We Built this City on Rock and Romans.

A geospatial comparison of Economy, Infrastructure, Settlement and Culture between Dorchester, Dorset, and Winchester, Hampshire, and their Environs during the Period 300AD- 700AD.

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Master of Research

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Cover picture from: Time Out: The essential guide to Winchester (2023)
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Abstract

The Roman military notoriously left Britain in 410AD after unrest on the Empire's borders and the sacking of Rome by Alaric and his band of Goths - a period of economic collapse followed in Britain… Or did it?

This project endeavoured to define the urban developments (or lack of) that took place over the period 300-700AD in the two Roman towns of Dorchester, Dorset and Winchester, Hampshire, from a geospatial, economic, cultural and logistical perspective in an attempt to discover why Winchester became a major centre by the Early Medieval Period, while Dorchester remained a suburban outpost? A GIS database was compiled in Ersi ArcGIS containing all known sites that fell within the study areas including settlements, production centres, villas, farmsteads, cemeteries, religious buildings and all their associated infrastructure. This project collected 347 sites, these were then subject to spatial analysis in order to identify patterns and trends which may lead to a better understanding of economic and social development of the period. Spatial analysis techniques included queries, buffers, topographic assessment, cluster analysis and density assessment.

Results have indicated that perhaps the Roman towns of Winchester and Dorchester were not as equal economic centres as first believed with factors such as Imperial industries, economic revolutions and ecclesiastical institutions acting as catalysts on the developmental trajectories of these urban centres.

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Finally, I would like to thank my dad for his support and encouragement throughout the past year and the last big thank you goes to Nuova, my dog, for bringing me toys at crucial moments but keeping me sane.

Declaration

I declare that the contents of this project are all my own work and have not been submitted in whole or in part for consideration for any other degree or qualification at this, or any other university.

Tilia Cammegh

June 2023

Introduction

1.0 Introduction

During the height of Roman Britain, both the towns of Dorchester and Winchester were equal in being moderately successful economic centres (Wacher 1995, Ottaway 2017, Cunliffe 2008, Eagles 2001, 2004, Rogers 2013, de la Bédoyère 2010) - Dorchester being the civitas of the Durotriges and Winchester being the civitas of the Belgae. After Roman authorities vacated Britain, Dorchester declined to become a suburban, rural outpost whereas Winchester became the holy and royal capital city of the Kingdom of Wessex.

The mystery is, if Winchester and Dorchester were towns of similar size, status and economy during Roman occupation, why did Winchester become a major centre by the Early Medieval Period? This research project aims to determine why Winchester became a major city within the Kingdom of Wessex from a landscape, economic and logistical perspective.

This piece of research intends to answer the aim above by undertaking a review and comparison of townscape development between the two towns of Winchester and Dorchester during the period of 300-700AD. The survey will remain objective, without incurring prejudices from current and popular theories - its purpose, simply to define and quantify the changes that occurred to economy, infrastructure, settlement and culture from a geospatial and logistical perspective, with a focus on interconnectivity. Furthermore, this project seeks to expand the knowledge of GIS functionality within archaeological research by utilising a Geographic Information System, specifically ESRI ArcGIS, to catalogue, query, extract, and display survey data, testing the strengths and weaknesses of the electronic GIS, not only as a hosting platform for complex site data, but for performing new methods of geospatial analysis.

In Britian, the period between 410-1065AD is known by a string of names; The Dark Ages The Saxon Period, Post-Roman Britain, Anglo-Saxon Britain, Late Antiquity, Romano-Christian Britain to name but a few, all of which refer to slightly different concepts of events that occurred during this era. Academics, archaeologists and historians have been vying to define this period of British history in question since at least the 1970s and it is difficult to use any of the above names to encapsulate the period without inferring the associated theory of change. Henceforth, for the purpose of this study, the following terminology will be: Roman, 300-410AD; post-Roman, 410-600AD; Early Medieval, 600AD+. Cultural identities will be described as Romano-British (pre-410AD), and British or Germanic (post 410AD).

1.1 What is a Townscape

To quantify and assess townscape change, there first needs to be a standard from which to build a comparison framework. Reece (1980) defines a town as a concentration of administration, relaxation, law, religious and occupational services, set out on a street grid with public buildings. This however, is not only a description very much limited to a Roman town, but focuses only on the town centre rather than a townscape as a whole entity. Consequently, any cross-period comparison will fall sort – even some modern towns of today would not be recognised under this definition. Ottaway (2017, 181) provides a broader definition; 'a place with a large and socially diverse population, and a wider range of economic and social functions than one would expect to find in a typical rural settlement'. This definition captures the essence of a town and is not limited by period stereotypes. However, it does not offer quantifiable traits against which change can be measured. An independent definition of a town is needed. The beginnings of such a definition is found in the National Planning Policy Framework (NPPF)(Ministry of Housing, Communities and Local Government 2021) which outlines the four main requirements of a town:

- Trade
- Access: Transport infrastructure
- Housing
- People

Transport infrastructure being a crucial element of a town, without which the remaining elements cannot function. Thus, a townscape is a collection of trade services, housing and community, amassed as a central hub with an associated support network connected by a transport infrastructure across a limited area. The radius of the 'limited area' is important as towns centres did not function in isolation, they were only the hub of surrounding activity; be that economic, religious, or residential. To get a true representation of urban change that occurred during this period, the support network of each town must be included.

1.2 Study Area

This project investigates Winchester, Hampshire and Dorchester, Dorset and their townscape within a 24-mile radius. The limited area was decided as the maximum distance that can be travelled by a person within one day, although the capacity for travel would likely have varied according to an individual's access to different modes of transportation, often linked to social and economic status (Gerrard 2023). Three ancient transport modes have been considered for study in this project; walking, animal-driven and riverine but as this research has a focus on economic logistics, primary modes of transport were assumed to be on foot or via ox-driven wagons. Using a number of algorithms; Google Maps algorithm (Google 2021) for pedestrian speed calculations and the Cato algorithm for freight transport speed, the maximum distance commutable within a day was calculated. This figure being 24 miles, using the average day length 8 hours. The calculated distance correlates with the suggestion made by Jones (2012, 19) who states 24 miles was accomplishable in an average day's fast travel. Figures 1.1 and 1.2 show the study areas of each townscape.


Figure 1.1: The Dorchester Townscape Study Area
N
ENGLISH CHANNEL
Dorchester Study Area
0 5 10 20 Miles
Contains OS data © Crown copyright [and database right] [2022].
CARDIFF
Newport
Cwmbran
Chepstow
Weston-super-Mare
Bath
Bristol
Trowbridge
Frome
Warminster
Salisbury
Taunton
Bridgwater
Yeovil
Dorchester
Weymouth
Poole
Bournemouth
Exeter
Torquay
Honiton
Exmouth
Lyme Regis
Sidmouth
Blandford Forum
Wimborne Minster
Ringwood
Christchurch
Swanage
Portland
Chesil Beach
Lyme Bay
Poole Bay
WILTSHIRE
SOMERSET
DORSET
TORBAY
Bridgwater Bay
Salisbury Plain
Isle of Purbeck
The Needles
St Aldhelm's or St Alban's Head
Portland Bill

Figure 1.2: The Winchester Townscape Study Area

This project has used catchment area analysis, in particular the technique of defining a circular territory from fixed radii. This technique causes limitations in both the collection and analysis of data as the populations within the study area were not physically limited by it (Vita-Finzi et al 2016), and the catchment is not able to reflect the actual complexity of the area (Hunt 1992). Furthermore, utilization of a circular catchment area often leads to data simplification, either cherry-picking or simplifying categories. However, the use of GIS in catchment analysis allows multiple thematic coverages to be overlayed and then new coverages generated, capturing data that may otherwise have been simplified or lost. GIS can also facilitate the refinement of the catchment area to reflect time contours, terrain and various other geospatial coverages (Hunt 1992). This alternate method of using coverage-refined catchment areas gives a slightly more realistic 'territory' (Roper 1979), and when specifically designed in GIS software, has the ability to conduct more thorough relationship analysis between attributes (Hunt 1992). Coverage-refined catchment areas, specifically travel-time refined catchment areas, were considered for use in this project; however the time and technology resources needed to create the coverages to generate such a catchment area were outside the allowances of this project. Even though the study area has been defined as a limited area, this project understands that there is potential for sites outside the area to have influence within it – as Roper (1979) highlights, these approaches assume there is no overlap in terms of importation or trade between the areas within polygons. Availability of data within the area will also affect the successfulness of the results. Therefore, artificial boundaries have been created to define a study area, but this project is aware these boundaries will cause a limitation to the results.

1.3 Geology and Topography

The geology of the Winchester townscape is composed primarily of chalk bedrock, whereas the Dorchester area is a mix of chalk, mudstone and sandstone, see Figures 1.3 and 1.4. The Winchester study area has a maximum elevation of 295mAOD where maximum elevation peaks at 279mAOD in the Dorchester study area, see Figures 1.5 and 1.6. Landcover within the Dorchester townscape is mainly arable with some areas of urbanisation. The Winchester townscape has areas of arable land but where the north-eastern sector of the study area falls within the London commuter belt it has a greater proportion of urban land cover. The study areas also vary in landmass despite the study radius being equal. The Winchester area has a land mass of 4390km^2, whereas the Dorchester townscape has a landmass of 2835km^2 due to its proximity to the coast.

