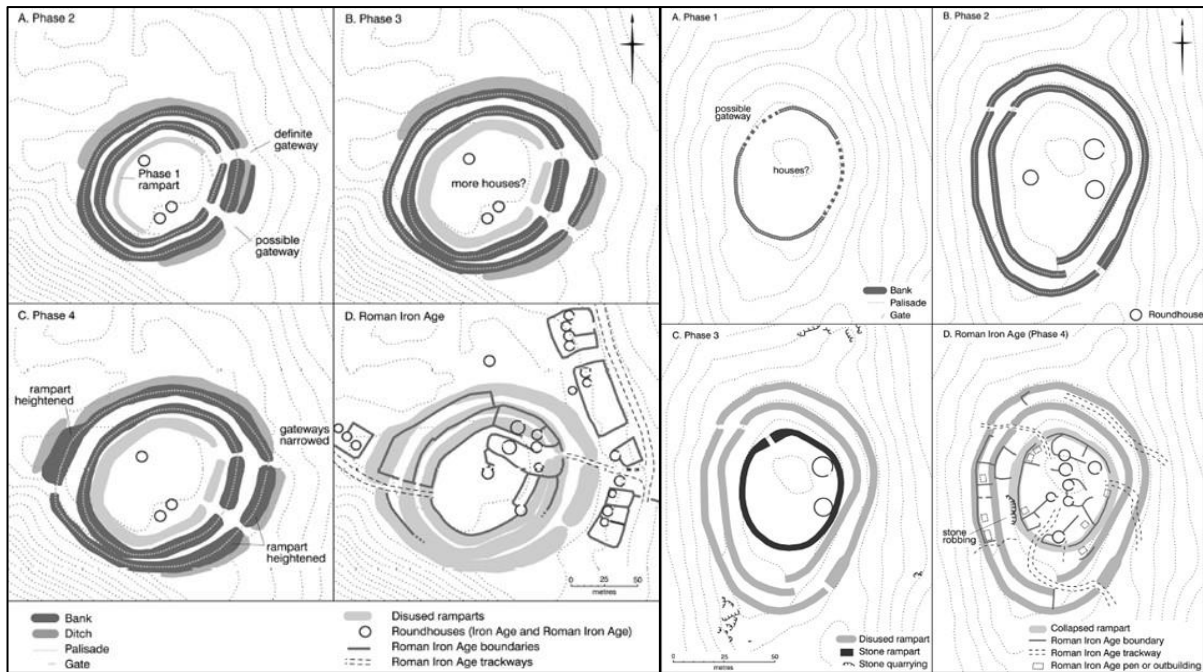
**Figure 149 - Phased plans of Cheviot hillforts (Alnham Castle Hill [left] and Ring Chesters [right]), showing Iron Age hillforts overlain by late-Iron Age/Romano-British enclosed settlements (Oswald *et al.* 2008, 23,25).**

Melrose in the Scottish Borders (interpreted as the potential central-place of the neighbouring *Selgovae* (Wilson 2010, 4,45-46)) and Traprain Law in East Lothian, further north-east (hypothesised as a northern alternative central site for the *Votadini*). Such comparisons use similarities in interpreted potential function, construction, scale and Bronze Age origin (Oswald *et al.* 2006, 97), ongoing importance into later prehistory and the Roman period suggested based upon these sites
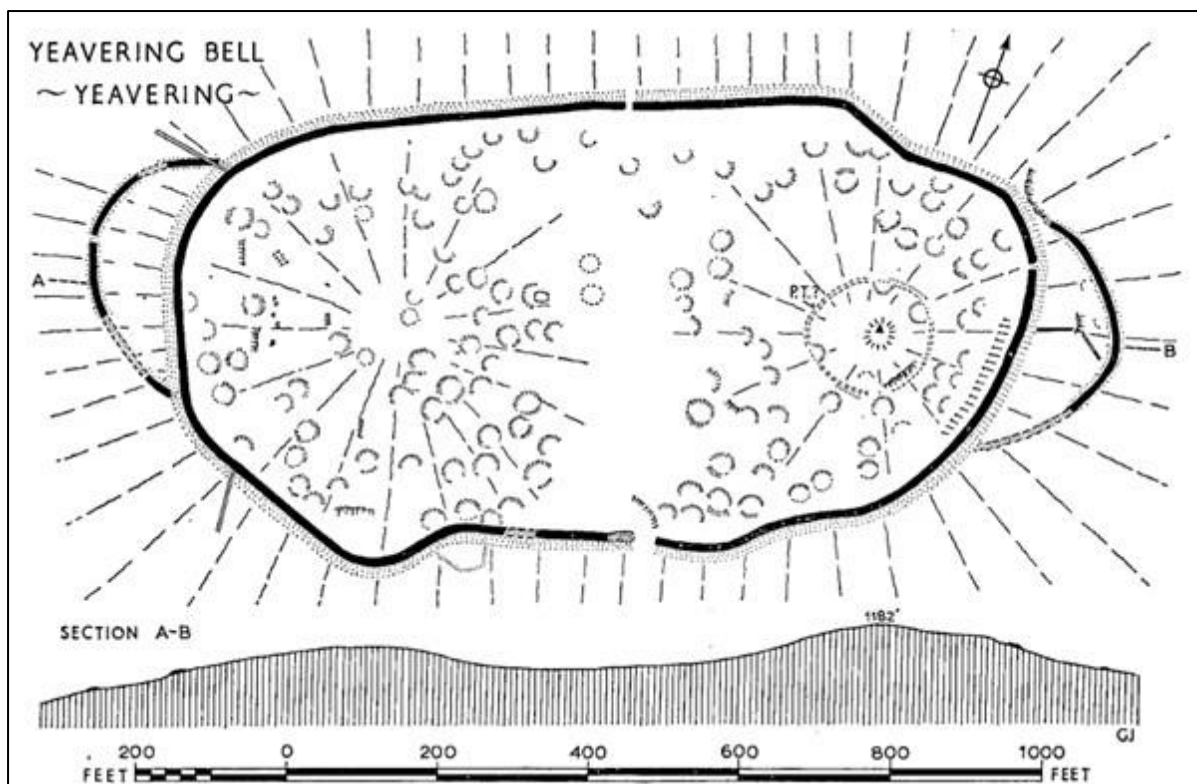


**Figure 150 - Survey plan of Yeavering Bell hillfort, showing the main perimeter defences and confirmed hut-platforms for timber-built roundhouses (Jobey 1965a, 33).**

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being mentioned in the later Ravenna Cosmography (Frere 2001, 286) (and late-Roman material culture at Traprain Law). Yeavering Bell's importance is not only supported by its size, form and position on a highly-visible summit (with panoramic, long-distance views); it also dominates nearby lowlands of the Milfield Basin, the most-fertile landscape locally (with dense associated settlement) (Oswald *et al*. 2006, 99-100) and with a proven societal and spiritual importance in earlier prehistory (seven henges, smaller ring-cairns and associated standing stones, pit alignments) (Harding 1981, 87,132; McCord and Jobey 1971, 128; Miket 1985, 137,147). Yeavering's importance further continues beyond the Roman period, attested by the Anglo-Saxon royal centre at its foot (Jobey 1965, 57). Whether or not the hillfort was permanently occupied in the Roman period therefore, its importance did persist in the regional landscape, arguable for many larger hillfort sites in this region.

Located between these different potential wider indigenous groupings (whether 'tribal' affiliations or more local-oriented communities), Redesdale acts as a corridor for human activity and movement [6.2a] and this is likely why Dere Street follows the valley north from Corbridge to High Rochester, acting as the main focus for Roman military sites (and associated settlement). Added to this is the recently-discovered potential market-site at Great Whittington [6.3a] where this route's southern terminus meets the Roman borderland. This forms a more direct route north into Scotland than Northumberland's coastal lowlands (albeit unsupported by maritime transport), located along a potential interface between existing divisions and so, best able to reach any such group quickly. The only other provable major road north of the borderland is the so-called 'Devil's Causeway', projecting north-east from Corbridge towards the Tweed (Poulter 2014, 76), via the fort at Low Learchild (where the eastward branch-road leaving High Rochester in Block 3 terminates), whose only dates from excavation suggest pre-Hadrianic construction (Gates and Hewitt 2007, 26). Learchild fort is potentially the *Alauna* mentioned in the Ravenna Cosmography, while *Oleiclavis* (translated as 'fleet granaries') is thought to thus be coastal, potentially on the Tweed's mouth, though only temporary camps in Tweeddale have been found (Frere 2001, 291-292). The possible timber-built roadside settlement with corn-drying kiln, associated field-system and over 600 sherds of Flavian and Trajanic pottery at Wooperton (Gates and Hewitt 2007, 26-27) also suggests only early Roman interest in this route. Several proposed military installations along the road have been shown to be indigenous settlements (McCord and Jobey 1971, 129-130). Proven temporary camps in Northumberland are generally located along these roads, excepting those in Tweeddale (Figure 151). The longevity of the roads east of Dere Street is thus unclear, potentially forming a temporary episode during initial Roman expansion rather than the permanent route into the late Roman period (Poulter 2014, 82-83). While the Rochester-Learchild link route crossed moorland to utilise eastward-running Coquetdale, Dere Street itself heads more directly north beyond High Rochester, leaving the valleys behind to follow a long-distance planned alignment across the high moors of the border ridge into Scotland (Poulter 2009, 14), towards Chew Green (a focus for temporary camps and potential further outpost fortlet).

Risingham (*Habitancum*) is the only confirmed permanent outpost fort other than *Bremenivm*, located south of Block 3 at the point where Dere Street diverts from its route to cross the Rede at Woodburn (Poulter 2009, 14-16), positioned to control the river-crossing rather than command local topography, 24.2km north of Corbridge (Biggins *et al.* 2014, 47,67). The Rede and marshy, floodable land on three sides could have formed a natural defence (Richmond 1936, 192-193). The fort's latest, 4.5ha phase is clearly-visible as earthworks, photographed from the air and field-surveyed, with earlier phases and features identified via magnetometry (Figure 152), and excavations (Richmond 1936), revealing a reorientation from south- to west-facing and increase in
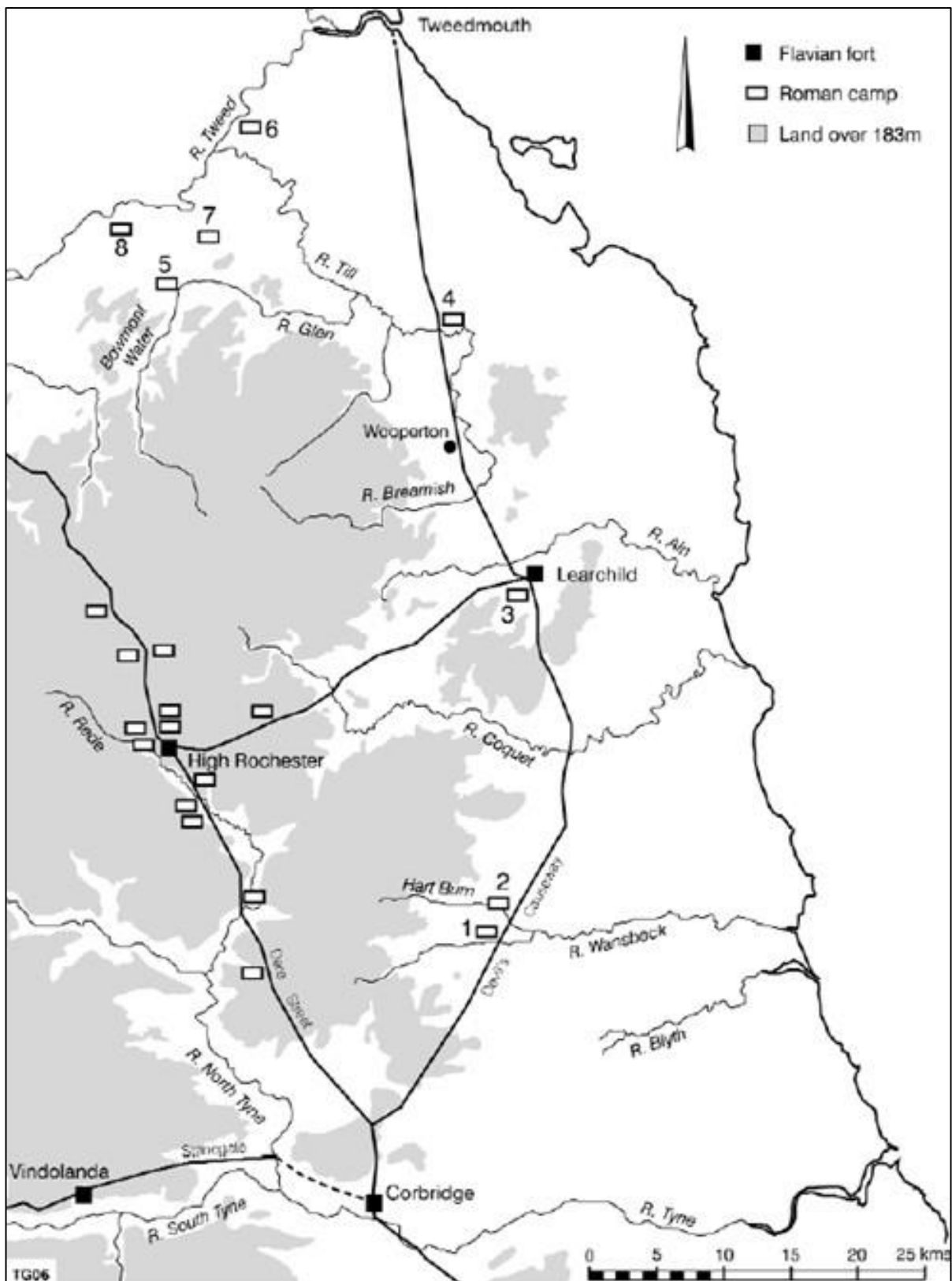
**Figure 151 - Map of the Roman road-network and distribution of forts and temporary camps north of Hadrian's Wall (Gates and Hewitt 2007, 12).**

building density (segregated by structural-form) to accommodate either a larger garrison of differing units (*cohors milliaria equitata* and *numerus exploratores Habitacenses*?) or units moving along Dere Street (Biggins *et al*. 2014, 47,68; Richmond 1936, 193-195). This is similar to changes attested at

High Rochester. Unlike the latter however, there is little suggestion of an extensive extramural settlement, or nearby temporary camps – as seems the case at Bewcastle to the west (Biggins *et al.* 2014, 69) [5.2b], though the hoard of second-century Roman coins and metalwork found at nearby Woodburn (Collins 2020b, 397) attests potential local interaction.

Units confirmed here are the second-century 500-strong, part-mounted *cohors IV Gallorum* and 1000-



**Figure 152 - Magnetometry survey of Risingham fort environs, showing the lack of extra-mural settlement and complex reorganisation of fort layout (Biggins *et al.* 2014, 54).**

strong, part-mounted *cohors I Vangionum*, supported by the above scouts and a vexillation of Raetian spearmen, while civilians are attested by locally-found tombstones despite the lack of settlement evidence (Jones and Woolliscroft 2001, 137; Richmond 1936, 186). Despite its apparent later founding than High Rochester (likely to fill a communications gap and guard the river-crossing), occupation until the c.AD360s is attested by pottery (Richmond 1936, 195) – slightly later than the final date for occupation at *Bremenivm*, either showing a gradual southward withdrawal, or more probably, proving a later, contemporary abandonment of the more-northerly outpost. An inscription from Risingham attests its potential importance as part of a second/third-century *praetensio* (specific local military command) stretching from Corbridge northwards (Speidel 1998, 357-359) and likely thus incorporating High Rochester.

Utilising this wider regional context therefore, it can be shown that the outpost fort at High Rochester was not only located along a natural, existing corridor of movement through the upland region, re-used by the military road from the initial Roman advance onwards. It was also situated within a narrow zone of agriculturally-viable land (and thus settlement – attested by the many settlements along the valley, clustered into distinct groupings), a potential supply source. Furthermore, prior to the Roman arrival, Redesdale appears to have been at the broad later-Iron Age interface between the rectilinear enclosed settlement type found to the west and the curvilinear farmsteads and hillfort-dominated culture further north and east (perhaps the social groupings

named by Roman authors as *Brigantes* (or their sub-groupings) and *Votadini / Selgovae* (see above for critique), or perhaps merely due to differing indigenous activities and social choices due to the different between middling and higher topographies). This may be another reason behind the route chosen for Dere Street and the siting of the outpost at High Rochester – a monitoring post on an existing 'frontier' zone. Imposition of military infrastructure and oversight into this region will have had a substantial impact, as did probable local supply requirements. Nonetheless, there is also clear evidence for indigenous-driven landscape change occurring from the late-Iron Age (as also shown by excavated settlements in coastal lowlands to the east [3.3]), suggestion societal and/or economic reorganisation prior to Rome's arrival (a situation no-doubt exploited but not necessarily initiated by the military).

## 6.3 – Boundary and Borderland: The Military Zone and Its Impact

*6.3a – The Iron Age and Roman Period in the Study Area: Results from Aerial Survey Mapping and Other Archaeological Investigations*

As discussed [6.1a], it was intended that the eastern transect's crossing of Hadrian's Wall (and environs of the major Roman site at Corbridge) would be assessed by updating the existing *Hadrian's Wall NMP* and creating small blocks of new mapping to north and south, taking-in the wider borderland zone. Unfortunately, due to delays from the Covid-19 pandemic, this new and updated mapping was abandoned. Nonetheless, this section will collate previously little-discussed aerial-survey evidence from the existing project alongside the extensive wider archaeological record, to investigate a comparable area to that around Carlisle [5.3].

The NMP encompassed the World Heritage Site and a wider buffer zone, mapping all archaeological remains visible from a broad range of aerial-photographic sources (Oakey 2009, 3-4). This did not utilise lidar, unavailable during the project, potentially reducing earthwork visibility in comparison to Blocks 1-3, though many earthworks were mapped from photography, as were large numbers of cropmarks and parchmarks. The NMP covers 10km north-south here, from immediately north of Corbridge to several kilometres north of Hadrian's Wall. The area under discussion (Figure 153) covers this band, also extending south to incorporate Corbridge (integral to understanding the Roman borderland where Dere Street traverses it). It ranges from east of the wall-fort at Haltonchesters, westward to Chesters in the North Tyne valley. Though the broader NMP results were reported (Oakey 2009), the area in question has not been analysed in detail previously.

In terms of natural setting, the borderland here is dominated by the broad Tyne valley, a mosaic of arable, pasture and woodland atop Carboniferous limestones and sandstones, which separates the North Pennines from the Border Moors further north (Natural England 2015b, 3). Two tributaries (North Tyne and South Tyne) join near Hexham to form this larger valley, the latter flowing from the west and the former from the north [6.2]. These valleys form natural east-west and northward routeways through the region, facilitating prehistoric settlement connectivity, Roman and 18th-century military roads (followed by modern road, rail, and electricity infrastructure). North of the Tyne, land gradually rises to the prominent ridge occupied by Hadrian's Wall, formed by igneous geology of the Whin Sill, with increasingly-extensive pasture and moorland (*ibid.*, 3-7). Modern settlement follows historic patterns, with major centres at Corbridge (a major river crossing since pre-Roman times) and Hexham (a medieval religious and market centre on the upland-lowland stock-droving network) (Natural England 2015b, 14). General vegetational history of the borderland,
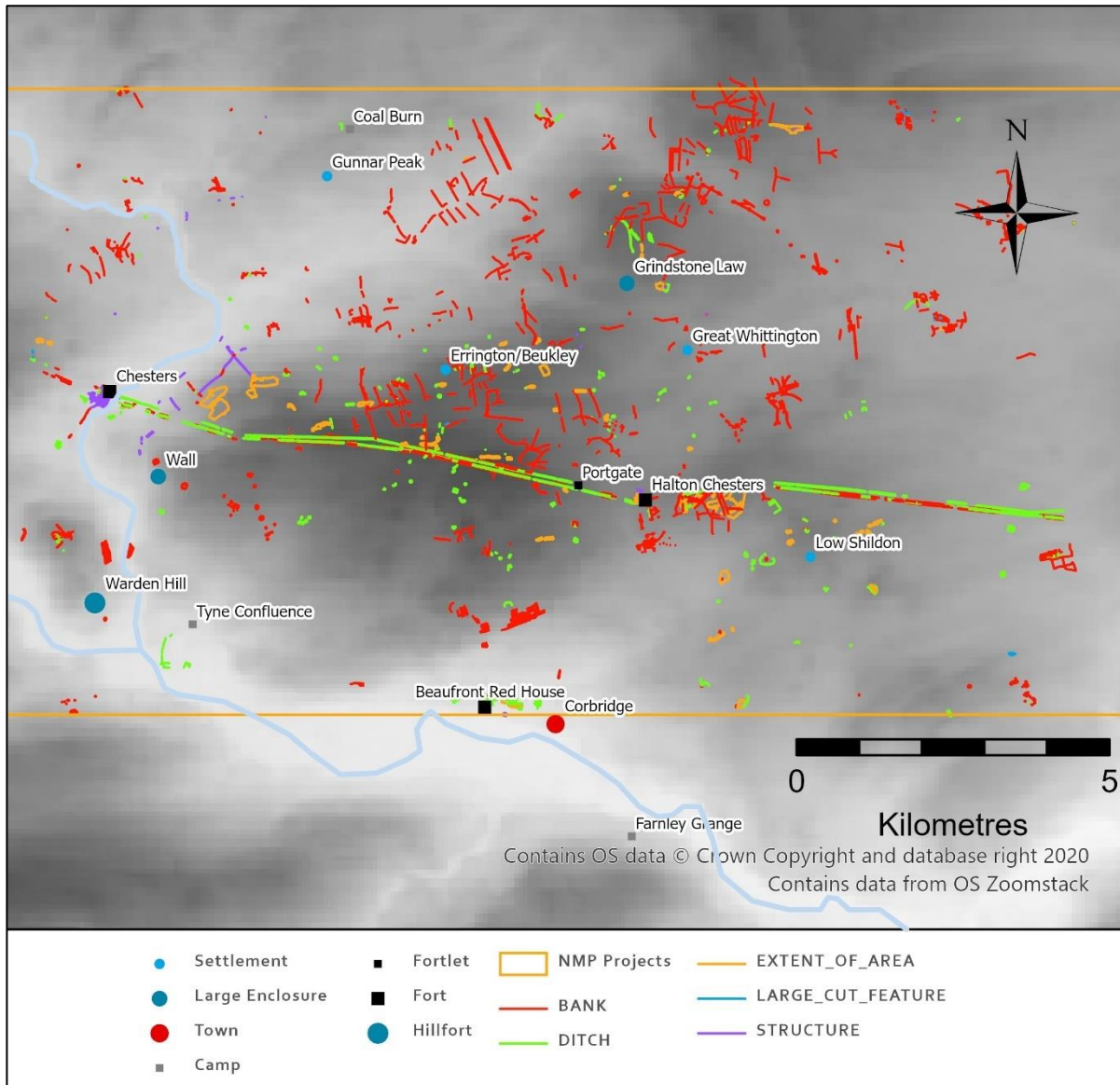
**Figure 153 - The project area, situated across the Hadrian's Wall borderland for the Eastern Transect, showing topography alongside aerial-survey areas and sites mentioned in the text.**

as elsewhere along Hadrian's Wall, sees woodland-clearance with increasing pasture and arable through prehistory, culminating in the late-Iron Age prior to Rome's arrival (Petts and Gerrard 2006, 35). Crops attested from Chesters bridge (below) and a native site at Thornbrough Scar (near Corbridge) include emmer, spelt and bread wheats, barley, rye and flax, indicating their cultivation in or around the Tyne valleys (Hall and Huntley 2007, 65-66).

The pre-Iron Age landscape, visible from the air, is dominated by ceremonial monuments, with at least five Bronze Age round cairns or barrows (19082, 19153, 19167, 19215, 19242) around Barrasford and Chollerford in the north-western project area, on higher ground overlooking the North Tyne from the east (likely sited for landscape-visibility). Only one has been confirmed as Bronze Age by excavation, the remainder dated from morphology and size (Oakey 2009, 12). The excavated mound at High Brunton, east of the North Tyne, revealed no burial or dating evidence, though was clearly constructed (Jarrett 1959a, 349-350). Isolated barrows at Brackness Hill (20871) and Matfen (20860), on high ground further east, continue the pattern, while standing stones at Wood Hall Farm (19172) at the mapping's northern end, and Brackness Hill (20868), attest further

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prehistoric marking of the landscape. That these monuments are only identified on higher ground north-east of the valleys is likely due to preservation in less-improved ground, funerary and ritual monuments likely extending across higher ground either side of the river. Evidence for Bronze Age agriculture or settlement is not visible, potentially too ephemeral for detection or survival, or alternatively situated beneath later sites.

Indigenous Iron Age and Romano-British landscapes north of the Tyne are well-represented, with earthwork and cropmark/parchmark settlement-sites, and discrete areas of field-system. In the north-western project area, two rectilinear embanked enclosures (19140) on Gunnar Peak are located only 65m apart across a small ravine (Figure 154). A third (18985), together with associated field-system, was only c.600m north-east (now quarried-away), outside the project area: a potential parallel for the settlement-clustering further north [6.2a]). Both within the NMP area have been

excavated, the western (RRS-40041) revealing a typical Iron Age/Romano-British settlement with stone roundhouses overlying timber, and a cairn or midden just south (19128); the eastern revealing (Jobey 1981; RRS-40021) a stone-built first/second-century farmstead of two roundhouse-phases containing both native and (an unusually-large number of) Roman items [6.2b]. Four unenclosed roundhouses just south of the latter enclosure (19133) are potentially associated or earlier structures. No surrounding field-system was visible however.
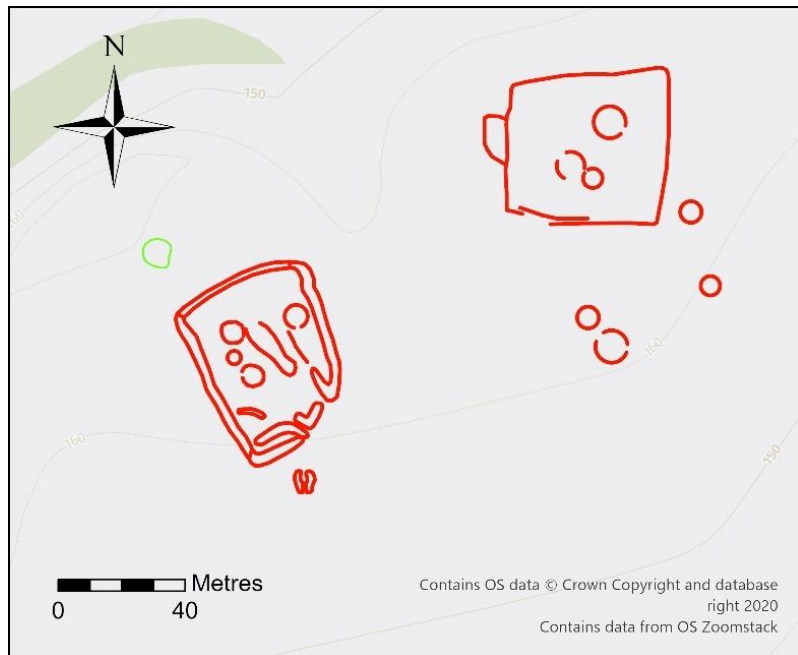


Figure 154 - NMP mapping of the native farmstead enclosures and external roundhouses on Gunnar Peak, showing their proximity.

Further south, between Errington Hill and Beukley Covert, are a series of Iron Age-style rectilinear enclosures c.200-650m apart, some with associated boundaries suggesting coaxial field-systems, located just 1-1.5km north of Hadrian's Wall, west of Dere Street (Figure 155). The westernmost (1433427) comprises a rectilinear main enclosure (embanked, four sunken hollows along its eastern side and single roundhouse visible – Figure 156) surviving as earthworks below medieval ploughing. Further small enclosures and a second roundhouse to the west may represent expansion. The next enclosure (1448580), c.600m east, comprises a smaller, less-regular earthwork with only fragmented perimeter ditch and no internal features. Two enclosures (500m north-east on Redhouse Crag and c.160m apart, either side of an aforementioned Bronze Age cairn (19082), are very different in form. The eastern (19087) forms the usual slightly-irregular rectangle (0.18ha), with a northern sub-enclosure and three roundhouses, all earthwork banks. The western (19042) is larger (0.5ha) with only eastern and western sides surviving clearly: it has a central ditch with inner and outer banks – more substantial than usual Romano-British farmsteads and possibly earlier in date, with a possible roundhouse near the south-east corner. Running north-south from each enclosure, extending between them and c.150m eastwards, are a series of linear ditched boundaries (1448711),
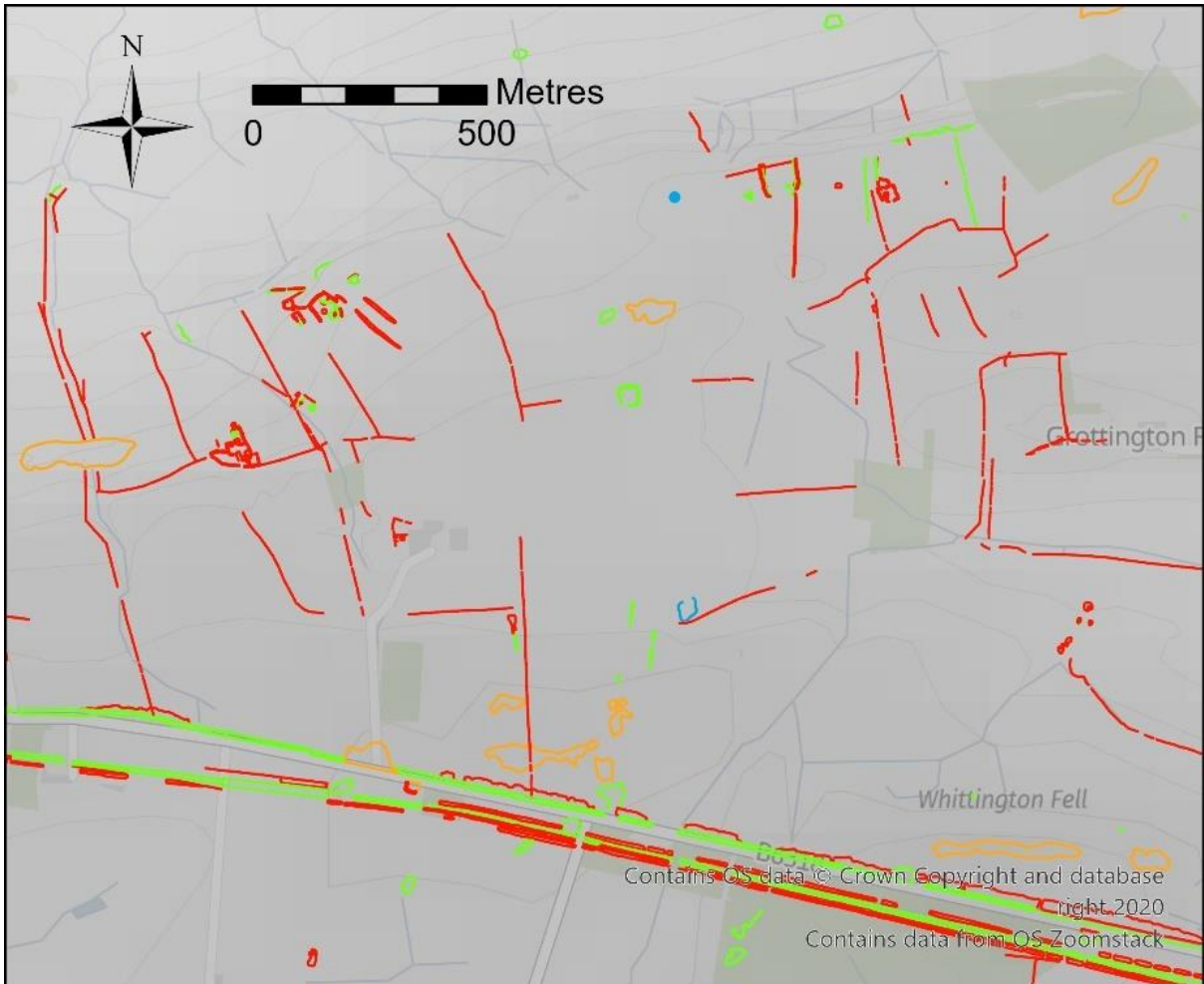
**Figure 155 - NMP mapping of native farmsteads and field-systems between Errington Hill and Beukley Covert, located between Hadrian's Wall (south) and Dere Street (north-east).**

some with parallel banks – likely remains of an associated field-system running up to the scarp. Though association cannot be proven without excavation, the divisions appear different from later ridge and furrow and more recent boundaries and likely date to the later-prehistoric/Romano-British landscape. An enclosure (1447504) of similar dimensions but visible only as a cropmark ditch, north of the borderland and overlooking the North Tyne from the east, shows that such sites extend between Dere Street and the river.

A further, levelled rectilinear enclosure at West Well House (19061), is located 1km east of Dere



**Figure 156 – Aerial photograph of rectilinear enclosure at Errington Hill Head, Northumberland under light snow-cover (NMR 17768/17 05-FEB-2003 ©HE) (Oakey 2009, 16).**

Street, recorded as Romano-British farmstead. This attests such settlements are situated either side of the road. An unenclosed roundhouse east of Low Hall (20887), 7.5km eastwards in the north-eastern project area, not situated near any enclosures, shows the potential for less-identifiable settlement across the upland area. It is notable that beyond these two sites however, no features of Iron Age or Roman date were identified east of Dere Street and north of Hadrian's Wall, other than the Scheduled 0.5ha ditched enclosure with internal bank atop Grindstone
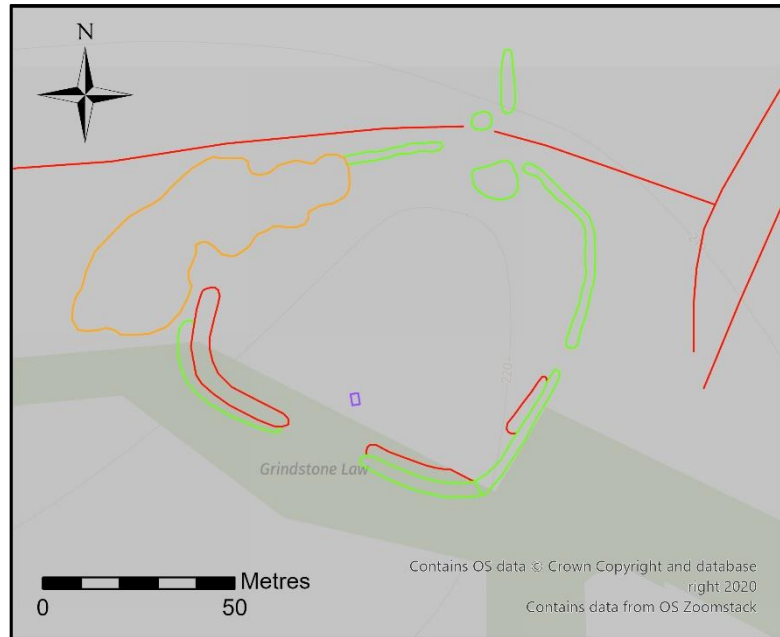


Figure 157 - NMP mapping of the curvilinear hilltop enclosure at Grindstone Law, illustrating its different form to later-Iron Age/Romano-British settlement sites.

Law (20840, Figure 157), its form and topographic position suggesting a different date (earlier Iron Age?) and/or function, more akin to a 'hillfort'. Given similarities of modern landscape (and preservation-potential) alongside NMP mapping of later archaeology (indicating photographic coverage), to the remaining project area, this absence of enclosed farmsteads and also open settlements suggests a comprehensive lack of contemporary indigenous activity compared to areas closer to Hadrian's Wall and Dere Street. However, metalwork reported to the Portable Antiquities Scheme around Great Whittington (2.2km north of Hadrian's Wall) indicates substantial Iron Age and Roman activity nearby, with second-fifth century coins and unusual (possibly ritual) small-finds such as a miniature-axe, gold fragments and *patera* (perhaps related to a major place of exchange or a market site near the line of the Devil's Causeway road) (Collins and Biggins 2013). The settlement-dearth therefore requires further study (both in the field and via lidar) to confirm, as shown by the additional detail added only by large excavations in south-east Northumberland (aerial photography having shown only isolated fragments of a complex indigenous landscape) (Hodgson *et al.* 2012). If true however, the absence of settlement has important economic implications for the Iron Age-Roman transition.

Southward, several small, ditched enclosures visible as fragmented cropmarks attest indigenous enclosures close to Hadrian's Wall, both north and south. A rectilinear example near Mile Plantation (1455139) has only hinted internal features, while the more-curvilinear example (1433448) 2.8km east, has internal roundhouse and is only 350m north of the Wall-ditch. Even closer (c.250m), immediately south of the military boundary, is another farmstead with possible internal roundhouse (1433447), with another rectangular enclosed settlement (1457734) south of that one. Without proven dates, it is impossible to say whether these settlements remained in use upon construction of the boundary, or if they were even extant upon Rome's arrival. If they were, it would parallel examples north of Carlisle [5.2/5.3] which attested ongoing indigenous agriculture truncated by the borderland's imposition. The Vallum runs parallel, and very close to, the Wall in this area, so the actual exclusive 'military zone' is narrow.

On the downward-slopes into the Tyne valley from the Whin Sill escarpment, two areas have evidence for indigenous landscape prior to, or contemporary with, the Roman frontier. The first, east from Dere Street around Low Shildon, has fragmentary evidence including a large (52m-diameter) curvilinear ditched enclosure (1433467) unlike the rectilinear settlements further north, a multi-phased cropmark showing a rectilinear enclosure and different-phased field-system (1455097), a potential isolated 14m-diameter roundhouse or circular enclosure (1455009) and a more substantial rectilinear banked and ditched enclosure (20499) surviving as earthworks but truncated by a modern lane. The most visible landmark here is the defensible 0.8ha multi-vallate enclosure on Shildon Hill (20492), its closest local parallel the Grindstone Law example north of the borderland (above) and likely to be of earlier date. Though only fragmented, and without clear late-Iron Age/Roman farmsteads founded elsewhere, these features show the long history of landscape occupation, use and change prior to establishment of Roman Corbridge just southward and the Wall garrison to the north.

The other nucleus for activity between the Tyne and Hadrian's Wall is three sites south-east of the modern village of Wall, just east of the North Tyne and north of its confluence with the South Tyne. The sites (Figure 158) west of Fallowfield (18424) and immediately east of Wall (18386) comprise earthwork (the former now-levelled) multi-banked, curvilinear enclosures, described in the record as 'hillforts' and resembling the more-defensive enclosures to the north-east (above), very different to the usual local rectilinear



**Figure 158 - NMP mapping of the Iron Age 'hillforts' and later-prehistoric/Romano-British settlement near Wall (top), and the major hillfort and later activity across the river at Warden Hill (bottom).**

farmstead and dated to earlier Iron Age as a result. Further investigation of the latter has however led to six internal roundhouses (of multiple phases) being classified as potentially late-Iron Age or Romano-British. The double-ditched rectilinear enclosure (1453905) visible as cropmarks c.470m south/south-east is more reminiscent of 'traditional' enclosed settlements, in both size and form.

At the project area's western edge, directly overlooking the confluence of the two Tynes, is the complex of earthworks atop Warden Hill (Figure 158), the best-known hillfort (18338) locally and far more substantial (with its three perimeter banks) than any other site, even the above examples near Wall, directly across the North Tyne. The site dominates the local landscape, overseeing both valleys and the east-west/northward communication within them. Like the recognised hillforts of the Cheviots, it likely dates to the earlier Iron Age, though its importance into the Roman period is shown by rectilinear enclosures (1454165) on lower slopes immediately to the east, two perimeters of different sizes attesting different phasing or zoning of activity.

Remaining aerial evidence for indigenous landscape within the NMP area comprises various elements of field-system and enclosure recorded north and west of Corbridge itself (Figure 159), generally dated to the late-Iron Age or Romano-British periods, where recorded from aerial evidence alone. North of the Roman town, between it and the Cor Burn, cropmarks (1451642) attest a ditched rectilinear field-system of enclosures, flanking a northwest-southeast running trackway, and containing pits of varying size. A large, curvilinear, timber-palisaded enclosure 500m westward (visible as cropmarks of two perimeters) on Bishop Rigg (1451499) was investigated (Jobey 1979, 99) in advance of the A69 road-upgrade. Despite no dateable artefacts or internal features being visible, the site is truncated by Roman quarries (1451496) and was thus thought pre-Roman, supported by its form (Jobey 1979, 102,104). Immediately north-west are cropmarks of a large rectilinear enclosure with rounded corners (18277), initially interpreted in excavation as a Roman temporary camp (Jobey 1979, 105,108) but containing a single roundhouse and thus re-evaluated as a native site. Ditches parallel the north and west enclosure-sides and project south-west, potentially associated field boundaries. Around 350m further west are cropmarks (1451515) attesting a field-system of rectilinear ditches and pits (some in clear alignments), intersecting with a differently-phased curvilinear enclosure. A square enclosure (1451506) superimposed over the westernmost boundaries may represent a later (potentially Roman) development, though is reminiscent of the
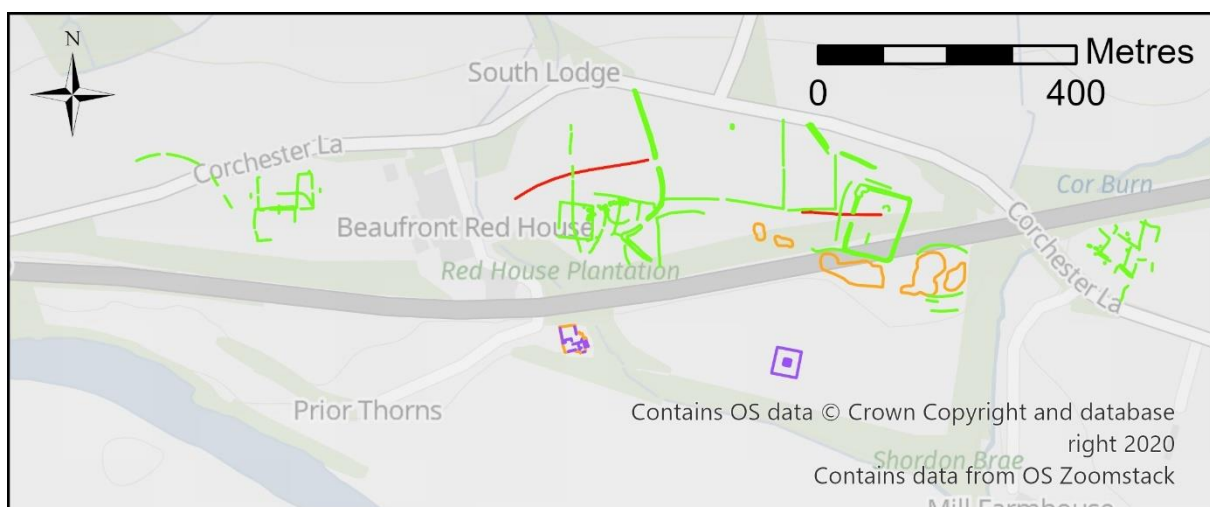


**Figure 159 - NMP mapping of the multi-phased field-systems and enclosures north and west of Corbridge (green), along with gravel quarries (orange), the Beaufront Roman bathhouse (centre, purple) and Shorden Brae mausoleum-precinct (right, purple).**

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known mausoleum-precinct at Shorden Brae (c.325m south-east) and may instead represent Roman funerary monumentality. Further ditches, pits, and enclosures (1451468) 380m westward, beyond Beaufront Red House, attest continuation of the rectilinear field-system, with more curvilinear elements of differing date, partially overlain by a Roman temporary camp.

This stretch of cropmark-survival west of Corbridge and just north of the river shows that where geology (gravel river-terraces) and modern land-use allow, more-extensive evidence of later-prehistoric landscape can be ascertained. A system of enclosures and boundaries is thus shown to have occupied the valley during the Iron Age, commencing with curvilinear ditched and palisaded enclosures and developing into a rectilinear field-system. Whilst it is probable that some elements of this continued into the early Roman period, serving as the immediate hinterland to military and then civilian activity around Corbridge, others were taken out of production by imposition of temporary camps or urban activity (e.g. potential funerary precincts) – crucial to understanding the impact of Rome on the native landscape. Indeed, excavations in the Roman town's core identified an undated timber roundhouse within a palisaded enclosure (Figure 163 below), overlain by soil prior to the earliest fort's construction and with scattered plough-marks and sherds of Iron Age pottery nearby (Bishop and Dore 1988, 7; Jobey 1979, 104).

In terms of existing indigenous routeways through the landscape, the only direct evidence from mapping is the prior-mentioned double-ditched trackway north of Corbridge, attesting localised routeways connecting the enclosures, fields, and settlements. Such droveways and tracks likely connected all the now-isolated (alongside undetected) settlements along the valley and gentle slopes rising to north, west and south. As discussed, the Tyne valley (and its tributaries) form natural conduits for movement (and agriculture) into the uplands further north and west, connecting the coastal plain and Durham lowlands to the dense settlement in Redesdale, North and South Tynedale and beyond to Cumbria [5.3] and southern Scotland [6.2].

Alongside the river's potential for transport and communication from Newcastle and the North Sea beyond, Roman roads (both the early 'Stanegate' and later Military Way, together with other borderland infrastructure) follow the east-west corridor. Meanwhile, Dere Street traverses the south-eastward lowlands, crosses the Tyne at Corbridge and climbs across the Whin Sill to regain easier terrain in Redesdale beyond Hadrian's Wall. The route substantially deviates from the long-distance straight alignment to north and south, presumably to better manage topography and river-crossing (Poulter 2009, 17, Figure 160). Its final course through the project area has been recorded since antiquity, better-understood than the Western Transect's equivalent road crossing the military zone, followed by the modern A68 north of the Tyne. Where the A68 turns toward the junction with the A69 north of Corbridge, the Roman agger is visible as an earthwork bank (1451335) on historic photography, confirming this route. The Corbridge excavations confirm that it dog-legged through the reorganised third-century town-centre to reach the known bridging point just south-west, from whence it turns south-east towards lowland Durham. No trace of the east-west Stanegate is visible in the project area, though its course through central Corbridge is known. Its projected route follows the Tyne's north bank (possibly obscured by subsequent fluvial activity) before heading north-east to cross the North Tyne south of Chesters in order to reach proven sections in the borderland's Central Sector. Its eastern extension beyond Corbridge is unproven. The north-eastward branch-road from Dere Street towards the Tweed: the Devil's Causeway [6.2b], was not identified by the aerial mapping. The final major Roman routeway here is the Military Way, established directly behind Hadrian's Wall in the second-century to connect border-installations, between outer curtain and
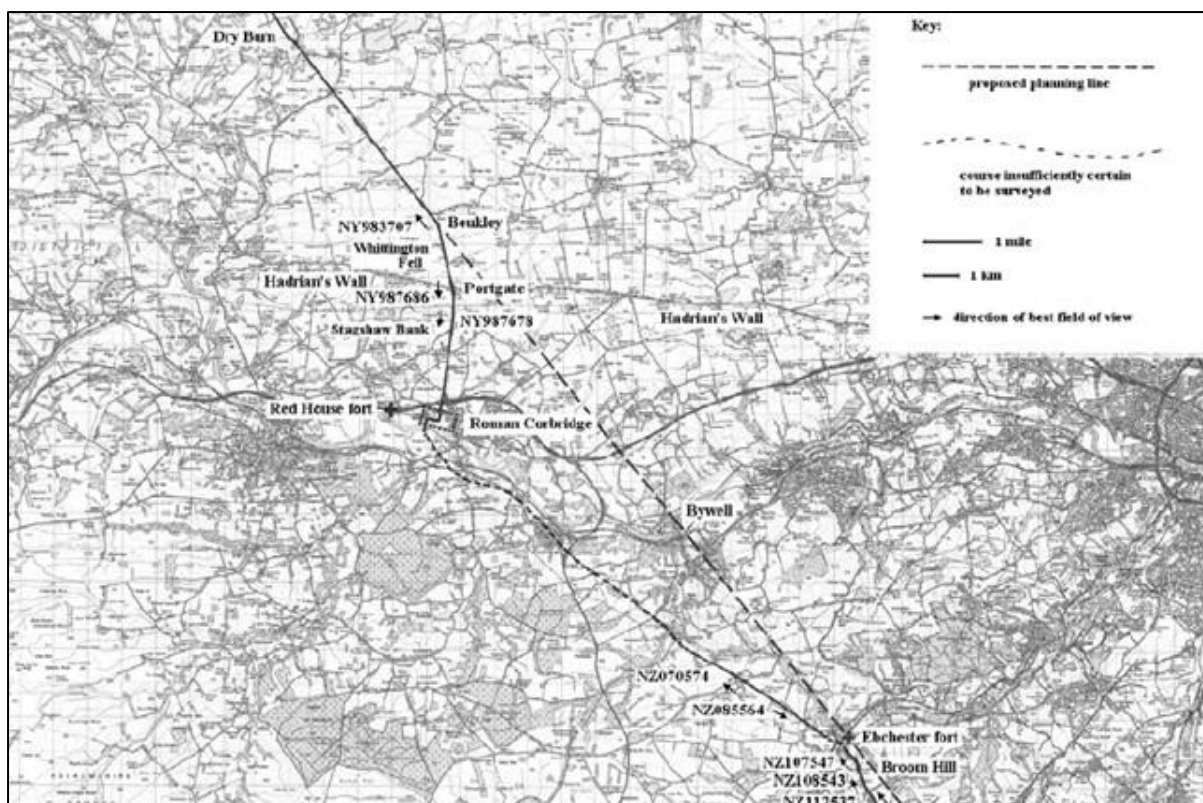
**Figure 160 - Map showing the long-distance planning-alignments used to lay-out Dere Street, alongside the substantial deviation to the Tyne crossing at Corbridge used by the early road (Poulter 2009, 17).**

Vallum. A few sections survive as earthworks, including the 170m stretch (1008863) west of Haltonchesters fort.

Temporary camps attest troop-movements through the landscape along these roads, attesting military activity beyond permanently-garrisoned sites. Some, such as the earthwork camp (1433441) c.2km east of Haltonchesters and 270m south of Hadrian's Wall, may represent construction-camps associated with units building the frontier-works, or alternatively units moving along the borderline. Others such as the three excavated at Farnley Grange, across the Tyne south of Corbridge, showing evidence of sporadic re-use (Wilson 2017, 332), and the mapped cropmark example near the Coal Burn, c.170m south-west of Dere Street in the northern block, represent troops on the march; given its position (beyond the borderland's additional protection), this is probably an early example. West of Corbridge, cropmark ditches and entrance-traverses of a camp (915936) west of Beaufront Red House show the nearby line of the Stanegate and troops moving along it, but also potentially relate to construction of the Agricolan fort site (below). Meanwhile, two further camps (1086019, 1453900), both cropmark perimeter-ditches, the easternmost with internal clavicula on three sides, are located just east of the South Tyne-North Tyne confluence, showing the importance of this location in the landscape (as with Warden Hill opposite); also revealing the further course of the Stanegate.

The earliest-known permanent Roman military site in this area is the Flavian 'fort' and associated bathhouse (18203) at Beaufront Red House, 1km west of Corbridge (Bishop 1998, 39; Hodgson 2009b, 25). The finely-built bathhouse was discovered first (Figure 161, mapped by NMP from 1950s aerial photography: Figure 159) leading to debates around its distance from the known first-century fort further east (Bishop 1998, 39,45; Daniels 1959, 85-94). These were partially answered by the 1974 discovery of an Agricolan-dated site (though of unproven function) just to its

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north, during A69 road-improvements. Thought a timber-built supply-base given predominance of storage-type buildings, evidence for industry and its unusual plan (Figure 162) (Hanson *et al.* 1979, 77-85), the site's exact nature and form remain unclear. Its position may relate to an earlier bridging-point during the initial military advance, later



**Figure 161 - Photograph of the extremely well-built, potentially high-status military bathhouse at Beaufront Red House (Daniels 1959, 86).**

moved to the known bridge(s) further east. Visible remains of this later Dere Street bridge are architecturally similar to that at Chesters (below), dated mid-late second century (Bidwell 2009, 53), with six stone piers and abutments supporting the wooden superstructure (Bourne 1967, 17-27).

The later-first century military-focus shifted to the well-known Roman site immediately west of modern Corbridge [see Appendix for details] (Birley 1954; Bishop and Dore 1988; Bishop 1995; Brassington 1975; Daniels 1968; Gillam and Daniels 1961; Gillam 1977; Hodgson 2008; Richmond and Gillam 1950; Richmond and Gillam 1952; Simpson 1972): multi-phased auxiliary-forts gave way to unusual legionary industrial-compounds and a major civilian town (Figure 163) located on the Tyne-crossing and Dere Street-Stanegate cross-roads, occupied into the post-Roman period. The town appears to have functioned as an intra-regional supply-depot, likely linking the borderland's landscapes with those further south (with two-way military and civilian/indigenous exchange as far as Scotland). Though most of the site lay outside the NMP (excepting the Shorden Brae mausoleum), it has seen aerial- and geophysical-survey in the past and more recently (Figure 164). Artefactual,
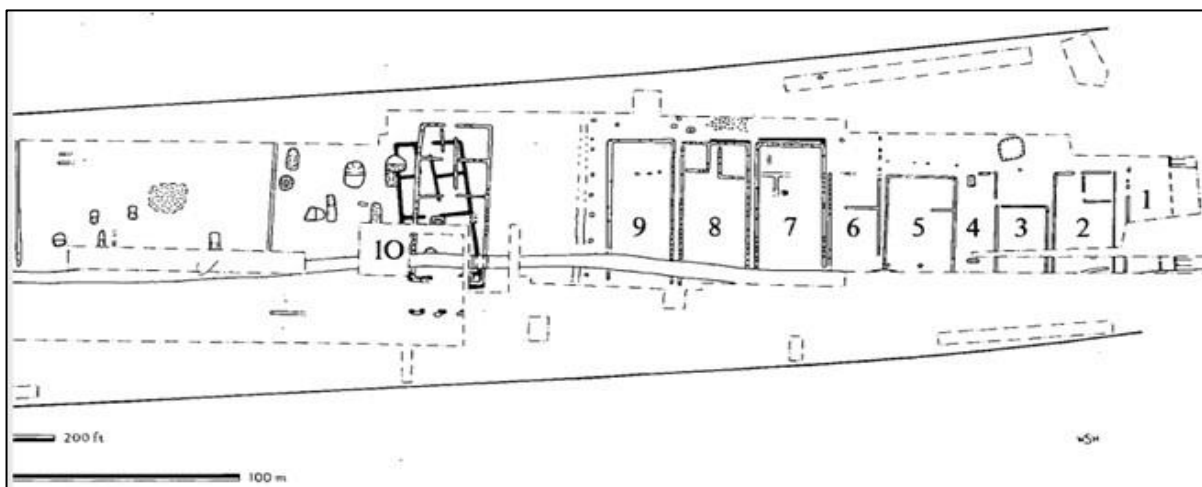


**Figure 162 - Plan of timber buildings at Beaufront Red House, their layout and form interpreted as an Agricolan-period supply base (Hanson *et al.* 1979, 7).**

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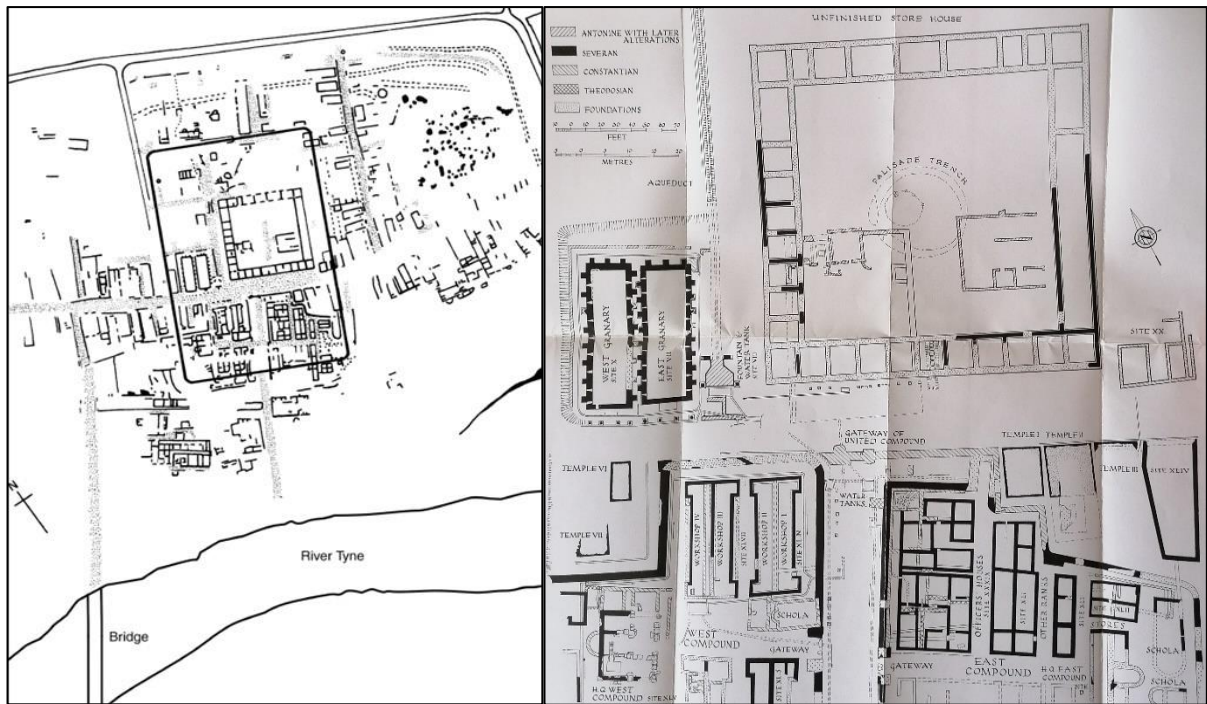
**Figure 163 - Plan of Roman Corbridge's core, showing outline of auxiliary fort overlain upon later settlement plan (Hodgson 2008, 50) [left]; and major phases identified from excavations, including pre-Roman settlement, elements of the auxiliary forts and later storehouse and compounds (Birley 1954, 33) [right].**

funerary, and sculptural evidence attest auxiliary cavalry and infantry, and legionaries present, with a huge range of civilian occupational-identities present from merchants and craftspeople to doctors,
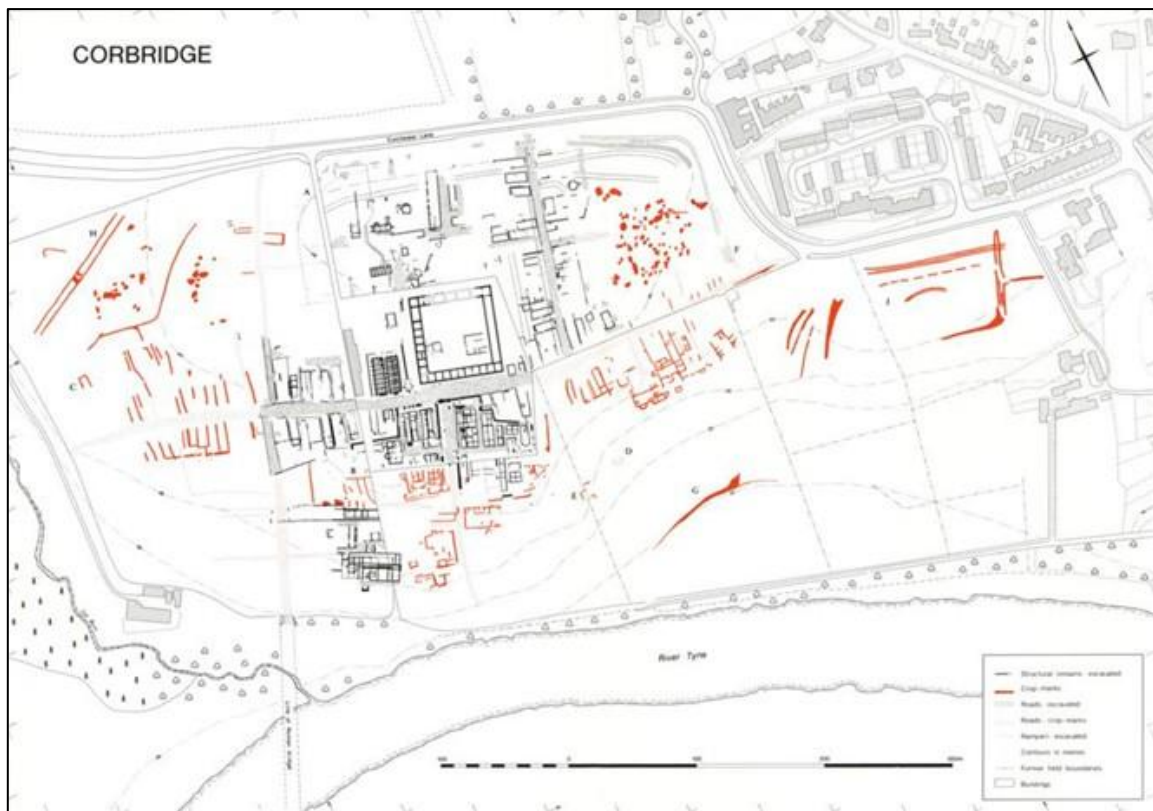


**Figure 164 - Aerial-survey planning showing extents of known settlement around the excavated fort(s) and urban core (Bishop and Dore 1988, 326). The Stanegate and Dere Street are visible, as are side-roads, strip-buildings (houses, shops and workshops), gravel/sand pits, a large corridor-house, two apsidal buildings (possibly bathhouses or townhouses), the central military compounds, and cemeteries.**

and origins from all over the empire. Men, women and children of low to high status are attested, with elegant townhouses (Figure 165) and a range of spiritual beliefs from Brigantia and other local-deities through to Classical and near-eastern gods/goddesses. Overall, the site forms an interesting parallel to Carlisle further west, with much debate around its place-name and socio-economic/political role: ranging from *civitas* for another sub-Brigantes group or 'meeting-place' between different peoples (Breeze 2004; Hind 1980; Hodgson 2002), tying-in with its position on the proposed native 'Tyne frontier' [2.3c/3.3]. Whatever its precise Roman-period standing, it undoubtedly had an enormous effect on its surroundings, connecting to the Tyne-Tees lowlands and also uplands to north and west.



**Figure 165 - The famous 'Corbridge Lion' sculpture, from a fountain in the largest house of the Roman town. Source: https://www.english-heritage.org.uk/visit/places/corbridge-roman-town-hadrians-wall/history-and-stories/collection/**

Military infrastructure in this borderland area is naturally dominated by the Hadrianic Wall and its attendant installations, sited here on the higher ground north of the River Tyne. The wall-forts at Rudchester, Haltonchesters and Chesters (and the milecastles and turrets between) housed the local permanent auxiliary garrisons from the second-century AD onwards (albeit with periods of change such as the Antonine move northwards) and saw a new focus of military activity locally. They also had their own adjacent civilian extra-mural settlements. However, the site at Corbridge remained by far the largest settlement in the immediate region, with its own ongoing military activity and dynamics. The establishment of the fixed linear border would however have had substantial new implications for changing the indigenous landscape's fabric, and movement within it, given the spread of aforementioned settlements across the surrounding low hills. The Roman border runs south-south-east to north-north-west through the block, slightly-changing alignment when adapting to local topography, then running straight down off the eastern high ground to cross the North Tyne valley and river at Chesters (Figure 166), before climbing back onto the Whin Sill escarpment further west. Situated atop the ridge to take best advantage of southward views across the lower Tyne valley and north across the low uplands towards Redesdale, it forms a naturally-imposing, clear barrier to activity and movement across an otherwise relatively-passable landscape at this point. Where it crosses the North Tyne, its role as a barrier is even more notable, with a bridge carrying the Wall across the river to hinder riverine movement and the boundary (and garrisoned fort at Chesters) forming clear obstacles across the valley's natural routeway.

The curtain-Wall itself is largely buried beneath the 18th century military road (modern B6318), its collapsed structure forming the road's foundations (Jones and Woolliscroft 2001, 92). It is thus only visible as a stone structure or earthwork where this road deviates north to Chollerford to cross the North Tyne, the Wall continuing straight, towards its bridge-crossing (19107) at Chesters. The outer ditch survives more consistently, together with fragments of counterscarp bank, north of the modern road. Turrets every mile-third have been identified (particularly the well-preserved example at Brunton, where the barrier descends the valley's eastern slope), though none were
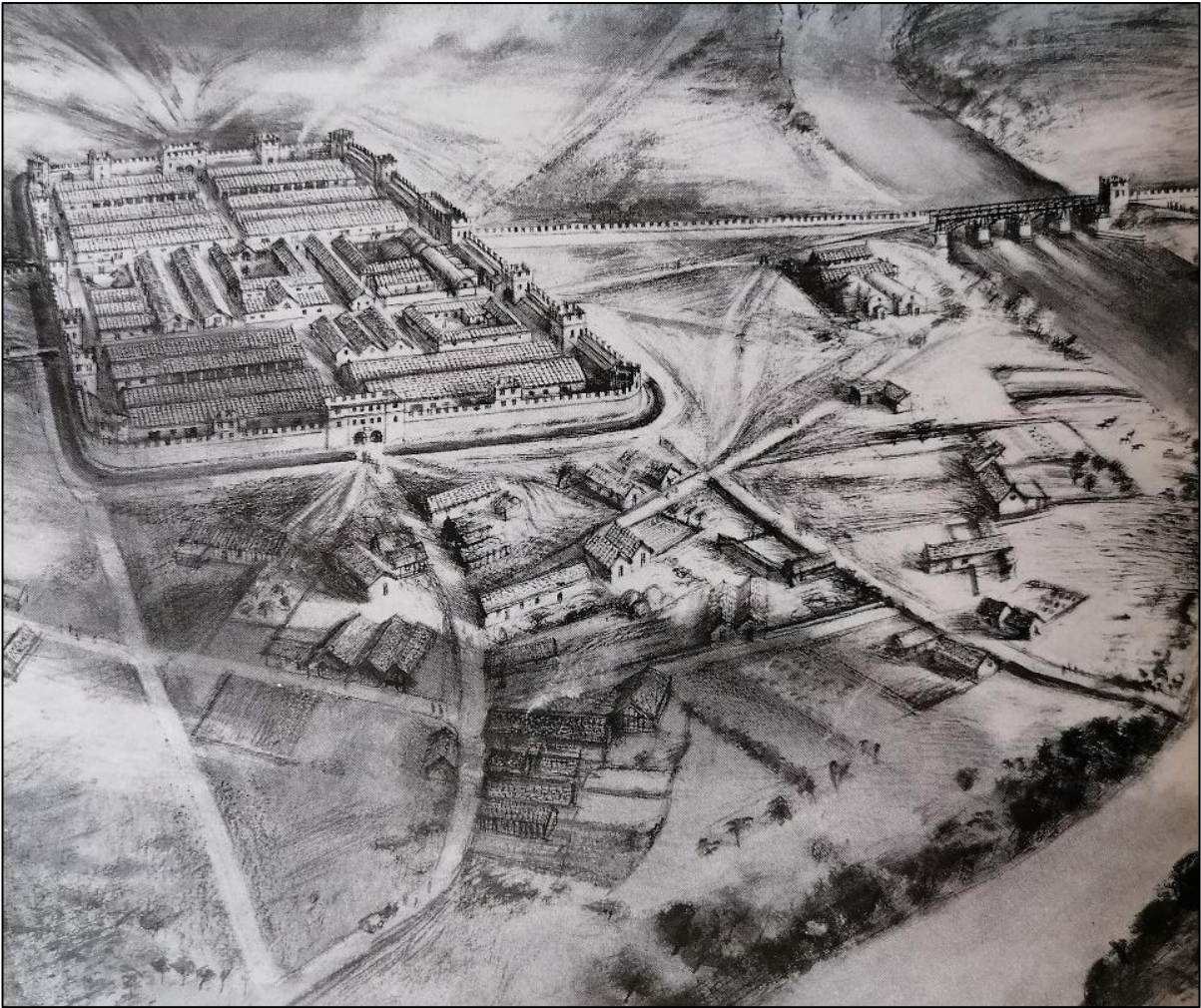
**Figure 166 - Reconstruction drawing of Chesters fort, bathhouse, civil settlement, Hadrian's Wall and its bridge over the North Tyne (Johnson 1990, 4).**

visible for NMP mapping. Between Haltonchesters and the river, Milecastles 23 (18177), 24 (18186), 25 (18282) and 27 (18300) survive only as earthwork platforms, only one with fragmentary ditches, and one levelled since the source-photo was taken. Milecastle 27 at Low Brunton was excavated to reveal little artefactual evidence but the expected Hadrianic ground-plan (Gillam 1953, 165-173). The other noteworthy border component is the 'Portgate', located beneath a modern roundabout (unmappable) just west of Milecastle 22 but with its own structure straddling the curtain-Wall, the outer ditch diverting to surround it – excavated in 1966 (Bidwell 2009, 50; Jones and Woolliscroft 2001, 94). Provision of such a feature rather than diverting Dere Street to the nearby milefortlets or the fort at Haltonchesters attests the road's early, ongoing existence and importance (Poulter 2009, 27).

The Military Way is visible as short earthwork lengths between Vallum and Wall, connecting the various small garrisons and larger forts, as are the roads (1454710, 1451541) projecting south from Chesters along the western side of the North Tyne valley towards the Stanegate, and north from Haltonchesters into the area immediately beyond the border. As before [5.3], the Vallum is the most consistently-mapped frontier feature, defining the narrow (c.20-40m width) zone of military control behind the Wall (varying to account for terrain, e.g. the small valley 700m of Haltonchesters). The area of obvious and direct impact by Hadrian's Wall is thus relatively narrow in this landscape, more to do with control of movement here, rather than taking land out of use.

Two wall-forts are present in the project area – Haltonchesters (18157), located on the ridge (controlling the high ground of this border-sector) c.900m east of Dere Street (close to the main north-south axis of the frontier); and Chesters (19110), situated c.8.5km north-west to control both the Wall's crossing of the North Tyne and the valley itself (Figure 166). Both are auxiliary forts dating from the initial phase of moving garrisons onto the border, with excavated evidence (Berry and Taylor 1997, 52; Blood and Bowden 1990, 55) for the initial curtain-Wall being demolished to make way for these forts (together with Turret 27a at Chesters (Birley 1960, 9)). Both initially held cavalry units, attested by epigraphy and layout. These original-phase forts project one-third of their area north of the Wall, arranged to face north (Berry and Taylor 1997, 56-57; Birley 1960, 9) with the main gates situated to allow speedier deployment of troops onto ground in front of the border rather than focus on static defence.

Little of the layout of Haltonchesters (*Onnum* from Ravenna Cosmography or *Hunnum* of *Notitia Dignitatum*), or its attached settlement (1014444), was visible on aerial photography to be mapped by NMP – much of the site has been stone-robbed and plough-levelled, with only its perimeter visible as earthworks (Jones and Woolliscroft 2001, 92). Thankfully, field survey (Blood and Bowden 1990, Figure 167) and excavations (Gillam 1961, 164; Jarrett 1959b, 177; Simpson and



**Figure 167 - Earthwork field-survey plan of visible surface remains of Haltonchesters fort, showing unusual shape (Blood and Bowden 1990, 57).**

Richmond 1937) provide more-detailed structural and occupation history, while geophysical survey (Berry and Taylor 1997) has confirmed these plans and revealed the *vicus* to east and south. The fort is situated on a natural ridge (c.185mOD) just east of a ravine, with extensive views over the Tyne valley and west towards the Portgate but less visibility to north and east (Berry and Taylor 1997, 51). Excavations revealed several phases of occupation, destruction and rebuilding/remodelling from the second to fourth centuries, the initial plan indicating a cavalry quingenary garrison and the *Notitia* and inscriptions from the site giving the third-century unit as *ala I Pannoniorum Sabiniana* (Berry and Taylor 1997, 51; Jarrett 1960a, 153-156). The fort has an unusual western extension added south of Hadrian's Wall in the early-third century, creating a final inverse-L plan-form (Blood and Bowden 1990, 58; Jarrett 1959b, 178,183-184) which is unparalleled on Hadrian's Wall.

Meanwhile, extramural settlement has been identified via magnetometry (Taylor *et al.* 2000), running either side of the southward road from the fort (both within and outside the Vallum) and also eastward, where it is contained within (and thus contemporary with) the military zone between Vallum and Wall rather than later overlying a filled-in Vallum (found elsewhere) (*ibid.*, 37-43, Figure 168). The settlement contains an external bathhouse, presumably of different date or usership to the internal ones within the fort's north-western quadrant and south-western extension, and served by the drain from the fort's internal latrines (Berry and Taylor 1997, 57-59; Blood and Bowden 1990, 60-61). The settlement is relatively confined in comparison to other *vici*, the open ground behind the buildings perhaps representing paddocks for the cavalry garrison's horses or alternatively farmland
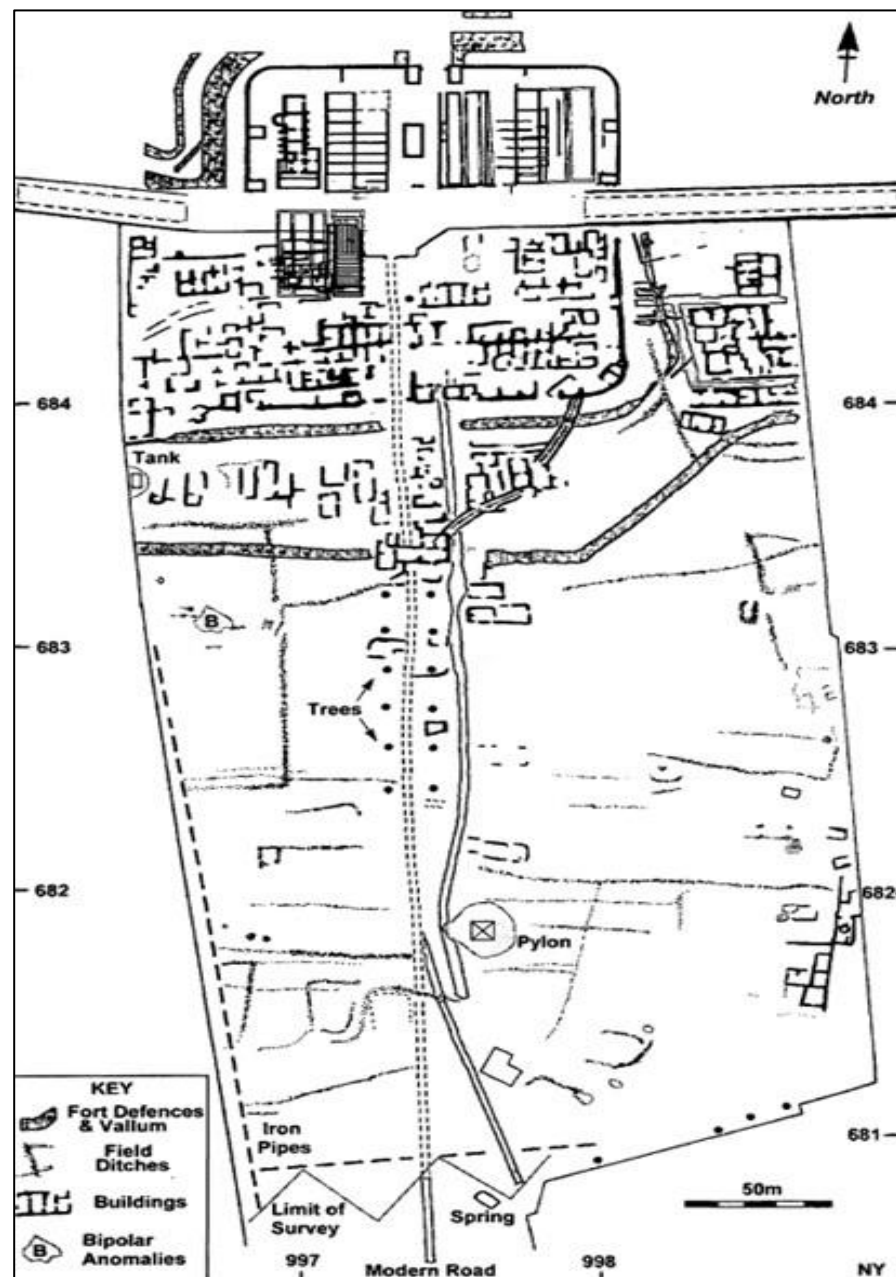


**Figure 168 - Interpretation-plan showing the magnetometry-survey of the *vicus* and earlier excavation, survey results from Haltonchesters (Taylor *et al.* 2000, 42).**

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(elements of field-system appear overlain by buildings, suggesting adaptation of existing native landscape here) (Taylor *et al*. 2000, 40-44). As with Chesters, the *vicus* has been little-excavated, the only evidence for the identities of its inhabitants being sculpture and epigraphy, such as the third/fourth-century family tombstone set up by Virilis, the family depicted in cloaks with the father's dress clearly military in style (Wright and Hill 1975, 209-214).