Figure 1.3: Dorchester Study Area Geology

Figure 1.4: Winchester Study Area Geology

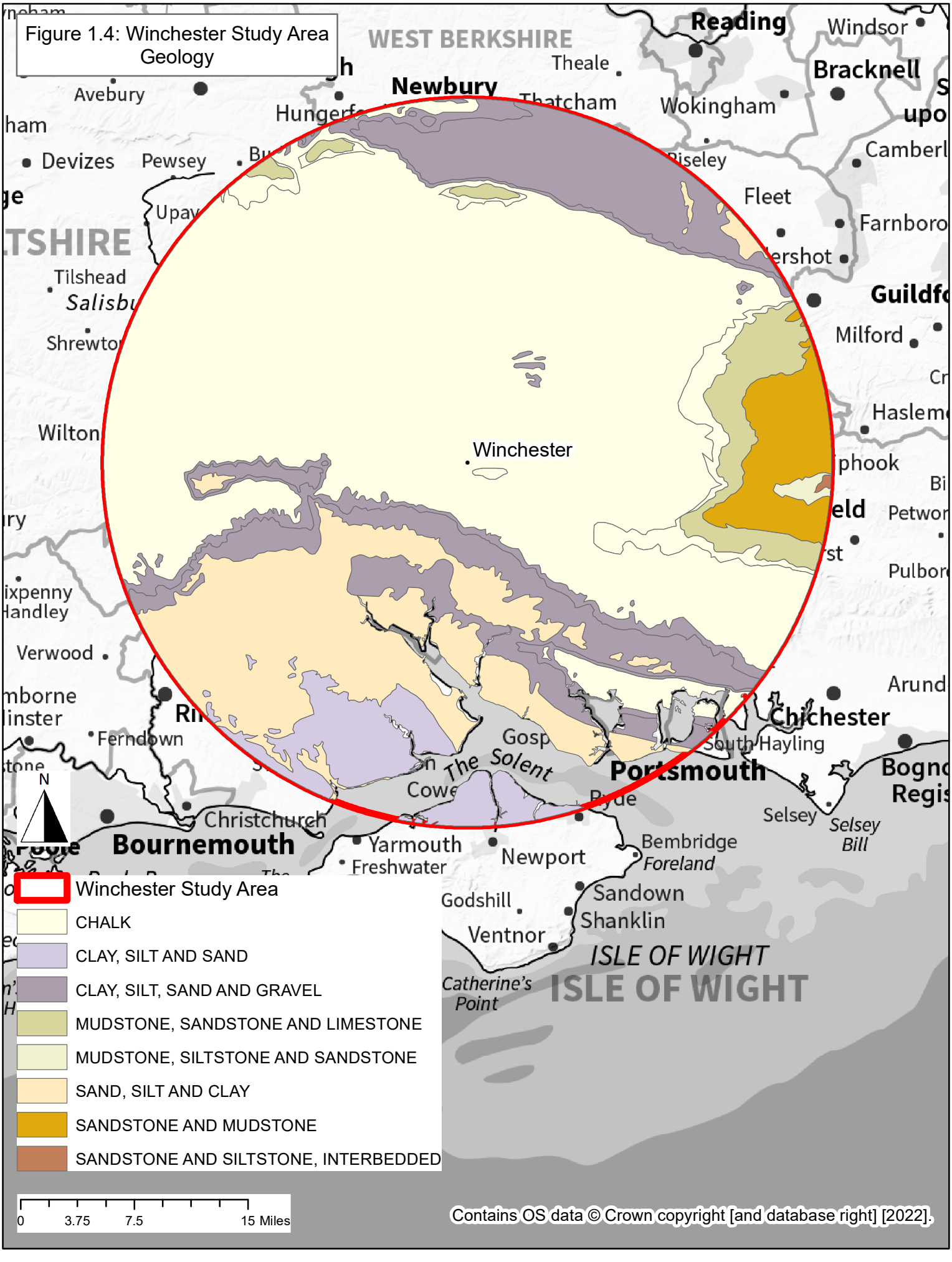
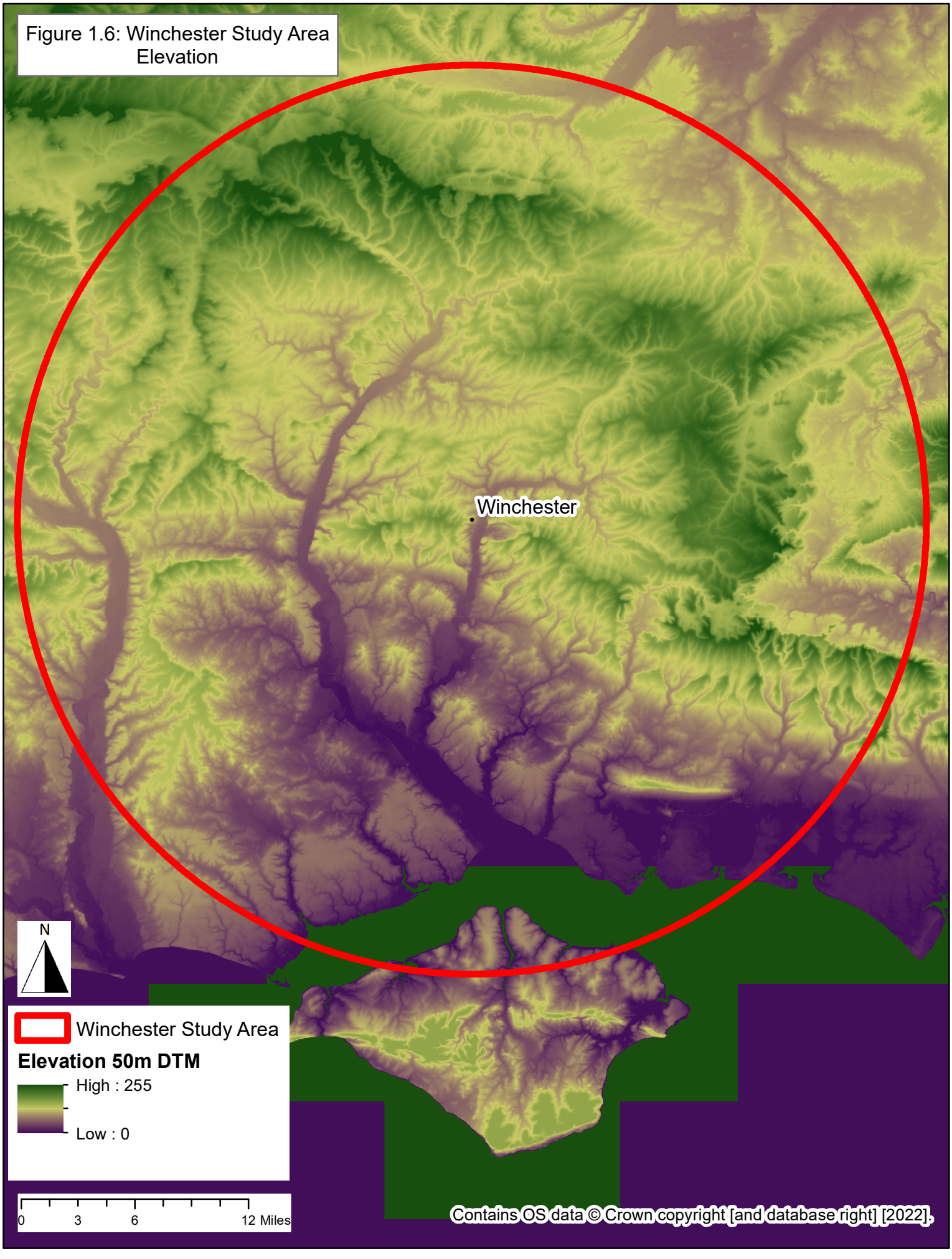


Figure 1.5: Dorchester Study Area Elevation

Figure 1.6: Winchester Study Area Elevation



1.4 Aims and Objectives.

This research seeks to build a GIS database of all sites within the two townscapes to cartographically display, and quantitatively define changes that occurred between the years of 300-700AD with the aim of making an attempt to explain why Winchester became a major city of importance whereas Dorchester remained in relative obscurity. To help fulfil the research aim, this project will seek to fulfil the following objectives:

1. Process townscape data into a geodatabase that can be used to produce quantifiable information and phased cartography relating to urban development.
2. Define any changes in production centres (location and/or activities).
3. Define whether either town supported anything more than a subsistence economy post 450AD.
4. Define any changes in settlement size and location.
5. Define transport routes between towns and their associated support networks.
6. Define whether differences in material culture/ religious culture are present between the two towns.

This project also hopes to highlight any local and regional patterns which may differ from current national observations.

1.5 Data Sources.

A vast array of data sources are available to support this project. The main resources that will be accessed are Historic Environment Records, Site and Monument Records, Portable Antiquities Scheme, and the Rural Settlements of Roman Britain Project (Allen et al 2015), supported by excavation reports. The Domesday Book will also provide useful supporting evidence. Grey literature, journal articles and unpublished (forthcoming works) will also be consulted.

Literature Review

2.0 Literature Review.

The Romans introduced many new aspects of daily life into Britain, one of the most valuable being that they kept written records of events at the time: the fourth century works of Marcellinus, Aurelius Optatus and Eunapius give us a great insight into contemporary events and economic structure of the Empire. Unfortunately, once Roman imperial powers left Britain, first-hand accounts generally disappeared but the 530~ works of Gildas (Thompson 1979), the Gallic Chronicle of 452 (Burgess 2001), Bede (731), Historia Brittonum (Nennius 828~), Anglo-Saxon Chronicle of 899~ (Giles 1912), and the Domesday Book (Powell-Smith 2022) provide some insight into urban socio-structural change of the time albeit with distortion from political agendas and secondary sources. Consequently, to achieve reliable answers to townscape change in the fourth to seventh centuries, archaeological evidence must be utilised.

Although the exact date of writing is unknown, Gildas' *De Excidio et Conquestu Britanniea* is one of the few British literary sources of information about Britian's history in the fifth century (Thompson 1979). Importantly, it is the most contemporary of the ancient texts of the period, but his work was still written over one hundred years after a number of events of which he speaks. His work was also never intended as a 'history', it was more a critical attack on leading churchmen and kings of the time, blaming them and their sins for the disastrous events that occurred; as such the work does not focus on the chronology of events. In the 8th century, the Ecclesiastical History of the English People was written by Bede (731). Although it follows a chronological order of events starting with Caesar's invasion of Britain in 55BC, its main focus is the history of Christianity. Furthermore, Bede's writings were composed from secondary sources including the words of Gildas (530~) and have a strong religious and political agenda. Furthermore, the Historia Brittonum (Nennius 828~) is further removed from the time of events but does give events in a chronology. Although the Historia Brittonum has less of a religious focus, concentration is given to the kings and major events of the time. Another ancient text is the Anglo-Saxon Chronicles (Giles 1912), a collection of annuals written by clerical historians, again from previously written sources with the main purpose being to legitimise the dynasty of King Alfred. Although these ancient texts contain information about certain events of sub-Roman Britian, they all have strong political and religious biases which limit their use. Needless to say, with the exception of an amount of Gildas's work, they are written primarily from secondary sources which further weakens the reliability of the accounts. One historic text that is written from primary sources and has potential to be of use in this project is the Domesday Book of 1086. The book contains a landownership survey of many of the counties of England and Wales recording many aspects of land productivity including livestock, tenants and mills. Winchester was not included in this original work, but was included in the second survey, the Winton Domesday of 1110.

At a national level, there are two main archaeological factions when discussing sub-Roman events: those who argue that Romano-British culture collapsed and that urban townscapes and their associated economies ceased to exist (Wacher, 1995, 1989, Faulkner 2001, 2016, Reece 1980, Fulford 1989, Liebeschuetz 2001, Lambshead 2022, Starkey 2010, Esmonde-Cleary 1989, Higham 1992, Hills 2003, Halsall 2007, Ward-Perkins 2005, Heather 2005); and those who support a transitional model of evolutionary change from Romano-British towns into fortified Christian Kingdoms, without an economic collapse (Dark 1994, 2000, 2014, Gerrard 2013, 2014, Rogers 2011, Bell 2005, Cool 2014, Esmonde-Cleary 2001, Hobsbawn and Ranger 1983, Howe 1989, Alcock 1995, Rahtz et al 1993, Barker et al 1997, White 2007, Bowles 2007, Jones 1964, Brown 1971, Bowersock 1996, Van Dam 1985, Mathisen 1993). These recognised theorists may often choose to highlight evidence supporting their argument and disregard others; therefore, their evidence-base must be approached critically. However, there does appear to be a relationship between the rising number of transitional theorists and archaeological discovery. Additionally, archaeologists looking at national scale models of change can lose sight of local and regional patterns, which can, and often do, vary to those identified nationwide.

Local patterns, particularly those which can be attributed to distinct tribal areas such as those of the Durotrigies (Dorchester) and the Belgae (Winchester) give a much more detailed diverse and arguably truthful picture of townscape change. Further to this, investigations made in the Dorset area have identified isolated continuation of Romano-British identity (Davey 2016); Germanic resistance (Gerrard 2016) and pagan religious revival (Putnam 2007).

Much work has been produced investigating the towns and countryside of southern Britain, but often a tribal divide down the modern Dorset/ Hampshire east-west boundary is present, especially in the case of Putnam (2007), who predominately studied Dorchester and the surrounding areas, whereas Biddle (1976, 1981, 1990, 2017, 2020), Yorke (1982), Ottoway (2017) are well recognised experts of the Winchester area. Down this same margin is the Roman Diocesan divide between Britannia Prima (Southwest) and Maxima Caesariensis (Southeast). This too defines study areas as seen by White (2014), Dark (2014), Petts (2016), Fulford and Allen (2017), Bird (2017) with an overarching focus on the southwest. Few works and even fewer archaeologists are an exception to this rule; fortunately they do exist; Cunliffe (1975, 1976, 2008), The Roman Rural Countryside Project (Allen et al 2015) and Eagles (2018) all contradict this rule. Furthermore, Eagles (2018) is one of the small number of authors that has a focus on understanding the relationship between towns, small towns and rural areas in a social, temporal and spatial context rather than concentrating solely on classification. Taylor (2001) outlined the need for this type of study. It is also important to note here, that no work has been published on Clausentum (Roman Southampton) since 1958, (Cotton and Gathercole 1958) but fortunately there have been more recent studies of Hamwic (Morton 1992, Andrews 1997 and Birbeck 2005).

More sparse are the works that investigate the economic and socio-spatial elements of a townscape in a single review. Certainly, the separate components of townscapes are evaluated at great length, for example cemeteries (Hawkes and Grainger 2003, Booth et al 2010, Williams, 2016, Petts 2016, Philpott 1991.); ceramic production, (Gerrard 2010, 2014, 2016, Roberts 1982, Kennett 1978); agriculture/ economy, (Fyfe and Rippon 2016, Mckerracher 2018, Domesday Book, 1086, Arnold, 1997, Maltby, 2010, 2017, Miles 1989, Jones 1989, Grant 1989, Branigan and Miles 1988, King 1988, Allen et al 2017, Greene 1986, Bowie 2015, Crabtree 2010); industry and trade (Langlands, 2020, Fulford 1989); settlement, (Todd 1988, Ottoway 2017, Putnam 2007, Tipper 2004, Hooke 1988a) and of course culture (art & religion), (Guest 2014, Garrow et al 2008, Henig 1989, 2016, Smith et al 2018, Blagg 1989, Henig and Ramsay 2010, Bell 2005, Brown 1997, Lewis 1965, Graham-Campbell 2016, Welch 1985, Hines 1995, Dickinson 1991, 2002, Suzuki 2009, Avent and Evison 2011, Hakenbeck 2007, Martin 2015, Toynbee 1971, Lucy 2000, Brugmann 1999, Robinson 2001, Blair 2005, Foot 2006). Less common are the reviews of access ways, (Chevallier 1976, Hindle 1993, Jones 2012, Ordnance Survey 2016, Biddle 2020, Fulford 2008, Shore 1889, Pelteret 1985), with Greene (1986) providing an in-depth analysis of Roman transport. Nevertheless, no work comprises all these fundamentals into a complete review. Ottaway (2017) comes close to producing a study of all components of both Roman and Early Medieval township but is limited by the city boundary of Winchester, negating to discuss any activity, economy, or infrastructure outside the city walls. Nevertheless, as Esmonde-Cleary (2001) states, this evidence-based approach is more useful than attempting to fit evidence into theories. The work of Biddle (1976) further supports the need for complete studies of urban development - although his work investigates social and economic changes in Winchester between 1050-1148, and makes an attempt to place the city in its contemporary rural context, there is limited evidence to do so effectively. Biddle (1976) also claims that this lack of evidence prevented a comparison between Winchester and contemporary townscapes. Fortunately, there is now a greater range of evidence available thanks to development-led archaeology.