More of Chesters fort's layout, external military bathhouse (1012586) and the Wall-bridge's eastern abutment have been mapped by NMP (Figure 169), supported by extensive ground-based investigations in the 19th/20th centuries [Appendix] (Austen and Breeze 1979; Birley 1960; Harper 1961; Johnson 1990; McIntosh 2019). The fort (*Cilurnum*) was situated to control the Tyne valley (and the borderland's river-crossing (Figure 170)) with evidence for substantial landscape-engineering via water-management. It housed cavalry and infantry garrisons at different times and with different geographical roots, with the 15ha *vicus* (1012583) suggesting a large, varied civilian population (though lack of major excavation here hinders confirmation). Nevertheless assemblages from the well-excavated fort and bathhouse (Figure 171) suggests local arable-cultivation in the immediate vicinity (an indigenous population?), the presence of women and children, and varied religious beliefs, with the settlement housing veteran-soldiers and craftspeople of various industries.
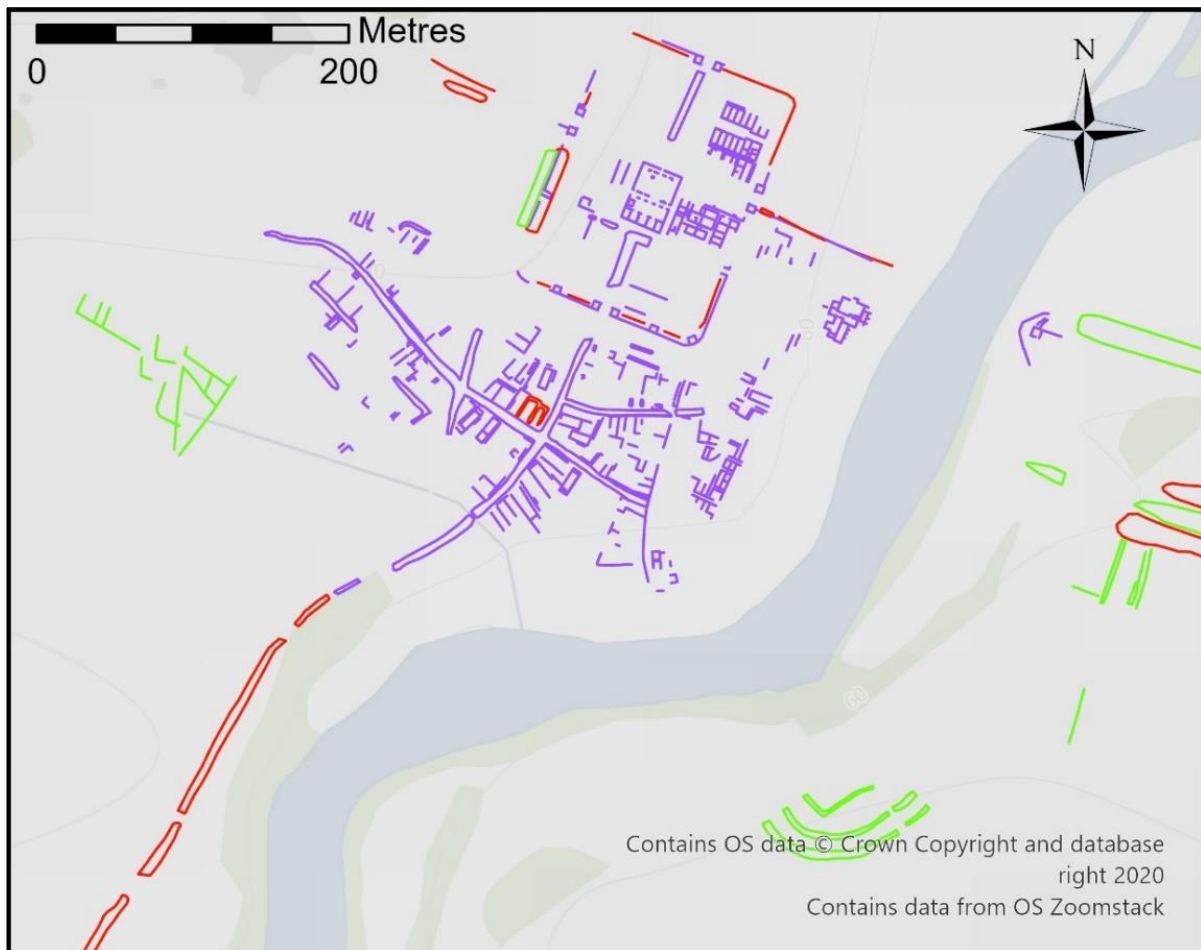


**Figure 169 - NMP mapping of the Wall-fort, bathhouse, vicus and bridge-abutments over the North Tyne at Chesters.**

The various garrisons at Haltonchesters and Chesters (together with their attached civilian populations of craftspeople, traders, and families) therefore form important foci for settlement, social and economic activity and potential cultural exchange within this borderland landscape, a new
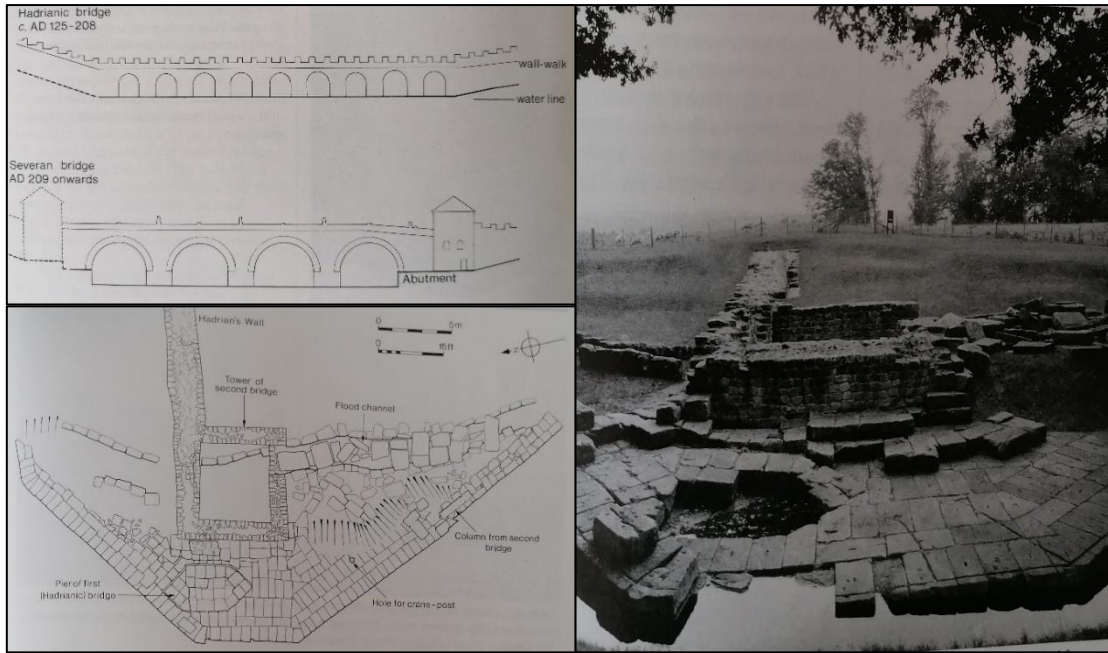
**Figure 170 - Reconstruction-drawings of the different phases of the Chesters bridge (top-left); Plan (bottom-left) and photograph (right) of the surviving eastern-abutment (Johnson 1990, 28-29).**

imposition (or opportunity) for the indigenous population living in the Tyne valley and surrounding uplands. These settlements likely provided access to many different essential activities undertaken previously within the family-farmstead enclosure, but on a different scale, and with new, different products available.
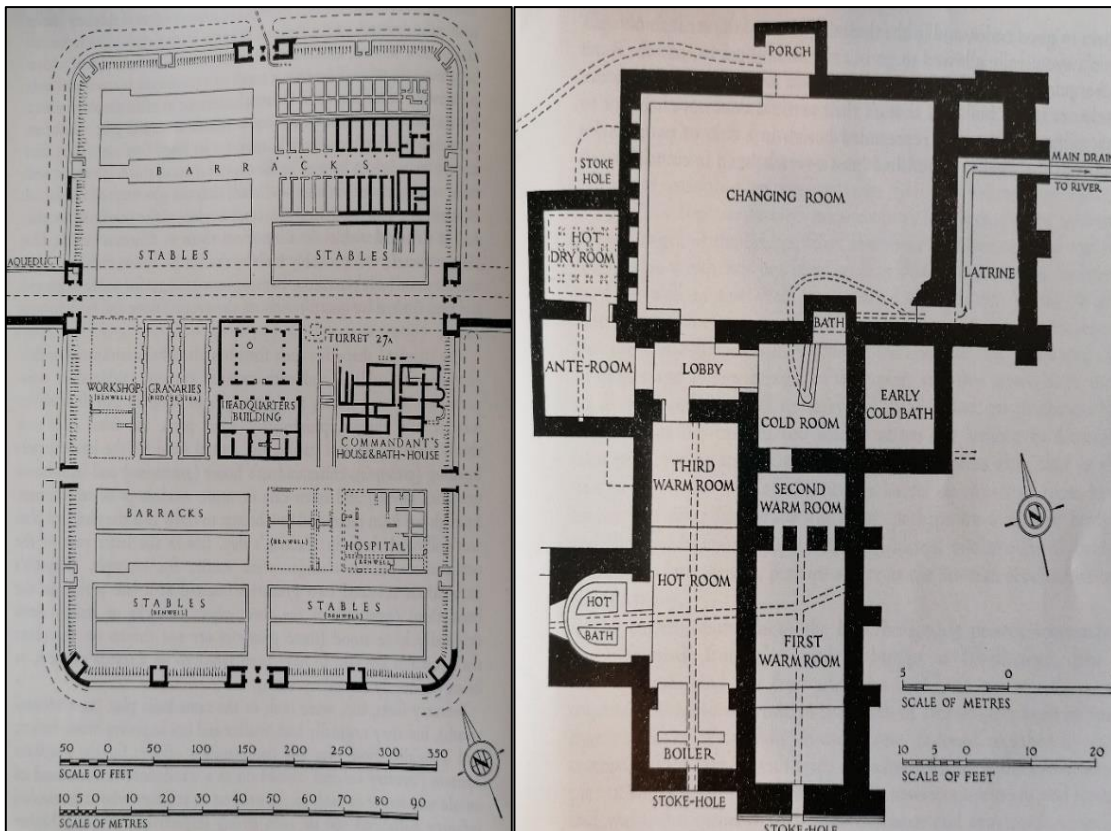


**Figure 171 - The known plans of the auxiliary Wall-fort (left) and bathhouse (right) at *Cilurnum* (Birley 1960, 16,29).**

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*6.3b – Implications of the Aerial Assessment alongside Existing Work*

Section 6.3a has thus shown the opportunities afforded by large-area aerial mapping for discussing the wider landscape in this well-known borderland. Roman military installations (and associated civilian developments) of Corbridge, Hadrian's Wall and its components, Haltonchesters and Chesters have long been well-documented, with all of these sites having had (often extensive) antiquarian and archaeological investigations from the 19th century through to the present. However, what has been little-discussed for this area is the wider landscape, particularly native settlement and connections, and how the arrival of these Roman sites (and infrastructure and socio-economic processes supporting them) impacted this. Only by looking at the broader landscape-picture, in association with existing site-based archives, can these questions be discussed.

Though less-conducive to archaeological visibility from the air than cropmark landscapes on better geologies further south [6.4], and good-earthwork survival in upland Block 3 [6.2a], this area nevertheless has a mixture of earthwork and cropmark survival attesting the long history of agriculture, extraction and settlement across the Tyne valley and surrounding uplands. The main issue in areas of earthwork survival is the apparent isolation of many settlements, with only fragments of field-system and no indigenous routeways identified, due to later arable and pasture-improvement. Cropmarks, where visible (as on the gravels north of the river near Corbridge) attest complex, multi-phased agricultural, settlement and military activities, but are sadly patchy on higher ground and other geologies.

Aerial survey has illuminated an existing indigenous landscape of Iron Age defensive and/or curvilinear enclosures, with sites such as Warden Hill and those near Wall overseeing movement and activity in the valleys below. This developed into traditional 'Jobey Type-A' rectilinear farmsteads and associated coaxial field-systems during the later-Iron Age, along the Tyne valleys and on the higher ground northward, prior to (and perhaps continuing with) the arrival of Rome. Corbridge's various phases of military and then mixed military-civilian activity had a profound impact on the valley-floor, utilising some elements (such as boundaries), but also levelling parts of the indigenous landscape to accommodate temporary camps, bases/forts and eventually a large town (together with associated features such as cemeteries) – e.g. cremations north of the town sealing a ditched native settlement, and the settlement and field-system beneath the town's core (Jobey 1979, 104). This process was then repeated further north upon completion of the Hadrianic border-zone, now also hindering widespread movement and communication alongside localised activities.

What has been little-discussed for this area is the fact that the Tyne acts not only as a corridor for movement but also a natural boundary. Section 6.2 discussed how patterning in settlement forms in Redesdale shows the valley's position at the interface between potential indigenous social or cultural groupings – extending this southward via the North Tyne to this area one finds a similar topographic landscape-division afforded by rivers (monitored from the locally-unusual site of Warden Hill), as well as an interface between the edge of lowlands to south and east and uplands. Wider discussions [6.1c] argue that the Tyne formed a possible boundary between the *Brigantes* to the south and other societies further north; Corbridge is thus located on a bridging-point across this potential division. Discussion has focussed on its Roman tactical placement controlling movement on the bridge-head and cross-roads (Birley 1954, 5; Gillam 1977, 47; Hind 1980, 171), but has not thoroughly examined the potential wider strategic role of the site as a meeting point between different existing regional socio-cultural groups: a potential reason behind construction of the symbolic monument of the Portgate directly to its north, rather than diversion of

Dere Street to fit better with the organisation of Hadrian's Wall (Hingley 2021, pers.comm). Indeed, archaeologists have preferred to see Corbridge as the proto-*civitas* for its own social grouping. *Coria* as 'meeting-place' rather than 'hosting-place' could support the former meaning. Indeed, artefactual evidence from Corbridge attests social and economic links to the wider empire (southern Britain, the Continent and further south and east), as would be expected, but also beyond the frontier to the north. The site thus likely functioned as a cross-roads not only on the Roman road-network but also between cultures and social groupings, locally and wider-afield.

All in all, this area has many parallels with Block 2 around Carlisle: major valley setting, early military activity giving way to large civilian settlement, alongside the Hadrianic-late Roman borderland. Similar patterns emerge from the data, though with different issues. Dense modern urbanisation in Carlisle hinders understanding of wider spatial and chronological patterning but deep stratigraphy and opportunities from modern development created more holistic ecofactual and artefactual assemblages, allowing greater discussion of topics such as identity and environmental impact. Artefact-collection at Corbridge and Chesters was heavily biased in favour of Samian wares, glass and metalwork over coarser ceramics and animal bones (McIntosh 2019, 52-53). Limited faunal remains from Corbridge, including the usual domesticates and hunted wild species, alongside oyster-shells (Birley 1954, 32; Hodgson 1968, 127-133), are not of similar preservation or quantity as assemblages from Carlisle (due to early excavation practice). Contrastingly, the more-rural setting of Corbridge increases visibility of wider landscape features, while extensive early archaeological interest has addressed issues of site-morphology and development (though at the expense of assemblages which could address the aforementioned themes). Nevertheless, important similarities between Carlisle and Corbridge include local landscape-situation, the nature of communication networks, and subsequent military and civilian activities within these. The early bases and subsequent development of regional urban central-places (unparalleled north of Yorkshire) supported the military borderland and anchored it, allow exploitation of the Tyne-Solway isthmus as a boundary in the first place. Of interest to this comparison is use of *Legio IX* tiles from Scalesceugh at both Carlisle and Corbridge, implying connectivity in supply and manpower between the two sites from the first century (Bishop 1995, 312).

## 6.4 – Hinterlands: The Southern Frontier Zone

As with the western transect [5.4], the 'inner periphery' or 'hinterland' of the Roman frontier, southwards from Corbridge, is important to understanding its impact and function. As discussed [Chapter 3], east of the Pennines this runs north from the legionary fortress and overall frontier headquarters at York (*Eboracum*) to the Hadrian's Wall borderland. This zone comprises two distinct landscapes, based on natural topography and resultant human activities: lowlands of the Tyne, Wear and Tees valleys (and Durham Plateau between them) [6.4a], and the Vale of York and Vale of Mowbray surrounding and north from York [6.4b], separated by the low watershed between the upland Pennines (west) and North York Moors (east), upon which is situated the major Iron Age site of Stanwick (below).

*6.4a – The Immediate Hinterland: Aerial Survey and Wider Archaeological Investigation of Iron Age and Roman Period Landscapes in the Tyne-Tees Lowlands*

The first area comprises the lowland basin dominated by the valleys of the Tyne, Wear and Tees rivers, together with the Magnesian Limestone hills of County Durham. Aerial survey has been greater in the Tees valley than central County Durham (which thus has fewer specialist oblique photographs, though historic vertical coverage is more consistent) (Hewitt *et al.* 2007, 24-28). However, in terms of largescale aerial mapping, this imbalance is somewhat rectified by the 'Durham Assessment of Archaeological Resource in Aggregate Areas' project (henceforth Durham NMP), undertaken in two phases to NMP standards (using the same specialist and historic archive photography as previously-mentioned projects), across the limestone plateau and Wear Valley (Radford and Pallant 2008, 1,4,7, Figure 172). Aerial mapping elsewhere is limited to individual site-based supporting-materials.

County Durham largely encompasses transitional landscapes between the upland North Pennines further west (the highest moorland in England, remote and exposed, with



**Figure 172 - Durham NMP project area, arcing eastwards across the limestone plateau, largely east of Dere Street (the road crosses the south-western project area around Binchester and comes close to the northernmost quarter-sheet near Ebchester) (Radford and Pallant 2008, 30).**

quiet pastoral valleys and mineral resources (predominantly lead) the primary land-uses (Natural England 2013d, 3,5,9)) and the North Sea coastal plain to the east (Lake 2020, 2). Broad ridges separate wide valleys (Wear, Derwent and tributaries), rising gradually east to west (11-370mOD) and changing from mixed arable/pasture separated by hedges and woodland to larger, walled pastoral fields. Modern industry (coal-mining and steel-processing) heavily impact this landscape; urbanisation dominating the north-east (Natural England 2013e, 3,7,9). The region is underlain by sandstones with coal and iron measures, with limestone on the Durham Plateau, all topped with heavy clay and alluvial gravels and sands in valleys (Haselgrove 1982, 57; Natural England 2013e, 3-9). This creates potential for cropmark development alongside earthwork survival.

Southward, the 'Pennine Dales Fringe' of limestone/sandstone foothills surrounds upper Teesdale and its wooded tributary-valleys and a major trans-Pennine route (Stainmore Pass) (Natural England 2015f, 3-10), before giving way to the lower Tees valley and its broad estuary: an open plain of intensively-farmed arable, sparse woodland and coastal wetlands, dominated by Darlington (south-west) and the urban-industrial conurbation of Middlesbrough/Stockton-on-Tees further east (Natural England 2013g, 3,5). This plain of glacial drift and alluvial gravel/sand (good for cropmark development) covering Permo-Triassic solid geology is surrounded by the Cleveland Hills (south) and Durham Plateau (north) (*ibid.*, 5-6).

The sheltered topography of the Durham and Tees Valley lowlands (Figure 173) and their fertile soils mean they have always been important agricultural areas, supporting denser settlement. Palynology (Seamer Carrs south of Middlesbrough, Neasham near Darlington, Thorpe Bulmer and
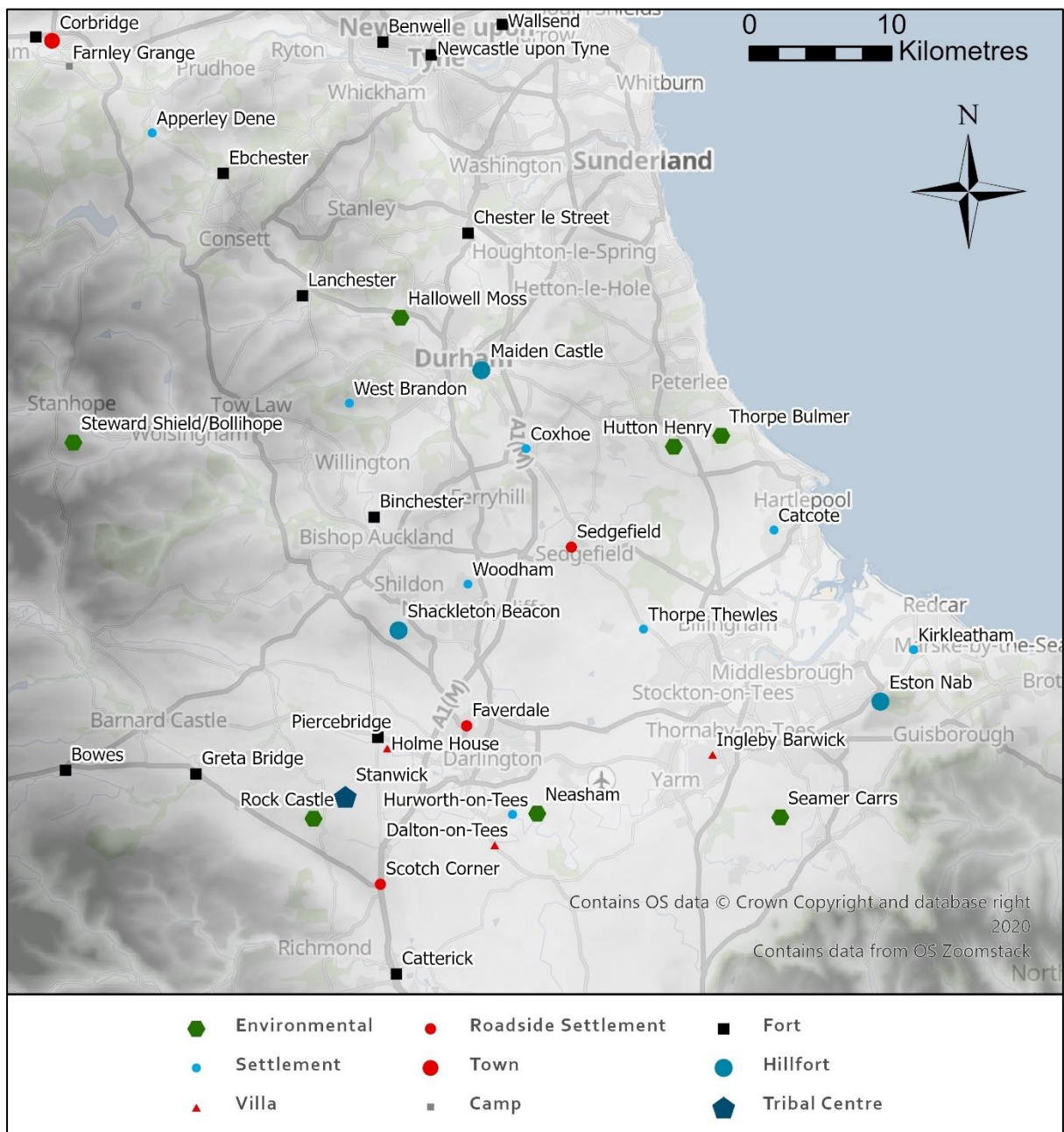


**Figure 173 - Topographic map of the Tyne-Tees lowlands and key sites mentioned in the text.**

Hutton Henry near coastal Hartlepool, Hallowell Moss in central County Durham) indicates woodland-clearance for both pasture and arable through the Bronze Age and Iron Age, differing by site but all peaking in the first centuries BC/AD (Bartley *et al.* 1976, 437,465-466; Dark and Dark 1997, 34-35; Dark 1999, 256; Davies and Turner 1979, 802; Donaldson and Turner 1977, 25-32; Haselgrove 1982, 76-77; Natural England 2013g, 9,23). Pollen-diagrams from Steward Shield and Bollihope (Weardale: higher and further west) attest similar later-prehistoric clearance (possibly running into the mid-Roman period here), peaking around 110cal.BC-cal.AD220 (accompanied by arable at the former, valley site and pasture at Bollihope on higher slopes) (Bartley *et al*. 1976, 466; Davies and Turner 1979, 802). Though some sequences have broad date-ranges for commencement of clearance (Dark 2000b, 61) or only begin in the first-century AD (Donaldson and Turner 1977, 25), coastal and riverine lowlands appear largely cleared and cultivated/pastured by Rome's arrival.

Regarding the later-prehistoric landscape's human component, Hewitt *et al*. (2007, 25) state: "it is clear that County Durham lacks, not archaeological sites, but archaeological *research*", the area less well-understood than the northward Hadrian's Wall borderland or landscapes further south. Issues affecting aerial survey include geological variation, heavy urbanisation and industrialisation, and biases in local fliers' search-patterns (McCord around Newcastle, Harding around Durham and RCHME/EH/HE along Dere Street), along with embanked features and ephemeral, unenclosed sites not showing
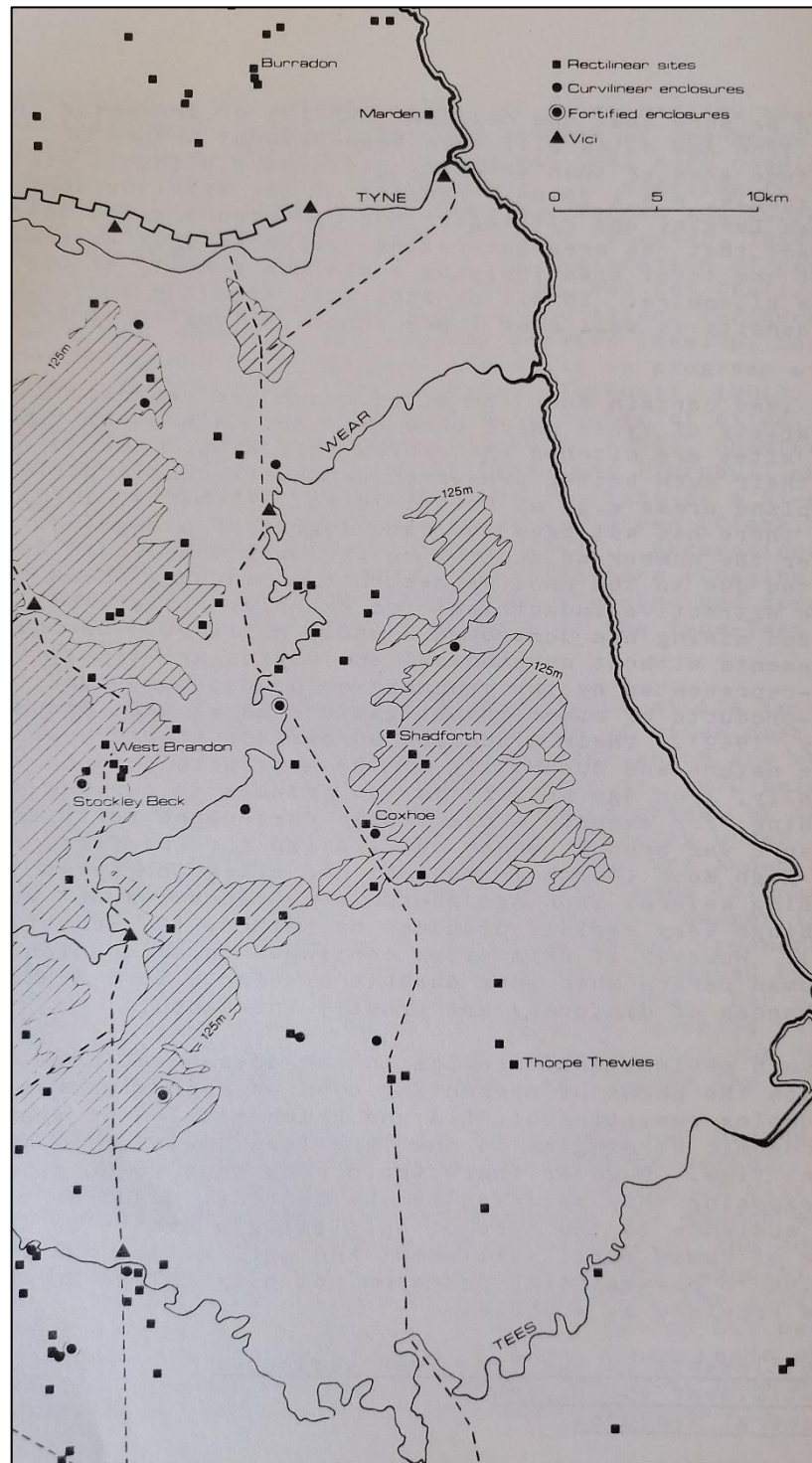


**Figure 174 - Distribution of 50+ curvilinear and rectilinear enclosures in the Tyne-Tees lowlands, in relation to Roman roads (Haselgrove 1982, 60).**

up in cropmarks (Haselgrove 1982, 58-59). Nonetheless, aerial photography and Durham NMP contributed greatly to mapping distributions (Figure 174). Earlier prehistory's features are restricted to monumental structures: a Neolithic long barrow and three Bronze Age round barrows (though more such features have been recorded by previous research regionally) (Radford and Pallant 2008, 11).
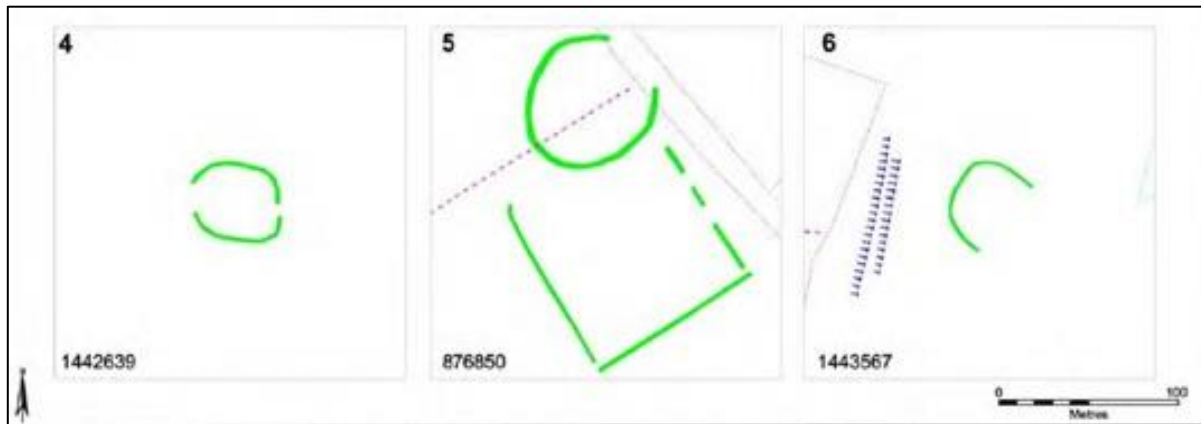


**Figure 175 - Durham NMP mapping of three cropmark curvilinear enclosures, Woodham (middle) adjacent to a differently-phased square enclosure (Radford and Pallant 2008, 31).**

Mapped Iron Age and Romano-British rural settlements are dominated by rectilinear enclosed farmsteads, excepting three curvilinear sites (876850, 1442649, 1443567) (Figure 175), Woodham near Binchester (876850) of particular interest due to the adjacent, presumed-later square enclosure (Hewitt *et al*. 2007, 28; Radford and Pallant 2008, 12). Whether curvilinear enclosures are all earlier is unclear. Of the now-familiar Iron Age/Romano-British rectilinear farmsteads (likely single-family, dated morphologically), all survive as ditched cropmarks bar one earthwork (Radford and Pallant 2008, 12, Figure 176) and mirror settlement-patterns further north in the transect. The two most-distinctive (25885, 25956) have slightly-bowed sides and single, east-facing entrances (*ibid.*). Only three sites (26160, 1448066, 1457166) contain definite roundhouses (Figure 177), and just three (1443329 and 1443331 near Sedgefield and 1446082 at East Holling Carr (Figure 177)) have clear associations with double-ditched routeways, enclosures or fields. Most enclosures regionally measure 0.3-0.5ha (including excavated Coxhoe and West Brandon, below) with a small minority being around 0.1ha-0.2ha or above 0.7ha (Haselgrove 1982, 59-61).

Despite the Tees lowlands lacking equivalent largescale mapped survey, development-led and research-project archaeology (aerial photography, geophysical survey and large excavation) have identified many later-prehistoric settlements in the valley (Still *et al.* 1989). Most continue the morphology of County Durham's examples – farmsteads of one or more timber roundhouses, enclosed by ditch and/or bank, often accompanied by fenced or ditched fields and paddocks, with multiple phases (Mason 2019, 7-8, Figure 178), though with additional elements (below) more akin to regions further south (Sherlock 2011). Western, upper Teesdale's settlement pattern comprises earthwork farmsteads involved in pastoralism on valley slopes and cultivation on the valley floor (Coggins 1986, 195-202).

Increasing numbers of settlements have been excavated across County Durham and Teesside. Rectilinear enclosures at West Brandon, Thorpe Thewles and Coxhoe (Figure 179) are best-known, revealing banks accompanying the ditches visible from cropmarks; alongside internal roundhouses of varying timber construction-forms, and earlier, curvilinear phases of palisaded
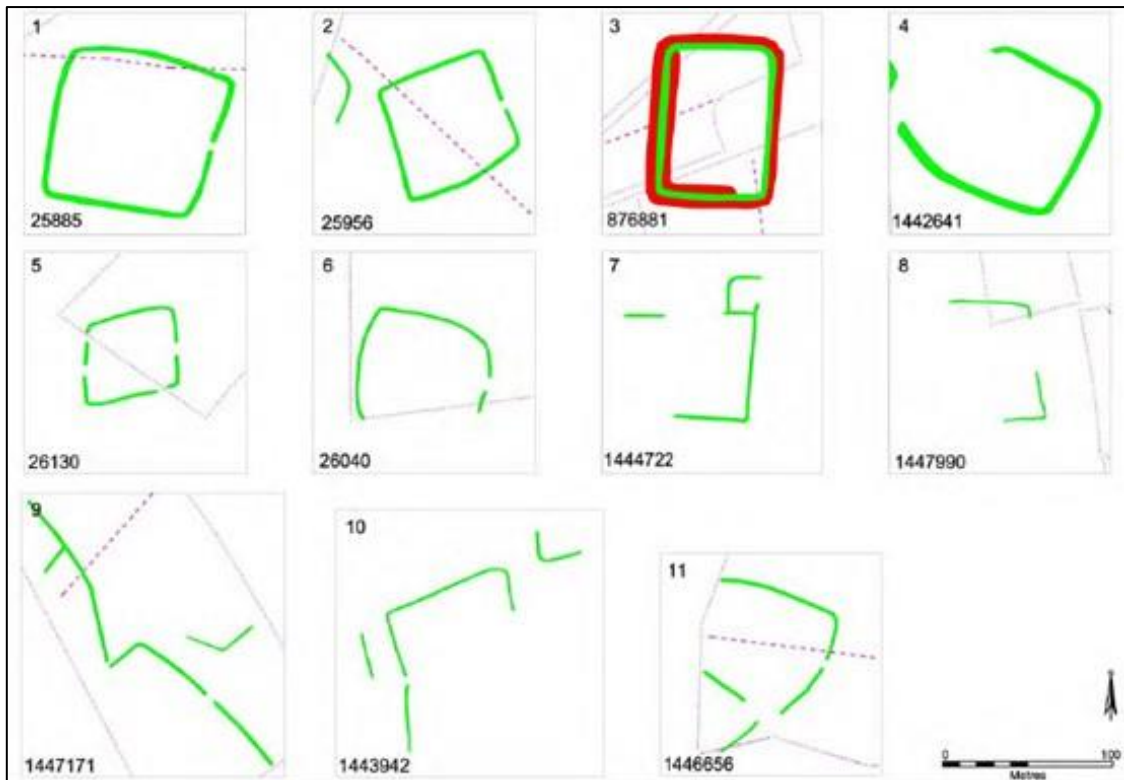
**Figure 176 - Mapped rectilinear enclosures, all bar one comprising ditched cropmarks, but similar in size and form to earthwork examples further north (Radford and Pallant 2008, 32).**

enclosure invisible from the air, West Brandon on the same site and Thorpe Thewles adjacent (Haselgrove 1982, 61-64; Haselgrove and Allon 1982, 25-28,47; Heslop 1987, 111-118; Hewitt *et al*. 2007, 25,28; Jobey 1962b, 1-17) – the latter mirroring the cropmarks at Woodham (above). West
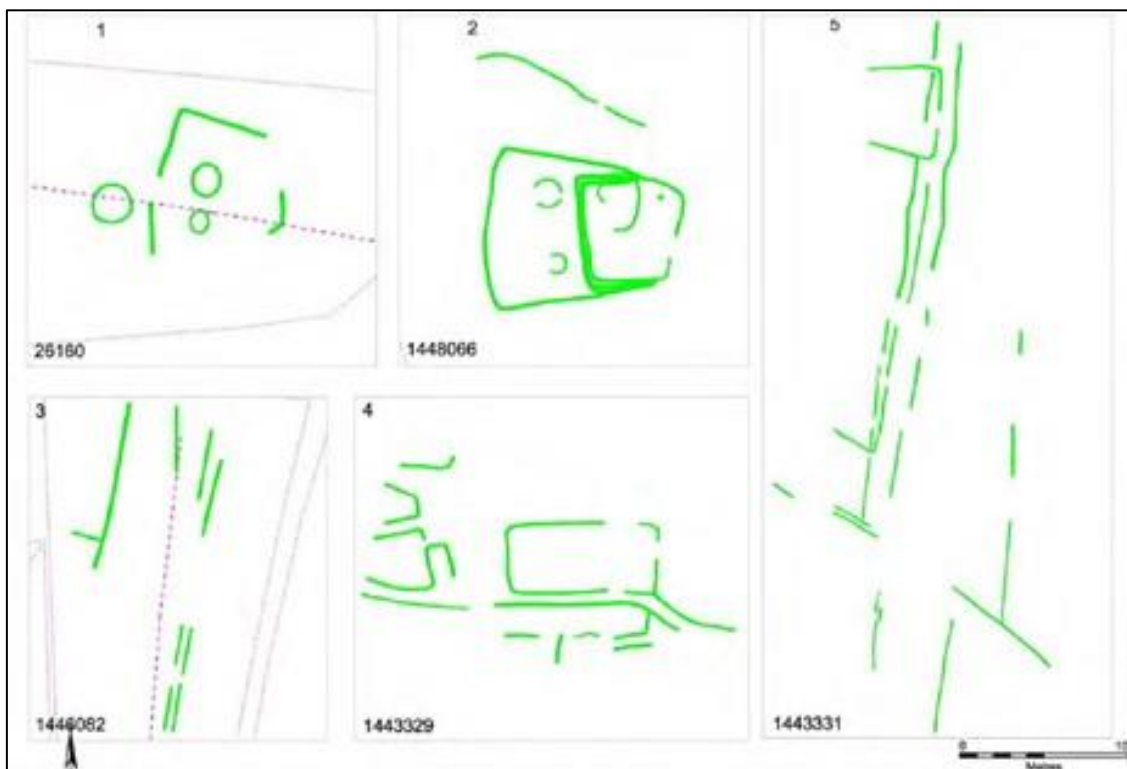


**Figure 177 - Rectilinear enclosures in association with internal roundhouses (26160, 1448066) and trackways or enclosure/field-systems (Radford and Pallant 2008, 33).**
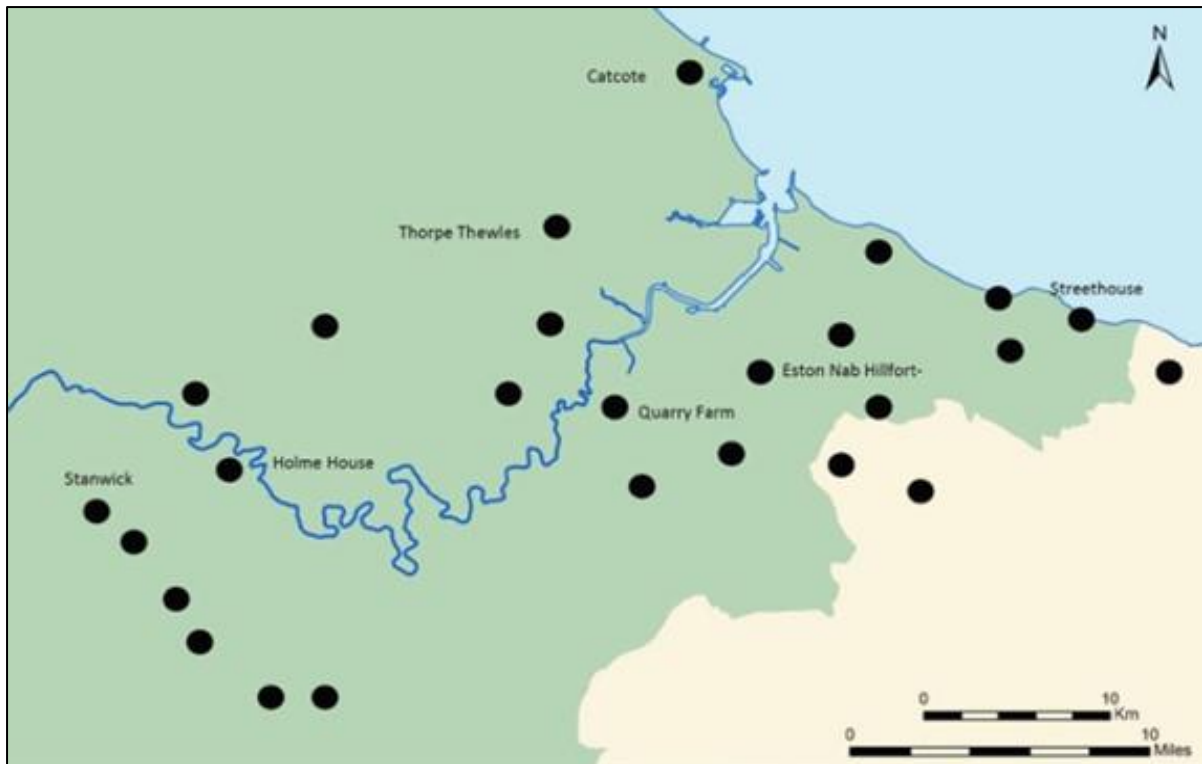
**Figure 178 - Map showing known Iron Age/Romano-British rural settlements in the Tees valley (Mason 2019, 7).**

Brandon and Coxhoe contained no Roman material culture and were dated as pre-Roman Iron Age (Haselgrove 1982, 64-65; Haselgrove and Allon 1982, 45-46; Jobey 1962b, 25-28). Another, recently-discovered Iron Age (157cal.BC-cal.AD1) site is the unenclosed settlement of 20+ circular structures and stock-enclosures at Kirkleatham in coastal Cleveland, with native-type pottery and no Roman imports (Sherlock 2020).

Contrastingly, Thorpe Thewles saw levelling of the original enclosure allowing settlement expansion, contemporary with widening connections and trade-links (likely by river) indicated by imported Samian and Gallo-Belgic fine-wares and high-status metalwork (gold, silver, bronze, iron), jet, amber and antler. These date prior to Roman military occupation, but with the settlement abandoned by the late-first century (Haselgrove 1982, 71; Heslop 1987, 114,117-120). Catcote near Hartlepool, excavated in the 1960s, comprised a 4ha, unenclosed settlement of timber roundhouses, grain-storage pits, boundaries and enclosures (Long 1988; Vyner and Daniels 1989). Occupied from the
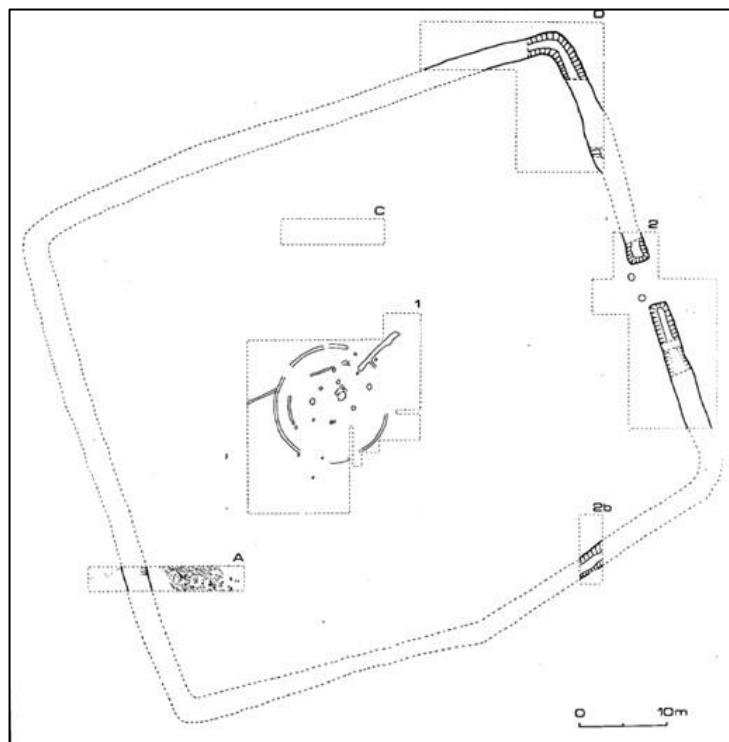


**Figure 179 - Excavation plan of Iron Age timber-built settlement at Coxhoe (Haselgrove and Allon 1982, 29).**

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later-Iron Age, it contained very early Roman imports similar to Thorpe Thewles (its coastal location a potential factor), but continued through to the late-Roman period (Haselgrove 1982, 71), with second-century reorganisation into rectangular buildings (Mason 2019, 48). Recent discovery of a similar Iron Age settlement at Hurworth-on-Tees, maintained and developed into the second/third centuries with the addition of stone-built buildings, well and pottery kiln, extends evidence for Roman-period modification of rural settlement into the central Tees valley (Collins 2019, 422).

Faunal assemblages from Coxhoe, Catcote and Thorpe Thewles attest a predominance of cattle (40-47%) over sheep/goat (23-40%), lesser amounts of pig (4-16%) and horse (5-17%), and occasional dog, deer, and hare at rural settlements. Overcoming possible preservation and collection biases, these show beef as the primary meat component of lowland indigenous diet (Haselgrove 1982, 80-81; Haselgrove and Allon 1982, 44,47; Heslop 1987, 119). Mixed farming is proven by excavated botanical assemblages from Thorpe Thewles, Catcote and Ingleby Barwick (below) containing spelt wheat and barley (with lesser amounts of emmer), alongside grass and pastoral weeds (Hall and Huntley 2007, 44,90-91; Heslop 1987, 119; Long 1988; Vyner and Daniels 1989). Further evidence for mixed agriculture is positioning of several sites at the 125m-contour interface between pasture on the Durham limestone and lower-lying arable-suitable soils, together with abundant querns at all sites (Haselgrove and Allon 1982, 47-48; Haselgrove 1984, 12).

Only one Iron Age 'hillfort' is confirmed in County Durham: Shackleton Beacon (Haselgrove 1982, 68-69; Hewitt *et al*. 2007, 25), a 1.3ha, oval-shaped, multivallate site on a promontory's western end, protected north and south by steep slopes. A second potential site is Maiden Castle near Durham (Haselgrove 1982, 68-69; Vyner 1988, 92). Given the potential for further such sites amongst Durham's hills and their presence further north [6.2/6.3] and south, their absence must indicate a different Iron Age settlement hierarchy. There are no hillfort-equivalents in the Tees valley either, though early-mid Iron Age defended sites top the northern edge of the Cleveland Hills and North York Moors, located at interfaces between lowland agricultural land and higher, seasonal grazing. Eston Nab (242mOD, with excellent views over Tees valley and coastline, Figure 180),

excavated through the 20th century, began as a 0.4ha timber-palisaded settlement containing structures, developing in the later-Iron Age into a different function with little permanent occupation, a boulder-wall and substantial bank and ditch enclosing a larger 1.2ha area – perhaps a meeting place or defensible refuge for the lowland community (Higgins 2015, 8; Vyner 1988, 60-65,89,94-95).



**Figure 180 - Aerial photograph of Eston Nab's hillfort (Vyner 1988, 101).**

From c.100BC to the AD 60s/70s, by far the largest, most-impressive pre-Roman site is Stanwick, located on the Pennine fringe above mid-Teesdale (north) and the Vale of Mowbray (south), controlling the lowland north-south corridor connecting the region and the eastern end of the east-west Stainmore routeway. It also dominates one of the few areas of Grade-2 agricultural land in northern England (Mason 2019, 9; Haselgrove et al. 1990b, 1-2). A late-Iron Age landscape of rectilinear and curvilinear enclosures was recorded from the air, one forming the core for the later, larger earthworks (Haselgrove 1982, 72). A 5m-high, 6.5km-long, stone-fronted earthen perimeter commands local topography but is not continuous (Welfare et al. 1990), enclosing 270ha and built in the AD 50s/60s atop earlier field boundaries (Figure 181), centred upon a smaller, high-status enclosure (the Tofts) of large roundhouses (initially timber but rebuilt in stone), long-thought the pre-Roman capital of the Brigantes (Haselgrove et al. 1990a, 37,85-86; Haselgrove 2016; Mason 2019, 9-10). Wheeler's initial interpretation (1954b) of the site as capital of anti-Roman ruler Venutius (given its short-lived but massive defences) has since been disproved: overall longevity of the site and Roman-influenced material culture, proven by the Durham University/RCHME multi-disciplinary landscape project of aerial, geophysical and earthwork surveys, documentary research, field-walking and excavations (Haselgrove et al. 1990a; Haselgrove et al. 1990b; Haselgrove 2016; Welfare et al. 1990). This is further supported by the proximity of the early Roman activity at Scotch Corner [6.4b].



Figure 181 - Phased development plan of the complex site at Stanwick (Haselgrove 1982, 73).

The site's agricultural economy mirrors wider native patterns, with cattle and sheep dominant (environmental evidence suggesting local pasture), and spelt wheat and barley the main crops (Hall and Huntley 2007, 44-48; Haselgrove 2016). Metalworking is also attested (Spratling 1981, 13-14). The wealth, importance and wider connections of the site are confirmed by early-Roman (pre-occupation) imported pottery, glassware

and obsidian cup from the Mediterranean, coins and brooches, with ceramic building-materials implying mid-first century Roman-style structures (though they remain undiscovered) (Haselgrove 2016; Mason 2019, 10), along with the antiquarian-discovered hoard of bronze chariot/horse-fittings and weaponry (Haselgrove *et al*. 1990b, 11). These objects, together with the earthworks' scale (defensive or status-oriented, they involved large, centrally-organised workforces (Haselgrove *et al*. 1990a, 86-87)), indicate occupation by a regionally-unique group of unparalleled wealth and status. The site is thus interpreted as *oppidum* (Latin term denoting indigenous capitals of northern Europe, paralleling Colchester, St Albans and Continental examples) (Haselgrove 2016). The major Scot's Dyke north-south linear bank/ditch (1km east of Stanwick, running for many kilometres) has recently been proven Iron Age in date, representing a major territorial division, possibly associated with the *oppidum* (Mason 2019, 9). Stanwick is therefore postulated as the central-place for wider settlement in the lowland north-east, with far greater inter-connectivity than surrounding upland sites (Ferrell 1997, 233). The site's complete abandonment in the late-first century therefore, contemporary with permanent military occupation (Haselgrove 2016), implies major impacts on both the local landscape (and activity within it) and wider regional social, cultural and economic dynamics.

Stanwick is not the only site locally with evidence for early, non-military links to Rome (see above). Elgee (1923) was the first to recognise the Tees region's apparent 'flourishing' under Rome, albeit based on limited evidence. Around 10 'villa' sites are identified across the Tees lowlands via aerial photography, development-led excavation and now lidar (Mason 2019, 44): the northernmost in Britain and first discussed within these transects. 'Villa' is a modern-term generally describing (in Britain) rural settlements with high-status Roman-type buildings, and complex socio-economic functions. Despite these terminological complexities, the sites discussed exhibit high-status, Roman-type construction, landscape reorganisation and associated material-culture and will be termed 'villas' for the purposes of this discussion. Mason (2019, 42) argues these sites developed due to riverine accessibility, quality arable land offering reorganisation-potential, and proximity to suitable markets (e.g. Piercebridge) as much as local cultural choice.

Holme House, Piercebridge (excavated 1969-70 before quarrying (Harding 2008)) comprised late-Iron Age multiple-phased timber roundhouses within a rectilinear enclosure, Roman material-culture arriving from the AD 60s (prior to regional occupation). A roundhouse was rebuilt in stone in the late-first century, alongside a rectangular, Roman-style building (Figure 182), the latter enlarged through the second-century with apsidal dining-suite and bathhouse wings, incorporating painted wall-plaster, mosaics, and hypocaust, to create a villa (ceramic and faunal evidence implying feasting). Both roundhouse and villa were abandoned by the late-second century, though activity continued into the fourth. Parallel indigenous and Roman-style structures have been variously argued as new management of the estate alongside the existing 'workforce', maintenance of indigenous tradition alongside new-fangled ideas (the roundhouse's position in the enclosure remains prominent) or continuation of some activities in native-style structures (Harding 2008; Mason 2019, 39-41). Ecofacts attest dominance of cattle (generally mature animals, eaten after lives of milking/traction) and sheep/goat (second-year animals indicating prime meat-consumption but also 60% over five years, implying wool or milk production), with pigs and poultry also farmed and horses and dogs present. Hunted animals include red/roe deer, wildfowl, geese, hare, polecat and sparrowhawk, while shellfish (oyster, mussel, crab) indicate imported foods (Gidney 1990, 1,10,14-15,18). Overall, the site operated the expected indigenous economy, but with more-diverse diet suggested, perhaps associated with socio-cultural changes shown in the structural evidence.
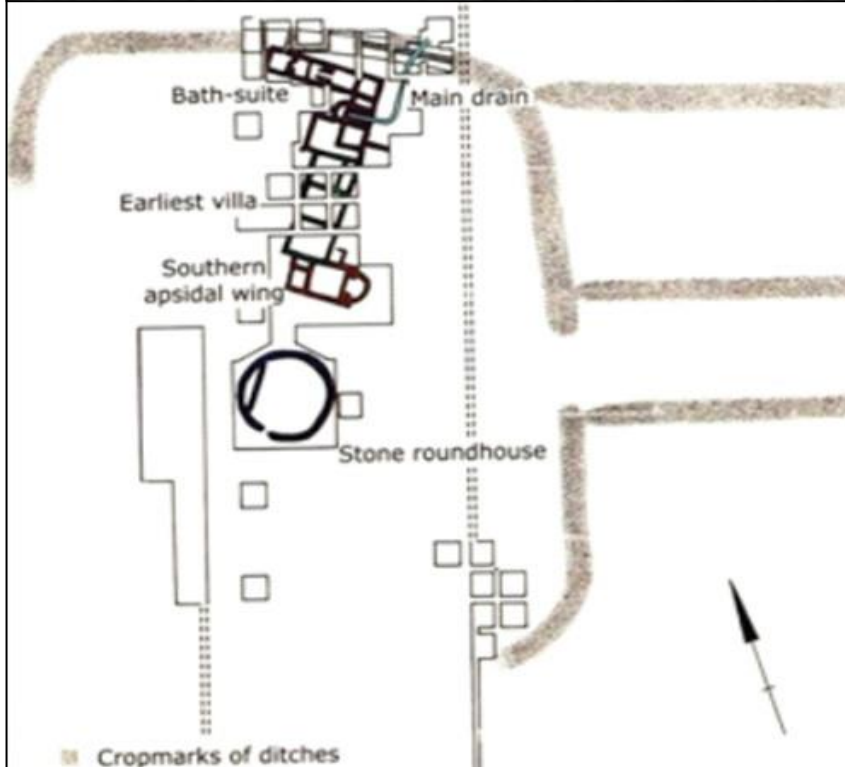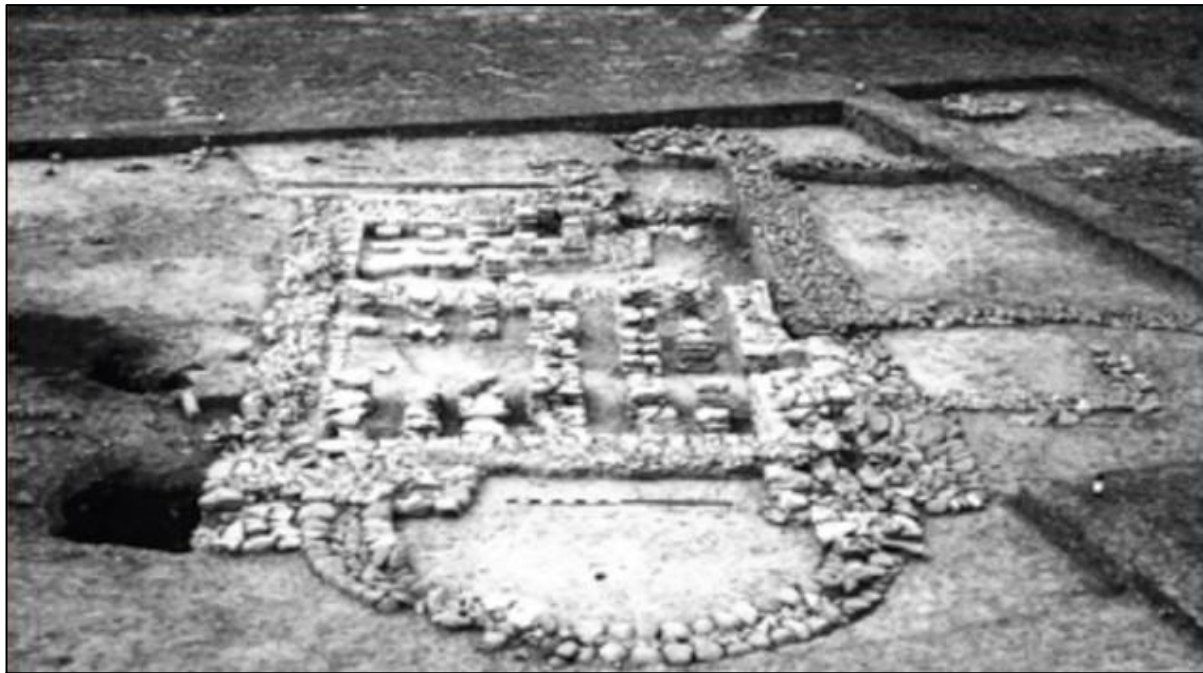
**Figure 182 - Photograph [above] and interpretation-plan [left] of Holme House Roman villa and roundhouse (Mason 2019, 39).**

Chapel House Farm at Dalton-on-Tees (downriver) is another such site: a rural, riverside settlement identified from aerial photographs as two buildings within sub-rectangular enclosure and wider system of ditched boundaries, geophysical survey identifying further structures including water-management leat, and 1990s excavations revealing the buildings as stone-built, tiled-roofed west-facing and south-facing winged corridor-villas of multiple phases, with evidence for painted walls, Iron Age through to fourth-century pottery, glass, slag and faunal remains attesting a mixed farming regime dominated by cattle (Brown 1999; Mason 2019, 43-44; Stobbs 2001).

A third villa-site at Ingleby Barwick was first identified as sub-rectangular enclosure and associated field boundaries from aerial photography (Figure 183), excavations and surveys from

1979-2004 revealing a late-Iron Age enclosed settlement with roundhouse, developing into a second-century AD winged-corridor villa, aisled building, stone circular structure and isolated small bathhouse, surrounded by further rectilinear enclosures, pits, ovens, paved yards and wooden structures, all occupied into the post-Roman period (Mason 2019, 42; Willis and Carne 2013, xvi, Figure 183). Finds were relatively few, including locally-produced Iron Age-pattern gritted-wares, but also drawing from the whole range of Roman military and civilian supply (pottery from southern Britain and the Continent, and later East Yorkshire, coinage throughout, copper, silver and lead items, and iron tools indicating construction, agriculture, carpentry and leather-working on-site) (Evans *et al*. 2013). Animal bones indicated the usual three domesticates (consumption of prime-meat based on age, alongside hunted deer and fish indicating high-status dining), while charred botanicals indicate processing of spelt and barley, bread-wheat, oats and rye – lack of weeds suggesting better agricultural practice and larger grain-size indicating good crop-growth for northern Britain (Gidney *et al*. 2013, 133-135,145-146). The overall impressions are of adoption
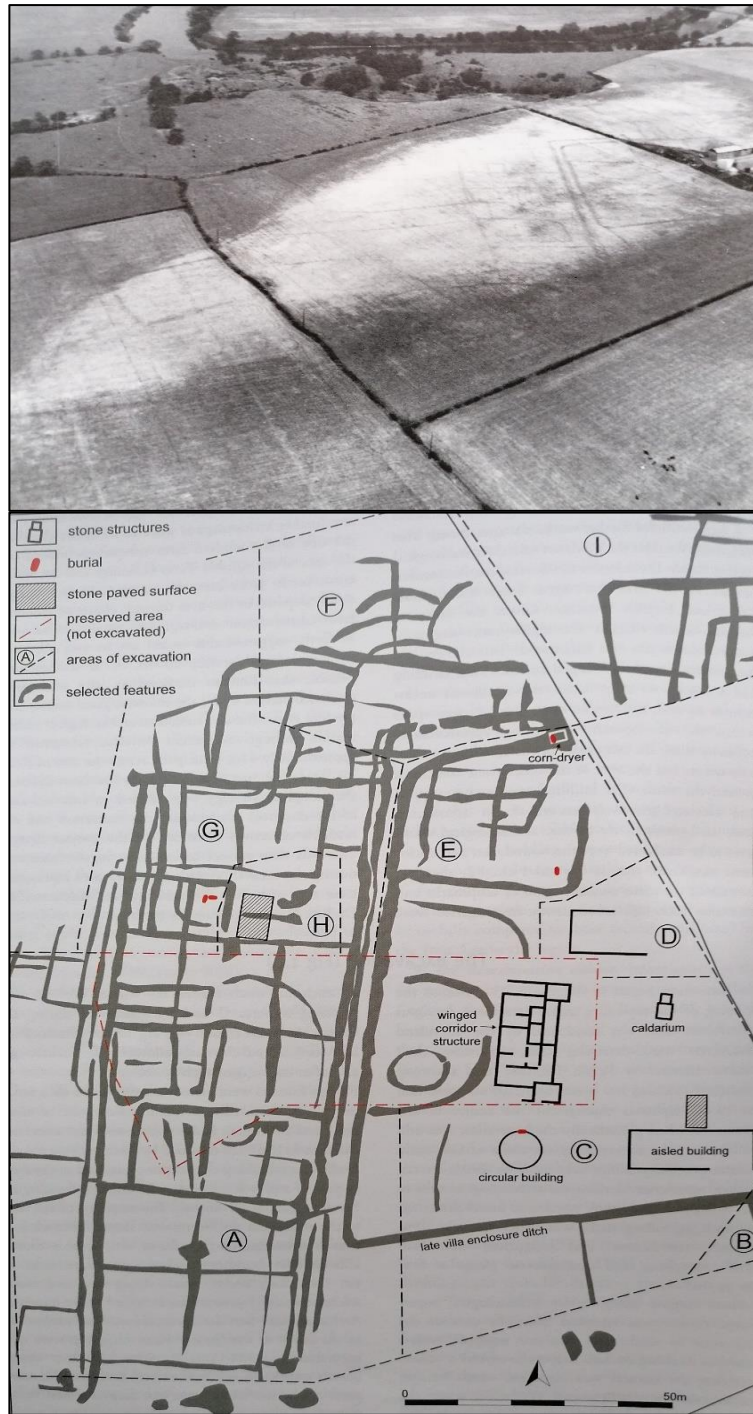


**Figure 183 - 1970s aerial photograph of Ingleby Barwick's villa and field-system [top]; survey and excavation plan of the features [bottom] (Willis and Carne 2013b, 5,18) © Tees Archaeology.**

of Roman architectural and agricultural practices, but retaining traditional approaches to material culture and daily life (implying ongoing local, rather than newly-arrived, landholders); objects indicate high-status, 'Romanised' components, but generally relate to activities rather than individual or personal identities (Carne and Willis 2013, 202; Willis 2013, 162-163).

Apperley Dene, located on top of a hill c.5km south-east of Corbridge, was identified by antiquaries and 1950s excavations as a Roman fortlet (double-ditched enclosure with east-facing causeway but no internal features, pottery indicating Hadrianic/Antonine and fourth-century

activity) (Greene 1978, 29; Hildyard 1952, 233-234). 1970s excavations proved it an indigenous-type farmstead with timber roundhouse and earthwork/timber enclosure; but established in the mid-second century close to Dere Street and with imported Samian and glass-wares. Following a short occupation, it was seemingly abandoned then rebuilt in stone in the late-third/fourth centuries (Crambeck and Huntcliff wares and Midlands-sourced mortaria) (Greene 1978, 31-39). This shows a site established in native tradition (very different to those further south) between pre-existing Roman forts near a military road, possibly associated with military-supply (Greene 1978, 47-53), with important implications for the role of military-supply in changing local economic dynamics, utilising the road-network to connect forts with their local landscapes.

A further site-type not previously encountered in either transect but indicating different Roman-period rural developments are 'ladder-settlements', located at the interface between Roman influence along roads and the existing landscape [2.2a]. At Sedgefield, located on Cade's Road (below), closely-spaced late-Iron Age settlements in a rectilinear field-system coalesced into a roadside ladder-settlement from c.AD100-300, identified by 1990s-2020 aerial, geophysical and field-walking surveys and confirmed by excavation (Carne 2009; Carne and Mason 2006; Collins 2020b; Hogue *et al.* 2019). Ditched rectilinear enclosures line the road, containing timber roundhouses, rectangular structures, stock-pens and aisled barns, workshops and kilns for pottery manufacture and copper-smelting, and a cremation cemetery – a mix of domestic, funerary, industrial and agricultural activities centred around a broader space (potentially market or 'green') with a substantial enclosure potentially housing a shrine or official structure (Carne 2009; Carne and Mason 2006; Collins 2020b, 398-400; Hogue *et al*. 2019, 11-12,37-38). Although serving similar functions to *vici* outside forts elsewhere on the frontier, there was no military focus or fort here and this perhaps represents an indigenous reaction to the new socio-economic landscape, adopting Roman market-dynamics.

Recent excavations at Faverdale (north-western Darlington) examined a 6ha complex of unenclosed settlement (9+ roundhouses in three distinct groupings), surrounding stock enclosures and rectilinear fields, occupied from c.AD70 (other than three late-Iron Age cist-burials) (Mason 2019, 45, Figure 184; Proctor 2012). Though not an obvious 'roadside' settlement like Sedgefield, the site has intensive 'ladder-type' occupation. Separate enclosures had different functions including habitation (roundhouses and later stone-built aisled and hypocausted 'bathhouse'), metal-working, stock-management (faunal assemblages attesting cattle, sheep/goat and pig) and crop-processing. Dates from ceramics range from locally-made, quartz-gritted first-century wares continuing Iron Age styles and imported South Gaulish Samian through to fourth-century Yorkshire wares (Mason 2019, 46-47). Symmetry Park, east of Darlington, is a similar site discovered in 2018, containing enclosures, a small, hypocaust-heated structure, corn-drier (Roman innovation?) and evidence for both water management and industrial processes, a large pottery assemblage dominated by fourth-century wares (Mason 2019, 48-51).

As with the borderland [6.3], long-distance prehistoric routes through the landscape likely followed the rivers Tees and Tyne (and associated lowland corridors), connecting the coastline with interior uplands, and further west. Weardale, though a local communication-corridor, cannot be used to easily cross the Pennines due to Cross Fell at its head, potentially why it saw less prehistoric and subsequent settlement (Fell and Hildyard 1953, 99). An isolated Roman dedication to Silvanus from the valley (RIB-1041) was suggested as use of the valley for hunting (Jones 1986, 232), copied by the medieval deer park (Young 1986, 224), although such dedications are found throughout the region, such as at Vindolanda. Nevertheless the presence of a Roman altar implies activity here

**Figure 184 - Phased-plan of the complex of Roman-period settlement, enclosure and field-system excavated at Faverdale (Mason 2019, 45).**

which is not conclusively linked to any permanent or even temporary site. Routeways also included topographically-easier connections including the low watershed from the Vale of Mowbray (north-south) and Stainmore Pass (east-west). Local connections between settlements are shown by trackways and droveways identified by cropmark and excavated evidence (above).

The main Roman roads through the frontier hinterland are the south-north Dere Street and parallel (15km eastwards) arterial route of 'Cade's Road' (named after its antiquarian discoverer, from Brough-on-Humber to Newcastle) beneath the modern A177/A167, its bridge crossing the Tees at Middleton surviving as stone footings (Mason 2019, 15-16). Fragments of Dere Street were mapped by Durham NMP as earthworks, cropmarks or parchmarks (Figure 185), most extensively around Binchester where it follows a south-east to north-west axis passing through the fort and is generally 3-6m wide. A second road projects from the north-east gate as a 4m-wide, 123m-long parchmark (Radford and Pallant 2008, 12-13). South of Binchester, Dere Street's line either side of Piercebridge (where it crosses the Tees) is preserved in the modern B6275, before it is lost beneath Bishop Auckland; northwards, following crossing of the River Wear below Binchester, its course has long been known, projecting towards Lanchester, Ebchester and the Tyne crossing at Corbridge [6.3a], excavated metalled, embanked surfaces north of Apperley Dene (Hildyard 1952, 235-236) confirming its route.

Two Roman temporary camps were mapped from cropmarks by NMP (Figure 185) – one just north of Binchester on Dere Street (923013), west of the Wear-crossing, potentially guarding it;
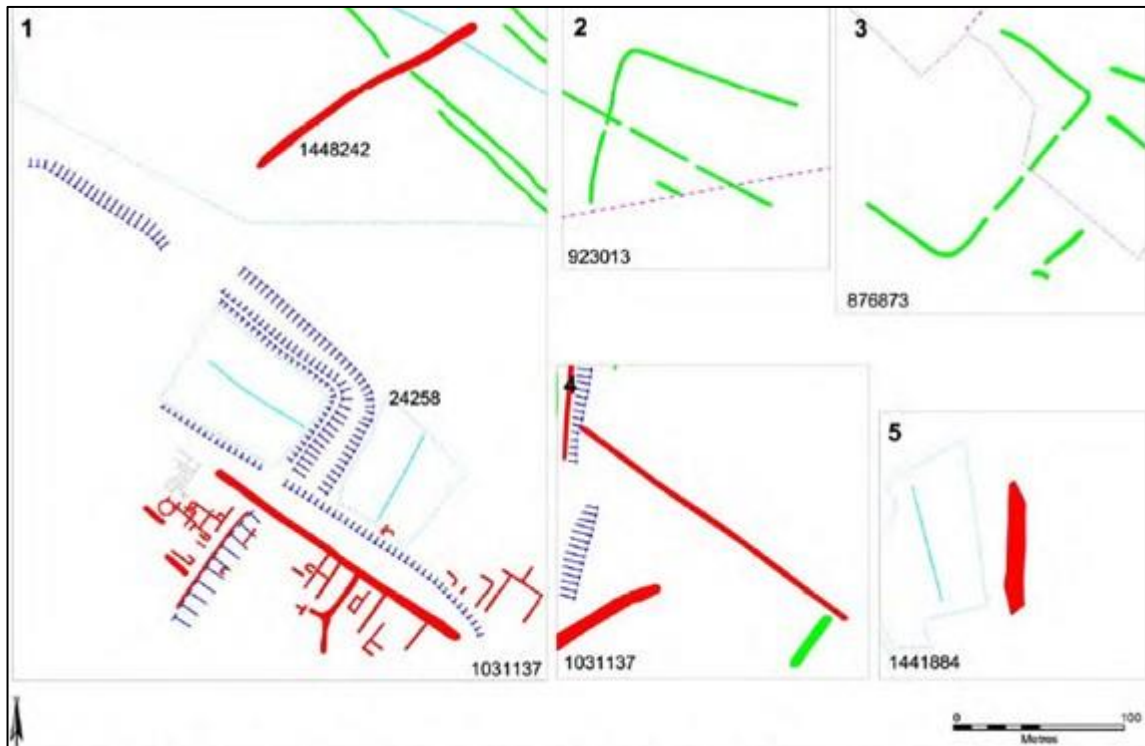
**Figure 185 - NMP mapping of aerial-visible remains around Binchester fort (1-left) together with other surviving segments of Dere Street (4/5), and two identified Roman temporary camps (2/3) (Radford and Pallant 2008, 34).**

another (876873) at Kimblesworth Grange between Chester-le-Street and Durham, attesting Roman movement in the landscape east of the main road (Radford and Pallant 2008, 13-14). Further short-lived military installations in the region include the early 'campaign fort' at Dalton-on-Tees, an initial 6ha site and much-larger 16ha camp (presumably for a full legion), excavations revealing a first-century 'box rampart' of timber walls containing earth and stone (Mason 2019, 12-13, Figure 186), and temporary camps at Greta Bridge, Newsham (*ibid*., 14) and 1km north of Bowes, likely from the AD70s Roman advance, linking to the line of major camps crossing Stainmore further west (Gates and Ainsworth 2008, 241-245).

This region also plays a crucial role in debates around Roman maritime and riverine supply infrastructure, with the so-called 'Piercebridge Formula' (Selkirk 1983) arguing the substantial bridge to be evidence for Roman damming, canalisation and deepening, allowing riverine transport of material and foods further inland, extrapolated for all north-eastern rivers, freeing up roads for troop movements. This scale of engineering has been disproven (Anderson 1992; Bidwell 1995), although the role of these major rivers for supply cannot be
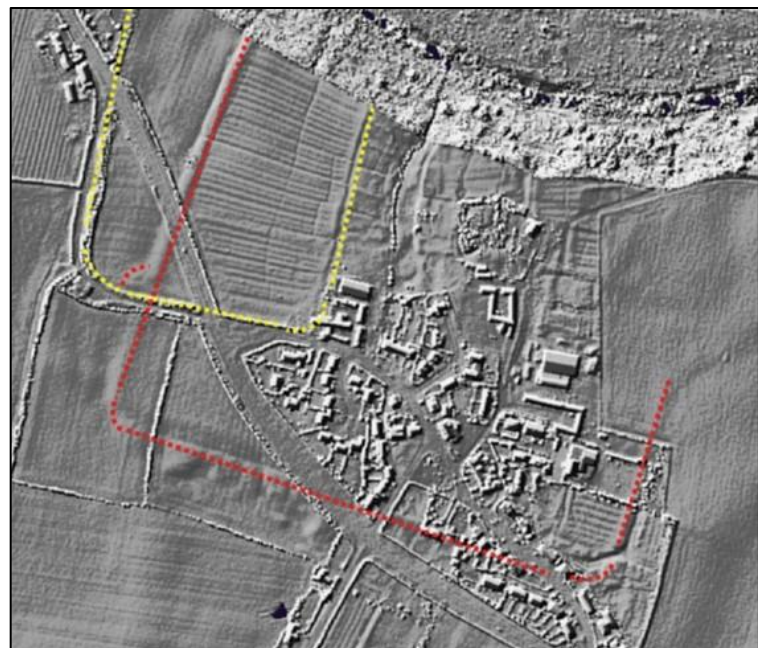


**Figure 186 - Lidar-plot showing two phases of temporary camp/'campaign fort' at Dalton-on-Tees (Mason 2019, 13).**

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completely dismissed. Alongside the supply-base at the Tyne's mouth (South Shields), a naval depot has been hypothesised for the Tees, potentially obscured by the vast urbanisation and industry around Middlesbrough (Mason 2019, 14).

The distribution of Roman forts through this lowland region is closely-linked to the road network – four on Dere Street (Piercebridge, Binchester, Lanchester and Ebchester), one on Cade's Road (Chester-le-Street) and two on the Stainmore trans-Pennine road (Greta Bridge, Bowes) (Hewitt *et al*. 2007, 25; Petts and Gerrard 2006, 50). Ebchester (*Vindomora*) and Lanchester (*Longovicium*) are the two forts south of Corbridge (Hammond *et al*. 2000, 2) and are less well-known than those to north and south. Ebchester, recorded by antiquaries and limited excavations, stands on a river-terrace overlooking the road's crossing of the River Derwent, much of the 1.5ha fort beneath the modern village. The fort has the usual development history, auxiliary cohort garrisons, military-supplied artefactual assemblage and faunal remains (Jarrett 1960b, 193-198,227-228; Maxfield and Reed 1975, 45-47,67-104; Reed *et al.* 1964, 177-185). Lanchester's fort (surviving as earthworks), vicus and cemetery have seen limited investigation, but are thought relatively-late, built c.AD140 during reorganisation of the frontier (Payne 1991; Turner 1990, 65-77). 'Celtic-style', Roman-period carved stone heads indicate ongoing native activity in the vicinity of both forts (Dodds 1967, 27-31), potentially evidence for religious or cultural syncretism [see 2.2a] with indigenous art-styles and/or beliefs communicated via new Roman stone-carving techniques, suggesting close interaction between the newly-arrived garrison or attendant civilians and local peoples.

Binchester (*Vinovia*) is the only fort mapped by Durham NMP, the north-eastern fort-platform, rampart and outer ditch surviving as earthworks, with internal buildings in the southern quadrant (possibly bathhouse and *praetorium*) showing as parchmarks (Figure 185); previous field-survey by RCHME identified the north-western perimeter beneath tree cover (Radford and Pallant 2008, 7,13). *Vinovia* is situated on Dere Street, sitting upon a high ridge in a defensive position overlooking the River Wear and its crossing (via a stone-built bridge) to the north-west (Buxton *et al*. 2008, 3; Ferris and Jones 2000, 1; Hammond *et al*. 2000, 2). The 3.6ha fort and its *vicus* have a long history of excavation and survey (Buxton *et al*. 2008; Ferris and Jones 2000; Ferris 2010; Ferris 2011; Hammond *et al*. 2000; Hooppell 1891). No pre-Roman occupation has been confirmed by archaeology in the immediate vicinity of the site (Hammond *et al*. 2000, 2).

An earlier, larger (7ha) Flavian fort with high-status internal structures has been confirmed by excavations north-east of the standing earthworks (Collins 2019, 422; Ferris 2010; Ferris 2011). Deposits indicate timber/turf and second-century stone rebuilds, with artefacts through to the Hadrianic period (Buxton *et al*. 2008, iv). The Antonine fort-layout was occupied into the fifth-century, epigraphy identifying garrisons including *ala Vettonum* (cavalry from central Spain, second-century) and *cuneus Frisiorum Vinoviensium* (cavalry from modern Netherlands, third-century but with long duration at Binchester suggested by the fort added to the unit-name), and detachments of *Legios IX* and *VI* (likely constructing/rebuilding the forts) (Buxton *et al*. 2008, 3; Hammond *et al*. 2000, 2-3,6-7; Wright 1970, 45). Unusually-late, high-status occupation in the rebuilt commander's residence indicates the site's importance into the post-Roman landscape, and reorganisation of local power structures (Buxton *et al*. 2008, iv; Ferris and Jones 2000, 4-5; Ferris 2010; Ferris 2011), bathhouse graffiti indicating an ongoing variety of ethnicities (and general literacy) amongst fourth-century soldiers (Ferris 2010; Ferris 2011). Ecofactual evidence attests consumption of spelt wheat (including flour-production), barley, hazelnuts, cabbage and poppy seeds, alongside presence of grass (likely animal-fodder), with cattle, sheep/goat, pig and fowl present (Buxton *et al*. 2008, 6-11).

Ceramic include first-fourth century fine- and coarse-wares and amphorae revealing imported olive oil from Spain (Buxton *et al*. 2008, 14).

The NMP also mapped structures from the south-eastern extramural settlement (24291) along Dere Street, visible as parchmarks, together with a secondary street running south-west and the aforementioned north-eastward road from the fort, though phasing and development of the site was indeterminable from this (Radford and Pallant 2008, 13, Figure 185). The settlement's total area, confirmed by geophysical survey, is 12ha (Ferris and Jones 2000, 1). Recent excavation confirmed the north-eastward road as 5-6m wide, flanked by hard-standings for timber structures (including a potential shrine to a local mother-goddess) (Collins 2019, 422), alongside a 'bypass-road' for Dere Street, which otherwise goes through the fort, flanked by further second-third century structures (Collins 2020b, 400). Substantial field-systems on other aerial imagery and geophysical surveys around the settlement suggest local production (Price and Petts 2009, 119), while the fourth-century cemetery contained relatively-simple inhumations, one with gold jewellery and another a horse's head, near a high-status mausoleum (Wilson 2017, 343-344).

Piercebridge is another fort (*Morbium*) and civilian settlement, located at the major Dere



**Figure 187 - Maps showing the layout of Roman Piercebridge and the various archaeological investigations which have taken place [top] and the known Roman-period structures (bottom). Sources: (Fitzpatrick and Scott 1999, 113); https://archaeologydataservice.ac.uk/archives/view/Piercebridge _eh_2008/overview.cfm**

Street river-crossing of the Tees (on its north bank) and investigated extensively, including research by antiquarians, 20th/21st- century excavations, geophysical and aerial surveys (Cool and Mason 2008, Figure 187; Fitzpatrick and Scott 1999, 111,114). Though artefacts suggest military activity from the first-century, there is little structural evidence for an early fort: the visible auxiliary-installation (now largely-beneath the modern village) dates from the mid-third century. High-status objects rivalling those imported to York (fine-wares, metalwork, glassware, coinage) and funerary epigraphy, building dedications and lead baggage-tags attest substantial legionary garrisons (*Legio VI* from York, *Legio XXII* from the Continent) from c.AD170-220, which indicate the site's importance (Fitzpatrick and Scott 1999, 114; Mason 2019, 22-24,27-28). 'Head-pots' (introduced from North Africa in the early third-century, likely by Severan legionaries) have been found at Piercebridge (Figure 188), another link to York [2.1d] (see Swan and Monaghan 1993), *Legio VI* and



**Figure 188 - Fourth-century 'head-pot' in North African tradition, similar to those from York, found at Piercebridge in the 1970s (Mason 2019, 38) © Durham CC.**

the identity of troops here (Mason 2019, 37-38). Following this unusual activity, the auxiliary-fort was occupied into the late-Roman period and beyond (Cool and Mason 2008).

The excavated town, visible on aerial photography in Tofts Field east of the fort (Figure 189), with further strip-development along Dere Street south of the river and 300m north-west of the fort, developed around the Roman bridge from the first-century, prior (unusually) to the auxiliary fort (Cool and Mason 2008; Mason 2019, 22), though an early fort may remain undiscovered (given the site's tactical position and hints of military activity). The northern settlement includes domestic and commercial strip-buildings, many rebuilt in stone, with ovens/kilns for pottery- and metal-working, and hypocausts, indicating some wealth/status amongst the civilian population, alongside a shrine (Cool and Mason 2008; Mason 2019, 20-21). Activities attested include copper-working (Bayley 1988). Third-century faunal assemblages indicate preference for cattle (mostly mature animals, post-worklife), substantial sheep/goat (mixed young and mature animals), pig (largely younger animals) and also horse, dog, cat, red deer and hare (Gidney and Rackham 1988, 1,9-12).

Dere Street's Tees crossing is the clear focus of military and civilian activity, with three bridges identified: two timber-built, south of the later fort-site (dated c. cal.AD10-100 and c. cal.AD130-160) and a re-routed late-second/early-third century stone-built bridge carrying Dere Street 200m east, bypassing the town (Figure 190), the well-known southern abutment showing similarities to those at Chesters and Corbridge [6.3], potentially associated with aforementioned legionary activity) (Fitzpatrick and Scott 1999, 115-129; Mason 2019, 22,30). First-fourth century material from the river-bed (pottery, leatherwork and metal) may have eroded from riverside middens, though clear votive offerings (pierced/folded coins, lead 'curse-tablets', figurines) indicate probable ritual activity associated with the river-crossing (Fitzpatrick and Scott 1999, 114-118; Mason 2019, 33). The overall size of the assemblage, typological range and materials of the artefacts

**Figure 189 - Aerial photograph of Piercebridge, showing the Roman town and line of Dere Street as parchmarks (Fitzpatrick and Scott 1999, 133).**

involved and structures of the deposits thus suggest people interacting with the river in a spiritual or 'magical' way, indicative of this aspect of Roman identity local to Piercebridge (Eckardt and Walton 2021, 278-279).