A further problem is the Roman/ Saxon period divide. Most of the authors mentioned here specialise in either Roman archaeology or Saxon archaeology; or indeed Early Medieval archaeology; this is especially seen in the environmental evidence reports of Winchester, where Maltby (2010) covers the Roman period and Serjeantson and Rees (2009) begin their analysis from the ninth century, leaving an analytical void between the years of 410 – 800AD. Only a small number of authors can build a discussion on the transitional period without reference to a fellow academic. This pattern is seen in the large number of contribution papers brought together under a single title where cross-analysis is prevented by chapter isolation (Ellis 2001, Gilmore 2007, Langslands and Lavelle 2020, Haarer 2014, Collins and Gerrard 2016, Gosden et al 2008). Although useful, these works do not allow for a continuous discussion of themes and patterns across time. Nevertheless, Hindle (1993), Fyfe and Rippon (2016) Sparey-Green (2016), Jones (2012), Swift (2014), Eagles (2014), Reece (1999), Cunliffe (2008) Dark (2000a) and Brown (1996) are some of the few works that integrate the transitional period into a comprehensive body of text.

As mentioned previously, since the 1970s, an ever-increasing number of excavations has taken place in the study areas allowing further evidence from the period 300-700AD to come to light. Excavations have been both research-led, (Johnson and Dicks 2014, Russell et al 2014, 2015, 2017, 2019, Hewitt et al 2021, Woodward et al 1993, Hawkes and Grainger 2003) and development-led, (Zant, 1993, Booth et al, 2010, Ford and Teague, 2011, Smith et al 1997, Dinwiddy and Bradley 2011) – together they all advance our understanding of the period. It is important when reviewing this data, to recognise that areas of urban development around the modern cities within the study areas such as Dorchester, Weymouth, Southampton, Portsmouth, Basingstoke and Winchester will display a higher density of archaeological sites. This does not mean that these areas had a higher level of activity in antiquity than that of rural sites, rather development funded archaeology has a heavier focus on these areas.

Furthermore, there is still the ongoing problem of identifying and interpreting post-Roman archaeology. Fitzpatrick-Matthews (2014) discusses the difficulties in recognising the period archaeologically such as interpreting fifth century pottery as residual Iron Age; rubble foundations and sill-beam buildings as evidence of Roman building collapse and calls for critical re-evaluation of existing data. Collins and Breeze (2014) raise the point that timber buildings are more prone to destruction and disturbance in the archaeological record, and Swift (2014) has written an entire review of the reuse of Roman glass, pottery and metal objects in the Post-Roman period; this, twinned with the shift to the use of organic materials for household wares, makes the post-Roman period nearly invisible to the archaeological record. The mystery of 'Dark Earth' is also an unexplained phenomenon; Hinton, (1990) offers a possible explanation of it being organic matter residue from agricultural storage in disused buildings, whereas others believe it is evidence of cultivation within towns. Due to these ongoing problems, there is a lack of understanding for the period 400-700AD.

Nevertheless, there are three works that stand out as being most relevant to this research; Yorke (1982), Ellis (2001) and Eagles (2018). Ellis (2001) combines a number of contribution papers concerning settlement distribution, ceramic production and distribution, rural industry and associated distribution, material culture shifts, religion and burial practice in Wiltshire, predominantly of the early Roman period, with one paper focusing on post-Roman material culture. This work considers settlement, community and commerce, and to an extent discusses interconnectivity via transport infrastructure. This work encompasses the urban development analysis that this project aims to achieve. However, this project wishes to go further, making interconnectivity of urban development a main objective as well as investigating the less-explored time frame of post-Roman development. Additionally, Ellis (2001) was prevented from any cross-analysis of his themes as they are isolated by chapter and author. The work of Eagles (2018) is again multiple papers united in a single review but is less impeded by the problem of isolation as the majority of papers are written by the editor. However, interconnectivity analysis is still absent. The papers of Eagles (2018) present discussions on cultural identity, access (waterways), agriculture, settlement, townscape variation across major towns, small towns/villages to rural areas, over the course of the Roman, post-Roman and Early Medieval periods. These papers show cartographically,

quantitively, and qualitatively how the kingdom of Wessex developed through the period 300-800AD. The study area of Eagles (2018) is that of the ancient Kingdom of Wessex, this bridges the geographical boundaries of both tribal areas and the Roman Diocesan divide. The studies are also exempt from underlying theoretical currents, choosing to discuss fact rather than theory. There is, however, a gap in the works for a deeper discussion of industrial and agricultural development, transport networks and cultural identity, as well as assessment of the specific townships of Winchester and Dorchester. Eagles (2018) fails to investigate how the townscapes developed in relation to their surrounding support networks and to the people within them which, in turn, would lead to potential answers as to why some towns became more successful than others. The only work to investigate development and specifically that of Winchester, is Yorke, (1982). Yorke (1982) bases her argument on archaeological evidence and that of historical sources, giving a number of suggestions for Winchester's development including the readiness of available building material, fortified walls, well-defined routeways, personal preference of bishops and kings and even Viking raids. This multifaceted conclusion excludes any assessment of economy but does demonstrates there is vast scope in this area to do further research into the development of the townscape of Winchester.

However, the main and arguably most-exciting aspect of this project is that it will harness the power of an electronic Geographic Information System to process and analyse the data, a technological advancement at the forefront of landscape analysis. It has been used in many projects including Eagles (2018), Powell-Smith (2022), Allen et al (2015), Conolly and Lake (2006), Rippon and Holbrook (2021), Rippon et al (2015) and Gosden and Green (2021). Eagles (2018) is a particular project that used the full extent of GIS functionality; using the software to collect, record, measure, extract, query and analyse data, producing information for use in the associated papers. Allen et al (2015) use their GIS as an online interactive resource. All rural Roman sites have been catalogued on a single database and displayed through an online interactive map. The map can be queried and analysed by individual users, and individual dataset can be downloaded. Similarly, Powell-Smith (2022) uses a GIS to transcribe Domesday book entries onto an interactive online map and database. The entries can be queried, but data is not downloadable or open to advanced geospatial analysis. All these works display the potential electronic Geographic Information Systems can provide, and recognise new approaches to record, sort, analysis and make data available to wider audiences.

Having identified a gap in current research defined by a lack of quantitative analysis and discussion of townscape development at a local level, especially that of both Winchester and Dorchester, this project hopes to produce research that will provide just that, remaining independent of prejudices and bridging the chronological divide over the important post-Roman transitional period. The in-depth analysis of the various elements of urbanisation: trade, culture, agricultural production, settlement and burial, will all be used to inform this paper. The extensive range of excavation reports and associated re-evaluations will also be utilised to extract the most accurate occupation data possible for site records. This research will harness the technological advancement of electronic Geographic Information systems to

record, query, analyse and display site information. Once complete, this paper should contribute to the understanding of the Roman/Early Medieval transitional period as well as expand the knowledge of GIS functionality within archaeological research.

Methodology

3.0 Contribution to New Knowledge.

This project seeks to fill the gap identified in current research by producing an in-depth analysis of urban development of the Winchester and Dorchester townscapes over the period 300-700AD. Very few works have addressed urban development of this period and no other research has viewed townscape development from an economic and logistical perspective, focusing on inter-connectivity. In addition to this, despite the growing number of projects that make use of a Geographic Information System to collect and analyse data, the capabilities of Geographic Information Systems in research production are largely unknown. This project seeks to expand this knowledge, using a GIS, specifically ESRI ArcGIS, to catalogue, query, extract, and display data, testing the strengths and weaknesses of the electronic GIS methodology and scoping the capabilities of functionality, not only as a hosting platform for complex site data, but for performing new geospatial analysis. Overall, this project will provide a new branch of information pertaining to urban development of the late and post-Roman transitional period as well as inform GIS capabilities within archaeological research.

3:1 Methodology Outline:

The main aspect of this research was a geospatial, quantitative survey and analysis of Romano-British urban development data pertaining to economy, housing, transport infrastructure and community from sites within the townscapes of Winchester and Dorchester. As well as creating new knowledge pertaining to post-Roman urban development, this project also tested the functionality of using a GIS within archaeological landscape analysis. As such this research planned to build a geodatabase in the GIS software; Esri ArcGIS to record all relevant sites and their applicable attributes. Relevant sites included settlements, cemeteries, agricultural, industrial, and religious sites. Site records were made to include date of occupation, site use, and economic and cultural variables. The variables were then subject to temporal and geospatial analysis via SQL commands (queries), density plots, proximity analysis via buffers, topographic analysis via elevation, aspect and slope data and cluster analysis in order to derive useful and meaningful information which could be used to inform the objectives and ultimately aim of this project. Transport infrastructure was recorded in a separate geodatabase shapefile to provide information on townscape interconnectivity. This project was entirely desk-based, sourcing data from excavation reports, HER records, The Rural Settlement of Roman Britain Project (Allen et al 2015), and from early documentary sources, such as the 11th century Domesday Book (Powell-Smith 2022).

Extracted information has been presented in phased cartography and through tables with associated visual representations. This information was then discussed with reference to patterns and trends identified in current literature. By applying this Positivist approach, the results have remained objective and impartial – the data has not been subject to any theoretical bias.

There are three main types of research paradigms; positivism and interpretivism or a mixed methods approach. Data for this project was collected in such a way as to make them quantitative, with data being relatively unaffected by observation. However, there was an amount of unavoidable subjective influence upon data collection including the size and design of the catchment area, availability of data, and the data selected to feature in the excavation reports. Despite this influence, the analysis of data within this report has endeavoured to remain objective, avoiding any temptation to cherry-pick data in support of a particular theory or argument popular in the current literature. Thus, by definition, the method would describe a positivist approach to research (Burke Johnson and Onwuegbuzie 2004). The alternative approach, interpretivism, is based on qualitative data where time and context-free generalisations are not possible and where multiple realities are possible; the data is subjective and socially constructed. Results to interpretivist investigations are often written in an empathic manner that cannot be absolute (Burke Johnson and Onwuegbuzie 2004). This description further affirms the positivist approach of this project.

Two particular projects in current literature; the works of Eagles (2018) and Allen et al (2015), utilise Electronic Geographic Information Systems (GIS) successfully to gather, analysis and present data within research projects. Methodologies used in these works have informed the method of this project.

3.2 Research Population:

All excavated sites within the study areas of Winchester, Hampshire and Dorchester, Dorset that have datable occupation evidence to the period 300-700AD have formed the sample for this research. Unstratified find spots and sites with no specific data ranges have been excluded on the grounds that they are chronologically vague or contextually uncertain. Regarding human remains, only individuals over 2 years of age and those who have been buried in cemeteries (groups of 4 burials+) have been included.

This is a representative sample of the townscapes for the period. As mentioned previously, some distortion from urban development is evident causing a development-led archaeology bias. This higher density of archaeology in and around modern urban centres does not represent a higher density of activity in antiquity, only a high density of archaeological exploration.

3.3 Research Strategy:

In order to successfully answer the proposed research question and objectives of this project, the database framework was designed to catalogue all sites and their variables that pertain to the four elements of a townscape:

1. Trade (Commerce)
2. Access (Transport Infrastructure)
3. Housing
4. Community

Table 3.1 indicates how each of the townscape elements provided relevant information to fulfil the objectives of this project.

Table 3.1: Table to show how the four townscape elements relate to the objectives of this project.

Project Objective	*Townscape Element*
Define any changes in production centres (location and/or activities).	Trade (Commerce)
Define whether either town supported anything more than a subsistence economy post 450 AD.	Trade (Commerce)
Define any changes in settlement size and location.	Housing & Community
Define transport routes between towns and their associated support networks.	Access (Transport Infrastructure)
Define whether differences in material culture/ religious culture are present between the two towns.	Community

Variables were selected to inform each townscape element. These variables were recorded in the geodatabase. See Table 3.2 for database framework and list of variables that were recorded.

Data pertaining to transport infrastructure was recorded in a separate database within its own shapefile.

Table 3.2: Database Framework.

Site Name	Date From	Date To	Type	No. of SFBs	Produce	Imports	Commerce	Commerce Type	Cemetery	No. of Individuals within Cemetery	Religious Indicators	Personal Object
			villa/ farmsted/ settlement Religious Building		see 3.3.1 for product list	see 3.3.1 for product list		Industrial/ Agricultural/ Continental	yes/no		N-S_Furnished/ N-S_Unfurnished W-E_Furnished/ W-E_Unfurnished/ Cremation	Square-headed brooch/ Cruciform brooch/ Button brooch/ Quoit brooch/ Christian symbology

Key
Trade (Commerce)
Housing
Community

Shading highlights how each variable will contribute to the understanding of the individual townscape elements and thus to project objective.

U/K was used where variables were unknown.

This database framework catalogued textual data with the exception of '*Sunken Feature Buildings*' and '*Inhumations*' fields where numerical values were recorded. Query functions, density plots, spatial proximity analysis (buffers and intersects) and Cluster analysis (Optimised Hot Spot analysis) were used to extract quantitative data from the textual data, but the dataset was first subdivided into three data tiers. These tiers were grouped by study area, then period, then queried to find objective specific data. See Figure 3.1 for a flow diagram of this process. This method resulted in a larger number of shapefiles being created, but the file formation process followed a logical procedure and allowed for analysis of data at various levels.

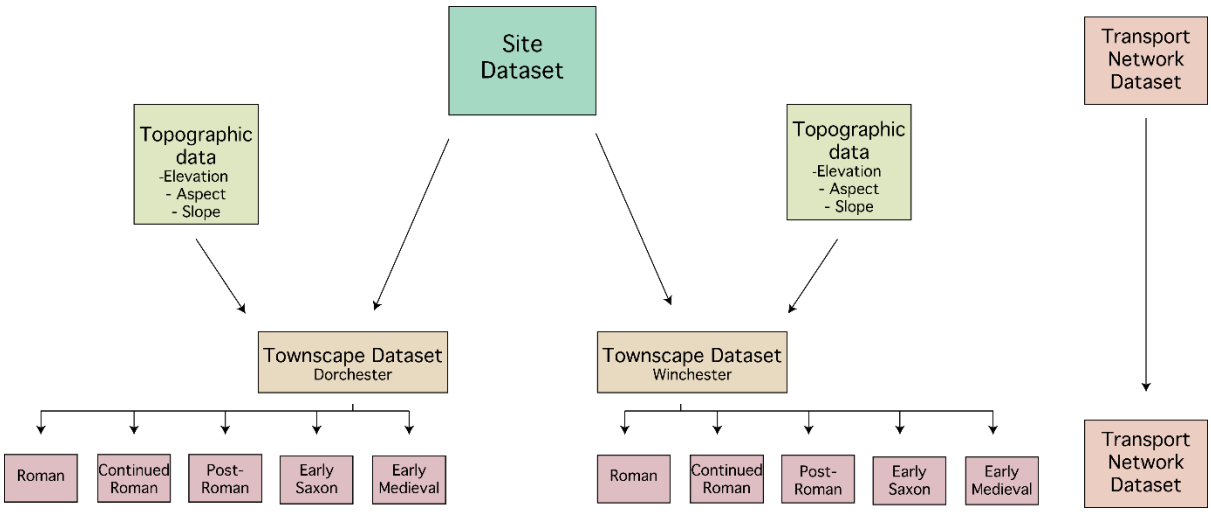


Figure 3.1: Flow Diagram to show data processing to create phased shapefiles.

These five phase groupings created multiple temporal slices through which urban development of the townscapes was analysed. The '*Roman*' period group was designed to give a standard for peak urban development from which change was measured. See Table 3.3 for the specific date ranges for each phase group.

Table 3.3: Period Groups

Period Groups		
Time Frame	**Name**	**Description**
<410-410	Roman	Sites that began before 410AD but ceased in activity by 410AD.
<410-410<	Continued Roman	Sites that began in or before 410AD and continued post 410AD.
410<-410<	Post-Roman	Sites that began after 410AD.
<700-500<	Early Saxon	Sites that were occupied post 500AD
≤700-650<	Early Medieval	Sites that were occupied post 650AD

Accessways were recorded in a separate Shapefile which included roads, projected roads, trackways and navigable rivers. These transport networks were subject to route planning analysis using a number of travel algorithms. For on-foot travel analysis, the Google Maps algorithm formed the basis of calculations (Google 2021); where travel speed is 3 miles per hour over flat and downhill areas, and 2 miles per hour over uphill distances. This calculation correlates with both the 'on-foot' speed of 2.3 miles per hour set by Orbis (Scheidel and Meeks 2024) and the well-regarded formula composed by Naismith in 1892, whereby one hour is allowed for every three miles covered, plus an additional hour for every 2000 feet climbed (Ordnance Survey 2019). The Cato Algorithm, designed by this project, was used to perform cargo route analysis. Taken from *De Agri Cultura* written in 160BC by Cato the Elder, it is stated that it will take 6 days for a grain cart pulled by oxen to travel 75 miles - assuming the cart travelled for 8 hours a day, the following equation can be used to calculate speed:

$$x = speed$$

$$x = {}^{distance}/_{time}$$

$$x = {}^{75}/_{48} = 1.56\ miles\ per\ hour$$

Given that the road network and road surface in Britain was generally poorer than that of the Italian equivalent (Russel Pers.Comms), this figure was rounded down instead of up. Consequently, the Cato algorithm predicted that cargo vehicles travelled at an average speed of 1.5 miles per hour. Kendal (1996 141-3) has endeavoured to produce similar calculations for the travel speed of ancient freight vehicles; however, Kendal's estimates are based upon cargo vehicles travelling at just over 50% capacity (Jones 2012). A fully laden carts will travel at a much slower speed. It can be assumed that this was the case for the 'Oxcart' feature on Orbis which is set to travel at a speed of 1 mile per hour (Scheidel and Meeks 2024).

Yet, with known travel speed, together with roadway layouts and slope data, routes between townscape environs could be calculated using the formula:

$$x = time$$

$$x = {}^{speed}/_{distance}$$

These formulas derived information to inform the objective; '*Define transport routes between towns and their associated support networks'.*

3.3.1 Commerce Variables

In order to analyse economic and commercial change, the specific imports and produce of sites were recorded. Regarding produce levels, this project relied on excavation reports to dictate whether sites supported subsistence or surplus production – only sites with evidence of surplus production were recorded in the 'Commerce' and 'Commerce Type' fields. By recording these variables, the potential movement of goods in supply/demand chains can be viewed. Produce and import variables were limited to the following products; animals on the hoof: cattle, pig, sheep; primary animal products (inferred by animal bone reports): beef, pork, lamb; secondary animal products (inferred by animal bone reports): leather, dairy, wool, cloth; agricultural produce: grain; stone (Purbeck Stone, shale); salt and ceramic wares: Black Burnished Ware, Alice Holt Wares, New Forest Wares and South-East Dorset Orange Wiped Ware. Investigation has been limited to these four ceramic wares as they encapsulate production at peak urban development, from which change can be measured.

3.3.2 Community Variables

Analysis of potential cultural change was another important aspect of this research - this branch of analysis sits within the townscape attribute of 'Community'. Both change in religious culture and change in material culture was investigated. In order to obtain evidence of the former, inhumation type, orientation and grave furnishing were recorded for all cemetery sites. Material culture variables were limited to four brooch types; the Square-headed, Cruciform, Button and Quoit styles as these types can arguably be indicators of culture, (Hakenbeck 2007, Martin 2015, Leeds 1949, Avent and Evison 2011, Suzuki 2009, Swift 2019). It is important to note here that unlike some research, this project does not try to make a distinction between the movement of peoples and the adoption of new cultures by regional natives. The purpose of this project is simply to define the change in culture across the townscapes of Winchester and Dorchester, be it with migrant settlers or as a result of trade and/ or cultural adoption.

3.3.3 Mapping

Sites were located using Ordnance Survey 25,000 raster mapping, assisted by Google Maps and accompanying satellite imagery. Digital Terrain Models were used for each study area to provide topographic elevation data for use in route analysis. Romano-British road projections were inferred from academic research, recognised patterns in topography and reference to Parish and Tithe Maps.

3.4 Data Sources

A vast array of data sources were available to support this project. The main resources that were accessed are Historic Environment Records, Site and Monument Records, Portable Antiquities Scheme and the Rural Settlement of Roman Britain Project (Allen et al 2015), supported by excavation reports. In regard to the latter, particular reference must be made to the organisations of Hampshire Field Club and Archaeological Society and the Proceedings of Dorset Natural History and Archaeology Society as without their extensive publication of excavation reports, this project would not have been possible. The Domesday Book also provided useful supportive evidence being the first detailed survey of land ownership and settlement, albeit from the 11th century. Grey literature, journal articles and unpublished (forthcoming works) were also consulted.

Secondary historical sources were avoided including the Anglo-Saxon Chronicle and Bede as these are subject to political manipulation and focus on pivotal events rather than change over time.

3.4.1 Historic Environment Records (HERs)

The study areas span multiple counties and local authority areas; all relevant Record Offices were contacted for the HER searches. See Table 3.4 for list.

Table 3.4: List of Record Offices contacted for Historic Environment Record Searches.

Historic Environment Record Name	Record Office
Hampshire County Council Archaeology and Historic Buildings Record	Hampshire County Council
Winchester Historic Environment Record	Winchester City Council
Southampton Historic Environment Record	Southampton City Council
Portsmouth Historic Environment Record	Portsmouth Museum
Dorset Historic Environment Record	Dorset Council
Wiltshire and Swindon Historic Environment Record	Wiltshire County Council
Devon Historic Environment Record	Devon County Council
Somerset Historical Environment Record	Southwest Heritage Trust

All Roman, post-Roman and Early Medieval entries that fell within the study areas were requested. Unfortunately, the HER searches were unable to differentiate entries anything beyond Roman 43-409 and Saxon 410-1065 with little dating evidence given in the

description of the entry. Due to the limited evidence provided in the Historic Environment Records, their main use was to ensure all relevant and known sites had been catalogued in this project. This method of checking for completeness was also used by Bell (2005) who utilised both national and regional monument inventories as a standard.

3.4.2 Domesday

The Domesday Book of 1086 was commissioned by William of Normandy to take account of all resources and taxable values in the Kingdom. Original entries were accessed via 'Open Domesday,' an online Domesday GIS created by Powell-Smith (2022). The limitation of the Domesday book is that Winchester was omitted. However, a second review was made in 1110, known as the Winton Domesday, which does contain Winchester. Further to this, Biddle (1976) made a thorough study of the Winton Domesday, including a detailed topography assessment of Winchester. Although both Domesday studies were made after the period of this research, these documents allowed townscape change to be analysed with hindsight from the eleventh and twelfth centuries.

3.5 Justify Procedures

3.5.1 Geographic Information Systems used in Current Literature

This project has reviewed methodologies designed and tested by other papers and has employed their strengths in this methodology.

As highlighted in the literature review, Eagles (2018) and Allen et al (2015), with the addition of Powell-Smith (2022) are the only projects to utilise electronic GIS to record and analyse their data. In terms of analytic functions used by the projects, the former makes use of the measure, extract and query functions, where Allen et al (2015) utilises the software's functionality to view, query and extract (download) data from an online platform. Similarly, Powell-Smith (2022) uses a GIS to make Domesday book entries accessible via an interactive online map. The entries can be queried, but data is not downloadable or open to advanced geospatial analysis. Allen et al (2015) has also collected data at a national level, pertaining to a varied range of Roman rural settlement attributes whereas, Eagles (2018) has collected a sample of Roman and post-Roman data from a regional area – all these data sets are significantly larger than that of this project, however the functionality of the system remains the same. Both Eagles (2018) and Allen et al (2015) have used their GISs to produce written papers, successfully answering multiple research questions doing so.

In addition, electronic Geographic Information Systems, in particular, Esri ArcGIS, is the preferred software used by commercial archaeology units to display and analyse HER data for the production of HER plots for Desk-Based Assessments - the software displays professional level capabilities to store, extract and present information. QGIS was considered as an alternative software, but it is less tested in professional use, therefore less reliable for use in this project.

An alternative method to the use of GIS was the use of a standard database software programme such as Microsoft Access. This software would allow quantitative analysis, but would not allow for geospatial analysis nor has the extensive functionality to query data. The analysis of accessways and analysis of sites through topographical attributes could not be accommodated and thus the objectives pertaining to these aspects could not be achieved.