Overall, therefore, aerial survey has played a large role in understanding the later-prehistoric and Roman landscapes of the Tyne-Tees lowlands, with good cropmark-formation on central
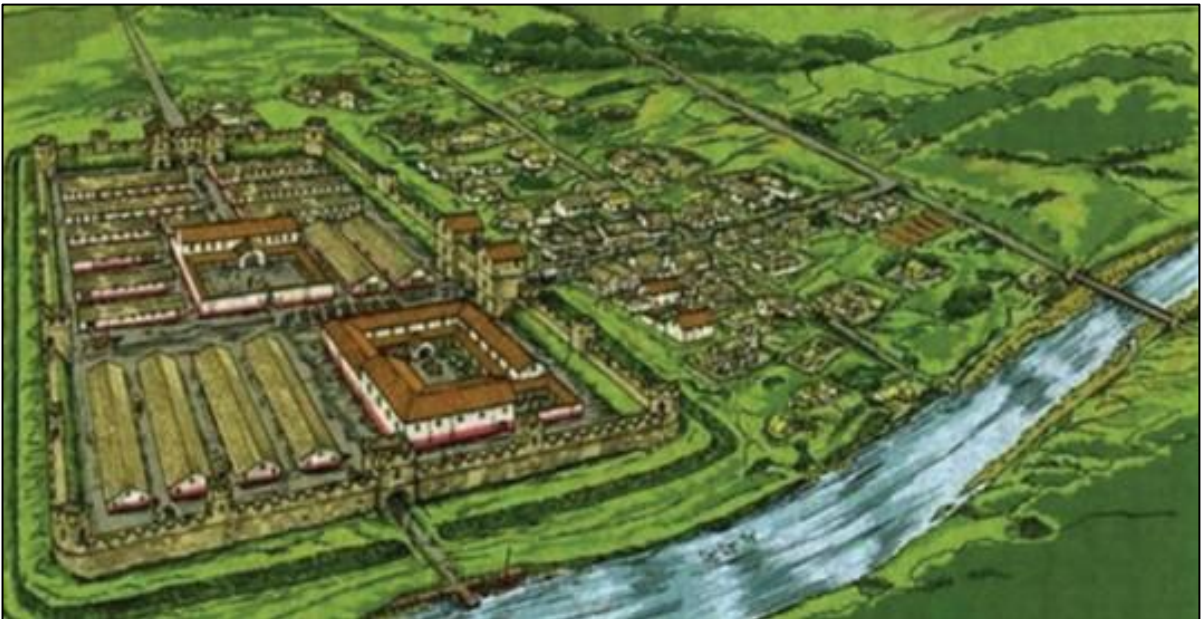


**Figure 190 - Reconstruction of third-century Piercebridge, showing the auxiliary fort, extensive settlement and diverted line of Dere Street on its stone bridge (Mason 2019, 25) © Durham County Council.**

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Durham's limestones but also earthwork-survival (with future potential for lidar) (Radford and Pallant 2008, 18-19). The Tees valley is similar, with aerial photography identifying sites alongside ground-based, development-led evaluation, albeit without any large-scale aerial mapping projects yet. Together with the plethora of large and small excavations, surveys and other research, aerial survey thus reveals a similar landscape of late-Iron Age enclosed, timber/earth farmsteads and mixed agriculture to those in upland Northumberland and Cumbria [5/6.2/6.3]. However, different here is the first-century AD expansion of settlements, with enclosures filled-in or redeveloped, and adoption of Roman material culture at some sites (often before the arrival of the military), while there is evidence for abandonment of others. Therefore, though the settlement evidence (and its implications for landscape change under Rome) for this part of the transect has many interesting aspects which differ from previously-discussed areas, overall the archaeological record is more patchy (particularly for aerial survey). The major site of Stanwick, proposed to be acting as a late-Iron Age regional capital, may be at the heart of these changes, high-status goods and new construction-techniques spreading into the fertile Tees valley and resulting in the creation of new types of settlement – roadside/ladder villages and Roman-type 'villas'. This is likely to be as much due to the presence of topographically-sheltered, fertile soils and the role of the river for connectivity as it is purely socio-cultural processes. Much of this activity seems to pre-date even the Roman conquest of southern England. The layout of the Roman road network, with its initial temporary installations and then permanent road-garrisons, thus appears secondary to this change, as at Piercebridge, unlike for all previously-discussed parts of both transects, where military infrastructure appears to have driven many of the Roman-period developments. Some sites in northern County Durham (e.g. Apperley Dene) look to follow traditional enclosed forms, but were first-constructed during the Roman period rather than in the preceding Iron Age, perhaps a result of the proximity to the borderland and/or the upland landscapes further north which demonstrate less-obvious rural landscape change.

*6.4b – The Wider Hinterland: Aerial Survey and Wider Archaeological Investigation of Iron Age and Roman Period Landscapes in Yorkshire*

The eastern transect's final, southernmost part follows the broad, lowland Vale of York (centred on *Eboracum*'s legionary-fortress and *colonia*, now York) and Vale of Mowbray further north. The aerial-survey projects covering this area (Figure 191) include the 'Thornborough Henges' (Deegan *et al*. 2005) and 'Yorkshire Henges and their Environs' (Deegan 2013b) mapping projects (the former in advance of aggregates-extraction, the latter research-led) and the relatively-older 'Vale of York NMP' (Kershaw 2001). For further contextualisation of the transect evidence, the 'Pennine Dales Fringe NMP' (Deegan 2015) covers the uplands west of the Vales, while the 'Lower Wharfedale' NMP (Deegan *et al*. 2004), located south-west of the transect, has extensive cropmarks assisting interpretation of fragments elsewhere. All projects consulted similar aerial-photographic sources, though only two utilised lidar – Yorkshire Henges using pre-processed raster imagery which proved of limited use other than confirming monument-survival (Deegan 2013b, 4,7) while the Pennine Dales Fringe processed 16-direction-lit hill-shade, greatly aiding earthwork identification (Deegan 2015, iii). Cropmarks are thus the primary aerial evidence for much of this region. Many site-based studies here reveal similar findings to those of Durham-Teesdale [6.4a], so focus will be on landscape-wide findings derived from the aerial projects, and implications from key Roman sites (Catterick, Aldborough and York).
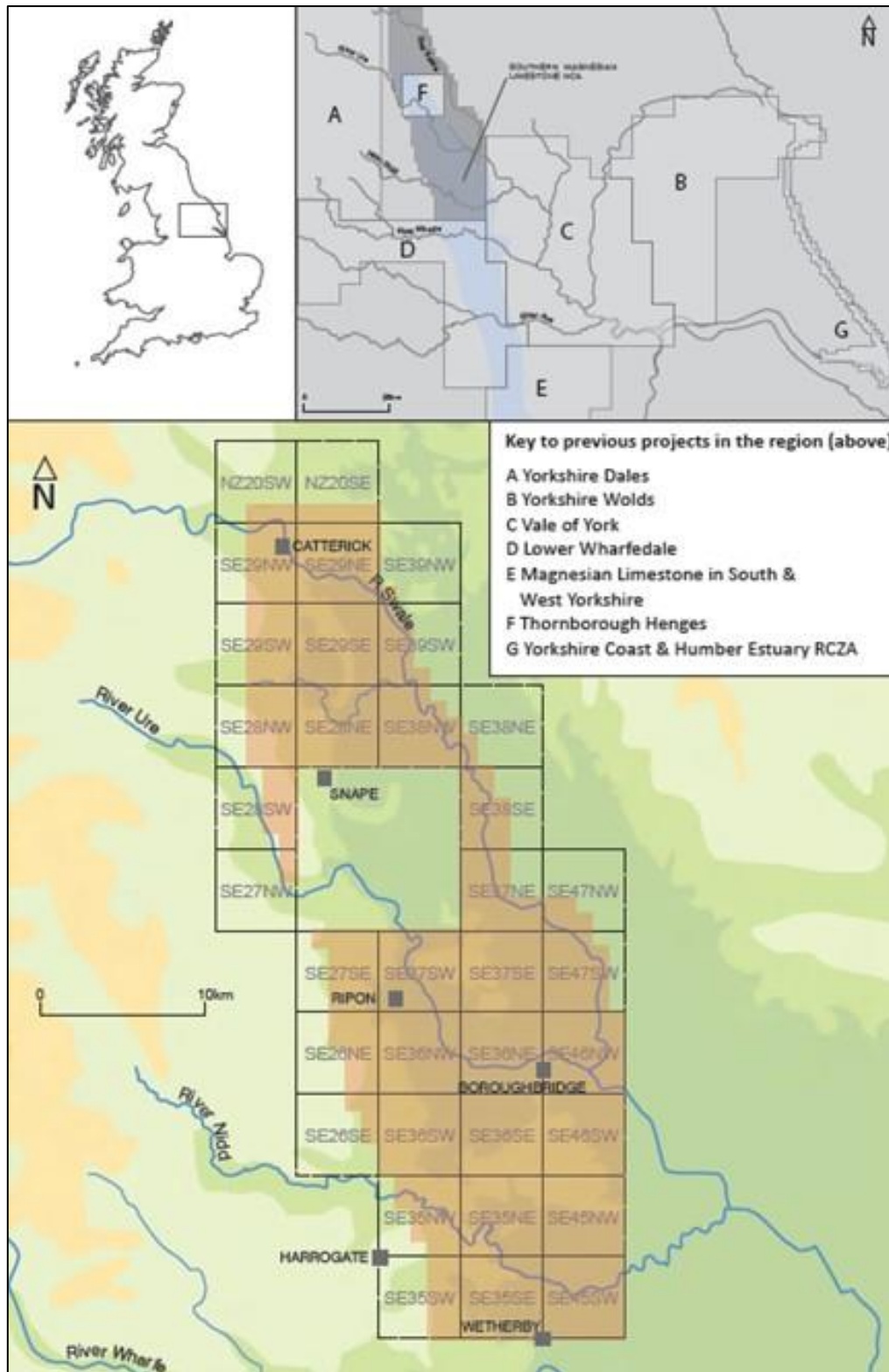
**Figure 191 - Map of Yorkshire Henges project, and how it relates to earlier aerial-surveys in the Vales of York/Mowbray (Deegan 2013b, 28).**

The Vale of Mowbray, connecting to the Tees valley via a low watershed, comprises gently-undulating floodplains of the lower Swale and Ure (flowing eastwards) and smaller rivers from north and east, on sandstone bedrock forming a major aquifer, overlain by glacial sediments: a heavily-farmed landscape of dairy-pasture with increasing arable south-eastward, and limited woodland

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(Natural England 2015g, 3-6). This forms the natural lowland north-south corridor followed by Dere Street (modern A1), other infrastructure and larger settlements (*ibid.*). Geology, land-use and climate combine to allow moderate cropmark-formation (*ibid.*, 10), as in County Durham. Westwards are the Pennines, remote moorland split by large, eastward-flowing pasture-dominated dales, blending into lower, more-wooded foothills (Natural England 2015e, 3-5), with mixed hilltop pasture and valley-floor arable atop millstone grit covered by glacial till (Natural England 2015f, 3-9). East from the Vale are the North York Moors, a large expanse of upland sandstone and limestone moorland incised by narrow wooded, pastoral valleys and rich in early-prehistoric monuments, with Iron Age and Romano-British settlement limited to their south and only isolated Roman military sites (including the enigmatic training-camps at Cawthorn) (Natural England 2015h, 3-10,29).

South of Ripon, the lowland followed by Dere Street opens out into the broader, flatter Vale of York, centred on the River Ouse (into which major rivers from the Dales and western Moors flow) heading south towards the Humber estuary wetlands. High-quality soils overlie till and fluvial gravels (atop Triassic sandstones/mudstones), dominated by arable cultivation (with limited pig- and cattle-farming), rising in the west onto a Magnesian Limestone ridge prior to the Pennine-fringe and east to the Howardian Hills and chalk Wolds (Natural England 2014c, 3-9). Two ridges arc across the southern lowlands, 8km apart and formed by glacial moraines, and it is where the northernmost of these meets the confluence of the rivers Ouse and Foss that the Romans founded their permanent legionary fortress and headquarters of *Eboracum*, dominating the lowland-plain for miles around (Natural England 2014c, 3,6-9). Combining aerial-surveyed cropmarks across this landscape with development-led excavation (urban expansion and highways-upgrades), has led to good understanding of Iron Age and Roman-period landscapes.

Regional palynology-studies traditionally focussed on the surrounding uplands due to availability of peat for preservation. Fen Bogs, Harwood Dale and Wheeldale Gill on the Moors attest widescale clearance throughout the Iron Age (c.800-10cal.BC), maintained into the Roman-period, associated with cereal cultivation, pasture and heather-formation (dependent on site) (Dark and Dark 1997, 37; Dark 2000b, 57-58). Willow Garth on the Yorkshire Wolds had no local woodland surviving and cereal cultivation by the Iron Age's end, while Rishworth Moor (eastern Pennines) shows clearance from the Neolithic, peaking in the first-centuries BC/AD, associated with heather and grassland formation (and limited arable) (Dark 2000b, 58).

For the lowlands north of York, environmental evidence is restricted to site-collected botanical assemblages. Excavated Iron Age/Romano-British (c.100cal.BC-cal.AD150) settlements at Catterick, Rock Castle and Scotch Corner in the Vale of Mowbray attest local cultivation and processing of spelt, emmer and bread wheats, barley and rye, alongside flax and weeds from pasture or turves (Hall and Huntley 2007, 45-51). Second-fourth century Roman sites near Dere Street, including the villa-site at Dalton Parlours (Wetherby), farmstead at Bayram Farm (Knaresborough), and *vici* at Roecliffe (Boroughbridge) and Catterick, continue this pattern of mixed arable and pasture in the vicinity (adding in oats) from both burnt (corn-driers and structures) and waterlogged (well) deposits (Hall and Huntley 2007, 74-75,80,89-90). Around York and further south, palaeoenvironmental data for land below 10mOD was assessed alongside prehistoric archaeology during the 'Humber Wetlands Project' (Van de Noort and Etté 1999, 1-3): an area of fertile soils but unsuitable for arable until 20th-century water-management controlled flooding (Ellis 1999, 11). Results indicate mature-woodland clearance and wetland formation in the Neolithic (c.5100-3900cal.BC), likely natural processes. Final clearance at Askham Bog near York follows wider regional patterns, peaking in the first centuries BC/AD (Van de Noort *et al*. 1999, 269,278), indicating that the

surrounding lowlands are part of the wider later-Iron Age agricultural expansion. York's extensive excavation-history [Appendix] has led to substantial environmental waterlogged-assemblages attesting a mixture of local environments: woodland, pastures (riverside and drier), arable and hay-meadows, heath, and wetlands (Buckland 1976, 39-40; Hall *et al.* 1980, 101-120; Hall and Huntley 2007, 54-56,70-74; Hall and Kenward 1990, 289,399-415; Kenward *et al.* 1986, 241-243,255,262-265).

The pre-Iron Age landscape in the Vale of Mowbray was dominated by large, monumental complexes, notably three henges at Thornborough (Figure 192), built on top of an earlier cursus near other Neolithic monuments, surrounded by Bronze Age barrows and pit-alignments, and avoided by Iron Age/Romano-British field-systems, attesting landscape-persistence (or local agricultural unsuitability) (Deegan *et al.* 2005, 10-13). Further Neolithic and Bronze Age monuments (cursuses, henges, palisaded-enclosures, and barrows) cluster across the valley (Catterick, Hutton Conyers, North Deighton) and along western upland fringes; distributions partly due to different land-use, geology and soil-drainage but also some areas seemingly deliberately devoid of monuments given the otherwise apparent suitability of agricultural land (Deegan 2013b, 8-9; Deegan 2015, 5-6). This was thus a core area for social activity, perhaps because of this landscape-corridor's role in regional connectivity, prior to formal field-systems laid-out in the Iron Age.



**Figure 192 - Aerial photograph of Neolithic Henges at Thornborough, showing scale and local landscape-dominance.**
**Source: https://www.amplanet.com/2015/09/the-thornborough-henges.html**

Regarding indigenous later-prehistoric and Romano-British activity, rectilinear enclosures (with only occasional confirmed roundhouses) dominate the lowland cropmarks, as further north. In both the Vale of Mowbray and the Vale of York, there is widespread evidence for Iron Age land-division and routeways but landscape-scale patterning remains indiscernible due to modern

fragmentation (Deegan *et al*. 2005, 12-13; Deegan 2013b, 9, Figure 193). Small areas of good visibility such as Snape-with-Thorpe and Kirklington show regular arrangements of large, rectilinear land units (8-12ha, too large for individual fields) defined by trackways and ditches, with smaller addended enclosures possible settlements (only one with structures, though roundhouse-
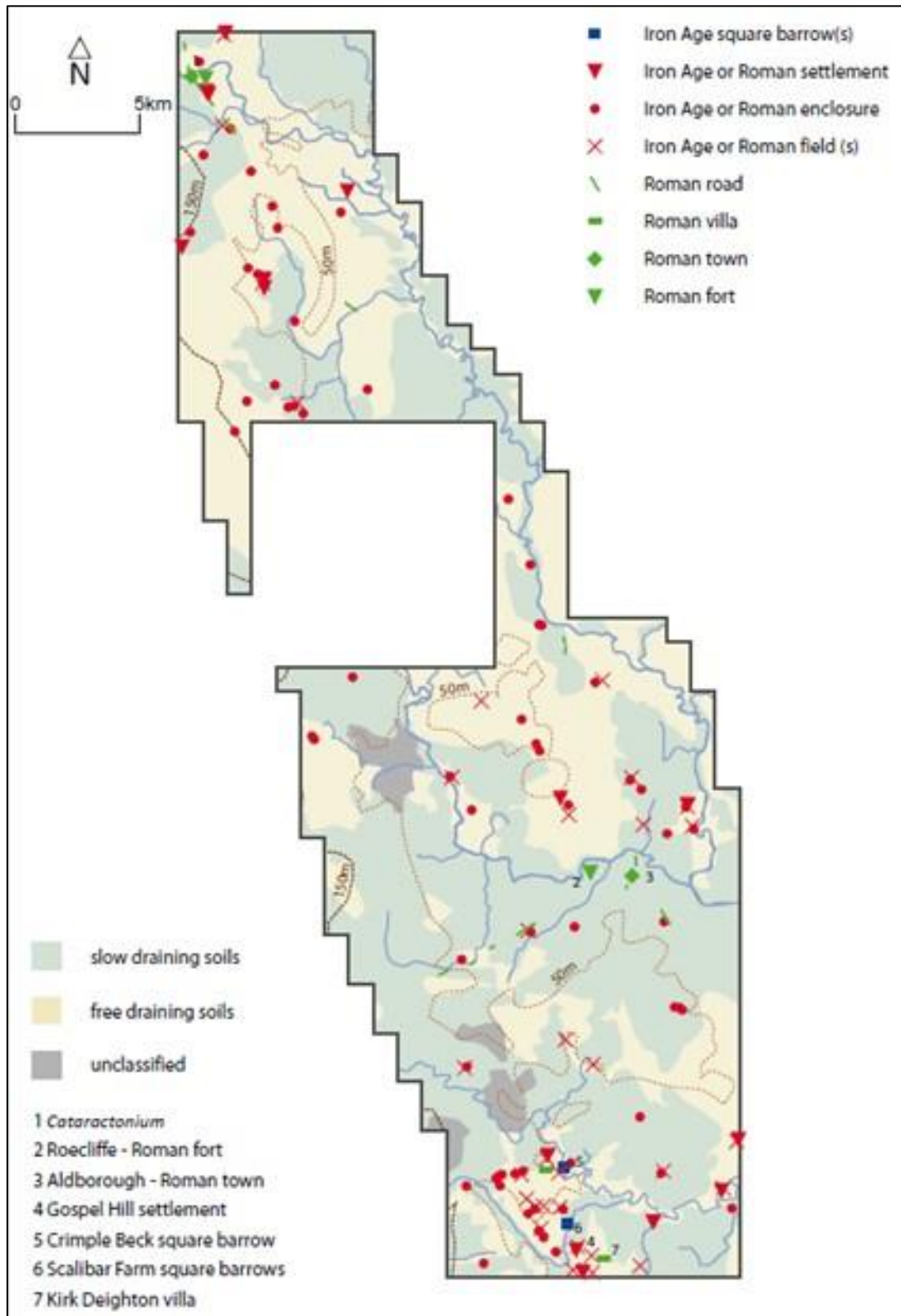


**Figure 193 - Map of Yorkshire Henges project, showing distribution of mapped Iron Age and Roman-period features (Deegan 2013b, 30).**

construction impacts aerial-visibility) (Deegan *et al*. 2005, 12-13). At Norton Conyers, Bronze Age round-barrows were incorporated into later linear boundaries, a potential 'ancestral' link (Deegan *et al*. 2005, 13-14, Figure 194). Further south-east, the Vale of York NMP mapped further fragmented cropmark remains of such field-systems (with occasional surviving earthwork settlement-enclosures) (Kershaw 2001, 1,14-15), revealing continuation of similar indigenous landscapes of coaxial, mixed agriculture systems, terminating at wetlands south of York (Ellis 1999).
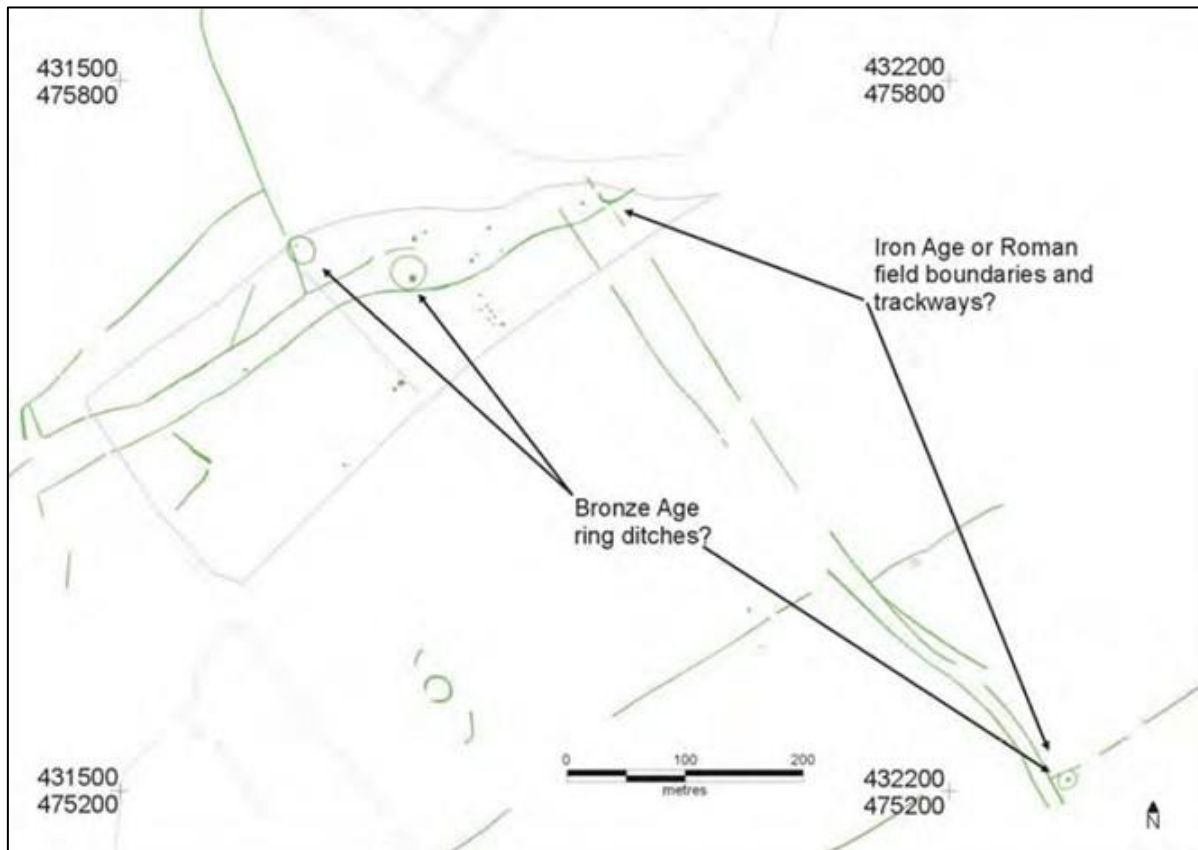


**Figure 194 - Cropmarks at Norton/Hutton Conyers, showing incorporation of round-barrows (circular ditches) into Iron Age/Romano-British field-systems (Deegan *et al.* 2005, 14).**

Better-preserved Iron Age/Romano-British agricultural landscapes are found in the southern Yorkshire Henges' project area, limestone geology and conducive soils enabling fantastic cropmark-formation, revealing a high density of enclosed settlements and connecting trackways within coaxial field-systems of multiple phases and both arable cultivation and stock-management (Deegan 2013b, 10), a focus for ongoing, elite Roman-period settlement (below). This continues into the well-known cropmark landscapes mapped by Lower Wharfedale NMP (Deegan *et al*. 2004), south of the current project's transect.

On upland margins between these projects and the earlier Yorkshire Dales NMP (Horne and MacLeod 1995b; Horne and MacLeod 1995a), the wooded and pasture foothills covered by the Pennine Dales Fringe NMP cover a transitional landscape akin to those further west and north, with isolated curvilinear and rectilinear enclosures surviving as variably-preserved earthwork banks and ditches and fragments of coaxial field-system such as Nutwith Common (Deegan 2015, 7-9). Roman gravestones from Marfield gravel-pit attest ongoing Roman-period settlement, although aerial evidence for nearby farmsteads is absent (*ibid.*).

Roman-period developments in the rural landscape were identified by Thornborough Henges NMP. The substantial rectilinear enclosure at Castle Sikes, massive ditch/bank perimeters on three sides and a small valley defining its north, previously-identified as Iron Age, was shown by parchmarks to contain a Roman villa (suspected from previous excavations): interpretations range from Roman re-use of an existing hillfort, or later defences constructed around the high-status Roman dwelling (Deegan *et al*. 2005, 14). A further, six-roomed villa surrounded by a rectilinear enclosure, with associated arrangement of buildings, small fields and paddocks, was identified at Snape-with-Thorpe, different in scale from existing prehistoric land-divisions, while an isolated kiln at Nosterfield, mapped from aerial photography of excavations, hints at smaller Roman features in the landscape invisible from cropmarks alone (*ibid.*).

In the southern part of the Yorkshire Henges NMP, the above-described extensive cropmarks permit visibility of widespread farmstead-dotted field-systems. These landscapes see further major development (Figure 195) during the Roman-period, with reorganisation of land-holdings and rectangular buildings (Deegan 2013b, 10). Gospel Hill is dated by small-scale excavation, while extensive investigations (Martin *et al*. 2013) at Wattle Syke revealed late-Iron Age to late-Roman period high-status occupation, including rectangular buildings. Two nearby villas were mapped at Kirk Deighton (1km from Gospel Hill) and Dalton Parlours (Deegan 2013b, 10). The latter was subject to major work in advance of the A1-upgrade (Wrathmell and Nicholson 1990), revealing a winged-corridor villa with hypocaust, mosaics, painted wall-plaster and apse, further domestic buildings including an aisled structure (potentially workforce accommodation) and two bath-blocks, and agricultural structures, kiln, aqueducts and wells, with trackways leading in all directions into extensive field-systems (Figure 195). The villa (occupied c.AD200-370), overlay a first-century BC sub-rectangular enclosed farmstead of roundhouses of various phases (palisaded then ditched perimeters, expanded land-divisions). Environmental evidence attests grain-dominated cultivation



**Figure 195 - Yorkshire Henges NMP mapping of complex late-Iron Age/Roman rural landscapes at Wattle Syke, Dalton Parlours and Gospel Hill, visible as cropmarks (Deegan 2013b, 31).**

and cattle/sheep husbandry, while finds reveal high-status occupation and military-links (*Legio VI*-stamped roof-tiles) (Wrathmell and Nicholson 1990).

With little topographic constraint in the lowlands, it is likely that double-ditched trackways and droveways crossing these cropmark landscapes formed primary short-distance communication between settlements around the Vale. Longer-distance contact is afforded by major rivers, navigable to some distance inland from the Humber Estuary via the Ouse, though subsequent fluvial changes make navigability-extents difficult to ascertain (Taylor and Macklin 1997, 326). Rivers also formed natural constraints on movement locally, as shown by Roman sites being located on bridging points of the Ouse, Ure and Swale. The route eventually consolidated as Dere Street (c.AD85-89), the major military road through Vales of York and Mowbray, was initially laid-out from Tadcaster in a direct south-north route bypassing the Humberhead wetlands (Poulter 2009, 28). Early camps and subsequent first-fourth century major forts at Newton Kyme on the Wharfe-crossing, alongside extensive multi-phased settlement with streets of buildings, enclosures and even cemeteries visible from cropmarks (Boutwood 1996, 340-343, Figure 196; Kershaw 2001, 14; Monaghan 1991, 51-58; Simpson 1981, 121-122), support this. Dere Street was diverted south-east from Aldborough (below) to connect to the regional-headquarters at York (Poulter 2009, 28; Poulter 2014, 9,14). Further roads branch east from York to the Derwent valley, and west to cross the Pennines (including the early Stainmore route, branching near modern Scotch Corner [6.4a]).

Concerning military features within the transect, the Thornborough Henges NMP survey mapped a possible temporary camp at Pickhill (130m-long perimeter-ditch with rounded corner, supported by local Roman Castle Farm place-name and only 1.7km east



**Figure 196 - RCHME aerial-survey of Roman camps, forts, and settlement, and earlier-prehistoric monuments, at Newton Kyme near Tadcaster (Boutwood 1996, 342).**

of Dere Street) (Deegan *et al.* 2005, 15). Other temporary camps are found at later-occupied fort sites and around York itself. Permanent military features generally follow Dere Street, including the short-lived Flavian auxiliary-garrison at Roecliffe (Boroughbridge) on the River Ure, discovered by 1990s geophysics and excavated (Bishop *et al.* 2005, Figure 197) but not visible on aerial imagery (Deegan 2013b, 9-10), and the large fort at Healam Bridge (Deegan *et al.* 2005, 15), 18km north at the crossing of Holme Beck. The latter site was investigated during the A1-upgrade (Ambrey *et al.* 2017), revealing a thriving second-fourth century roadside settlement, with evidence for iron-smithing and horse- or mule-breeding (given faunal assemblage), as well as the broad range of Roman-period finds expected from a busy transport-hub.

Roecliffe's fort was superseded c.AD85-89 (Bishop *et al.* 2005, 218; Collins 2019, 422) by the major town of *Isurium Brigantum* ('*civitas* of the *Brigantes* on the Ure' (Dobinson 1995, 1,4)) located at modern Aldborough (2km east).



**Figure 197 - Geophysical-survey and excavation results from A1-upgrade at Roecliffe, showing Flavian-period fort (Bishop *et al.* 2005, 137).**

Structures, earthworks and cropmarks / parchmarks of the town remain visible (Figure 198), with a long history of excavation, field-walking and geophysical survey (Charlesworth 1971; Dobinson 1995, 3,6; Dobinson *et al.* 2018; Ferraby and Millett 2020; Snape *et al.* 2002). Located near the confluence of the rivers Swale and Ure, the site has long been thought to supersede the earlier indigenous regional-centre at Stanwick [6.4a] (first-century activity paralleling the end of activity there). However, recent research synthesising previous archaeological investigations alongside new geophysical survey and excavations (Ferraby and Millett 2020, xii, 124-126) argues that Aldborough was in fact not a direct replacement of Stanwick, given the c.50km distance from the latter and the evidence for settlement of traders forming the origin of the settlement around AD70. Whatever its origins however, the site became the major local urban and administrative centre for indigenous peoples by around AD120, with evidence for a formally laid-out street pattern (now followed by the modern village) and the expected formal buildings (including forum) and high-status townhouses (with mosaics (Figure 198), painted wall-plaster, and hypocausts) of a Roman-defined *civitas* (political-centre), later enclosed by defences and with an external amphitheatre at Studforth Hill to

the south-east (Dobinson 1995, 3-10; Wilson 2017, 345-346). Northern parts of the town appear focussed on storage (warehouses) and industrial activity (workshops for iron- and antler/bone-working) (Collins 2019, 422; Collins 2020b, 400; Ferraby and Millett 2020) thought to show that the town's economy remained closely-linked to military supply and local taxation throughout the Roman period.
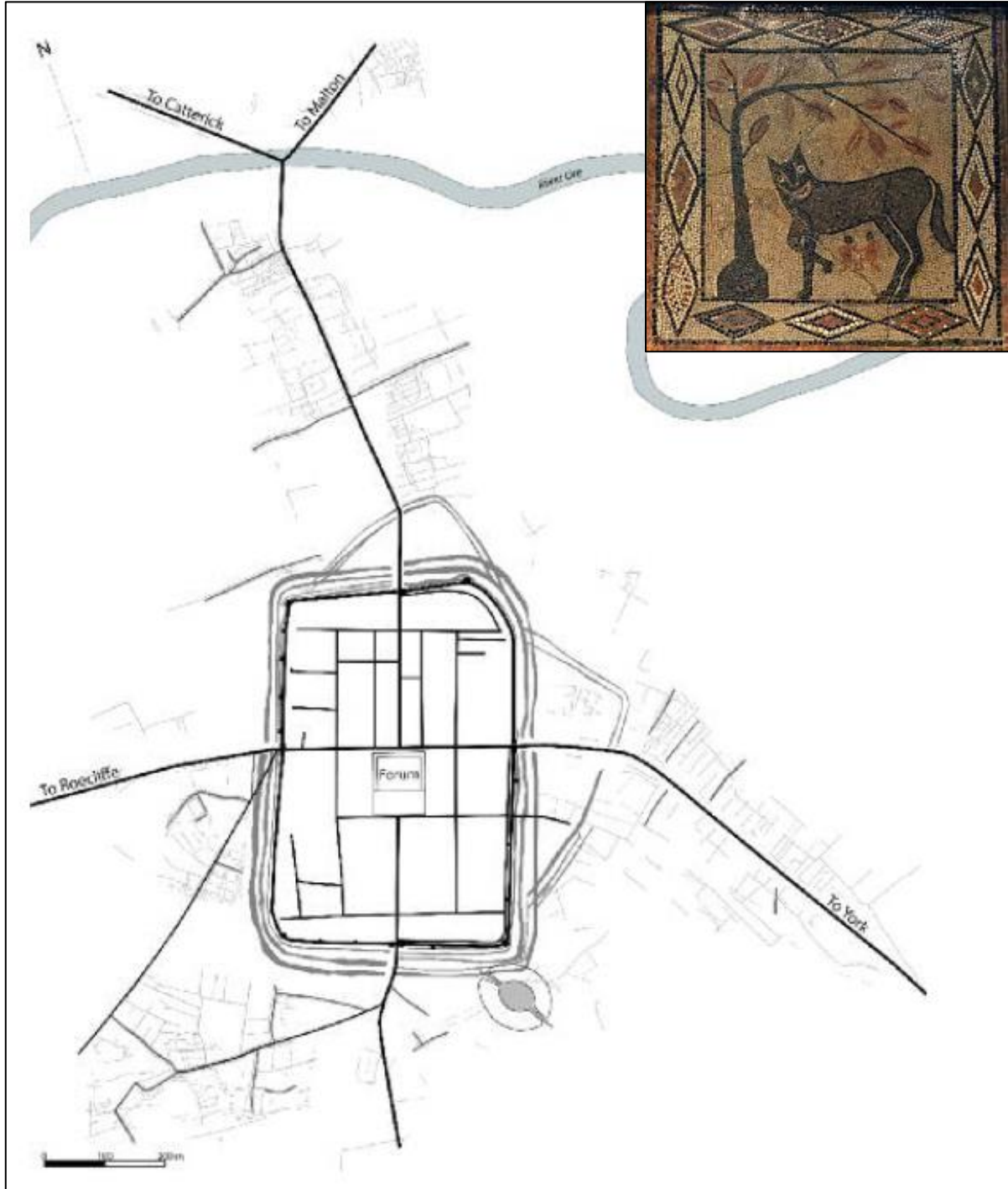


**Figure 198 - Known plan of the Roman town of Isurium Brigantium (Ferraby and Millett 2020, 125); town-house mosaic depicting Roman Classical culture via the myth of Romulus and Remus [inset], source: https://en.wikipedia.org/wiki/Isurium_Brigantum.**

A substantial finds assemblage includes wide-ranging ceramics (imported Samian and amphorae; mortaria, coarse- and fine-wares from around Britannia), 2000+ coins and abundant

personal items, attesting wealthy occupants adopting Roman culture (Classical motifs), fashion and religion. Militaria (including a *Legio IX* tile, weaponry, and uniform-fittings) suggests early military activity and also later-Roman soldiers present in the town (Bishop 1996; Brickstock 2019; Dobinson 1995, 13-17; Ferraby and Millett 2020; Johnson and Neal 2002; Wilson 2017, 345-346). The town's environs are difficult to identify from the air due to permeable soils hindering cropmark development and extensive ridge and furrow further obscuring earlier features. Nonetheless, ten enclosures (probably farmsteads) were identified within 5km of the town, suggesting dense indigenous settlement locally (Deegan 2013b, 9-10).

18km north of Healam Bridge is the well-known Roman site of *Cataractonium* (Catterick), sited on high ground overlooking Dere Street's crossing of the River Swale with its name referencing rapids in the river, close to both Iron Age settlement and a prehistoric henge (Ross and Ross 2020; Wilson 2002) (previously interpreted as an amphitheatre (Esmonde Cleary 1997, 416)). Aerial and geophysical surveys show only 20% of the fort-town site has been excavated (Deegan 2013b, 9). Extensive 1950s-2020 excavations along the A1 north from the modern town, on both sides of the river, revealed a 2ha auxiliary fort guarding the river-crossing from the AD 70s, with associated early timber-built depot and settlement to its east, developing as a major leather-working centre for regional military-supply (Ross and Ross 2020; Wilson 2002). Following Hadrianic abandonment of the
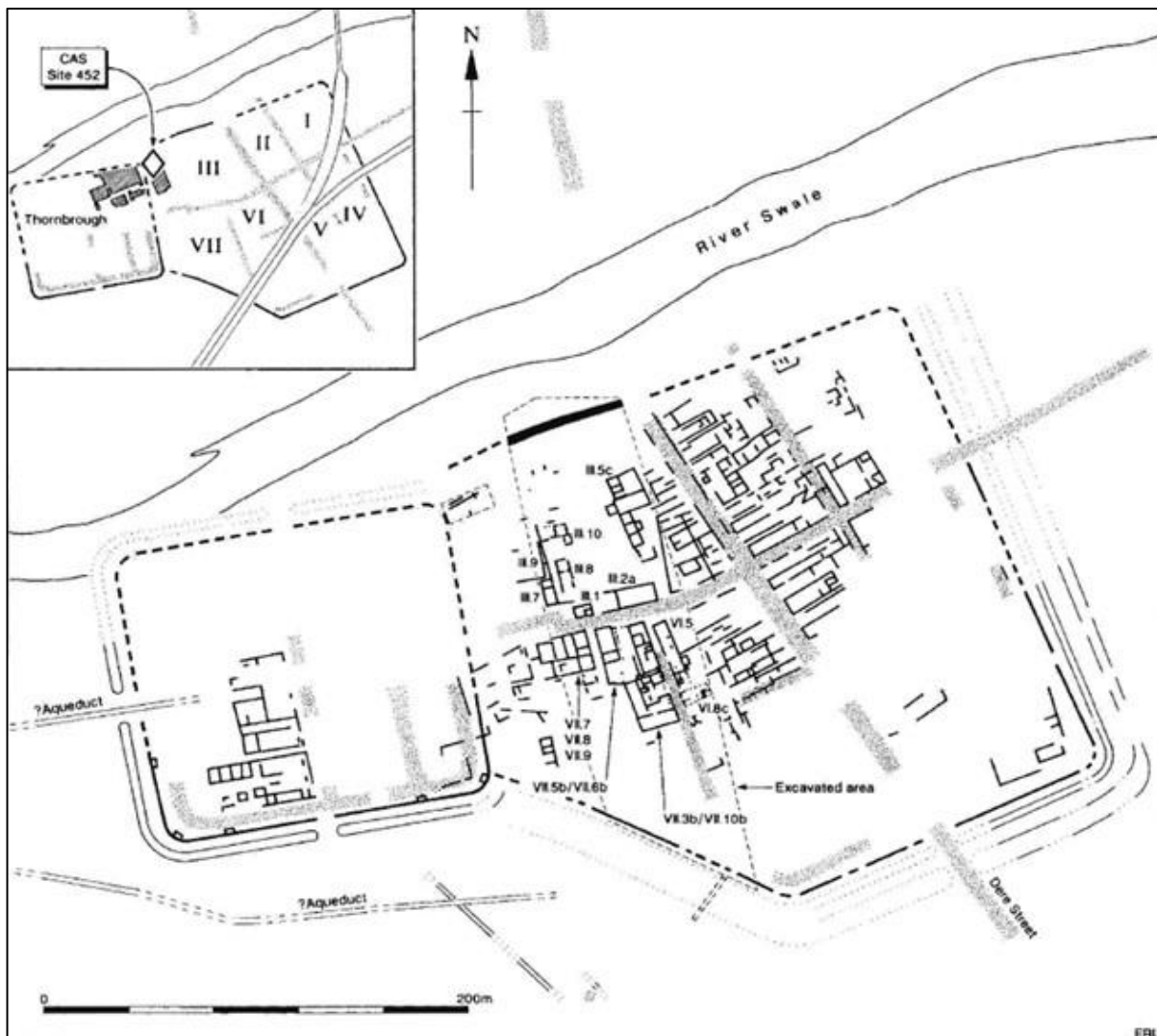


**Figure 199 - Known elements of the late-Roman fort and settlement (Cataractonium) either side of the Swale north of modern Catterick (Wilson 2000, 29).**

fort, a defended enclosure was built around settlement and wharves north of the bridge, with much of the southern town rebuilt in stone (including a *mansio*), further roadside development extending north and south of the core areas. The fort was reoccupied twice (c.AD140-200, fourth-century), with a defensive circuit built around the town, which continued to grow amidst increasing crafting-industries (pewter-working and ceramic-production), becoming one of the largest towns in northern England (Figure 199) (Wilson 2002). Its occupation and importance lasted into the fifth-century (Wilson 2000). Faunal evidence from fort and settlement shows similar consumption throughout second-fourth century occupation: c.64% cattle (most prime meat-age implying high-status consumers, increased size suggesting 'improved stock'), 17% sheep/goat, 8% pig and 9% horse, with domestic fowl and marine (not riverine) fish (Meddens 1990, 1; Stallibrass 1997, 1,49).