3.5.2 Pilot Test

A pilot test was run for 52 sites. The 52 sites were selected at random from the data sample and entered into the GIS database using a preliminary database framework. The database framework was successful at recording and querying single and multiple site attributes across component variables and geospatial properties. SLQ Commands to extract quantitative data were tested, as well as density plots. Running the pilot test raised awareness of a number of problems that have been addressed as follows.

First, the database framework model must be final. Once created, attribute fields and their properties cannot be changed, only deleted, along with all data they contain. However, additional fields can be added to the model. Consequently, the dataset framework must be concrete before commencing data collection.

Second, when trialling queries, results showed that extreme care must be taken to enter the variable text into the fields. The SQL commands are case and space sensitive. In order to run successfully, any multi-word attributes must be connected by a hyphen and any spaces added by default such as when copy-and-pasting text must be removed. Additionally, each attribute listing must begin with a capital letter.

In addition to software specific problems, it was also realised that the variable of ‘ceramic ware’ would be of more use if the specific pottery ware type was given. Entry of specific ceramic type will allow individual wares to be traced from production centre to employment site. Due to the amount of pottery ware types known in the period, this project limited interest to four distinct types, (see above for details).

The main issue highlighted in the pilot database was that the primary framework would not allow multiple function sites to be listed as a single entry. This led to site duplication. Although not an immediate problem, it had the potential to skew quantitative analysis when investigating sites over multiple function types.

3.5.3 Acknowledgement of limitations to the method

This geospatial urban development study encountered a series of limitations and problems. These limitations occur in the archaeological record in terms of survival of material, ability to identify and date evidence, but also occur within the capabilities of the software, including temporal analysis within a site. Limitations highlighted by the pilot survey were either rectified or their acknowledgement is made below.

The main problem faced by this research was the visibility of the period 410 -700AD in the archaeological field. Roman Imperial coinage was no longer issued post 410, identifiable ceramics typologies were no longer (mass) produced, and the shift towards an increased use of organic materials makes the period almost invisible in the archaeological record on a number of sites. Furthermore, where potential post-Roman material is recovered, there is the problem of reliable dating. It was often the case for the peoples of post-Roman Britain to reuse Roman domestic wares and objects of recognisable Roman typologies such as jewellery, skewing site date ranges. The availability of modern dating techniques such as Radiocarbon Dating has greatly reduced this difficultly, but the problem is still very prevalent on sites excavated some time ago; Cunliffe (1975,1976), Cotton and Gathercole (1958) to name but a few.

The consequence of the poor recognition and the difficulty in dating the period is that problems arise in identifying continuous activity across sites. Although not an objective of this research, identifying continuous activity across a single site would entail a single entry in the database. If there is a break in activity, site occupation was recorded in two separate entries. A break in activity was deemed as any lapse in activity spanning 100 years or more. This allowed for any discrepancies in the dating of occupation evidence without compromising the potential for continuous activity on a site. This approach also overrides an inherent problem with site recording systems which break site activity down into artificial chronological blocks, again distorting any evidence of continuity that might be present on a site.

One further point regarding excavation evidence is the use of excavation reports. This project is aware, as Tipper (2004) highlights, excavation reports are limited in the information they contain. This project was not able to go directly to site records to view all excavation evidence due to logistic, temporal, and financial constraints. In light of this, this project used only evidence contained within published reports.

The final limitation pertains to the database framework and the constraints of the database design. Sites were entered into the database recording their occupation start and end dates. Site variables were then entered. However, it was not possible to relate specific variables to stratigraphic phases of site occupation. Fortunately, this research is only concerned with the site overview, however, original excavation report references were recorded in the database for all sites if a more detailed review was needed.

Analysis

4.0 Data Summary

This project has identified 347 sites that meet the study criteria. All site records are stored in a single shapefile which forms the database for both study areas. Historic Environment Records from the relevant counties were checked to verify all applicable sites were included. Throughout assembling the dataset, a continuous assessment was made to ensure all objectives remained relevant in the developing understanding of the records.

4.1 Analysis Plan

Themes of analysis were identified in accordance with the objectives. These themes were translated into questions that were asked of the data via geospatial analytical processes deriving quantitative information that was interpreted to inform the objectives. The structure of section 4.3: *The Results* is set out in Table 4.1, findings being laid out by objective, then by theme.

Table 4.1: Structure of section 4.3: The Results

Sub-section Number	Page Number	Objective	Themes
4.3.1	31	Define any changes in production centres (location and/or activities	1. Number of sites producing surplus 2. Agricultural sites producing surplus. 3. Production Potential by produce type (grain, sheep and cattle). 4. Topographic characteristics of agricultural production sites. 5. Industrial sites producing surplus.
4.3.2	46	Define whether either town supported anything more than a subsistence economy post-450 AD	1. Number of sites producing surplus post-450AD 2. Number of sites producing surplus post-600AD.
4.3.3	47	Define any changes in settlement size and location	1. Settlement density 2. Sunken Feature Building quantification 3. Cemetery density (No. of Individuals with the cemeteries.) 4. Density Plots 5. Topographic characteristics of settlement sites.
4.3.4	61	Define transport routes between towns and their associated support networks.	1. Transport Models 2. The relationship between supply chains and transport networks. 3. Towns vs processing centres
4.3.5	73	Define whether differences in material cultural are present between the two townscapes.	1. Presence of brooch types 2. Direct and indirect Christian influence 3. Religious buildings: quantified 4. Material culture hotspots

4.2 Data Processing

Before analysis could begin the database had to be divided into townscape area, creating two shapefiles, one containing sites for the Dorchester townscape and the other containing sites for the Winchester townscape. Table 4.2 displays the number of sites within each townscape with their percentage contribution to the total number of sites.

Table 4.2: Total number of sites per townscape.

Townscape Name	Townscape Landmass (km^2)	No. of Sites	%
Winchester	4390	206	59
Dorchester	2835	141	41
Total		347	100

The Winchester townscape contains a larger number of records by a total of 65 – several factors could attribute to this. First, although both study areas are equal in size superficially, the Winchester townscape has a landmass area of 4390km^2 whereas the Dorchester townscape only has a landmass of 2835km^2, losing 35% of landmass to the sea. In order to avoid a bias in numerical comparisons, data for comparison between the two townscapes was, where possible, converted into a percentage relative to the corresponding study area. A second factor is that the north-eastern sector of the Winchester study area falls within the London Commuter Belt so has been subject to a larger amount of development-led archaeology, contributing to site identification. Using a relative percentage will lessen this bias also. Furthermore, the use of relative percentages will lessen the bias caused by period groupings of varied temporal ranges; groupings with larger temporal ranges have greater potential for sites.

Topographic data was added to each record. These topographic values were elevation, aspect and slope. This data allowed locational changes to be identified. Elevation data was extracted from the Digital Terrain Model produced by Ordnance Survey (2022). The Digital Terrain Model was also used to produce the aspect and slope models though the Esri ArcMap functions.

After the topographic data had been joined to the site records, the records were subdivided into period groupings. Upon completion of the data processing, 11 shapefiles were created, 5 for each townscape and 1 containing transport network data. Tables 4.3 and 4.4 give a summary of this data which was now ready for analysis. N.B some sites fit into multiple period groupings.

Table 4.3: Winchester Data Summary

	Winchester Townscape						
Period Group	Settlement	Farmstead	Villa	Industry	Religious Building	Cemetery	Total
Roman	36	19	25	10	1	9	100
Continued Roman	22	2	12	1	3	1	41
Post-Roman	24	2	0	0	5	30	61
Early Saxon	41	4	5	0	6	28	84
Early Medieval	38	3	5	0	7	21	74

Table 4.4: Dorchester Data Summary

	Dorchester Townscape						
Period Group	Settlement	Farmstead	Villa	Industry	Religious Building	Cemetery	Total
Roman	46	6	30	8	3	6	99
Continued Roman	14	1	7	2	5	1	30
Post-Roman	1	0	0	1	5	5	12
Early Saxon	10	1	4	2	7	5	29
Early Medieval	10	0	3	1	7	5	26

4.3 The Results

4.3.1 Define any changes in production centres (location and/or activities).

This objective sought to investigate change in activities and locations of sites producing agricultural surplus for trade and industrial surplus for trade. Surplus production was dictated by excavation reports. Three types of agricultural surplus were investigated: sheep, cattle and grain. Industrial surplus was limited to ceramic industries; two ceramic ware types were selected from each townscape. Stone industries from Dorchester were recorded in the database but no equivalent was found in the Winchester townscape, so these industries have been excluded from analysis.

Quantitative values of the sites producing surplus are given per production type in Table 4.5. These values were extracted using query functions. Totals are composed from the number of sites per phase, per townscape with commerce potential: industrial, settlement, farmstead, and villa sites. Tables 4.6, 4.7 and 4.8 give these values as relative percentages.

Table 4.5: Trade sites by phase

	Dorchester			Winchester		
Trade by Period Group	Industrial Trade	Agricultural Trade	Total	Industrial Trade	Agricultural Trade	Total
Roman	23	3	25/90	18	31	44/90
Roman Cont.	13	10	17/24	13	10	19/37
Post-Roman	1	0	1/2	6	4	10/26
Early Saxon	11	8	13/17	12	10	19/50
Early Medieval	9	7	11/14	13	10	20/46

Table 4.6: Percentage of sites producing Industrial Surplus

% of sites producing industrial surplus		
	Dorchester	Winchester
Roman	26	20
Roman Cont.	54	35
Post-Roman	50	23
Early Saxon	65	24
Early Medieval	64	28

Table 4.7: Percentage of sites producing Agricultural Surplus

% of sites producing agricultural surplus		
	Dorchester	Winchester
Roman	3	34
Roman Cont.	38	27
Post-Roman	0	15
Early Saxon	47	20
Early Medieval	50	22

Table 4.8: Percentage of Sites Trading

% of sites trading		
	Dorchester	Winchester
Roman	28	49
Roman Cont.	71	51
Post-Roman	50	38
Early Saxon	76	38
Early Medieval	79	43

Figures 4.1, 4.2 and 4.3 display these relative percentages in line graph format. Visualising the data has highlighted four general trends. The first being that a high percentage of Roman Continuation sites from the Dorchester townscape were actively trading in both industrial and agricultural produce. This would imply that a large amount of surplus production continued post-410AD within the area. Winchester agricultural production decreased post 410AD.

The second trend is that over one third of sites in occupation post-410AD in the Winchester townscape were 'new' Post-Roman sites whereas no agricultural sites were established in the Dorchester townscape post-410AD.

By 500AD, the proportion of sites producing both industrial and agricultural commerce in Dorchester increased, whereas levels in Winchester remained the same or increased only slightly.

The final general trend is that the Dorchester townscape held a higher percentage of sites involved in commerce, in both industry and agriculture, across three phases: Roman Continuation, Early Saxon and Early Medieval, with the latter two phases exceeding all Roman phase production. The Winchester townscape trend follows a more traditional expectation, where production remains in decline post 410AD, and gradually begins to increase post-500AD. An explanation for this occurrence could be due to the sample size of the Dorchester townscape being smaller so there is a greater chance of outliers weighting results. On the other hand, relative percentages have been used to minimise this bias and normalise data across both study areas. Even so, the small sample sizes, especially that of Post-Roman Dorchester does limit the meaningfulness of all the above trends.

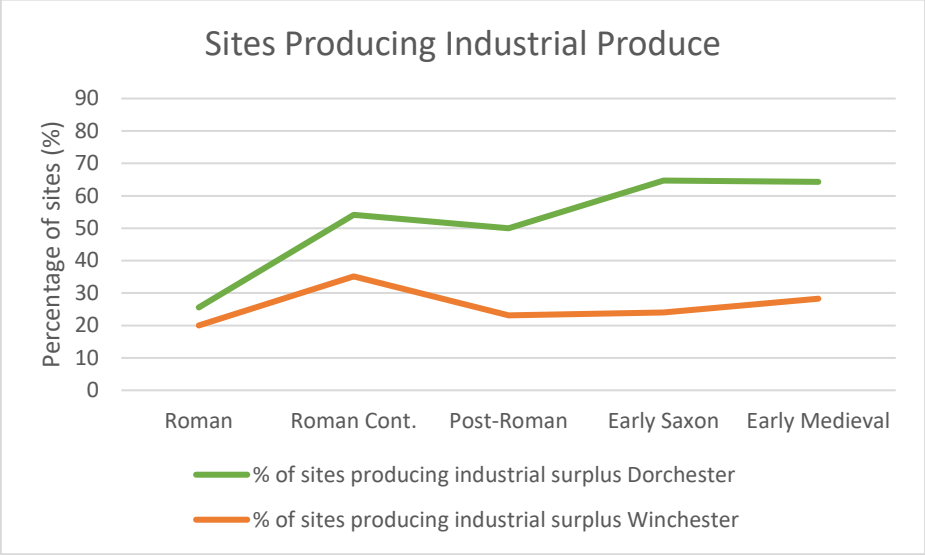


Figure 4.1: Graph showing industrial produce variation.