The site's hinterland includes contemporary roadside settlements 3.5km north at Scurragh House (Ross and Ross 2020) and c.2km south at Bainesse, with timber strip-buildings, pottery- and metal-working (Busby *et al.* 1996, 283). Charred botanical material from one kiln (reused as corn-drier) attests dominance of spelt wheat over emmer and barley in processing locally (*ibid.*, 295-296). Recent work (Sherlock 2017, 95) identified stone buildings, potentially high-status dwellings, associated with Bainesse, alongside a large first-fifth century inhumation-cemetery. This, together with large numbers of burials from Catterick itself, have been studied (Speed and Holst 2019), revealing a range of burial-practices and grave-goods throughout the occupation (infant burials within the town-centres, a separate second/third-century cremation cemetery for the fort's garrison, and later-Roman inhumations in back-plots behind the settlement buildings), showing a range of belief systems and identities at play in the different phases of settlement.

North of *Cataractonium* at Scotch Corner, recent excavations have upended traditional views of military-led Roman activity, with an unenclosed settlement of roundhouses (c.55BC-AD15) practising mixed arable-pastoral farming, developing (c.AD15-55) into a settlement of timber rectangular buildings alongside roundhouses in nucleated units, with imported Roman pottery and other high-status items, presumably linked to Stanwick [6.4a] (only 6km to the north-west), operating copper-mining and possible indigenous coin-manufacture (Mason 2019, 10; Fell 2020). Following a short abandonment, the site was reorganised again into a ladder-type arrangement, objects implying local military presence (possibly during initial Roman military conquest), developing further into a settlement of military-surveyed regular timber buildings with very high-status objects (fine-wares, glass vessels and environmental evidence for imported foodstuffs) thought-associated with military officials, likely due to positioning on the junction between Dere Street and the Stainmore road. This was then abandoned c.AD85-90, contemporary with settlements developing further north (Piercebridge) and south (Catterick) but later than Stanwick. This newly-discovered site is thus crucial to understanding impacts of Rome upon the Vale of Mowbray, initially from afar (via indigenous-orchestrated, long-distance interactions) and then by direct intervention.

The eastern transect's final site, one of the most-important for the entire frontier, is York (*Eboracum*): the legionary fortress founded AD71 by *Legio IX Hispana* to control the Vale of York (heartland of the Brigantes) and with maritime and riverine access. An extremely-long history of investigation has led to detailed understanding of the myriad identities and activities at play in the fortress and adjacent *colonia* city-settlement [Appendix for detail] (Home 1924; RCHME 1962; Ottaway 2004; Ottaway 2013; Parker 2019; Wenham 1971). The site (Figure 200) was thus a crucial melting-pot of identities from around the empire, military and civilian, along with local elites and ordinary people. Though as yet not comprehensively-proven, the city would have substantially altered the dynamics of this lowland region, a wetland/mixed agricultural landscape heavily-settled

**Figure 200 - Reconstruction-drawing of the legionary fortress, extramural settlements, and Ouse bridge at Eboracum (York). Source: English Heritage Prints.**

in the Iron Age but not central to socio-economic or politico-cultural dynamics. It thus would have possibly formed its own hinterland within the broader hinterland of the frontier, which it was connected to by both Dere Street and the North Sea.

On the whole therefore, much information regarding the changes to the landscape under Rome in the Vales of York and Mowbray has been gained from longstanding major excavation projects along the A1 and sites such as York and Aldborough. Aerial survey predominantly relies upon cropmark-formation across the lowlands, earthworks being limited to sporadic survivals except along the upland fringes. In the south-western limestone areas, larger cohesive cropmark-zones offer insights into multi-phased landscapes of mixed pasture and arable, located around settlement enclosures (some developing into Roman-style complexes such as Dalton Parlours). Elsewhere, fragmentary remains suggest similar patterns of enclosed settlements, as found in other lowland environs of both transects. Unenclosed settlements and ephemeral features are invisible without excavation across much of the Vale. Dere Street forms the main corridor of Roman-period activity (traversing an area of pre-Roman importance attested in numerous monumental complexes), Scotch Corner revealing Roman influence prior to official occupation, evidently connected with nearby Stanwick's ongoing late-Iron Age centre. Movement of troops and civilians along the route from the AD 70s onwards was supported by the evenly-spaced auxiliary forts and attendant roadside-towns (Newton Kyme, Roecliffe, Healam Bridge, Catterick) and further roadside settlements between them. The main foci of indigenous high-status activity in these lowlands switch to these (as at Catterick) in the first/second centuries AD, with Aldborough developing from a seemingly-Roman foundation into the major regional *civitas* centre (a 50km move southwards from the Iron Age indigenous 'capital' at Stanwick) suggesting a major shift of focus towards riverine access and York. *Eboracum* is the most-obvious Roman impact in this final transect zone; though its effects on

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surrounding native settlement are variable, smaller towns are not found in its immediate hinterland, suggesting different landscape-organisation to areas further north and west in the Vale of York. The Vale's broad swathe of farmland (together with that further north [6.4a]) was vital in supporting the wider frontier, creating both arable and pastoral foodstuffs which were collected and stored in the various towns, alongside manufactured wares and objects produced in these settlements. This is therefore altogether a very different landscape to those of the borderland to the north, and those west of the Pennines (excepting perhaps the Eden valley).

## 6.5 – The Eastern Transect in Summary

*6.5a – The Frontier in Full: Discussion of the Eastern Transect*

As with the western transect [5.5], overarching themes from the various component-parts of the transect following Dere Street east of the Pennines will now be discussed, prior to comparison between the transects [Chapter 7]. The full zone comprising the Hadrianic and post-Antonine frontiers (i.e. excluding the Antonine Wall) was discussed, from the outermost zone of activity in Redesdale around the outpost-fort of High Rochester, through the borderland along the Whin Sill and Tyne valley around Halton Chesters, Chesters and Corbridge, to the lowland hinterlands of the Tyne-Tees region and the Vales of Mowbray and York. Unlike the western transect, this comprised a more-even split of upland (dominating the borderland and outer periphery) and lowland (most of the region behind / south of the boundary), with resultant differing environments, topographies and opportunities for human activity.

The outpost-zone [6.2] and borderland [6.3] are located along the same river-system: the Rede/North Tyne and then Tyne, the valleys forming lower-lying corridors of sheltered, fertile land in comparison to higher surrounding moorland, particularly the Cheviots to the north-east and the Border Moors and Pennines further west. These natural corridors enabled both movement and indigenous settlement, likely why the Roman roads and border-line follow them, controlling both settlement and interaction, and offering increased connectivity. South from Corbridge, the transect [6.4a] runs perpendicular to the major Tyne, Wear and Tees valleys, each offering further broad swathes of indigenous settlement and farming, Dere Street crossing each in turn (with closely-spaced forts guarding river bridging-points). The low, rolling hills of County Durham offer little barrier to movement or agriculture, with higher slopes supporting pastoral and otherwise mixed-farming settlements. Teesdale [6.4a] offers the first extensive area of truly-fertile, sheltered and accessible lowland, with a resultant increased settlement density supported by good agricultural-land. This connects directly to another broad lowland [6.4b]: the Vale of Mowbray (surrounded by the North York Moors and Pennines, with their own unique upland environments), widening into the Vale of York which forms the centres of both settlement and arable activity supporting the Yorkshire region, prior to the Humber wetlands that divide this from southern Britannia. Palaeo-environmental evidence throughout the transect supports similar trajectories of clearance throughout the Bronze and Iron Ages to those further west, peaking just prior to Rome's arrival (generally), with pasture replacing woodland on higher slopes and arable in valleys for the northern half of the frontier-zone, and largely mixed-agriculture in the lowlands further south, allowing cattle- and sheep-farming alongside cultivation of spelt, emmer and bread wheats, barley, oats and rye (in that order of preference by the late-Iron Age and under Rome). Roman-period specific clearance is very limited, as

with Transect 1, even along Hadrian's Wall: Rome generally entering pre-cleared agricultural landscapes resulting from later-prehistoric social and/or economic changes.

Indigenous settlement of the late-Iron Age appears consistent throughout the transect's breadth, with enclosed settlements the most common surviving form in both uplands and lowlands. Many of these sites (particularly in the uplands) appear to have housed a single family-unit, while larger sites (which are more numerous in lowland settings) may have been occupied by bigger numbers of people, potentially representing wider kin-groups. Excellent preservation in Block 3, together with wider studies by Jobey, Hodgson and others in Northumberland, allows morphological distinction between generally rectilinear sites (within the Block 3 project area and landscapes further south and south-west) and curvilinear enclosures (to the north-east and in Scotland), hypothesised as revealing different socio-cultural groupings (in absence of better terminology, *Brigantes* and *Votadini*). This is further-shown by the mid/late-Iron Age hillfort phenomenon in the Cheviots. In Redesdale and further south in the transect, curvilinear enclosures do occur, maybe merely local variation or earlier phasing (attested by timber-palisaded and ditched curvilinear sites beneath later rectilinear earthen or stone perimeters at some sites). Also of interest in Redesdale, wider upland Northumberland and parts of lowland Durham is an apparent clustering of enclosures, implying larger social group-identities at play, perhaps extended-families or wider kin-units living close together, though smaller than the 'tribal' units described in Roman literature.

Further south, in the borderland and Durham plateau, earthwork preservation in the low hills mixes with cropmark survival at lower topographies, with the hinterland lowlands of Teesside and Yorkshire (further south still) dominated by cropmarks. Enclosed farmsteads also dominate here, excavations giving insights into their occupation-histories and inhabitants' identities. Implications of Roman material-culture being present prior to official military occupation at some sites is intriguing, while other sites (e.g. Thorpe Thewles, West Brandon) are abandoned either prior to Rome's arrival or later in the first-century AD. Thorpe Thewles, Catcote and other settlements developed from enclosed farmsteads into larger, unenclosed complexes of roundhouses and separate stock-pens. This was seemingly an indigenous action rather than directly resulting from Rome, perhaps part of the wider socio-economic developments at the Iron Age's end. Taken together with the general regional increase in both settlement-density and associated woodland-clearance / increasing agriculture from around 200BC, this implies a socio-cultural shift (and resultant economic changes) [see 2.3c, 6.1c] prior to Rome's official arrival in northern England (though potentially influenced by wider changes caused by Rome in north-western Europe) and indigenous in origin, resulting in new forms of landscape. This process of indigenous-led change leading into, and informing, the early Roman period's landscape-development mirrors the wider findings of the *Roman Rural Settlement Project* for its 'north-east' region. The RRS similarly suggested that late-Iron Age landscape-organisation and settlement patterns in the Yorkshire / Durham / Tyne lowlands persisted more strongly under Rome than in areas further south, initially overlain by the road and military site network and only later in the period seeing more-significant changes (Smith *et al.* 2016, 242-246, 280). This ongoing indigenous process continues with the development of distinct new types of site along the Tees valley (perhaps supported by riverine communication to wider areas?) and also following early Roman roads, such as the villas at Holme House, Ingleby Barwick, Dalton-on-Tees, and Dalton Parlours. Only the latter has confirmed military-links, the rest showing adoption of Roman building-styles and economic approaches to landscape by native land-holders (although also maintaining pre-existing material-culture and day-to-day indigenous identities). Further north, new sites in the Roman period (e.g. Apperley Dene) utilised

Roman ceramics and glass-ware but copied earlier rectilinear enclosure forms, an interesting settlement variation.

Southwards, ladder-type and roadside settlements such as Faverdale, Sedgefield, and those on Dere Street in Yorkshire appear at an early date and do not directly derive from Roman military installations, something not seen further north in the transect. The main Roman impacts here are primarily the new opportunities afforded by long-distance connectivity via riverine and road communications, generally innovative indigenous-chosen products, markets and ideas, rather than military-imposed ideals. This is demonstrated most-clearly at the regionally-unique site of Stanwick, a purely late-Iron Age phenomenon resulting from centralised authority with wider links to southern Britain and beyond. Elsewhere, larger sites (including multi-vallated settlements and hillforts) are few across the transect, limited to those mapped by the Hadrian's Wall NMP, and Shackleton Beacon and Eston Nab, each such site resulting from unique local socio-economic requirements throughout the Iron Age, rather than forming an omnipresent regional feature.

Major landscape impacts orchestrated by the Roman Empire itself generally originate with military activities. As with Transect 1, these are primarily the short-lived camps and more-persistent forts and associated infrastructure (whether permanently garrisoned or used periodically). While the borderland removed some existing landscape from indigenous use, the zone was relatively narrow here, and the main impact was thus the barrier to free movement along the Tyne valleys and crossing the low hills of the north-east. A greater impact regionally were the permanent garrisons at the outpost-forts, wall-forts and hinterland road-forts, generally controlling their surroundings (dominating valleys such as the North Tyne, Redesdale or Weardale) or guarding crucial river-crossings (Corbridge, Binchester, Piercebridge, Catterick), alongside drawing upon a vast quantity of resources (often imported but also locally-sourced, given the scale and longevity of occupation). While environmental evidence does not generally suggest further agricultural intensification than had already occurred by the late-Iron Age, landscape-reorganisation in the hinterland (via new settlements of conglomerated activities, i.e. 'villa-estates') suggests some change, possibly to meet the new demands. Roman material is also found at many indigenous settlements, though in variable quantities (generally little north of the Wall and greater for the lowlands), indicating exchange between Roman supply networks and local farming communities.

Noticeable here is the impact of urbanised settlements. Fort *vici* comprise many, even in the outer periphery (e.g. High Rochester), with Roman-type buildings, social activities, economic processing and industry, and cemeteries, together indicating new social, cultural, religious and ethnic identities. Some *vici* are quite large (for instance, Chesters and Binchester), while others developed further into even-larger settlements following decline or changes in military activity (as at Corbridge and Catterick). New for this transect are the other new settlement-types including roadside-towns (e.g. Sedgefield, Faverdale) and the major early town at Piercebridge (developing around the Tees-bridge prior to, rather than after, the visible auxiliary fort's founding, albeit with evidence for earlier military involvement). Such developments are thus related to Roman infrastructure but are not solely military in focus, showing the breadth and complexity of identities at play in the wider frontier-zone. The two final noteworthy sites are Aldborough, the major political-centre and town of the *Brigantes* (representing a focal shift southward from the earlier major site at Stanwick, but seemingly not a direct indigenous-led replacement) and York, the major Roman frontier power-base with an enormous population from all over the empire (military and civilian) and social, economic and military influence over the entire region.

As with the western transect, roads form the final major landscape impact, following nature-defined long-distance routeways of the Vales of York and Mowbray, Tees and Tyne valleys, and Redesdale, but providing a single, connected network of maintained communication. Where existing indigenous routeways are evident, they comprise double-ditched trackways or droveways, winding between settlements, and these will have continued for local, everyday travel or stock-movement. However, Dere Street, Cade's Road and the Devil's Causeway provided quicker south-north travel, while trans-Pennine routes offered unprecedented east-west connections, revolutionising long-distance interactions and trade. Unlike the north-west, evidence suggest pre-Roman nuclei for wide-ranging interactions (Stanwick and the Tees valley, alongside coastal hubs like Catcote), presumably using the major rivers penetrating north-eastern England. The Romans also depended upon these natural conduits, given the siting of York for naval supply and the roles of both Tees and Tyne, though perhaps without the scale of new Roman engineering previously postulated [6.4a].

*6.5b – Addressing Gaps in the Knowledge Base*

General coverage by aerial-survey mapping throughout Transect 2 is excellent, with the new mapping data addressing the gap north of Hadrian's Wall, the NMP covering the borderland (albeit without lidar and modern imagery updates, which might identify further low earthworks, as in Block 2) and large-area mapping projects on cropmark areas further south. The main issue encountered therefore was not aerial-mapping coverage but rather the nature of visibility and what aerial survey can tell us. Whilst broader patterns have been successfully identified, including extra contextual data from field and geophysical surveys and large excavation projects, questions around specific site-chronologies and development remain difficult across many of the areas mapped. Though less of an issue for areas of good earthwork preservation (e.g. Block 3, and around Hadrian's Wall), this is particularly noticeable in parts of the Durham, Thornborough/Yorkshire Henges and Vale of York NMP survey-areas where cropmarks are the main mapping-source. The southern part of the Yorkshire Henges project showed the potential for identifying phasing where cropmark-formation is extensive, but much of the area covered is far-more fragmented, requiring comparison to neighbouring areas such as Lower Wharfedale for fuller interpretation. Targeted use of geophysical and analytical-field surveys and field-walking throughout the lowlands might help offset this issue and increase understanding [8.1a, 8.2].

Palaeo-environmental evidence covers the breadth of the transect, allowing discussion of wider patterning in natural (and managed) vegetation, arable agriculture and animal domestication. As mentioned however, lowland palynology is lacking in comparison to upland samples, and the vegetation between these landscapes has the potential to differ greatly. Site-based environmental-sampling mitigates somewhat against this, but greater sampling is needed across the region. Many published regional studies are also not recent.

Excavations, and artefactual and ecofactual evidence derived from them, are far more substantial than those in Transect 1, with large infrastructure and housing-development projects such as the A1 and those in south-east Northumberland and around Darlington/Sedgefield somewhat mitigating against the traditional research-project bias towards Roman military sites and offering new insights into civilian and indigenous settlement patterns. The long histories of extensive research at York, Aldborough, Catterick, Piercebridge, Binchester, Corbridge and Chesters offer insights into site-development, identity and landscape-interactions, with even isolated sites such as High Rochester having good pedigrees of investigation (in comparison to Transect 1's equivalents).

Jobey's native settlement studies and the recent excavation-led research by Hodgson *et al.* (2012; 2017) offset the Roman-military focus for Northumberland and northern County Durham, though excavations of enclosed farmsteads have been more-limited further south. Detailed investigation of such sites, particularly those further from Dere Street, needs undertaking in order to improve our knowledge of rural indigenous farmsteads across the Vale of York and north-eastern lowlands.

# Chapter 7: Identity and Landscape on the Roman Northern Frontier

Having discussed broader patterning (primarily via aerial survey) alongside detailed evidence (from other types of archaeological investigation) within the western [Chapter 5] and eastern [Chapter 6] transects of the project, the research questions [4.1b] under-pinning the project, wider conclusions arising from the data and a comparison between the transects will now be addressed, prior to assessment of the thesis' wider implications [Chapter 8]. The order in which the theory-based questions were introduced in Chapter 4 has been followed here (identity, then landscape, and frontier) to maintain continuity. However, as discussed in Chapters 2 and 3, the largescale nature of the primary aerial survey data used in this project means that questions around landscape and frontier theory are more easily assessed [see 8.2]. Nevertheless, identity is an important concept supporting both of these themes and evidence for certain aspects of Iron Age and Roman identities is accessible from the data available and has thus been discussed throughout both transects and will be synthesised first here [7.1].

## 7.1 – Concepts of Identity in the Region

*7.1a – Did ways in which people in the late Iron Age and Roman periods perceived themselves (and others) affect the way they viewed and interacted with their surroundings?*

As discussed in Chapters 2 and 3, identities are multi-faceted and operate at differing scales and in relation to various wider criteria or groups. Therefore, different components of identity are more prominently drawn-upon dependent on the person's immediate situation or a specific interaction, for instance military aspects of an individual's identity such as rank being more important during undertaking of their official duties in a fort, while familial or more individualistic components would be emphasised when interacting with people in the neighbouring extramural settlement. The broader structures of the socio-cultural landscape around an individual impact the process of identity-definition. In this study, this relationship with surrounding landscape is therefore crucial to discussion. Evidence across both transects for specific components of indigenous and Roman identities largely comprises artefacts and/or ecofacts from sufficiently-excavated sites, landscape-level survey offering broader, theorised suggestions of wider identities derived from the form, distribution, relationships-between and function of sites.

Artefactual evidence for indigenous identities is limited due to the nature of assemblages recovered (partly taphonomy-related, given a widespread lack of organic preservation). Native-type pottery is found at sites north and south of Hadrian's Wall, often extrapolated as evidence for ongoing native identities, while Roman imports (ceramics, glassware, metalwork) are taken to imply adoption of 'Romanised' elements of identity, particularly focussed on economic aspects (accessibility to trade and income) or socio-cultural elements (relating to changing dining practice emulating wider influences). Patterns do emerge from rural settlements: Transect 1 sees relatively-little adoption of Roman material-culture versus a strong ongoing usage of native objects (particularly north of the Solway), while Transect 2 shows more Roman-imported materials at indigenous farmsteads north and south of the border. Most evidence from native sites pertains to everyday activities: family-based farming, agricultural-processing and small-scale craft-working, attesting the socio-economic, generally subsistence-based identity of farming communities rather than specific individuals. Ongoing indigenous belief-systems in this landscape are usually proposed from Roman-period sculptural or epigraphic finds or occasional votive-deposits to local deities (e.g.

*Genius Loci*, Cocidius, Belatucadrus) but these new ways of displaying such beliefs are new practices and may not emulate pre-existing ones, while such deities are often also identified with imported Roman deities. Therefore, rural evidence suggests general continuity in day-to-day identities (albeit with small-scale adoption of new ideas and/or materials from wider Roman Europe and beyond). Associated landscape-interactions consequently also persist from the late-Iron Age into the Roman period: the small-scale, farming-focussed locality defining landscape for much of the region's population.

Wider-area surveys indicate identity's influence on the distribution and form of indigenous settlements. Enclosed farmsteads are maintained from the Iron Age into the Romano-British period, with little change in form for much of the region, likely due to that settlement-type's suitability for the mixed-farming regimes practised in these landscapes. Construction-material seems determined by local resource-availability rather than particular identities, while change from curvilinear to rectilinear enclosures represents indigenous late-Iron Age development rather than new Roman-period change. Field-systems do vary slightly dependent on local topography and land-use but generally comprise rectilinear, coaxial boundaries: a common practice irrespective of indigenous/Roman or local/regional identities.

Landscape variations hints at different levels of identities being operated: grouping of sites in Redesdale and the Tyne-Tees lowlands potentially represents wider kin-based group identities (larger than single farmstead-based families but smaller than 'tribal' units). Also, differentiation between rectilinear-dominated enclosures (from Yorkshire to south-western Northumberland) and generally-curvilinear farmsteads (alongside more-numerous hillforts) further to the north-east suggest different socio-cultural group-identities, as do different settlement-forms (e.g. crannogs, brochs) located north-west of Transect 1 which imply distinct identities between Solway lowland and south-western Scottish upland communities. This would fit with the notion of the previously-identified 'frontier' between different pre-Roman social units along the Tyne-Solway isthmus [2.3c/3.3b].

Roman literature and/or epigraphy reports several socio-cultural 'tribal' identities (*Brigantes*, *Carvetii*, *Anavionenses, Novantae, Setantii, Lopocares* and *Votadini*) regionally, with societal organisation comprising discrete geographical identities, though such Roman-defined units should be treated with caution. Nonetheless, evidence from both transects suggests several lowland 'core' population areas connected with their surrounding uplands (the Solway basin/Eden Valley, Milfield Basin, Tyne-Rede corridor, and Teesdale-Vales of Mowbray/York), divided by natural higher-upland boundaries. Such differences are further supported by the aforementioned distinctive site-forms and also several major central-places (Clifton Dykes, Burnswark, Yeavering, Stanwick) indicating elite foci or centralised function. These variations are not reflected in material-culture at the average farmstead, however. The *Brigantes*, often described as 'confederation' rather than 'tribe' [5.1c], with a name meaning either 'hill people' or 'overlord' [6.1c] would fit this landscape-pattern of several lowland-focussed groups rather than one discrete politico-cultural unit. These lowland-cores formed the nuclei for more-intensive Roman-period activity (Carlisle, Brougham, Corbridge, Stanwick-Aldborough). Such persistence of indigenous patterns (and group-affiliated identity) across the Iron Age-Roman transition indicates a longevity of landscape-perception and interactions regionally.

Finds from Roman forts, *vici* and larger settlements have a known potential for identifying individual and group-based identities, including for natives who moved to, or interacted with, these sites. Alongside military-identity components for soldiers (tied to the Roman Empire and army itself), various unit-types (including several cavalry-garrisons), statuses, ethnicities and associated cultural traits and spiritual beliefs (e.g. Brougham and High Rochester's cemetery-practices; worship of martial gods (Mars, Mithras, Victory) and other imported Graeco-Roman and Near-Eastern deities)

are attested, prior to and alongside evidence for later, localised recruitment. Throughout both transects, forts held diverse auxiliary units from around the empire, with higher-status legionaries from the imperial-core (particularly York, Piercebridge, Corbridge, and Carlisle). Multiple professional, economic, spiritual and ethnic/cultural identities were also at play in extramural settlements: traders, craftspeople, doctors, people in hospitality, etc. Many diverse ethno-cultural origins are recorded (bringing with them their own belief-systems and world-views [7.3a]) but others were locals seeking new opportunities. Indeed, key urban sites (Carlisle, Corbridge, Aldborough) and rural sites with definite Roman-influenced changes ('defended farmsteads' near Carlisle; 'villas' of Yorkshire and the Tees valley) indicate high-status, wealthy locals adopting Roman approaches to daily-life and belief (whilst simultaneously maintaining links to their existing native identities). These new or developing identities affected perceptions of the landscape locally, identifiable in changing building-forms and creation of 'urban' environments across some lowland areas (familiar for new arrivals used to Roman culture, and innovative for locals, but also developing continuously due to sharing of those varied experiences (Nesbitt 2016)). However, human-environment interactions beyond these new or changed sites appear to follow on from late-Iron Age trajectories. Even around the major Roman centre of York, excavated rural sites show Roman material from the AD 70s but no wider landscape-changes until the third/fourth centuries. Though further archaeological investigation is needed, this lack of early Roman landscape reorganisation would seem to suggest the local indigenous settlement pattern and agricultural economy was sufficient to meet the supply requirements of York's legionary garrison (showing native people's ongoing agency) until the greater blending of military and civilian activities and identities around York in the mid/late-Roman period. Alternatively, this could represent an initial stifling of the rural population's ability to innovate or enact change due to the area being in the immediate environs of York and thus under the direct jurisdiction of the fortress.

Despite wider landscape-interaction seemingly unchanging beyond urban settlements, one clear change under Rome is the rapidly-developed inter-connectivity of landscapes with wider regions across northern Britain and beyond. This is earliest-visible at the major site of Stanwick, with its rapidly-constructed monumentality controlling lowland connections between the Yorkshire and Tees lowlands, together with material imported from the Continent (some of it Roman), a clear indication of Roman influence prior to occupation, cascading such changes to local sites such as Scotch Corner, Thorpe Thewles and Catcote. This inter-connectedness in the landscape likely begins with natural conduits such as rivers, coasts and lowland-corridors but was further-cemented by the consolidation of Dere Street and the other military-constructed roads criss-crossing the region a decade later, connecting the previously-disparate regional groupings and 'expanding' people's known landscape-conception to unprecedented levels.

Further evidence for changing identities under Rome affecting landscape perceptions, and vice versa, are the other uses for Roman military-sites (beyond merely garrisoning troops). Whilst the presence of legionary troops (with higher Roman status due to citizenship, skills in masonry and carpentry, and evidence for greater imports of material-culture and 'Roman' ideas) gave some sites (e.g. York and Severan-period Piercebridge/Corbridge) a different character, other forts appear to have been deliberately-constructed on a monumental scale for a particular purpose. These include the impressive defences and stone-built buildings at early Carlisle, first-century Ribchester and even at Birrens and High Rochester beyond the Hadrianic borderline, the architecture and scale of building seemingly deliberately designed to intimidate or impress locals. Such sites would also simultaneously reinforce concepts of Roman power and permanence, reassuring new garrisons in a potentially-hostile territory and forming a reminder of wider 'Roman' culture. Commonality of fort layouts, together with the resultant ordering of movement within them, further imposed 'Roman'

identity in the immediate landscape. This form of *Romanitas* is most-notably manifested in the form taken by Hadrian's Wall, which both connects and divides the region.

Contrastingly, the open, often-undefended extramural settlements around most forts appear to have been inclusive rather than exclusive in character, revealing the lack of an immediate threat generally (the late-Roman withdrawal of settlement to within defences perhaps indicating a change to this situation). Together with the frontier-wide Roman activity attesting socio-economic connections and interactions with indigenous activity (below), this infers a more open-minded conception of landscape.

*7.1b – Is there clear variation between 'military' and 'civilian' groups? Are these terms even valid for such an analysis?*

There is clear variation between military and civilian groups, with identifiable legionary and auxiliary units moving around the landscape via temporary camps and garrisoned at each permanent installation. This is further championed by distinct military-professional, imperial, status-based, ethnic, and religious components of identity [7.1a], found throughout both transects as personal ornaments, military-objects, epigraphy and dietary evidence. Through epigraphy and specific forms of material-culture (discussed throughout both transects) we can see both the movement of specific units (with associated ethnic or cultural identity-affiliations early in the period) between permanent sites within the study-region, but also evidencing places travelled by those troops prior to reaching Britannia (or after having served on this frontier and having moved on). All of this movement and resultant interactions affected the particular identities of those involved and how they individually related to wider 'Roman', imperial affiliations associated with being in the military. This likely changed further into the mid/late-Roman period due to increasing local recruitment (blurring lines between indigenous / civilian and Roman / military).

'Civilian' identities are shown by the native rural population's distinctive material-culture and agriculture-based identities showing variable levels of Roman interference (above). Within *vici* and other settlements however, these identities begin to merge. Women, children and non-military professions were clearly not soldiers, but nonetheless displayed clear military associations in their identities due to their proximity to forts (utilising military supply and activities) and also interactions and relationships with the garrisons themselves. Across the frontier, tombstones attest soldiers' families, even before the Severan-period legalisation of marriage for soldiers. At Brougham and Petty Knowes, funerary evidence implies very close ethno-cultural links between soldiers and civilians, with the latter seemingly either following the units from previous postings or extremely-rapidly adopting new, specific practices. However, as mentioned above, increasing local recruitment into the military through the course of the Roman period would have further blurred the lines between military and civilian, albeit with influxes of new identities from elsewhere caused by constant military reinforcement or redeployment and ongoing mobility via trade and supply across the empire (and throughout the study-region).

Military identity is further embedded in the supply-networks across the region; not only at forts and associated *vici* but also indigenous-organised towns (e.g. Aldborough) and even rural sites: Roman ceramics are found at many period-farmsteads across both transects, though with greater quantities at south-eastern sites and even pre-Roman imports at some (Stanwick, Thorpe Thewles, Scotch Corner, Catcote). Even beyond the Roman border in the north-west, Woodend Farm and Boonies contain Roman objects implying some wealth or status, possibly due to nearby Roman roads facilitating interaction. Direct military involvement at civilian sites include construction for the towns at York, Carlisle, Aldborough and Corbridge and even rural sites (e.g. Dalton Parlours), as proven by both epigraphy and stamped building-materials. New 'villas' in the south-east and more-prominent

new 'defended' farms south of Carlisle (below) indicate further potential military-civilian links, as do the depots (Walton-le-Dale, Catterick), industrial sites (Quernmore, Scalesceugh, Whitley Castle), ladder-settlements (Faverdale, Scotch Corner) and roadside-sites (Catterick, Sedgefield) not directly-related to forts. Even indigenous sites (e.g. Castle O'er) provide evidence for military quartermasters accessing native stock-management, while forts located in intensely-settled valleys (Lune, Eden, Esk, Annan, Ouse, Tees, Wear, Tyne and Rede) presumably oversaw local agricultural supply. Therefore, whilst there were distinct military and civilian/indigenous identities at play across the frontier region, even remote rural settlements (excepting a few examples north of Hadrian's Wall and in County Durham) show interaction between military and non-military.

*7.1c – Did this change over time and if so, was this transformation gradual or sudden?*

Interaction between Roman and non-Roman identities did change over time, though varying greatly across the region. The western and much of the eastern transects show military installations along the burgeoning road network forming the initial Roman activity which attracted associated extra-mural settlement, with material culture slowly spreading outward to surrounding rural settlements (following traditional archaeological regional interpretations of northern Britain of this period), with key sites (including York, Ribchester and Carlisle) forming early foci for military-led Roman cultural and economic inculcation via exchange of high-status goods, and introduction of monumental architecture and ideas.

However, even-earlier Roman influence, predating the military invasion, is found at coastal or riverine sites (e.g. Scotch Corner, Thorpe Thewles, Catcote) in the Tees lowlands and Vale of Mowbray, centred on the major late-Iron Age site of Stanwick. It is no surprise that this area became a centre for Roman socio-economic change from the first-century onwards, with York's fortress deliberately-located at a nearby maritime-navigable position, and development of the *civitas* of Aldborough (whether or not this was a direct replacement for Stanwick). Major extra-mural and roadside settlements also dominate this part of the eastern transect (Newton Kyme, Catterick, Binchester, Sedgefield, Faverdale) with some towns even appearing prior to forts (as at Piercebridge). Accompanying these are the formerly-mentioned 'villa-sites', showing clear Roman-influenced landscape change: the only such examples in the entire project area.

Carlisle and Corbridge developed from military sites into major civilian centres (albeit with ongoing military activity and the nearby garrisons on Hadrian's Wall) while most forts in both transects had extramural *vici* (varying in size, although this may be due to modern archaeological survival or visibility). Even beyond areas of direct Roman control, the outposts at Birrens, Netherby, High Rochester and Risingham had external settlements (with defended-annexes present at only two of these). The divisions between forts and their associated settlements disappeared over time, even along the borderland where the Vallum delineating military-only access was either quickly ignored (Haltonchesters) or infilled (Chesters, Castlesteads). Nonetheless, identities at play remain more complicated than either pure division or integration when dealing with concepts of 'occupier' and 'occupied', with countless possible perceptions and variations on this relationship. This change was likely associated with increasing local recruitment (rather than ongoing reinforcement from abroad), inter-marriage and settlement of retired veterans. At many sites, this development culminates in either the settlement withdrawing largely into the fort (e.g. Ribchester, Piercebridge, Binchester) or the town being given defences (Catterick, Aldborough, Corbridge) during the late-Roman period.

## 7.2 – Landscapes of the Frontier and Human-Environment Interactions

*7.2a – How did the region's natural environment affect activities and actions of people within it during the period under study, and how did they in turn affect their environment?*

Northern Britain's natural landscapes heavily influenced human activity throughout both later prehistory and the Roman period. The major dichotomy in both transects is therefore that between upland and lowland landscapes, which greatly determined the patterns of land-use developing through the Bronze and Iron Ages (and then into the Roman occupation). There appear to have been no region-wide differences in land-use, with mixed pastoral and arable agriculture, heath or woodland dependent on localised variables in topography, climate, soils and geology. Thus, pastoralism dominates the higher uplands (the Pennines, southern Scotland, Orton Fells, South Cumbria Low Fells and Bowland in the west; and the Border Moors, Cheviots, western County Durham, North York Moors and Dales in the east) while upland valleys (Esk, Annan, Eden, Petteril, Lune, Ribble, Rede and Tyne) form narrow arable bands throughout the western transect and northern half of the eastern. Only the Tyne-Tees and Yorkshire lowlands provide shelter, soil-fertility and topography facilitating creation of broader, richer agricultural landscapes.

Regional indigenous settlement seems to have generally been located to best-exploit a variety of land-uses locally. Settlement patterns follow valleys through the uplands rather than occupying the higher slopes (some of which had been settled in earlier-prehistory but abandoned by the Iron Age) and are dotted throughout the broader lowlands to better-utilise varied landscape opportunities. For instance, the settlements around the Solway Basin follow the interfaces between estuarine/floodplain pasture and slightly-higher arable-quality land, while those in the Lune and Rede valleys and County Durham are situated to access both higher pasture and cereal-growing lowlands, resulting in a distinct patterning of farmsteads in the landscape, generally slightly-raised above their surroundings and at boundaries between differing land-uses.

Larger, flattish and fertile areas sheltered from northern England's predominantly west-originating weather-systems (i.e. the Eden valley, Teesdale and the Vales of York and Mowbray) resulted in development of denser indigenous settlement and associated high-status, elite sites (Stanwick in the east and Clifton Dykes further west). Elsewhere, intermediate-sized sites (e.g. those in the Lune valley and Eskdale and around the Tees (Shackleton Beacon, Eston Nab)) appear as localised settlement-variations with specific social or economic functions for their areas (given their absence elsewhere). The social grouping occupying the Cheviots seemingly utilised the natural topography to create the densely-distributed, varied hillforts unique to that area (compared to isolated, generally-larger hillfort examples elsewhere in both transects). Particularly-identifiable summits (Burnswark Hill, Ingleborough, Yeavering Bell) became the mid-late Iron Age landscape-foci, though their precise function and occupational nature remains unknown. Under Rome, the lowland areas of existing native settlement density (and with high-status sites) became centres of ongoing agricultural development. New settlement types appear in the Petteril valley (substantial, Roman-type 'defended' farmsteads), Teesdale and the Vale of York (villas and roadside settlements), while forts are situated amongst native farmsteads in all major valleys of the region, directly-overseeing agricultural production as well as natural routeways.

The natural environment's final impact on later prehistoric/Roman society is its role in defining human movement through the landscape. Rivers form crucial arteries for longer-distance travel either side of the Pennines, linking with coastal navigation (evidenced by maritime trade-hubs including Warton Crag in southern Cumbria and Catcote near Hartlepool). This riverine/coastline linked network also determined the locations of many early-Roman sites, notably York's fortress and the garrisons at Ribchester, Carlisle and Corbridge. It also influenced siting of subsequent Roman

military sites (many forts supplied by rivers or guarding crossing-points over them – Walton-le-Dale, Lancaster, Netherby, Roecliffe/Aldborough, Catterick, Piercebridge, South Shields, and Chesters). Rivers thus formed important components in wider Roman strategy, vital to controlling movement or using them as boundaries, and also managing the supply-opportunities they provided.

Topography determined the early routes of Dere Street (following the Vale of York, Tees-Wear-Tyne lowlands and Redesdale), the equivalent western road (using the Lune, Eden and Esk/Annan valleys) and the Stainmore Pass between, utilising natural corridors and passes (which were presumably already being followed by existing indigenous long-distance communication routes). Such valleys or passes furthermore comprised key areas of settlement and agriculture (another likely reason for the roads' planning). This process then continued with the subsequent roads added to facilitate the wider frontier's easier intra-regional operation. Finally, the Tyne and Solway-Eden river estuaries and the prominent escarpment of the Whin Sill between them determined the siting of the Roman borderland; the heart of the frontier-zone. Alongside being an existing, exploitable natural barrier, this had the added benefit of being a natural east-west, slightly lower-lying connection between higher uplands, facilitating the infrastructure needed to garrison, maintain, and supply the perimeter.

Human impact upon the landscape during this period has been assessed using palynological, ecofactual and landscape-survey data. Regional patterns of gradual woodland-clearance through the Bronze and Iron Ages peaked just prior to Rome's arrival, presumably representing indigenous socio-economic changes and/or population growth. This resulted in landscapes of mixed arable and pasture (the improvement-level dependent on local topography), with heath and peat-bog atop higher moors and hills. Forest was likely small-scale and managed (evidenced by mature oak and alder being used in construction at new Roman-period sites). Only limited areas (e.g. Hadrian's Wall's western end and the remotest parts of its central-sector) show largescale woodland clearance continuing under Rome, likely directly-associated with the frontier's construction. Most major human changes to the natural landscape therefore appear native rather than Roman in origin, with knock-on local environmental effects including drainage-changes and erosion in the Howgill Fells, a situation likely present elsewhere in the region.