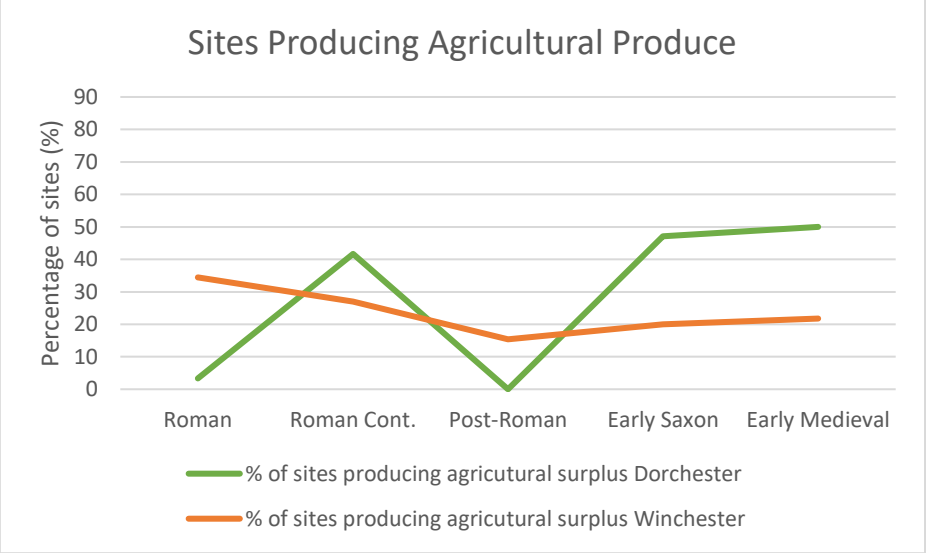


Figure 4.2: Graph showing agricultural produce variation.

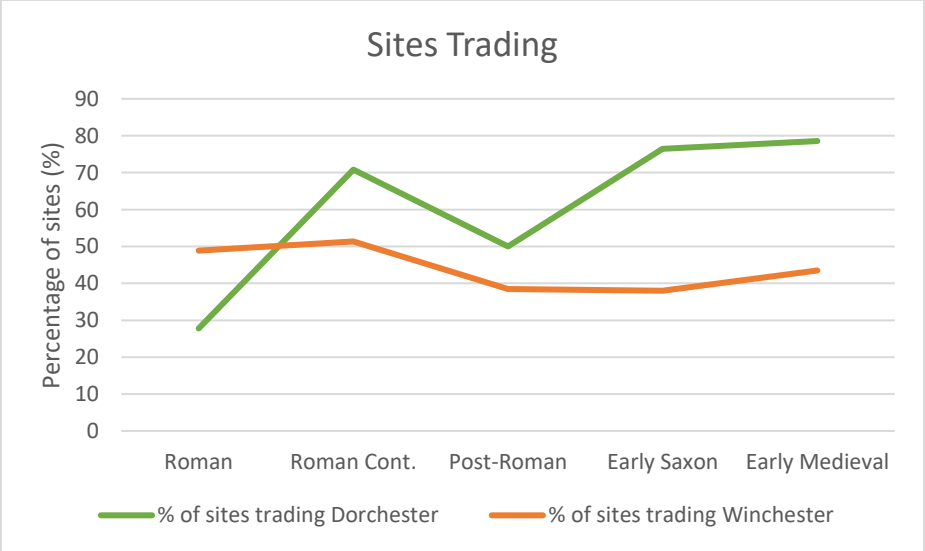


Figure 4.3: Graph showing variation in number of sites which are trading.

To investigate these trends further, two channels of analysis were designed, one to investigate agricultural practice and the other to compare ceramic industries.

As Dorchester displayed a higher percentage of sites creating agricultural surplus for trade in three out of five phases, this could indicate that the Dorchester area had a higher number of sites on land of high productivity potential compared with Winchester. A strategy was devised to identify land of high productivity potential for each of the three agricultural produce types; sheep, grain and cattle, quantify sites located on this land and then to test these numbers against the number of sites producing surplus.

Queries were created to identify areas which had topographic characteristics best suited to the production of the three produce types – these areas being areas of high productivity potential. These queries are referred to as Production Potential Parameters (PPPs). Topographic requirements for the three types of agricultural produce differ greatly; cattle required a greater water supply and were more suited to being farmed in riverside valleys, whereas sheep suited grass and chalk downland (Cunliffe and Poole 2008a, Godden et al 2002), and grain required flat, generally south facing land.

The sheep PPP was set to identify land of a 50-degree gradient or less that fell within 6 miles of water. Six miles was chosen as, although not as intensely dependent on water as cattle, sheep need access to water at least once a day (Defra 2002). Six miles would allow a shepherd to herd the flock for 2 hours to return them to water, traveling at a pace of 3 miles an hour according to the Google Maps algorithm (Google 2021).

Sites of high productivity potential for cattle were identified through a PPP that selected sites on a gradient of 40-degrees or less and that were within 1 mile of water. This water parameter was set on the basis that a dairy herd can drink up to 6 litres of water per hour, per cow (DAERA 2023), so a 1-mile radius would allow cattle sufficient access to water.

The PPP to identify sites with a high productivity potential for grain selected land of a 3-degree gradient or less, and which was south facing with an aspect value between 113-247 degrees. (Aspect data was taken from the topographic aspect model generated in Esri ArcGIS which indicated the exposure/ azimuth of the terrain surfaces.)

Tables 4.9, 4.10, 4.11 give the number of sites per townscape that met the PPPs for the three agricultural produce types and so are located on land of high productivity potential. Results are given as a value out of the total number of farming sites per phase; these include settlements, farmsteads and villas. If the number of sites on land of high productivity potential is equal to the total number of sites, then maximum productivity potential has been reached.

Table 4:9: Number of sites on land of high productivity potential for sheep production, per townscape group.

Total number of sites on land of high productivity potential for sheep production.				
	Productivity Potential			
	Dorchester		Winchester	
	Total	%	Total	%
Roman	82/82	100	80/80	100
Roman Cont.	22/22	100	36/36	100
Post-Roman	1/1	100	26/26	100
Early Saxon	15/15	100	50/50	100
Early Medieval	13/13	100	46/46	100

Table 4.10: Number of sites on land of high productivity potential for cattle production per townscape group.

Total number of sites on land of high productivity potential for cattle production.				
	Productivity Potential			
	Dorchester		Winchester	
	Total	%	Total	%
Roman	68/82	83	48/80	60
Roman Cont.	19/22	86	30/36	83
Post-Roman	1/1	100	24/26	92
Early Saxon	13/15	87	44/50	88
Early Medieval	11/13	85	40/46	87

Table 4.11: Number of sites on land of high productivity potential for grain production, per townscape group.

Total number of sites on land of high productivity potential for grain production.				
	Productivity Potential			
	Dorchester		Winchester	
	Total	%	Total	%
Roman	24/82	29	27/80	34
Roman Cont.	9/22	41	17/36	47
Post-Roman	0/1	0	12/26	46
Early Saxon	4/15	27	22/50	44
Early Medieval	4/13	31	21/46	46

Data from Table 4.9 shows that both townscapes reach maximum productivity potential for sheep production. Table 4.10 shows that Dorchester features land marginally better suited for producing cattle, but Winchester has a higher productivity potential for grain production, seen in Table 4.11.

The number of sites on land of high productivity potential could then be compared to the number of sites actively producing the specific produce to analyse whether maximum productivity was being achieved. Maximum productivity would be achieved if the percentage of sites producing the specific produce equalled the number of sites on land of high productivity potential.

Tables 4.12, 4.13 and 4.14 display productivity values for grain, sheep and cattle by phase for each townscape. Again, results are given as a value out of the total number of farming sites per phase; these include settlements, farmsteads and villas.

Table 4.12: Sheep Farming Productivity

	Dorchester				Winchester			
Sheep Farming	Productivity Potential	Producing Sheep	Trading	% of sites trading	Productivity Potential	Producing Sheep	Trading	% of sites trading
Roman	82/82	10/82	2/82	2	80/80	33/80	27/80	34
Roman Cont.	22/22	12/22	8/22	36	36/36	17/36	10/36	28
Post-Roman	1/1	1/1	0/1	0	26/26	9/26	4/26	15
Early Saxon	15/15	10/15	6/15	40	50/50	19/50	9/50	18
Early Medieval	13/13	9/13	6/13	46	46/46	19/46	9/46	20

Table 4.13: Cattle Farming Productivity

	Dorchester				Winchester			
Cattle Farming	Productivity Potential	Producing Cattle	Trading	% of sites trading	Productivity Potential	Producing Cattle	Trading	% of sites trading
Roman	68/82	9/82	2/82	2	48/80	10/80	6/80	8
Roman Cont.	19/22	13/22	8/22	36	30/36	15/36	8/36	22
Post-Roman	1/1	1/1	0/1	0	24/26	9/26	3/26	12
Early Saxon	13/15	10/15	6/15	40	44/50	17/50	8/50	16
Early Medieval	11/13	8/13	5/13	38	40/46	18/46	8/18	17

Table 4.14: Grain Farming Productivity

	Dorchester				Winchester			
Grain Production	Productivity Potential	Producing Grain	Trading	% of sites trading	Productivity Potential	Producing Grain	Trading	% of sites trading
Roman	24/82	11/82	2/82	2	27/80	29/80	25/80	31
Roman Cont.	2/22	15/22	9/22	41	17/36	13/36	8/36	22
Post-Roman	0/1	1/1	0/1	0	12/26	6/26	3/26	12
Early Saxon	4/15	11/15	7/15	47	22/50	15/50	8/50	16
Early Medieval	4/13	9/13	6/13	46	21/46	13/46	8/13	17

The values from Tables 4.12, 4.13 and 4.14 were converted to relative percentages and plotted alongside the proportion of sites trading per phase in the bar charts below; Figures 4.5, 4.6 and 4.7. Comparison between productivity potential and surplus produced was then made.

Unsurprisingly, Figures 4.4, 4.5 and 4.6 display the general agricultural production trends identified in Figure 4.2; the Dorchester townscape saw trade continue post-410AD at an increased level, with the addition of only one new production centre established post-410AD. Whereas the Winchester townscape saw a decrease in sheep and grain trade, but cattle production marginally increased. The Winchester townscape also saw a greater influx in production centres established post-410AD, however only a small proportion of these were trading.

In the Dorchester townscape, on Roman sites that ceased in occupation by 410AD, grain, sheep and cattle production were of equal importance. Grain production became a priority post-500AD, followed by sheep, with cattle being produced at the lowest level of the three agricultural practices. By contrast at Winchester, during the Roman phases, sheep followed by grain account for highest production, cattle were of considerably lower production, shifting to a dominance of sheep in the Early Saxon phase, with equal reliance of cattle and grain.

Maximum productivity potential was reached and in fact exceeded in Winchester for Roman grain production, but in no other phase nor produce type was this achieved. Maximum productivity potential was not met for any produce types during the Roman phases in the Dorchester townscape but was exceeded in Early Saxon and Early Medieval grain production with the number of sites trading grain exceeding the number of sites with high productivity potential for grain.

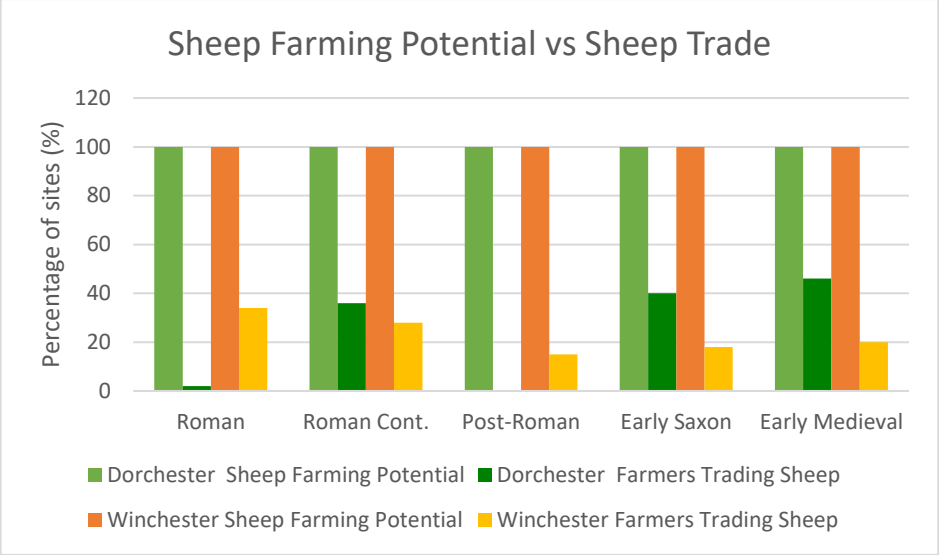


Figure 4.4: Graph showing sheep farming potential vs sheep trade.