Major Roman-period impacts to the existing landscape are consequently the changes to human landscape components. One example is the reorganisation of indigenous rural areas and settlement-types in the south-east of the region in Yorkshire and Teesdale and around Carlisle in the north-west. Another is the evidence for depopulation of enclosed settlements (and presumed associated changes in local land-use) evident north of the borderline in coastal Northumberland. A final, long-discussed impact is the introduction of new military and/or urban sites which likely dominated their local landscapes and the natural and agricultural resources within them. Hunting is evidenced from faunal assemblages at many Roman sites, though only Weardale has potential evidence for being a designated hunting-area. Another impact is the new or greatly-increased exploitation of mineral resources on unprecedented scales: i.e. lead in the Pennines (with evidence from Whitley Castle, Brough and Piercebridge), iron throughout the region (extracted notably at Warton Crag, though with iron-working at many other sites), stone quarries (e.g. Petty Knowes near High Rochester, Gelt and Coombe Crag on Hadrian's Wall) and clay for pottery/tile production (Scalesceugh near Carlisle, Quernmore near Lancaster, Crambeck near York). Roman landscape-engineering is limited to local water supply via aqueducts and wells at forts and urban sites, and associated drainage, with little evidence for the region-wide improvements of riverine-navigability previously-hypothesised on limited evidence [see 6.4a].

*7.2b – How did existing settlements, field systems and other features of the late Iron Age cultural landscape affect Roman developments in the frontier zone?*

As discussed, many clearly identifiable Roman-period developments occurred in areas of existing late-Iron Age agricultural and settlement density, particularly the Vales of York/Mowbray and Tees valley in the eastern transect and Eden/Petteril valleys and Solway lowlands in the north-west. Villas, 'defended farmsteads' and ladder settlements thus represent new developments but following ongoing later-prehistoric trajectories of increasing landscape development, with new Roman-type material-culture and construction-techniques added to the mix. Understandably, these areas also formed the hinterlands for major new Roman settlements: York, Aldborough, Catterick, Brougham's environs and Carlisle, with further sites developing in similar valley-settings at Piercebridge, Corbridge, Ribchester and Walton-le-Dale. High-status local elites and Roman politico-military officials sited new central places upon existing landscape-patterns rather than imposing new, 'Romanised' systems. Existing late-Iron Age centres (Clifton Dykes, Stanwick) were therefore surrounded by Roman-period landscape-changes, though they themselves were out-of-use by the late-first century AD.

As also mentioned previously, garrisoned forts sited upon new roads (Dere Street, Cade's Road, Devil's Causeway, Ribchester-to-Carlisle, the Stainmore Pass, traversing Eskdale and Annandale) controlled strategic places and natural routeways in both transects. These pre-existing long-distance routeways also happened to comprise locally-important farmland areas (as in Lunedale, the Eden and Solway lowlands, Eskdale, Annandale, Yorkshire and the Tyne-Tees valleys, and Redesdale) supporting denser clusters of settlement: another reason for locating these forts here, controlling local stock-movement and arable-production, directly tapping-into indigenous agriculture for supply (once occupation was established) to control regional economic landscapes. Bewcastle's outpost-fort thus oversaw the pastoral agricultural economy of the uplands north of Hadrian's Wall, as well as the Cocidius cult-centre, a situation likely mirrored in the location of the other outposts beyond direct provincial control. Spiritual continuity in the landscape is also hypothesised (though difficult to prove) for High Rochester and Netherby, via their inscriptions to Romanised deities. Henges in the Eden and Mowbray valleys (with longstanding socio-cultural and religious connotations pre-dating the Iron Age) are also located near nuclei for Roman-period activity, standing reminders of past landscapes and previous 'power systems', whether or not Roman sites were deliberately positioned there.

The borderline taken by Hadrian's Wall follows the natural boundaries of the Solway-Tyne isthmus and Whin Sill. Crossing the Pennines at a slightly-lower topography, this forms an east-west routeway using the Tyne and Irthing/Eden valleys, each with their own accompanying densities of native settlement: military garrisons again controlling local activities, similarly to the road-forts north and south. The outpost-forts oversee interfaces between possible different indigenous groupings: Netherby and Birrens at boundaries between the Solway's lowland-farmers (the epigraphy-attested *Carvetii*?, noting aforementioned issues with using Roman-defined 'tribes') and upland pastoralists (*Anavionenses*, *Novantae*?); High Rochester and Risingham along the apparent-division between predominantly-rectilinear settlements south-west of Redesdale (thought to represent the *Brigantes* or one of their sub-groupings) and the curvilinear settlements and hillforts in higher uplands to the north and north-east (referred to by Rome as *Votadini*?). These forts therefore not only dominated local agricultural and settlement activities but also potentially monitored existing regional boundaries predating the Roman frontier. Corbridge's definition as 'meeting place' (*Coria*) between different peoples, if correct, extends this Roman oversight of native boundaries further southwards.

*7.2c – How did the Romano-British landscape (and interactions within it) vary across the wider region?*

Other than Hadrian's Wall and its attendant garrison-forts and infrastructure, the main variations in Romano-British landscapes across the region appear unrelated to the frontier-zone's operation, instead defined by nature-defined divides between upland and lowland environments [7.2a]. Upland areas surrounding the Solway Basin in Transect 1 and covering the northern third (and located to either side) of Transect 2 appear, at a broader level, to operate completely unchanged settlement and landscape-organisation patterns from the late-Iron Age. Roman impositions in these landscapes are consequently limited to military roads, associated forts and *vici*, controlling and overseeing existing routeways, river crossing-points and key socio-economic resources.

Meanwhile, the lowlands also see a continuity of rural settlement patterns, density, and form, with field-systems of intensive mixed-agriculture. However, alongside the frontier hinterland's road-forts and *vici* lining Dere Street, Cade's Road, and the western arterial roads, different forms of occupation and settlement newly-occur (e.g. the previously-mentioned early 'emporia', defensible farmsteads, villas and ladder/roadside settlements). The other major difference appearing in the lowlands under Rome are the major new urban sites of Carlisle in the west and York, Aldborough and Corbridge in the east, each forming a nucleus for wider changing settlement-forms (at different times through the occupation, often surprisingly late in the period) and centred on the most-productive agricultural hinterlands regionally.

In both transects, indigenous local routeways (generally double-ditched trackways and droveways) represented ongoing local communication-networks in the landscape, while new military-built roads provided unprecedented intra-regional connectivity between towns, military installations and lowland areas. This shows two tiers of landscape movement throughout both transects, the connectivity between them as yet unknown. The most-obviously different Roman-period landscape in the project area is of course the Roman borderland itself, a narrow band of high-intensity military activity and changing land-use, dominated by a huge military garrison (and its attendant civilian population) and new forms of site and construction [see 7.3b]. Otherwise, the wider Romano-British landscape is one of inter-connectivity (but with military control and oversight) rather than difference, building primarily upon existing late-Iron Age landscape dichotomies of upland versus lowland.

## 7.3 – The Roman Frontier and its Impact

*7.3a – How did the Romans perceive the frontier region?*

A common modern misconception of the Roman frontier is as a unilaterally-designed, single-phase border-zone designed for/by Emperor Hadrian and enacted by the army. However, evidence shows the wider frontier-zone forming this northernmost periphery of the Roman Empire is much more variable, both spatially and over time. Indeed, ideas of a single linear boundary were not conceived until c.50 years after Rome's arrival in the region, while the auxiliary-forts situated directly upon that borderline were not added until after the Wall was already partially-constructed. Furthermore, the frontier under study was active in the Trajanic-Hadrianic period but then at least partially abandoned during the Antonine northwards-expansion, prior to reoccupation from the second-fourth centuries. This shows Roman perspectives of the frontier as something changeable rather than being fixed (contrasting the modern perception of Hadrian's Wall as a feature emanating landscape-permanence). Evidence from both transects shows that the wider frontier-zone was largely established in relation to existing late-Iron Age landscapes: forts and settlements controlling

specific lowland nuclei for indigenous settlement, high-status activity, and agriculture, separated by topography but connected by road-systems and maritime links [see 7.2].

Outpost-forts and their associated settlements thus existed within local-scale landscapes, observing the region beyond the limits of official control and also facilitating interaction with indigenous peoples to access resources in Redesdale (and its surrounding uplands) and Eskdale and Annandale's lowland-upland landscape interfaces. Forts in the borderland and hinterlands were also sited with specific tactical considerations (guarding roads and river-crossings; providing surveillance of key valleys), whilst also overseeing areas of arable farming or stock-droving. Sites at Whitley Castle, Brough and Bowes had specific control over lead-production (an imperial-controlled, military-organised initiative). Consequently, new Roman sites operated with specific roles in localised landscapes, rather than as part of a concerted single-purpose frontier-strategy.

Upon the construction of the Hadrianic boundary (with concentrated auxiliary-garrisons, movement-control and monumental structures to impress or subdue locals), the networks of road and riverine forts then became part of a wider strategy, with troops stationed at key locations to police the broader frontier, ready for concentration in case of emergency. It has long-been known that Hadrian's Wall was designed not for static-defence but rather to deter everyday transgressions. It formed a defensible east-west link (as with the Stainmore Pass further south) allowing Roman units to muster for open battle where needed. The finalised distribution of forts across the frontier thus performed a two-fold role: controlling their own individual landscapes as well as the wider periphery as a whole.

Within this enormous frontier-zone extending north and south of the actual borderland, other hinterlands come into play. Alongside the areas of influence around each fort and/or settlement itself, there is the major hinterland around York (constructed on the River Ouse for long-distance supply and communication but also dominating the entire lowland Vale of York and surrounding uplands). This represents the *Brigantes*' heartland (centred on the nearby Roman-period *civitas* at Aldborough and the earlier *oppidum* at Stanwick), and also close to the smaller *Parisi* cultural-group hypothesised as occupying the eastwards Yorkshire Wolds. Carlisle operates a similar sub-regional influence over the Solway and Eden lowlands (*Carvetii* central-territory?) while Corbridge is hypothesised either as capital for a third group (*Lopocares*?) or as controlling an existing societal interface (as with Redesdale further north) between the *Brigantes* and their northward neighbours. As discussed throughout the thesis, linking archaeologically-visible groups to Roman literature-attested terms needs caution however.

For the newly-arrived Roman soldier or *vicus*-trader, their conception of their surrounding landscape would vary dependent on their origins and previous life: for the first-third century AD legionary originating from somewhere in the Mediterranean (those areas influenced by Greek or contemporary 'Classical' societies) or North Africa (many arriving under Emperor Severus), the damp, largely upland, northern British environmental landscape and its generally small, roundhouse-dominated settlements of subsistence-based mixed-agriculturalists would have been unfamiliar. The presence of a Roman fort and imperial settlement architecture, defences and organised layout might therefore have been reassurances in an alien landscape. This may be another reason behind the greater transformation into Roman-familiar settings in Yorkshire and Teesdale, where legionaries were permanently-stationed throughout the period (York, Piercebridge, Corbridge).

For the varied auxiliaries (and their attendees) from much of the wider reaches of the empire, this effect would have been similar, if not more intense. However, troops from Germania and northern Gaul likely had more familiarity with the type of natural and resultant late-Iron Age cultural landscapes they encountered (if not the specifics of architecture, material-culture and language, etc). Through the course of the Roman period, as troops became more integrated with local populations via longstanding interaction (whether trade/exchange, personal relations, or just

greater experience in these landscapes), and particularly as local recruitment became the norm, these landscapes would have become home, with the military-civilian fort-settlement the core of its own hinterland and wider landscape.

Overall, therefore, the western transect shows Roman control of natural routeways in the landscape, alongside dominating of arable and pastoral areas to maintain and utilise productivity of the predominantly-upland region. The same is true of much of the eastern transect, although with more-obvious changes visible from aerial survey and ground-based investigations in the lowlands, likely due to York, Aldborough and their hinterlands, as well as aforementioned indigenous-led dynamics. Even here however, landscape-change beyond the settlements themselves is generally small-scale and not immediate upon Roman occupation: a gradual progression from Iron Age landscapes rather than rapid new departure.

*7.3b – How did the frontier impact the existing landscape, natural and cultural? Did this change over time?*

As discussed, many of the Roman frontier-region's landscapes continued ongoing indigenous developments from the late-Iron Age, particularly in terms of rural settlement distribution and wider agricultural practices. These formed the foundations for the road-network and associated forts and *vici* which dominate newly-imposed Roman settlement-types regionally. Rome's designation of northern Britain as a 'military zone' rather than a conventional province is often argued by scholars based upon less evidence for the social, cultural, and economic changes found on the Continent and in southern England: it is not Roman impact on existing landscapes here, but rather lack of parity with other Roman occupations that has therefore dominated academic discourse.

One major impact of the frontier's establishment is the new intra-regional movement and connectivity afforded by major infrastructural development, resulting in larger 'landscapes' being perceivable than previously. New aforementioned roads connect lowlands across the frontier-zone: south of the border, along the borderline itself (the Stanegate and Military Way) and north of the boundary. Initially military in purpose, these roads' maintenance to support permanent garrisons offered long-term use for other people, presumably connecting with existing local routeways. New, direct and highly-engineered connections across uplands were established, bypassing longstanding slower, topographically-defined routeways (these include east-west routes such as Penrith-Alston via Haresceugh, the Tyne Gap and Stainmore, and Ladyward-Dere Street; and also those running north-south across the Orton and Bowland Fells). As shown for Roman-period landscapes elsewhere in the empire [2.2a], roads also form monuments to Roman imperialism and familiar symbolic features for newly-arrived 'Romans' (whatever their origin), as omnipresent as the forts and towns they connected, and part of the process of measuring new Roman territories and making maps, with implications for social changes brought-about under Rome. Pre-Roman maritime links did exist regionally (with settlements along the Cumbrian and Northumberland coastal plains: Catcote, Kirkleatham, Warton Crag) connecting to rivers including the Tees (and thence sites such as Stanwick and Thorpe Thewles) but these were heavily-augmented under Rome by port-bases at Walton-le-Dale, Lancaster, Carlisle, South Shields, the Tees (hypothesised), and York itself. Rivers offered inland access to northern Britain for Rome, with associated infrastructure (sites at Netherby, Aldborough, Catterick, Piercebridge, Corbridge) assisting in providing this greater water-borne communication. Finally, visual communications systems such as the tower networks around Bewcastle (potentially extending to Netherby), Hadrian's Wall (turrets), and across Stainmore and the Orton Fells (though interestingly with little evidence in the eastern transect) show further landscape connections introduced by Rome.

What remains unclear are the levels of connectivity between native trackways/droveways, existing indigenous use of waterways, and these new road and improved water-borne connections offering longer-distance networks. In upland areas (e.g. upper Eskdale, Redesdale), the Romans likely utilised indigenous patterns of regional stock-droving for military supply, though how native droving routes connected with the Roman road and fort network remains unclear. However, whether Roman roads were used for locals' everyday activities remains uncertain. Conversely, the Roman military sites and structures crucial to the frontier's function interrupted and controlled previously-free movement, with Hadrian's Wall being the most-obvious example. The barrier hindered open travel across the Solway and Tyne lowlands; while movement and exchange were now controlled through the provided milecastles, Stanwix road-crossing and Dere Street's Portgate. The border even controlled water-borne movement along the Rivers Eden and North Tyne via the Wall-bridges, while the Wall near Burgh-by-Sands controlled the Sand and Peat Wath Solway-crossings and the heavily-policed Tyne was controlled east of Wallsend. Movement north and south of the borderline was further constricted by the positioning of forts (and camps) at river-crossings and narrow-points in lowland terrestrial connections (e.g. Netherby, Birrens, Carlisle, Brougham, Burrow, and Ribchester in the west; High Rochester, Risingham, Chesters, Corbridge, Ebchester, Binchester, Piercebridge, Catterick and Roecliffe in the east).

In terms of wider economic impact, despite ongoing Roman military supply from elsewhere in Britain and the wider empire, the siting of forts to control arable land and stock-movement implies that local production formed a key activity in the frontier-landscape (accessing existing native agriculture in Eskdale, Lunedale and Redesdale, and with more-substantial landscape changes in the Tyne-Tees and Yorkshire lowlands). The presence of Roman pottery at indigenous rural enclosed settlements across Transect 2 and much of Transect 1 indicate contact, likely from exchange. Military *territoria* (areas of direct control) remain difficult to define regionally, though York and Carlisle are clearly situated in large, agriculturally-productive lowlands, and the adaptation of sites along Dere Street (e.g. Dalton Parlours), lower Teesdale (Holme House, Dalton-on-Tees, Ingleby Barwick, Faverdale, Sedgefield) and south of Carlisle (Wreay Hall, Park House, Petterilgreen, Petterilbank) indicate more-substantial changes (seemingly indigenous-led) which utilised new Roman site-types and forms of landscape-organisation, potentially enabling surplus-production for military and urban markets. Distribution of goods and products across the area connected many sites economically: not only agricultural produce but specialist-produced items such as tiles from Scalesceugh near Carlisle and found in Corbridge [6.3b], implying links between the transects in either (or both) manpower or supply.

Military sites did however take some existing agricultural land out of use: for instance, the forts and settlements located in valley-settings (e.g. plough-marks and indigenous settlements beneath Roman Carlisle and Corbridge), and evidence for field-systems put out of use by the Hadrian's Wall borderland in the west (Stanwix, White Moss). However, the border-zone was narrower in the eastern transect and has settlement-enclosures clustered close to either side, while the excavated Windsor Way site just north of Hadrian's Wall (Carlisle) was occupied beyond the boundary's construction, showing local variations in the Wall's effect. Excavations in south-eastern, lowland Northumberland (located east of Transect 2) do however show that a large area north of Hadrian's Wall seems to have seen major landscape-changes, including settlement abandonment, following (but not immediately) the establishment of the boundary (Hodgson *et al.* 2012), perhaps showing a severing of previously-connected lowland indigenous landscapes. This is something that further excavation work around the Solway's indigenous settlements could shed light on for the equivalent, western part of the frontier.

Forts and associated *vici* (containing thousands of troops and affiliated civilians) created new markets for both agricultural produce and varied material-culture, providing opportunities for

entrepreneurs both local and newly-arrived. Many of these settlements remained open and accessible even north of the Wall (e.g. High Rochester, Netherby), growing quite extensive in places (Haltonchesters, Chesters, Castlesteads, Brougham, Catterick, Binchester): a substantial impact on local resources [7.2a] such as timber, turf and stone for construction, clay for ceramic-production, iron- and lead-working, and farming. Local settlements undoubtedly supplied some (if not most) of the produce used by frontier-hinterland garrisons, potentially hinted at by Lunedale's unusual hierarchy of sites (including Howerigg's larger roadside settlement) near the forts at Burrow and Low Borrowbridge, and further suggested by the closely-spaced forts dominating the Eden valley's agricultural core and the large fort/settlement sites along Dere Street in the eastern farming lowlands. This is further supported by the previously-discussed new settlement-forms [7.1/7.2]. Even beyond the border, Netherby's location and Castle O'er's morphology imply control of upland stock-droving, while large granaries at Birrens potentially indicate local arable-surplus collection, extending Roman socio-economic impact into these outer-periphery landscapes. Finally, the potential effects of intensified agriculture (e.g. Howgill Fells) and industrial activity and extraction across the transects indicate impact on the natural environmental [7.2a].

Regarding socio-cultural effects of the frontier's establishment, the garrisoning of thousands of troops of differing identities and origins [7.1] must have had a tremendous impact regionally, differing locally by garrison and varying over time. Locals were exposed to new Roman-imperial culture, politics, economics and belief-systems (as well as variations on these, dependent on specific ethnicities of troops, associated civilians and traders). Imported ceramics, glassware, metalwork, and foodstuffs further imply socio-cultural changes, with Roman material-culture reaching native farmsteads across the region, although relatively-small proportions at many may indicate only a limited adoption: an interesting implication for native perceptions and identity (potentially showing active resistance, or apathy?). Furthermore, the new sites in the landscape represented novel organisational layouts, construction-techniques and materials, many on an unprecedented monumental scale locally (e.g. York, early Ribchester, Carlisle, Corbridge and Birrens): a symbolic as well as physical impact. Despite this, indigenous building-forms and site-layouts continue at most rural settlements (excepting the new developments in lowland Teesside/Yorkshire and the Petteril valley). Therefore, although Roman forts, towns and smaller or temporary installations impacted social and cultural landscapes, changing perceptions in a region seemingly previously-divided into small geographically-defined groupings (with only Stanwick and associated sites attesting wider connections), most landscape-evidence available from aerial and field surveys does not currently show this.

The most archaeologically-obvious impact of the Roman frontier is of course the establishment of the monumental linear boundary of Hadrian's Wall itself, building upon the earlier Stanegate fort/road-network: a clear statement of Roman imperial power (for both Roman citizens in the northern province(s) and the native population). This landscape was one of surveillance (milecastles guarding routeways and turrets overseeing wider landscape activities), a complete change from any previous land-use. The border was anchored-upon Carlisle and Corbridge, connecting their two similar lowland environments in a measured, observable way. When one thinks of the Roman northern frontier, this is the landscape that first comes to mind: military power controlling a rugged, naturally 'frontier-like' landscape. It thus stands out within the wider frontier-zone as one of the largest landscape-impacts of Rome regionally (although the founding of York, Aldborough, Corbridge and Carlisle, and the imposition of the road-network were equally-dramatic). While the borderland removed only small areas of existing land-use (above), its impact on local perception was designed to be enormous. Conceptions of the border will have been divisive: for those hostile towards, or uninterested in, Rome, it divided previously-accessible landscapes; for newly-arrived Roman soldiers, civilians, and pro-Roman natives it provided a unifying impression of

security (potentially cementing an existing north-south socio-cultural boundary running between Tyne and Solway or lowland and upland): a safe-zone for elite-driven adoption of Roman landscape-changes centred on Aldborough (and York) in the eastern transect and the Eden valley further west. This latter suggestion may be why wealthy, extensive lowland settlements and agricultural landscapes in Northumberland were abandoned or changed following the establishment of Hadrian's Wall.

*7.3c – Is there a clear difference to either side of Hadrian's Wall, or alternatively between east and west of the Pennines?*

An important reason for this project's large-scale aerial survey-focussed approach is to address wider regional differences in landscapes across the entire frontier-zone, particularly those variations to either side of the Roman borderline and east/west of the region's upland-spine (formed by the Pennines and Border Moors). It might be expected, given previous discussion of existing indigenous groups located around distinct lowland heartlands, that the topographically-variable region (with resulting differential potential for agriculture and settlement) gave rise to numerous different identities and divergent landscape-perceptions prior to Rome's arrival.

Indeed, local topography, climate, soils, and geology appear to be the greatest variables influencing human activity across the region. Palaeo-environmental data suggests a region-wide later-prehistoric woodland clearance, generally peaking prior to the Roman occupation. West of the Pennines, native settlement comprised individual farmsteads (within coaxial field-systems where boundaries are preserved), often located at the interfaces between pasture and arable (such as those between valley floors and higher slopes or low hills and floodplains) throughout the Ribble, Lune, Eden, Esk and Annan valleys and across the broader Solway Firth and Lancashire coastal-plain lowlands. These survive as stone structures or earthworks in less-improved, upland pasture and as cropmarks beneath modern arable. On top of these indigenous landscapes is laid the Roman road network, connecting these lowlands via passes or lower hill-ranges between higher uplands, and supporting a network of forts and their extramural settlements [7.3b]. Lunedale and the Orton Fells have sufficient landscape-preservation to suggest greater hierarchies of native sites not identified elsewhere, something with potential implications for the entire transect.

A similar natural environment and resultant Iron Age/Roman settlement types and land-use patterns is found in northern parts of Transect 2 (along the Rede, North/South Tyne and Wear valleys, where surrounding uplands have similar 'bounding' effects). Better earthwork and stonework preservation in Redesdale permits greater site-identification, allowing discussion around apparent clustering of farmsteads (attested elsewhere in Northumberland) and unusual settlement morphology (such as Birdhope's 'village'-like arrangement). General patterns of enclosed farmsteads continue further south in County Durham and into Yorkshire (though preserved as cropmarks rather than earthworks), with broader field-pattern details identified in areas of better cropmark formation (e.g. the south-western Vale of York) and also new site-types identified from both the late-Iron Age and Roman-period via large-area geophysical survey and excavations.

Both transects contain larger, higher-status or different-function mid-late Iron Age sites (with varying levels of continuity under Rome). In the north, Burnswark Hill is roughly paralleled by Yeavering Bell, with smaller multi-vallate sites such as Castle O'er (Eskdale) and Cargo Hill (Eden valley) in the west matching Warden Hill (overlooking the Tyne confluence) and Shackleton Beacon (Weardale) east of the Pennines. The Cheviots have an unparalleled clustering of hillforts, though hillforts do extend westward into upland Scotland. Heading southward, Ingleborough's major hillfort has some comparable sites in the east (albeit on smaller scales, e.g. those on the edge of the North

York Moors such as Eston Nab). Later-Iron Age centres include Clifton Dykes (in the upper Eden valley) and Stanwick (at the Teesdale-Vale of Mowbray interface): both are very substantial in size and perimeter, have unusual site-morphology (incomplete perimeters enclosures huge areas with inner areas of activity), and dominate their lowland surroundings. The latter is interpreted as an *oppidum*-type site with important early-Roman imports; the former is less well-understood but similar in earthwork-form, though on a smaller scale to Stanwick. These are also both close to earlier-prehistoric social and/or spiritual foci (the Eamont and Thornborough henge-complexes) and are located at either end of the Stainmore inter-Pennine routeway, showing a potential longevity to the importance of these locations in the landscape.

As expected from the fact that the transects follow major Roman south-north roads, the communications-networks either side of the Pennines appear similar: Dere Street running from Tadcaster (later York) northwards through several accessible lowland-corridors to Corbridge, then along Redesdale into southern Scotland; and the roughly-parallel route from Ribchester (ultimately originating in Chester) north along the Lune and Eden valleys to Carlisle and thence climbing into Eskdale and Annandale. Branch-routes connect these two by east-west roads across the Pennines (following the Stainmore Pass and Tyne Gap) or alternatively provide access to the coastal plains and other important hinterland-sites. Even the nature of coastal and river transport is similar between the two transects: the Ouse serving York before continuing north-westward to Dere Street's road-forts, paralleled by the Ribble accessing Walton-le-Dale and Ribchester; the Tees and Tyne similar to the Lune and Eden/Esk in terms of accessibility further north. Overall Roman fort and settlement distributions, utilising this network, are thus also similar throughout.

The Roman borderland's infrastructure is again similar for both transects. The western transect's part of Hadrian's Wall is now largely beneath modern urbanisation, understanding provided by a mixture of aerial/field surveys and excavation; the eastern transect crosses the Roman border in an area of modern mixed farmland allowing greater aerial, field and geophysical survey. Although the western part of the boundary began as a turf construction rather than stone-built curtain-wall, only excavated evidence and divergent courses between phases near Birdoswald reveal this. The Wall-forts in both transects (Haltonchesters, Chesters, Castlesteads and Stanwix) even had similar garrisons, layouts, and functions, all with extramural *vici*. Levels of modern urbanisation and the subsequent archaeological approaches used have resulted in different levels of knowledge for each site. The major fort/town sites of Carlisle and Corbridge dominate the borderland, the key sites east and west of the Pennines where the primary north-south roads cross the boundary. They have remarkably similar development-histories, landscape-settings, and roles (first-century military garrisons replaced by major urban centres but with ongoing specialised military activities), as well as limited evidence for a linked supply between the two (e.g. ceramic tiles from Scalesceugh, mentioned above [7.3b]). This confirms an overall similarity in Roman-period landscapes flanking the Pennines to east and west.

However, there are also differing Roman-period developments between the transects. In the east, the northernmost 'villas' of the Roman Empire (Holme House, Dalton-on-Tees, Ingleby Barwick, Dalton Parlours) attest rural settlement-changes akin to those further south in England, resulting from greater opportunity for arable surplus production and also riverine and roadside connectivity facilitating an indigenous adoption of Roman material-culture and ideas. This is unparalleled in the west, as are the pre-occupation European imports at Stanwick and across Teesdale, and the mid/late-Roman roadside-settlements here (e.g. those in Catterick's environs, and Scotch Corner, Faverdale and Sedgefield), though this evidence may also be partially due to more-intensive modern development resulting in large-scale archaeological investigations. Similarly, the foundation of York's legionary fortress and *colonia* is unparalleled regionally (the more-southerly Chester is the nearest long-standing western example, with Lincoln to the south-east quickly being replaced by York in

terms of military focus). The eastern transect also has large non-military settlements at Aldborough (the Brigantian *civitas*) and Piercebridge (which only later gained a fort, following uncertain high-status legionary activity in the town's environs), which are not paralleled west of the Pennines. A Roman-period site-type unique to the western transect are the fortified rectangular farmsteads along the River Petteril south of Carlisle, their forms and construction suggestive of military-derived ideas (hence an initial interpretation as fortlets), thought to operate similar socio-economic functions as the eastern villas but in different morphology (representing possible new Roman-influenced reorganisation of Carlisle's hinterland).

Overall, however, the similarities in indigenous landscapes to east and west of the Pennines outweigh the differences, suggesting broadly-comparable sub-regional identity-groups at play throughout the project area (potentially a reason as to why the *Brigantes* ('hill people') remained less-definable by Roman authors and modern studies), with similar settlement and land-use patterns, high-status sites developing through the Iron Age, and intra-regional connectivity. This continues under Rome, though with some spatial differences in the nature of indigenous rural and urban developments, and notable development in the pre-existing lowland socio-cultural and/or political nuclei for activity, supported by wider interactions beyond the frontier-zone (via York, Aldborough and Carlisle).

Regarding variability to north and south of the Roman borderland within the broader frontier, clear similarities also exist between the landscapes behind and beyond Hadrian's Wall. The borderland's landscape is similar across its east-west length (above). Meanwhile, the northern outpost-forts beyond the perimeter and those guarding the hinterland to the south clearly fulfilled similar functions, dominating local agricultural and settlement landscapes and existing routeways, alongside providing surveillance and communication throughout the frontier-zone. Whilst High Rochester, Risingham, Netherby and Birrens all have impressive outer-defences, fort examples behind Hadrian's Wall also have this (e.g. Whitley Castle). The outpost-forts' extramural settlements appear generally undefended (annexes at Birrens and High Rochester only enclosing specific areas): again mirrored by the fort-settlement complexes both along and behind the Wall. High Rochester's cemetery also implies the garrison's relative comfortability in its surroundings, located well beyond the settlement and with substantial funerary monuments, as with those cemeteries within areas of definite Roman 'control'. This overall similarity to both north and south may be due to parallel forms of existing indigenous landscapes (valleys providing connectivity and also sheltered mixed-agriculture potential) in the uplands either side of Hadrian's Wall, only distinct from the broader lowlands further south (e.g. Solway-Eden, Tees and Ouse plains). Though the western transect does lack Roman material-culture on many of the excavated native sites north of Hadrian's Wall, some sites (e.g. Woodend Farm) do show both larger structural-investment (more substantial structures and perimeters) and Roman material objects, albeit in close proximity to the road-networks. Overall, therefore, there is a constant resonance in human-environment interactions and forms of landscape-perception and construction during this period, regardless of where one was within the wider frontier.

In summary, both transects show that topographic (and associated vegetational and climatic) diversity between lowlands and uplands were more important in defining indigenous and Roman-period landscape activities than the north-south division imposed by the artificial Roman boundary, earlier sub-regional divisions between native groups, or even the natural 'frontier' of the Pennines splitting the region east-west. Variation in late-Iron Age and Roman landscape forms therefore result from diverse environments informing human decision-making, as opposed to externally-imposed, and purely political or cultural notions.

# Chapter 8: The Project in Context and Wider Implications

The final project aspects needing discussion are the effectiveness of the methodology used to address the aforementioned theoretical-informed research questions [Chapter 7], posed using the questions laid out in the methodology [4.2a], and also the project's implications for future research. Aerial survey has traditionally been utilised for studying wider morphological patterning and site distributions, forming broader contextualisation for site-based work; the National Mapping Programme and its descendant projects thus have acted purely as baseline-surveys of archaeological landscapes for planners and researchers. The current thesis thus attempted to directly utilise such data, alongside other forms of archaeological evidence, to address more-theoretical questions.

## 8.1 – Methodological Implications from the Project

*8.1a – Can aerial survey alone provide enough data for this type of theory-based research study to be effective?*

As expected, the main issue with using aerial survey alone (as with all non-intrusive survey) is the difficulty in identifying specific dates for features and precise site-development sequences, other than by morphological analogy. The only areas in the transects with identifiable phasing had either exceptional earthwork preservation (e.g. the Lune valley and Redesdale) or cropmark-development (limited to the south-western part of the Yorkshire Henges NMP). Thus, the broad answer is no: excavated, field-walked or metal-detected evidence is needed to confirm occupation-dates, structural sequences, and material-culture (also aiding in answering questions around identity, inter-site interaction, specific activities and/or abandonment), while minimally-intrusive surveys (geophysical and analytical earthwork) can also provide more detailed site-based distributions and suggestions of development and activity-types. Nonetheless, when sufficient exemplar sites have been excavated (for instance, the extensive work in Northumberland by Jobey and Hodgson) this allows careful extrapolation of their findings to similar sites, identifying the small-scale changes from the surveyed data which can suggest parallels or differences in form, function and date. While subsequent interpretation thus remains theoretical until proven via invasive archaeology, it does allow for wider landscape discussion, on a scale impossible even for large-area excavations or fieldwork.

*8.1b – How well can the data be related to existing data from other archaeological and palaeo-environmental investigations, in order to answer the research questions?*

The thesis hopefully shows how aerial survey evidence can provide understanding for discussing of wider landscape patterns, distributions and site-types in the past, which can be utilised alongside other forms of archaeological data to add greater detail and address questions about past identities, activities and dynamics at both individual sites and on a larger-scale. Analytical field survey and geophysical survey also add further site-based detail, with subtler evidence invisible on aerial imagery due to scale from the former or surviving features below the ground surface for the latter. Artefactual and ecofactual assemblages are needed to answer questions around a site's date (via stratigraphic, radiocarbon or typological approaches), function, economy and wider landscape connections, as well as the potential life-choices of occupants (representing identity). Palynological, botanical and geoarchaeological surveys are required to address questions around the past

environment, its influence on human action, and their impact in return: interactions which, alongside perception and conception issues, form 'landscapes'. Answers to the hypotheses posed by this thesis [Chapter 7] hopefully prove that combining aerial survey with these other forms of archaeological data can provide meaningful contributions to existing studies, helping synthesise large volumes of evidence and draw out regional rather than just site-based narratives.

*8.1c – How significant is variability of archaeological survival across the different landscapes studied, and how does this impact the conclusions drawn?*

Archaeological survival has indeed been highly variable across both transects. Mapping Block 1 showed how a combination of geology, modern land-use and an overall lack of historic and recent aerial photography can greatly reduce the visibility of past landscapes in specific areas of northern England, consequently needing comparison with better-investigated neighbouring landscapes and other forms of evidence to assess the fragmented aerial survey record. When compared to the other new mapping for this project in Block 3, an area with far greater earthwork and structural survival, this shows how taphonomic processes and investigation-history greatly impact the effectiveness of aerial survey, adversely affecting any conclusions drawn. Throughout both transects, there is variability in preservation of earthwork and structural remains (from good in upper Eskdale, the Orton Fells, Lunedale and Redesdale down to sporadic and limited in both the Carlisle and Corbridge borderlands and the wider Eden and Yorkshire lowlands). There are also great differences in cropmark-formation (with fragmented patches along the lower Esk valley, and across County Durham and the Vales of Mowbray/York, and more-complete landscapes visible around the Solway Plain and Lower Wharfedale, west of York).

The question is thus not about cropmark versus earthwork survival but rather completeness of landscape-visibility beyond the usually more-substantial (generally settlement) evidence: a major finding of this study. This project shows how small areas of well-preserved archaeological landscape (as opposed to just isolated sites) can potentially skew wider, regional interpretations due to a reliance on them for contextualising larger, less well-preserved areas. Some of these 'blank areas' are thought crucial to understanding past landscapes regionally, e.g. the upper Eden valley and its late-Iron Age centrality, and need further large-scale survey. A further issue is the aerial-survey data itself. Most projects used here comprised born-digital mapping which allows easy interrogation in modern GIS software. However, two very large-area projects (the Yorkshire Dales and Vale of York NMPs) were either raster-only or partially-redigitised, hindering full inclusion due to a lack of attached data and interpretation.

These spatial issues are mirrored in variable assemblage preservation across the region, with Roman military and urban sites providing by far the most-substantial artefactual and ecofactual assemblages used to answer otherwise purely-theoretical questions around issues of identity, human-environment interaction (beyond broadscale palynology-derived studies), etc. Indigenous rural sites have been excavated across the region but relatively-shallow stratigraphy and associated taphonomic issues create only small assemblages of hard-wearing (i.e. non-organic) material-culture, creating a fundamental imbalance only recently partially-addressed by major development-projects (with environmental sampling, full-stratigraphic excavation and larger-area coverage, alongside rapid, substantial publishing which overcomes difficulties in grey-literature accessibility), generally in the eastern lowlands. Nevertheless, excavated parallels (located in Annandale and Eskdale for Block 1; and North Tynedale and wider Redesdale for Block 3) do add vital contextual information to the aerial-survey areas. Greater levels of detailed survey and excavation of rural settlements across both transects is therefore needed, with the potential to reveal changing economies and identities across

the Iron Age-Roman transition, as shown by excavations at Scotch Corner, Ingleby Barwick, Thorpe Thewles and Catcote, and in south-east Northumberland. This would provide greater parity with the long research-histories from Roman forts and *vici*. Upland mires in both transects form the basis for regional palaeo-environmental studies (being more widespread and thus frequently-sampled), with lowland examples generally rare: another area needing further research (if sufficient lowland waterlogged sites can be identified).

8.2 – Implications of the Current Study for Future Research

The project's main aim was to examine the northern frontier on a broader scale than is often attempted, moving beyond the Hadrian's Wall borderland to examine the frontier-zone's full depth, from the legionary headquarters at York to the permanently-garrisoned outpost-forts north beyond the Wall, alongside comparing differences in landscapes to either side of the Pennine uplands which divide the region. A need for such broader regional contextualisation is something noted in both the Hadrian's Wall and regional research-frameworks [Chapter 1, 3.3a, 4.1a]. In this regard, the project has been successful, identifying broad patterns from archaeological data and identifying gaps where further large-scale survey might benefit understanding: for instance, the Annan valley of southern Scotland, the Eden valley heartland of north-west England, the Tees valley; and updating of the Hadrian's Wall and Vale of York NMPs in the east with new imagery, particularly lidar, and mapping.

The thesis shows the importance of relating aerial and other wide-area survey techniques to more-detailed but area-limited fieldwork, particularly excavation, enabling the addressing of key regional Iron Age and Roman issues and questions. Many of the sites mapped in the surveys deserve further investigation to confirm any interpretations made (particularly indigenous settlements, where excavations haven't already taken place). Even landscapes with recent multi-disciplinary work (e.g. the Lune valley) have the potential for further excavation to draw out detailed variations between standard enclosed farmsteads and larger, different-morphology sites. As mentioned, modern palaeo-environmental collection (both excavated and via lowland pollen-coring) would further clarify localised environmental changes and human impacts on the landscape.

Finally, the use of aerial survey to research wider theoretical issues from the Iron Age and Roman period (particularly concepts of identity, landscape and frontier), all with resonance today [Chapter 1] due to modern discussions around human-imposed boundaries, interactions with the environment, and negotiation of identities in changing worlds has been attempted here, showing that aerial survey (in association with other archaeological evidence) can investigate such issues, rather than merely forming a backdrop or context to site-based research. That said, one difficulty encountered during the project has been in the use of identity theory to inform the first set of research-questions, given the wider-landscape nature of the dataset. Given that identities are reconstructed in relation to material surroundings, this project's theoretical framework primarily examined landscape and frontier first, with identity forming a third subsidiary theory component (integrated into the other two) to support rather than define the study, given its wide-area scope and nature. As a result of this, certain aspects of identity such as gender, dress and diet have not been covered extensively by this thesis [discussed in 2.1c/2.2a], despite their importance to wider debates around Iron Age and Roman-period identity. Integration of other forms of archaeological evidence would be needed to expand upon such issues, a potential avenue for future research.

Together, these various strengths and weaknesses all offer potential insights for future aerial-survey projects when attempting to answer theory-informed objectives, whether creating new

mapping or photography and/or re-evaluating the archived surveys undertaken by or on behalf of RCHME, English Heritage and Historic England or local Historic Environment Records. Crucial to such wider discussions in future will be finding novel ways to integrate aerial and field survey with other types of archaeological evidence.

# Chapter 9: Conclusions – Pushing the Boundaries of Iron Age / Roman Frontier Studies?

In summary, this thesis has utilised aerial survey to address a theoretical framework of questions around concepts of landscape, frontier and identity for the Iron Age-Roman transition in northern England (and parts of southern Scotland). It combines a range of previous archaeological research, published and unpublished, with both new and existing aerial-survey mapping from across the region, to show similarities and differences in form and function (and identities at play) within indigenous settlements across these periods and how the arrival of Roman material-culture and peoples impacted upon these. Various societal groupings are proposed from the survey and excavation evidence, though these are not necessarily directly relatable to terms (e.g. *Brigantes*) handed-down through Roman literature; they are seemingly geographically-defined rather than overtly-political units, based on centres of lowland agriculture and settlement controlling surrounding upland areas.

Unlike previous syntheses, this regional overview shows that 'Roman' developments were not necessarily dependent-on, or originated by, military actions. Some in fact pre-date the official regional occupation, though could still be a result of early interaction with Rome (notably in south-eastern parts of the later frontier-zone), forming nuclei for Roman forms of landscape-organisation and socio-economic, political, and military power. This provides a clear indication of the importance of local native identity and agency in determining the subsequent effects of Roman-period landscape-changes. Elsewhere, a combination of indigenous social dynamics and landscape exploitation, alongside natural environments conditioning human activities, resulted in continuation of long-held mixed-agricultural subsistence and small-scale settlement, overlain by a network of Roman roads, forts and towns which did have some influence on their immediate surroundings but did not reach all of the region. Differences between lowland and upland environments appear to have had greater effect on the variability of settlement form, activities and wider landscape perceptions and organisation than wider definitions such as the 'frontier-zone'.

Thus, the project's western sample-transect sees the operation of very similar landscapes of indigenous settlement and land-use throughout its length, regardless of whether north or south of the imposed Roman borderland (with Roman forts and settlements sited to exploit and control existing landscape-patterns rather than altering them substantially). This situation extends at least as far south as the nominated transect-end in the Ribble valley of Lancashire, which seemingly represents an interface with landscapes of differing Roman activity (possibly surrounding the major site of Chester). As a result, landscapes across this transect would have been familiar to the frontier-zone's inhabitants but also the people living north of the Roman Empire (and incomers from across north-western Europe) with only isolated, externally-imposed centres of Roman-type culture and activity. The main exception is the major site of Carlisle, a military-originated settlement growing into a local capital with resultant economic and ideological influence on land-use and settlement-types in its hinterland, further connected to the Roman world by maritime links.

The eastern transect maintains similar ongoing late-Iron Age landscapes throughout much of its length, including to either side of Hadrian's Wall in Northumberland and reaching south into County Durham. However, the greater lowland areas in the transect's southern half appear to have

facilitated indigenous landscape-changes beginning in the pre-Roman Iron Age and emanating from the Vale of Mowbray and Tees valley, developments which naturally led to Roman-type 'villas' and ladder-settlements alongside more-major towns (amid the omnipresent military installations). These changes do not originate with the founding of *Eboracum*'s legionary fortress and civilian city. However, they likely aided and assisted the mid/late-Roman domination of the landscape by that major site, as well as the major new towns at Aldborough, Catterick, Piercebridge and Corbridge (all further-connected to the wider Roman world by rivers and the North Sea).

The main landscape-variation therefore is that the 'inner frontier' (if the ongoing indigenous-type, military-stamped landscapes can be termed that) extends further south to the west of the Pennines, a result of native perceptions and actions as much as the nearer-proximity of York for the eastern transect than Chester here. Further work north of both transects could ascertain whether similar indigenous-Roman landscapes extended beyond the permanent outpost-forts into Scotland (particularly given the Antonine frontier which was not covered here, and the ongoing military campaigning throughout the period), and also south-westward into upland North Wales, the 'frontier' perhaps arcing in that direction given similarities in topography, environment, and presence of permanent Roman garrisons.

To conclude, the thesis achieves the three aims set out at its commencement. It has shown that remote-sensed survey data can be used alongside other forms of archaeological research and theoretical approaches to answer academic questions around broader-region discussions of Roman Britannia's northern frontier. It has also shown the variability in landscapes regionally and how this affects archaeological survival (as well as the impacts of previous research-biases on any knowledge gained), raising potential areas for future work. Finally, it has discussed themes of landscape, frontier and identity using this aerial-survey data to investigate the Iron Age and Roman periods across the region, an approach which hopefully transcends a common academic divide between scholars of ongoing later-prehistoric societies and those who study Roman military, socio-economic and cultural/political activities in the landscape.

# Appendix: Major Roman Sites in the Project – Archaeological Backgrounds and Histories of Study

This appendix contains greater detail on historiographies of archaeological investigation, site layouts and chronologies, and artefactual and ecofactual assemblages from major Roman sites throughout the project-area (both transects) which have seen large amounts of previous research and are well-known in the discipline. The detail is relevant to the site-summaries made in each discussion chapter [5/6], but the amount of information herein would disrupt the general landscape-focussed narrative. The descriptions below therefore do not represent comprehensive overviews of these sites (readers are directed to the bibliographic references for more information), but rather offer relevant information supporting the thesis' discussion around identity, landscape and frontier.

*It should be noted that full descriptions of Netherby (*Castra Exploratorum*) and High Rochester (*Bremenium*) have been left within their respective chapters due to their being discussed in the context of the new aerial-survey mapping blocks undertaken for this project.

## A - Sites in the Western Transect

### A1 – Bewcastle ('Fanum Cocidii')

Bewcastle in Cumbria, 9.6km north of Birdoswald (Figure 58-48) and connected by the Maiden Way Roman road (Jones and Woolliscroft 2001, 139), operates as an outpost-fort for control, surveillance and interaction with local peoples east of Block 1, controlling the uplands immediately north of Hadrian's Wall's western-central sector and particularly the Lyne valley (Sainsbury and Welfare 1990, 139). The only known garrison of Bewcastle is the 1000-strong infantry unit *cohors I Aeliana Dacorum* present in AD145 though other units likely-occupied the site at different times given its long history. Inscriptions indicate legionaries from *II Augusta* and *XX Valeria Victrix* present for construction-periods (Taylor and Biggins 2012, 83).

More is known of Bewcastle than of Netherby, given extensive excavations from 1930-1980 (Austen 1991) and recent surveys (Sainsbury and Welfare 1990; Taylor and Biggins 2012), with more of the fort plan unencumbered by later features (despite persisting in importance, via early Christian religious activity, a medieval church and castle and later farms). The most-unusual aspect of the 2.9ha fort is its irregular hexagonal plan (Taylor and Biggins 2012, 81), deviating from rectangular or square plans favoured by the imperial-period military (Figure 65), proposed explanations including additional ritual function (supported by its documented, epigraphically-supported name of *Fanum Cocidii* or 'Place of Cocidius', a local deity (Sainsbury and Welfare 1990, 143)), locally-important economic role (an enclosure for stock collection for army provisioning, as argued for Castle O'er) or topographic constraints (unusual, though not unheard of – see Whitley Castle (Figure 58-31)). Excavations revealed four phases of timber and then stone buildings; the usual buildings expected within a Roman fort but reoriented to fit within the irregular perimeter (Austen 1991; Jones and Woolliscroft 2001; Sainsbury and Welfare 1990, 141). Finds comprise the usual military assemblage of ceramics, radiate coins and East Yorkshire grey-wares indicating occupation until at least the early-fourth century (Austen 1991).

There is no evidence for a substantial external settlement, though a late Roman timber-framed building containing metal-working evidence was identified 1.5km north of the fort

(Woolliscroft *et al*. 1989). Dressed Roman masonry close to the road-crossing over Kirk Beck just south-east of the fort indicates external construction (Sainsbury and Welfare 1990, 143) and aerial imagery shows possible structures dotted around the site (Jones and Woolliscroft 2001, 139-140). This lack of formalised *vicus*, in comparison to other outposts, may suggest it was too remote for one to be required, was unsafe, or merely that it has not been preserved. Other than two undated hut-circles, there is no evidence for existing native settlement or earlier or contemporary field-systems within the wider environs of the fort (Taylor and Biggins 2012, 81,91).

An important aspect of Bewcastle for the current study is its connections back to Hadrian's Wall: not only the Maiden Way road extending from Birdoswald fort (Small 2008, 8), confirmed on Kiln Hill (Caruana 1988, 55), but also a direct visual line of communication afforded by watchtowers on Gillalees Beacon (Richmond 1933, 241-243) and Barron's Pike (Figure 66) (Topping 1987; Woolliscroft 1990). Richmond (1933, 244-245) suggests Bewcastle and the towers were designed to increase surveillance on part of the frontier where rapid withdrawal from the line of Hadrian's Wall was hindered by the Irthing Gorge to its immediate rear. Surveys identified no trace of the Maiden Way beyond the outpost (Taylor and Biggins 2012, 91), unlike roads at Netherby and Birrens further west, which extend further north. No parallel for the towers connecting the outpost to Hadrian's Wall has been discovered for Netherby (though the modern landscape of Blocks 1 and 2 is very different); a watch-post has previously been proposed at Harker Grange north of Carlisle (Wilson 1999, 18-19), based upon topographic location. Furthermore, Woolliscroft (1988, 27) suggests that visibility from Barron's Pike reaches to within 1km of Netherby, so a single further inter-visible tower would suffice to connect the outposts for signalling.

*A2 – Birrens ('Blatobulgium')*

The other major outpost-fort north of the western-half of Hadrian's Wall is Birrens (Figure 58-53; Figure 67), 14.5km north-west of Netherby and 5km south from Burnswark Hill (Figure 58-54). Its long history of study (Roy 1793; Christison 1896; Robertson 1975) reveals a multi-phased turf/timber then stone fort located by the Mein Water in eastern Annandale, controlling the main Roman road into western Scotland and the interface between upland Annandale and the Solway lowlands (similar to Netherby's location in Eskdale). The name *Blatobulgium* from the Antonine Itineraries translates as 'flour sack' (Robertson 1975, 4), mistranslated to *Stodoion Sinetriadum* (Greek for 'warehouse') in the Ravenna Cosmography (Frere 2001, 287-288). These names, combined with above-average grain capacity in its granaries (four rather than two), could indicate need for protected food supply (indicating lack of secure local sources, further supported by defended annexe, internal water supply and bathhouse). Alternatively, Birrens could have fulfilled a similar socio-economic function for the arable lowlands of Annandale to Castle O'er in pastoral Eskdale, especially given Birrens' proximity to Burnswark Hill. Despite early importance on the route north (Agricolan-dated finds) and as an outpost, with two stone phases (the latter extremely well-constructed, with multiple ditches – a potential military/political statement) (Christison 1896, 110-120,163; Robertson 1975, 280-281), assemblages suggests Birrens went out of use somewhat earlier than other outpost-forts, precise destruction indicating deliberate abandonment in the later second century (Keppie 1994, 35-36; Jones and Woolliscroft 2001, 142).

A large group of sculptural fragments in local sandstone (Hunter and Scott 2002, 80; Keppie 1994, 35), include the goddess Brigantia (Christison 1896, 82), long-debated as evidence for either *Brigantes* territory reaching this far north, or that the garrison or associated civilians hailed from

further south in the region (Christison 1896, 164-166; Robertson 1975, 284). Other deities attested include Classical gods (Mercury (Christison 1896, 82) and Victory (Hunter and Scott 2002, 83-84)). Epigraphy names second-century garrisons *cohors I Nervana Germanorum* then *cohors II Tungrorum*, both mixed infantry/cavalry auxiliary units, hailing from Germania and northern Gaul (the former later stationed at Netherby), and also legionaries from York (Christison 1896, 161-162): a similar range to Netherby for potential statuses, ethnicities and organisational identities at play. Large finds assemblages include military-supplied pottery from Britain and the Continent, imported amphorae and mortaria, glass tableware, metalwork (construction, military and domestic) and first/second-century coinage (Christison 1896, 179-199). Environmental evidence indicates use of various trees (oak, alder, hazel, ash, beech, birch, elm and willow) throughout each phase (supported by pollen diagrams from nearby Burnfoothill Moss (Dark 1999; Dark 2000b)), utilising presumably-local (and persistent) sources (Robertson 1975, 105-107), while building stone and turf for construction is also locally-sourced (*ibid.*, 254-256). Ecofacts indicate close proximity of wetlands and alder woodlands (plants utilised either as fodder or fuel), alongside limited arable (emmer wheat and barley) (*ibid.*, 259-269). Faunal remains attest a smallish breed of oxen, pig, sheep/goat, ponies and red, roe and fallow deer (*ibid.*, 107-108), probably locally-sourced (either trade, farming or hunting), or shipped up the Annan. Combining this evidence, Birrens therefore offers a better-investigated parallel for Netherby (at least for early phases), serving in a similar frontier capacity and with direct evidence for local landscape interaction.

*A3 – Carlisle ('Luguvalium')*

Carlisle is the main Roman settlement dominating north-western England, located at the junction of several major topographic routes and subsequent Roman roads, including maritime connections via the Solway Firth, and controlling the northward crossing of the River Eden. The site was named *Luguvalium* – attested by documentary and cartographic sources, the name potentially associated with the pan-Celtic deity 'Lug' (McCarthy 2002, 50) or alternatively the 'town of Luguvalos' – possibly a pro-Roman, local chieftain at the time of the Roman arrival (Ross 2012, 64-65), located on high ground immediately south of the Eden's flood-plain between the Caldew and Petteril. It is unknown whether Carlisle, presently 8km upstream from the tidal limits of the Solway, was reachable by maritime vessels – though as with Netherby [5.2a], it is likely that shallow-draught vessels could reach a port here (McCarthy 2002, 70). From the air, the only vestige of the Roman settlement is the location of the medieval castle (Figure 73), atop the defensible northern end of the promontory formerly occupied by the Roman auxiliary fort (Jones and Woolliscroft 2001, 60-62), and the street layout and defences of the medieval city immediately south-east, thought to roughly correlate to the core of the Roman extra-mural military settlement and later town.

Dating from excavations has put earliest phases of Roman Carlisle at c.AD72-73 (McCarthy 2002, 71). The site's history is well-covered in several publications (McCarthy 1984; McCarthy 2002; Zant 2009) so will only be discussed briefly here. A first-century auxiliary-cavalry fort of turf/timber (Ferguson 1893a; Hogg 1964; Zant 2009, xv) with a major military annexe containing industry and stabling (McCarthy 1991b) developed into a military-focussed depot-type installation (later rebuilt in stone) upon construction of the Wall-fort at Stanwix 1km north. Meanwhile, initial extra-mural settlement, including a substantial 'official-function' enclosure (McCarthy *et al*. 1982, 81-82) developed into the largest Roman town north-west of York, with probable forum, courtyard building interpreted as *mansio* (Caruana and Morgan 1996) and *praetorium* linked to a *centurio regionarius*

(an unusual military officer-role holding civilian oversight, attested in writing-tablets) (Zant 2009, 9) These show Carlisle's importance in Roman governance, communications and economics. Temples (McCarthy *et al*. 1982, 81-82), shrines (Hogg 1964, 22,60), public baths, aqueduct, and high-status housing attest social status, *Luguvalium* usually interpreted as capital for the *civitas Carvetiorum* from epigraphic sources [5.1/5.4], occupied until the fifth century (Hodgson 2009b, 20,29-31; Jones 2009, 126; McCarthy 1984; McCarthy 2002, 69). Excavations reveal zoning into domestic/housing areas, administrative complexes, and industry; changing with each redevelopment phase (McCarthy 2002, 75-81), and with substantial landscape engineering – an inactive meander of the Eden filled with clay terracing to permit Roman building in the second-third centuries AD (McCarthy 2002, 32). The town is of a scale comparable to others further south, outside the frontier zone: very different to usual military settlements attached to forts regionally.

Units attested at Carlisle include detachments from *Legios VI Victrix*, *IX Hispana, II Augusta* and *XX Valeria Victrix* (Hodgson 2009b, 31) and the permanent, first/second century auxiliary-cavalry garrison *ala Gallorum Sebosiana* (Jones 2009, 126), recorded in writing tablets (Jones and Woolliscroft 2001, 62; Speidel 2007). Numerous inscriptions and sculptures have been found, altars giving insights into individual and group identities (Ferguson 1886a, 317; Tomlin and Annis 1989). One dedicated by Tribune Marcus Aurelius Syrio of *Legio XX* (Figure 79) reveals his military unit, rank and position in local hierarchy, Danubian place of origin and 'pseudo-tribal' affiliation. Inscriptions, writing-tablets (recording daily life, supply and individuals (Tomlin 1998, 31-45), Figure 80), lead baggage-seals, stamped roof-tiles and pottery strongly-associated with specific units (e.g. African-style 'Ebor ware' linked to Severan-period legionaries from York) (Zant 2009, 435,442) indicate a cosmopolitan mix of potential origins for people in Carlisle, including Italy, France, Spain, the Rhineland, Low Countries, Croatia, Romania, Greece and North Africa (McCarthy 2002, 107,109).

Finds from the many excavations include vast ranges of personal, domestic, commercial, religious and prestige objects. Good waterlogging facilitates organic preservation, particularly leather-work, alongside the usual ceramics, metalwork, glass and bone (Hogg 1964, 27-29; McCarthy *et al*. 1982, 83-89). These assemblages, together with the range of timber and stone buildings, show all aspects of society amongst garrison and town, with men, women and children of all ages: soldiers, officials, families, merchants, traders, craftspeople, camp followers and slaves (McCarthy 2002, 75-81). Religious beliefs are attested via altars, dedications and personal objects: central Roman deities (Jupiter, Mars, Minerva, Mercury, Hercules, Diana, and Bacchus), military-associated eastern cults (Sol and Mithras), and local deities (local *genii*, the 'three mothers' and Belatucadros) (*ibid.*, 90).

Environmental assemblages offer detail on Roman consumption, with imported foodstuffs, herbs and medicinal plants linking Carlisle to wider Roman tastes (fig, grape, olive, coriander, cumin, dill, lentil, opium poppy) alongside exploitation of local natural resources (wild celery, plum/sloe, elderberry, blackberry, bilberry, pear, apple, walnut, and hazelnut). The local landscape also provided fuel, bedding, stabling and thatching (peat, heather and straw), construction timber (oak for major construction but alder the dominant wood locally) and stone, alongside arable production (spelt wheat, rye, barley and oats) (Hall and Huntley 2007, 63-78; Huntley 1989a; Huntley 1989b; Huntley 1989c; Huntley 1989d; Huntley 1989e; McCarthy 1991b, 59-60; McCarthy 2002, 125; Zant 2009, 43-45). Faunal remains include expected domesticates of cattle (generally mature, indicating consumption after working life, and 'Celtic shorthorn' rather than imported stock – the former suggesting lower-status consumers and both indicating supply by local farmers rather than the wider military), sheep/goat and pig. There is the usual dominance of beef (including specific animal-part

selection, hook-holes implying smoking) found at northern military and civilian sites (though with sheep more prominent in the early annexe and young pigs preferred in some military contexts, perhaps associated with cultural identity or status) (McCarthy 2002, 125-130; Stallibrass 1991a; Stallibrass 1991b; Stallibrass 1993a; Stallibrass 1993b). Other species identified include dog and horse (expected, given cavalry garrison), domestic fowl, red and roe deer, geese, duck, pigeon, and black grouse (local landscape exploitation via hunting) (Allison 1991, 2-3; McCarthy 1991b, 85; Stallibrass 2018, 45). Overall lack of fish bones is surprising given proximity of riverine environments and the Solway, though this appears paralleled on other Roman military sites in northern Britain (Stallibrass 1993b, 48).

Cemeteries have been found at multiple sites around Carlisle, to north-east, east, south-east and south (Esmonde Cleary 1997, 415; Ferguson 1886a, 318-320; Ferguson 1893b), a mix of different practices (cremation, burial in wood/lead coffins and stone cists) suggesting a wide-ranging slice of the urban population over a long period of time. Sepulchral monuments included columns and the tombstones to men, women and children, some from a local second-third century workshop of sculptors (identified by carving style, depiction of the deceased standing in niches and repeated motifs of grapes/poppies, birds, lions and pine cones) (Hill and Miket 1974; McCarthy 1984, 72; Phillips 1976). These have clear connections to central-Roman funerary identity, while clothing shows regional or local cultural influences.  Alongside formal interments, infant burial within buildings and a potential murder-victim from a well (The Lanes) reveal other aspects of the Roman town (McCarthy 2002, 92).

*A4 – Ribchester ('Bremetenacum')*

Ribchester (*Bremetenacum* in Roman documents and cartography, supported by third-century inscription) (Buxton and Howard-Davis 2000, 8), located at the southern-terminus of the western transect, is the most heavily-excavated (c.110 investigations over 200 years (Philpott 2006, 62)) and thus, best-understood auxiliary fort in this region (Buxton and Howard-Davis 2000, xv; Edwards 2000, 68-72). The 2.2ha fort (now partially-eroded by the river, Figure 113) guarded the Ribble crossing and cross-roads on the Chester-Carlisle, York-Kirkham routes from the early-AD 70s. Ribchester fort went through various timber and then stone phases. North of the fort was a large extra-mural settlement (including well-built stone houses and the bathhouse) and defended annexe (Olivier 1982) containing leather- and metal-working (interpreted as a military *fabrica* supplying local garrisons), and stabling (Buxton and Hodgkinson 1993, 39-45; Buxton and Howard-Davis 2000, xv,3; Hawes and Saunders 2011, 134-137). Preserved first and second century timbers show local Iron Age (rather than Roman military) wood-working techniques, though the structures themselves are of Roman-type (Buxton and Hodgkinson 1993, 43). The settlement declined (or shifted focus) in the later third century, dated by ceramics and coins, though the fort remained occupied until the fourth century (Buxton and Howard-Davis 2000, 136-137; Edwards and Webster 1987, 10-11).

Known auxiliary garrisons from inscriptions and the Vindolanda Tablets were *ala II Asturum* (initially from northern Spain) and *ala I* (later *numerus equitum*) *Sarmatarum* (modern Hungary north of the Danube) – both cavalry, supported by ecofactual and structural evidence for stabling, leatherwork/metalwork horse-related objects (including the famous parade-helmet), numerous horse skeletons, and a cavalry tombstone. Detachments from *Legios VI* and *XX* were present for specific periods, possibly rebuilding. *Bremetenacum* later had the suffix *Veteranorum* added, implying the town's role as a military-veteran settlement, with inscriptions from veterans and

recording of a legionary centurion (Natalis) with an unusual rank of *praepositus numeri et regionis* indicating a local administrative role beyond ordinary garrison-commander (Buxton and Howard-Davis 2000, xv,8,48; Edwards 2000, 52,73; Olivier 1987, 123; Hawes and Saunders 2011, 134).

After initial high-status activity (fine glassware, decorated Samian, imported pottery and leatherwork) thought part of attempts to impress the local population, variations in food-quality across the first century are visible in ecofactual assemblages, suggesting fluctuating interaction with local landscapes (and society). Nonetheless, the fort became a major cavalry supply depot, with environs dominated by grazing, evidence from both fort and settlement suggesting close interaction with the indigenous population by the second century (Buxton and Howard-Davis 2000, 48,74-75,410). Pottery comprises imported fine and coarse wares from continental Europe, southern Britain and Yorkshire, and (from the second century) more locally-produced wares from Wilderspool and Holt (Edwards and Webster 1985, 59-60; Edwards and Webster 1988), alongside Spanish, Gallic and Italian amphorae attesting olive oil and wine imports (Edwards and Webster 1987, 12). Dietary evidence suggests reliance on local supply, dominated by local Celtic shorthorn cattle (mature animals) and smaller amounts of sheep/goat and pig (as at Carlisle and other excavated auxiliary forts in the transect), locally-grown cereals (80% barley, the rest wheat and oats) and native fruits, with potential garden plots in the settlement. The usual imported plant-foods are present but in relatively small amounts compared to Carlisle (Buxton and Howard-Davis 2000, 100,125,349-356,384; Hall and Huntley 2007, 62). However, though this suggests close links to local rural society for animal- and plant-based products (food, fodder, fuel, construction materials), alongside woodworking evidence (above) and the size of the town suggesting significant civilian impact, there is little evidence in either fort or settlement for indigenous material culture suggesting two-way cultural interaction (*ibid.*, 412-415).

## B - Sites in the Eastern Transect

### B1 – Corbridge ('Corstopitum' / 'Coria')

The well-excavated Roman site immediately west of modern Corbridge: named 'Corchester' in the medieval period (Hodgson 2008, 48), seems to have replaced the first-century fort/depot at Beaufront Red House 1km to the west, the new installation commencing with multi-phased large timber/turf and eventually-smaller stone auxiliary forts, differently-planned but centred on the same *principia*-site (Birley 1954, 7; Bishop and Dore 1988, 294; Gillam and Tait 1971, 27-28; Gillam 1977; Hodgson 2009b, 25; Richmond and Gillam 1950; Richmond and Gillam 1952; Richmond and Gillam 1953; Woolley 1907). The fort subsequently developed into an unusual arrangement of military-style buildings in the late-second century, divided into two compounds directly associated with legionary (rather than auxiliary) detachments (Brassington 1975, 68; Hodgson 2008, 68,74-75). These formed the nucleus (Figure 163) for a developing civilian town grander than the usual '*vicus*', delineated by Cor Burn to north and west (Hodgson 2008, 47-48; Hodgson 2009b, 25), centred on the Dere Street-Stanegate cross-roads (Simpson 1972). Subsequent early-third century alterations (possibly associated with Severus' campaigns) resulted in the planned (only partially-constructed) grand courtyard building now on public display: variously hypothesised as headquarters for a never-completed legionary fortress (for planned northward movement of the border) (Birley 1954, 10-11), forum or market for a new *civitas*-level town (Hodgson 2008, 65,73), or huge storage facility (Birley 1959, 13) for transferring and exchanging goods between the uplands and coastal lowlands, e.g. food and supplies for inland frontier garrisons and exports (locally-mined lead, iron and coal) (Birley

1954, 10-11; Hodgson 2008, 65). Further growth of the town, road repairs, unification of the compounds, and possible defence-construction extend occupation into the fourth-century and beyond (Birley 1954, 11-13; Simpson 1976, 285). Unfortunately, the site lies just south of the NMP project area, though its environs have undergone substantial past aerial survey, extending the known settlement-area (Bishop and Dore 1988, 8-12, Figure 164; Jones and Woolliscroft 2001, 39-41) beyond the heavily-excavated core (Birley 1954, 5-6; Birley 1959; Bishop and Dore 1988, 294), with confirmation by geophysics (Collins 2020a, 395). Usual issues of identifying complex phasing and structural contemporaneity apply to the aerial evidence, in comparison to excavated areas.

Various military units are attested at Corbridge, both legionary and auxiliary – armour and weapons from a buried hoard (Bell 1978, 174; Daniels 1968, 125-126), alongside inscriptions, imply detachments from *Legios II, VI, IX* and *XX* at various points, not only for construction of the forts and later civil buildings but also within the aforementioned compounds on more-permanent, industrial basis (Birley 1954, 29; Bishop 1995, 312; Hodgson 2008, 51-52). The earliest-proven auxiliary garrison (late-first century tombstones reused in Hexham Abbey) was the Gallic *ala Petriana* (Birley 1954, 8; Hodgson 2008, 49), the same unit later moved to Stanwix in Block 2; a second-century unit was *cohors I Vardullorum* (Hodgson 2008, 51), later at High Rochester [6.2a].

Civilian identities from inscriptions, tombstones and artefactual evidence show men, women and children with origins including England, France, Germany, Greece, North Africa and Syria (Birley 1954, 10-11,30-31; Birley 1959, 22-31), while a silver, zoomorphic pin's decorations link further north: paralleled at Traprain Law in Scotland (Smith 1960, 231). Ceramic evidence (Brassington 1975, 73-74; Brewster 1972) indicates further close links to Gaul and the Rhineland, alongside local and wider British supply. The town's occupants included merchants, traders, craftspeople (leather-workers, smiths, masons, plasterers, carpenters), farmers and medical practitioners (Birley 1954, 29-30). High-status individuals are attested by the corridor-townhouse (grander even than local cavalry-fort *praetoria*), overlooking the river with its own bath-suite (findspot of the famous 'Corbridge Lion' (Figure 165)) – perhaps a Roman official or local wealthy elite? (Birley 1954, 25-26). Religious beliefs are shown via 'Romanised' cemeteries (below), personal items, inscriptions and sculptures, confirming worship of gods from all over the empire – Brigantia, Celticized Mercury with Rosmerta (local), Romulus/Remus, Minerva, Mercury, Mars, Neptune, Hercules, Victory, Castor/Pollux, and Salus (all from the Mediterranean core) and Baal/Jupiter-Dolichenus (eastern empire) (Birley 1954, 29-31; Henig 1973, 241), while silver objects recovered from the nearby Tyne contain references to Classical culture and education amongst the population (Nicholson 1995).

This large civil settlement around a continuing military core (following the main frontier-garrison's shift northwards onto Hadrian's Wall) clearly mirrors the situation of Carlisle in Transect 1, with more-complete ground-plans of remains and understanding of structural sequence due to lacking modern urban limitations, but seemingly less-clear comprehension of the site's role in regional administration or economy. The proposed Roman names for Corbridge – *Corstopitum* (Antonine Itinerary ), *Coria* (Vindolanda Tablets) and *Corie Lopocarium* (Ravenna Cosmography ) have caused long interpretation debates, suggestions including 'meeting/hosting place of the *Lopocares*' or links to the *Corosopites* of Brittany (via first-century Gallic auxiliaries) (Birley 1954, 5; Hind 1980, 165-168; Hodgson 2002, 174; Hodgson 2005, 151), with implications for potential social groups at play. Recent challenges of *Corsopitum* ('reedy/marshy ground'), *Corioritum* ('army ford') (Hind 1980, 169) and *Corsobetum* ('place of small birches') (Breeze 2004), follow other Romano-British place-names referencing local geography. Whatever the site's actual name, it is unparalleled

regionally (other than Carlisle), this importance known from Anglo-Saxon sculpture to persist into the post-Roman landscape (Richardson 1994).

The only part of the site mapped by NMP is the mausoleum (18514) at Shorden Brae, on river-terracing outside the western town limits, visible as cropmarks and excavated to reveal a mid-second century tower-structure over sunken burial chamber, surrounded by ornamented precinct-wall (Gillam and Daniels 1961, 37-40,43-45,50-51; Hingley and Allason-Jones 2009, 162). A focus for later surrounding burials, it likely contained a senior officer or official given its date and proximity to Corbridge's fort (Gillam and Daniels 1961, 60-61). Another, similar-sized enclosure just northward has already been mentioned. Further cemeteries are reported around eastern limits of the town (Birley 1954, 15; Hodgson 2009b, 25), while excavations for the A69 upgrade identified a first/second-century cremation cemetery north of the town flanking Dere Street, mostly lower-status burials but one wealthier example with grave-goods implying close links to central Gaul (Casey and Hoffmann 1995, 17,21). Meanwhile, nearby gravel quarries mapped by NMP have been proven on the ground (Jobey 1979, 104-105) to be Roman, likely associated with construction of roads and the sites at Beaufront and Corbridge.

*B2 – Chesters ('Cilurnum')*

Located at Hadrian's Wall's crossing over the North Tyne, Chesters fort, its external military bathhouse and the Wall-bridge have seen extensive archaeological investigations, commencing with the 19th-century Clayton family, and continuing under state-ownership, including extensive aerial-survey (Birley 1960, 6-7; Harper 1961, 321; McIntosh 2019, 40). The site, *Cilurnum* of the *Notitia Dignitatum* ('cauldron pool', perhaps swirling rapids in the nearby river; alternatively, linked to the *Cilurnigi* people of Spain via *ala II Asturum*?) (Birley 1960, 5; Hodgson 2002, 173; McIntosh 2019, 40), is located on a shelf above the floodplain, commanding no extensive views except north along the North Tyne valley. Altars and inscriptions attest two cavalry units: initially *ala Augusta ob virtutem appellate*, followed by the regular *cohors I Dalmatorum* and possibly *cohors I Vangionum* in the mid-second century, and then *ala II Asturum* from the late-second to fourth centuries (Austen and Breeze 1979, 125; Birley 1960, 5,10-11,35; Johnson 1990, 31), while the Hadrianic layout (one of the best-preserved cavalry forts in the empire: Figure 170) suggests construction by *Legio VI Victrix* (similar to Haltonchesters, also built by that legion) (Birley 1960, 15). Roman landscape-engineering is demonstrated by an aqueduct, entering the fort's highest point (the western gatehouse), from where it is distributed around the site and then drains the bathhouse below before entering the river (Johnson 1990, 9).

The external bathhouse (Figure 170) is one of the best-known in Britain (Jones and Woolliscroft 2001, 94), used until the early-fourth century (when a reduced garrison likely made it inefficient) (McIntosh 2019, 40). The four-arched bridge over the North Tyne carried Hadrian's Wall itself, later augmented in the late-second/early-third century with towers and a roadway behind to carry the Military Way (Bidwell 2009, 53, Figure 171), its form and development visible in the now-stranded (due to river-migration) eastern abutment, also revealing further landscape-engineering in its incorporated mill-race or overflow channel (Birley 1960, 31; Johnson 1990, 28-31; Lewis 1995, 47-48). A deposit preserved by the bridge is also the only environmental evidence for this site, dated second-fourth century and including barley and spelt and bread wheats, probably attesting the crops being cultivated (or at least used) in the valley (Hall and Huntley 2007, 65-66).

The extensive (15ha) extramural settlement surrounding the fort to east, south and west, with substantial stone-built, rectangular buildings along parallel but sinuous streets has largely been mapped thanks to aerial survey, given lack of excavation (McIntosh 2019, 40). What excavation there has been proves that, unlike at Haltonchesters, the Vallum was in-filled to allow settlement (Birley 1960, 11-12). Tombstones show southern limits of the *vicus* c.180m south of the fort's perimeter (Birley 1960, 33).

As with both Haltonchesters and Corbridge, information on identities of the inhabitants is limited largely to sculptural, epigraphic, and ceramic evidence, given the bulk of excavations taking place pre-1960. Thus, worship of a river-god and Syrian versions of Juno and her consort Jupiter-Dolichenus (latter attested at Corbridge) are confirmed, while a second-century bronze diploma suggests settling of veterans in the civilian population (Birley 1960, 34-35). Metalwork recovered indicates presence of women in the fort environment and also people of great wealth or high status, with Christian imagery in the late-Roman period showing changing spiritual identities (McIntosh 2019, 82-83), alongside the expected militaria (which has subtle bias in favour of cavalry equipment, supporting epigraphic references, and also shows similar supply networks to Carlisle, Vindolanda and South Shields) (*ibid.*, 107). Good preservation of iron tools allows identification of a similar plethora of crafts and trades to Corbridge: leatherworkers, cobblers, textile-workers, smiths, carpenters, quarriers, builders, plasterers, potters, farmers, and bone/antler-workers (all attested from the fort, though likely with workshops in the town) (McIntosh 2019, 133-134).

*B3 – York ('Eboracum')*

York (*Eboracum*: 'Place of the Yew Trees' or 'Estate of Eburos', dependent on translation) is possibly the most-important Roman-period site for the entire frontier: the legionary fortress founded in AD71 by *Legio IX Hispana* under Governor Cerialis. Located at the confluence of the Rivers Ouse and Foss, it is reachable from the North Sea for maritime supply and also has riverine-access further inland allowing control of the inland Vale of York and its surrounding uplands. Situated to oversee the territories of the *Brigantes* to the north and west, and the *Parisi* tribe to the east (Yorkshire Wolds), a few days' march from the Brigantian *oppidum* of Stanwick (and closer-still to its replacement *civitas* at Aldborough), it became the base for all subsequent military campaigns northward and the permanent headquarters of the resulting Hadrianic to late-Roman frontier. The large extramural settlement (*canabae*) of storehouses, workshops, shops, dwellings, and docks, which developed around the fortress, was later extended west of the Ouse, and granted *colonia* legal-status in the early-third century by Emperor Severus, who also ruled the empire from York whilst campaigning. It eventually became the capital of the northernmost province upon political reorganisation of Britannia (Figure 200). The city's long history of excavations into often-deep stratigraphy provides a wealth of structural, environmental, and artefactual assemblages, resulting in many publications (Drake 1736; Home 1924; RCHME 1962; Wenham 1971; Roskams 1992; Cool *et al.* 1995; Ottaway 2004; Ottaway 2013; Parker 2019), too much detail to discuss fully here. Military activity also stretches beyond the city limits with several temporary-camps in the vicinity.

Identities of the city's inhabitants varied substantially given its cosmopolitan nature as a vast military base (with troops from all over the empire and two separate legions: *Legio IX Hispana* (71-c.AD120, recruited from Spain) and *Legio VI* Victrix (c.AD122 onwards, also recruited from the Mediterranean with a notable reinforcement in the late-second/early-third century from North Africa: attested in material-culture change) here) alongside being a maritime/northern-British

trading-nexus, late-Roman provincial capital, and large city of c.10,000 inhabitants: families, craftspeople, merchants, politicians, indigenous elite, and many other groups. Documentary, epigraphic, ecofactual, artefactual and architectural evidence for these myriad identities was synthesised in my undergraduate dissertation (2011, unpublished), with dietary aspects of identity expanded for York and its hinterland in my MA thesis (2012, unpublished). Evidence for Iron Age and Roman-period environment around York is discussed below, while faunal assemblages prove consumption drawing-upon a wide range of resources from both its immediate mixed-agricultural hinterland and further afield via the sea. Alongside the domesticates (cattle, sheep, and pigs), horse, poultry and hunted fauna (deer, hare and wildfowl), riverine and salt-water fish remains have been collected from both fortress and *colonia* (Hall and Kenward 1990, 386-387; Kenward *et al*. 1986, 254; O'Connor 1988, 63,77). Predominance of cattle, while in-keeping with wider regional trends for indigenous and military consumption (suggested by mass-processing of beef similar to Carlisle) may be influenced by local landscape (O'Connor 1988, 116,120): another aspect in the fortress' siting, close to riverine-pasture but also accessing arable cultivation further north in the Vale of York. Unusual late-Roman consumption of young pig appears to suggest ongoing connections to Mediterranean dietary-patterns.

There is no definitive evidence for Iron Age settlement beneath *Eboracum*, the site likely mixed woodland-scrub and agricultural land (Ottaway 2004, 26-27). However, widespread evidence for enclosed settlements in extensive coaxial field-systems across the Vale of York (shown by NMP (Kershaw 2001)) and southward to the edge of the estuarine wetlands, shows that the presence of 5-6000 legionaries would have had a massive impact on local people, both local supply-requirements and opportunities for exchange. Definition of a formal fortress *territoria* or hinterland is much-debated (Roskams 1999) though there is evidence for interaction in arrival of Roman material-culture at native sites. Rural settlement (enclosed farmsteads) and associated field-systems just south of York at Heslington East show native-Roman interaction via first/second-century objects, but it is not until the mid-late Roman period that extensive landscape reorganisation commences, with new formalised boundaries and trackways around a high-status compound of hypocausted, stone-built buildings (Roskams and Neal 2020): curious given proximity to the largest Roman settlement in the region and indicative of variabilities in Roman landscape-impact.

York's extensive excavation-history has led to substantial environmental assemblages from Roman levels, with evidence from both waterlogged (wells, sewers, riverside warehouses) and charred (granaries, ditches, rubbish-dumps) deposits. Botanical evidence suggests nearby waste ground and potential gardens (likely within the *colonia* environs, producing fruit and herbs), local oak and alder woodlands (perhaps maintained for timber), riverside pastures and grazing further afield (including chalk-based grassland, at least 15km east), hay meadows, arable cultivation (spelt and bread wheats, barley, oats, rye, flax), nearby wetlands/salt-marshes and peat/bracken (turves brought in for ramparts/roofing or animal-bedding) (Buckland 1976, 39-40; Hall *et al*. 1980, 101-120; Hall and Huntley 2007, 54-56,70-74; Hall and Kenward 1990, 289,399-415; Kenward *et al*. 1986, 241-243,255,262-265). Weeds, grain-pests, and spoilage amongst cereals from earlier-phased granaries and warehouses indicate grain-imports from southern Britain or overseas (Hall and Huntley 2007, 70; Kenward and Williams 1979, 62,77), suggesting the surrounding landscape was not relied upon immediately for military supply. This is possibly due to local late-Iron Age dominance of grassland and wetland, suggested by pre-Roman pollen-samples beneath the first-century timber granaries (Kenward and Williams 1979, 45,65,76).

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