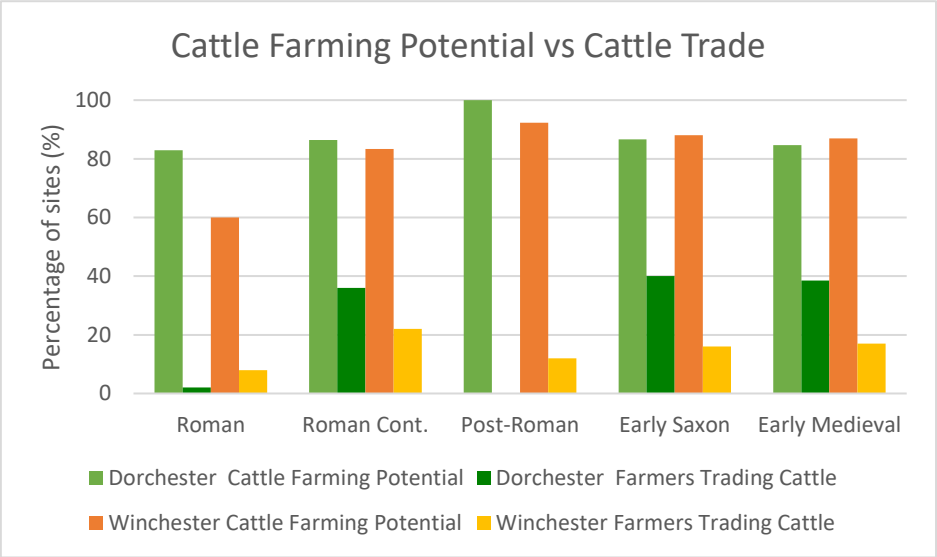


Figure 4.5: Graph showing cattle farming potential vs cattle trade.

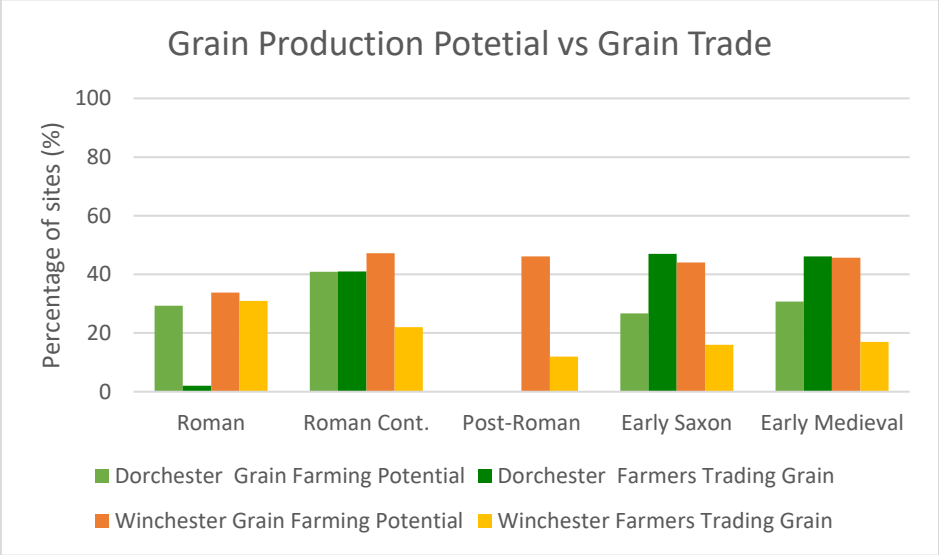


Figure 4.6: Graph showing grain production potential vs grain trade.

Last, in an attempt to analyse change in farming site location, elevation data from all agricultural sites were plotted in bar graph format. Here, changes between low and highland farming could be identified, see Figures 4.7, 4.8 and 4.9.

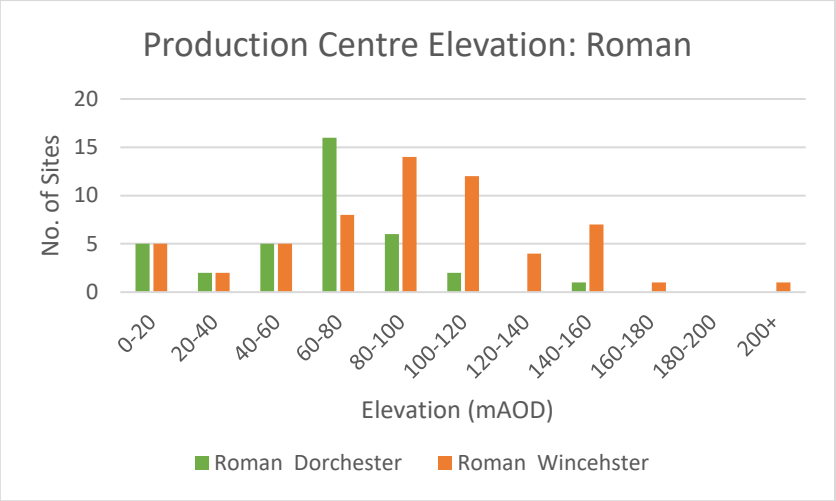


Figure 4.7: Roman Production Centre Elevation for the Dorchester and Winchester townscapes.

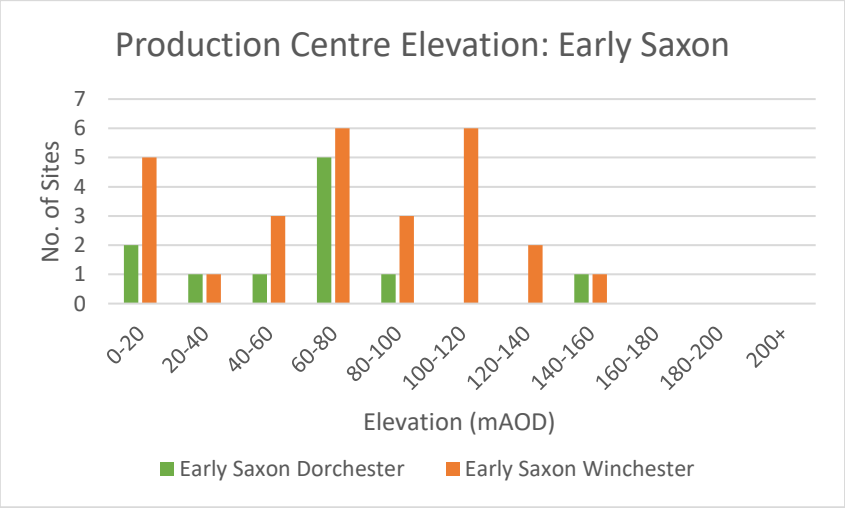


Figure 4.8: Early Saxon Production Centre Elevation for the Dorchester and Winchester townscapes.

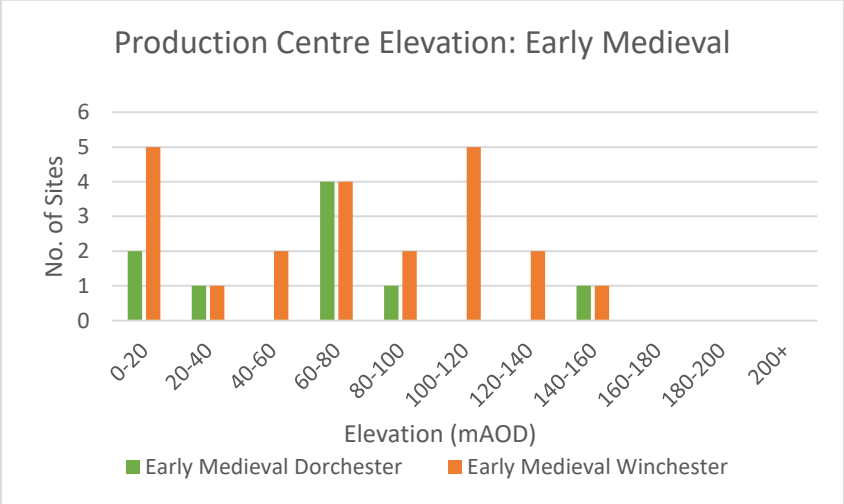


Figure 4.9: Early Medieval Production Centre Elevation for the Dorchester and Winchester townscapes.

Initial review of agricultural site elevation data shows that the majority of sites in the Dorchester townscape occupied land between 50-100m AOD for all three phases, whereas over one third of Roman agricultural sites within the Winchester townscape were located on land above 100m AOD. As stated previously, highland areas held production potential for sheep herding. This elevation topography would fit the results identified above where the Winchester townscape was producing high numbers of sheep during the Roman period.

Aspect data extracted from the Aspect model built in the GIS was then added to the charts to test whether any topographic patterns could be seen, and if so, to what extent they reflected patterns in production as identified above. Figures 4.10, 4.11, 4.12, 4.13, 4.14 and 4.15 display the topographic data.

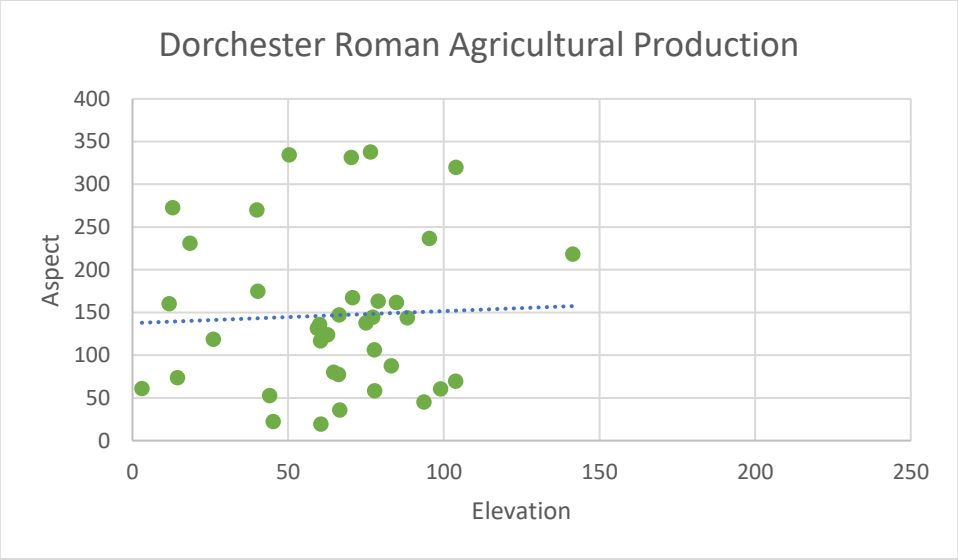


Figure 4.10: Scatterplot to show the relationship between elevation and aspect in Dorchester Roman farming sites.

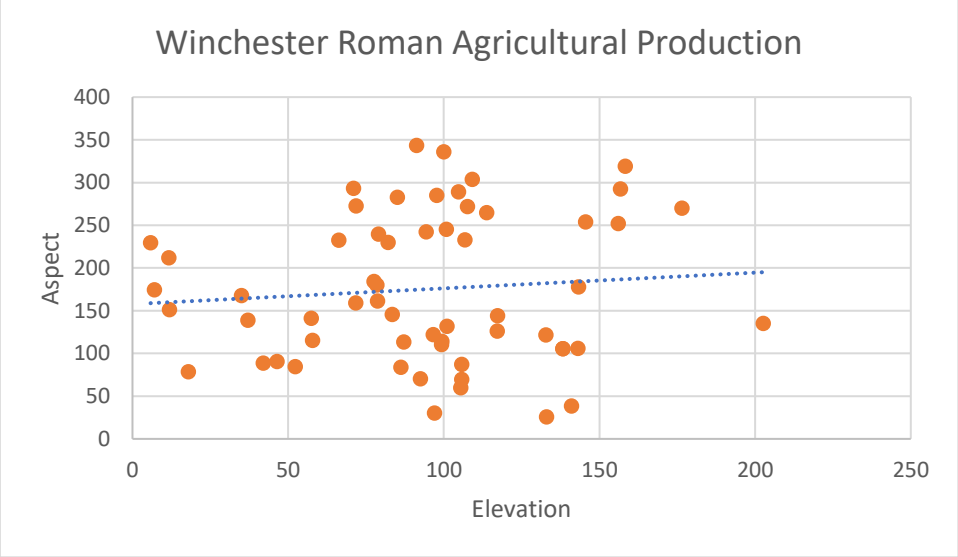


Figure 4.11: Scatterplot to show the relationship between elevation and aspect in Winchester Roman farming sites.

As hoped for, the relationship displayed in Figures 4.10 and 4.11 does reflect produce variation. The Dorchester data in Figure 4.10 reflects a focus of sites at relatively low elevation, a topology ideal for both cattle and sheep production; a number of sites lie within 113-160 degrees in aspect, this southeast facing aspect would enhance grain production. It is plausible then that the topographic character of Roman agricultural sites in Dorchester reflect a mixed farming practice between grain, sheep and cattle - this would match with production data above. Figure 4.11, on the other hand, displays a topographic pattern of sites around 100m AOD in Winchester, with a number being between 113-247 degrees in aspect. This would be indicative of sheep and grain production. This was true Roman Winchester as inferred from data above in Figures 4.12 and 4.14.

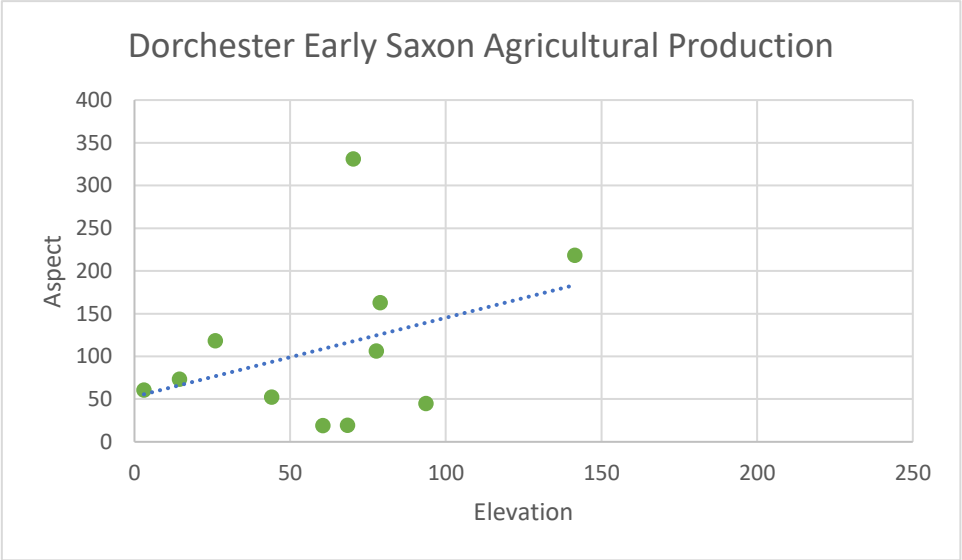


Figure 4.12: Scatterplot to show the relationship between elevation and aspect in Dorchester Early Saxon farming sites.

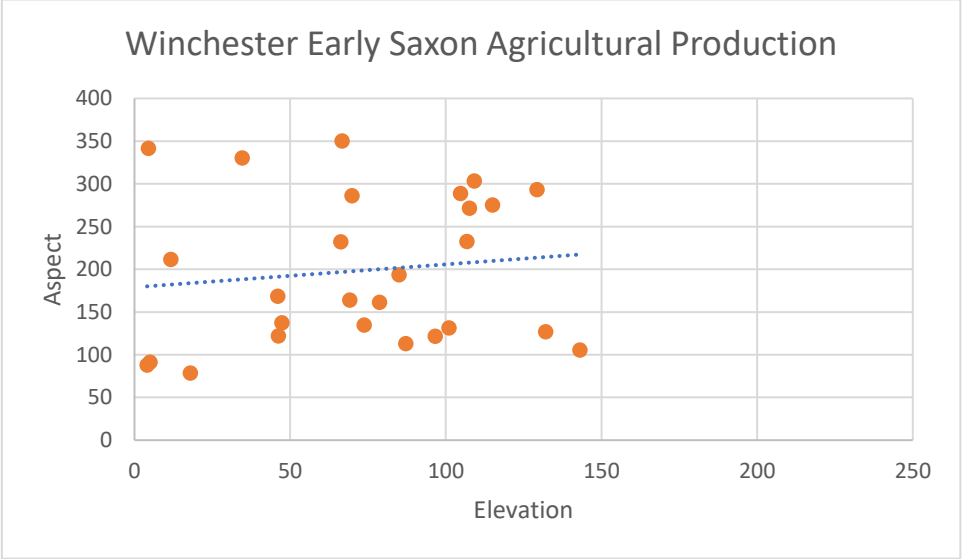


Figure 4.13: Scatterplot to show the relationship between elevation and aspect in Winchester Early Saxon farming sites.

Figures 4.12 shows a distinct shift from sites located on south/west facing land to east/ south-east facing land in Dorchester, with a continued use of sites above 50m which could be indicative of hilltop farming. The change in aspect could reflect the intensification in grain production alongside sheep production. Whereas the relationship in Figure 4.13 would suggest a decrease in hilltop farming within the Winchester townscape with all sites now below 150m. However, the majority of sites on land between 113-247 degrees in aspect in Figure 4.13 would suggest a continued focus on grain production.

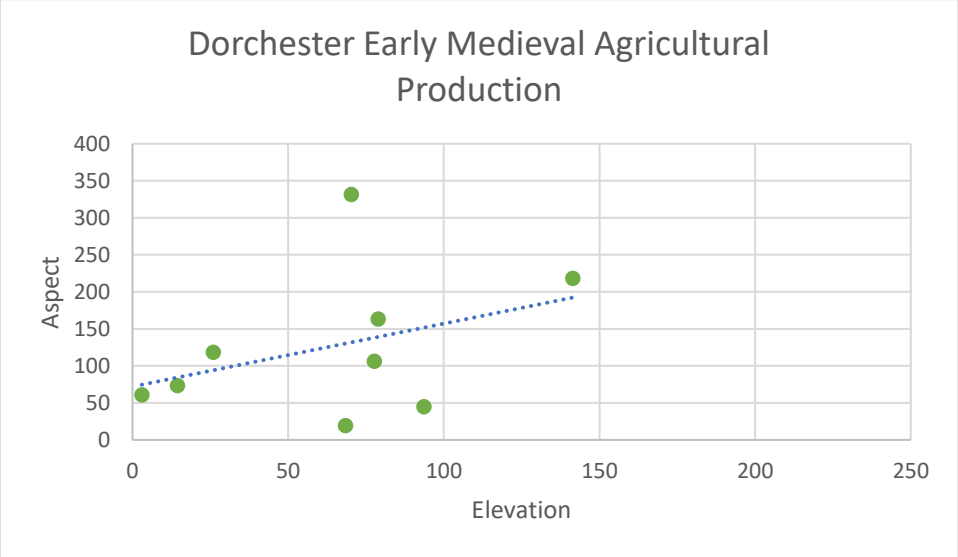


Figure 4.14: Scatterplot to show the relationship between elevation and aspect in Dorchester Early Medieval farming sites.

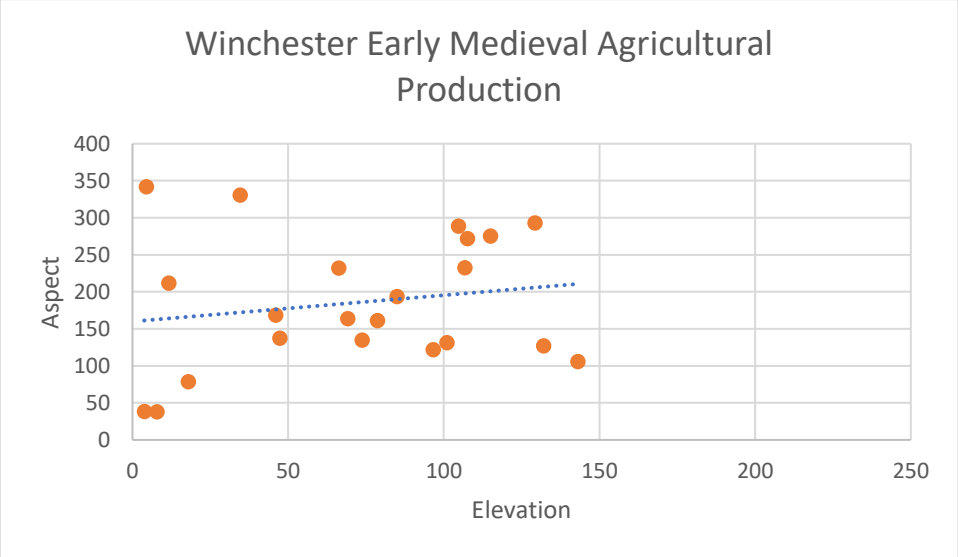


Figure 4.15: Scatterplot to show the relationship between elevation and aspect in Winchester Early Medieval farming sites.

Upon review of Early Medieval farming site topography from within the Dorchester area, displayed in Figures 4.14, the continuation of hilltop farming with a focus of sheep and grain production is indicated. Two distinct data clusters are clear in Figure 4.14 – the first being on land below 50m facing east and south/east, the second on land around 100m AOD also east and south-east facing. The Winchester farming sites again do not display these clusters as

clearly, but the topographic relationship in Figure 4.15 would indicate a focus on hilltop farming, on south facing land, suggesting a mixed farming approach. The same conclusion could be true of sites on land below 50m, on west and east facing land, suggesting cattle herding as well as grain.

When reviewing these graphs collectively, there is an indication that farming site location was influenced by specific produce, be it sheep, cattle or grain, this is particularly clear in the topography of Roman farming sites in Winchester where focus was directed towards hilltop sheep and grain production, and in Early medieval Dorchester, where two distinct clusters are seen for grain production sites and sheep production sites.

When placing this information alongside the productivity data for farming sites, it confirms the themes for post-500AD farming practices. Grain production intensified in the Dorchester townscape post 500AD, and sheep production was maintained.

Furthermore, this exercise has tested the capabilities of using Esri ArcGIS to run analysis on topographic data to identify certain site qualities. Although there is room for designing more realistic topographic parameters to identify both arable and pastoral areas of high productivity potential, these processes have shown that the Esri ArcGIS software has functionality to both identify and extract points with defined characterises and as a result can reveal previously unrecognised qualities of agricultural sites.

Turning to industrial production; the Dorchester townscape had a higher number of sites involved in surplus than Winchester. Industries of specific interest were the ceramic industries of Black Burnished Ware, SEDOWW, New Forest Ware and Alice Holt Ware, the former two being located in the Dorchester townscape and the latter two in the Winchester townscape.

The total number of sites producing specific ceramic types were quantified by period; results are given in Table 4.15. As the number of sites producing Black Burnished Ware and New Forest Ware were equal it can be said these were industries of similar size, however, production continued post-650AD for Black Burnished Ware in the Dorchester area, whereas production appeared to have ceased in New Forest Ware by 410AD. Alice Holt Ware was a larger industry than SEDOWW production, having 4 known production sites compared with a single SEDOWW production site, but again the Winchester industry was out of production by the beginning of the 6th century, whereas SEDOWW production sites appear to have still been active post-650AD. However, due to the extremely small sample sizes, limited meaning can be given to this interpretation.

Table 4.15: Sites Producing Ceramic Ware

	Sites Producing Ceramic Ware							
	Dorchester Townscape				Winchester Townscape			
	Black Burnished Ware		SEDOWW		New Forest Ware		Alice Holt Ware	
Roman	3	43%	0	0%	7	100%	2	50%
Roman Cont.	4	57%	1	100%	0	0%	2	50%
Post-Roman	0	0%	0	0%	0	0%	0	0%
Early Saxon	3	43%	1	100%	0	0%	0	0%
Early Medieval	2	29%	1	100%	0	0%	0	0%
Total No. of sites	7		1		7		4	

This data also follows the trend identified in agricultural sites in the Dorchester area, where a large proportion of commercial sites established before 410AD, continued post-500AD whereas many Roman sites ceased in activity post-410AD in the Winchester townscape.

Overall, production site analysis has extracted data revealing several main trends. First, the location of agricultural production sites evolved to reflected specialised farming practices. This is true of both townscapes.

Agricultural surplus production and ceramic industries in the Winchester area were most intensive prior to 410AD. By the Early Medieval phase this intensity had reduced but in the Dorchester townscape agricultural surplus production increased and ceramic industries were still in operation, including Bestwall (Ladle 1995, 2004, 2012, Gerrard 2010) and Worgret (Hearne and Smith 1992, Hinton 1993, Gerrard 2010).

The focus of agricultural produce shifted within each townscape. Prior to 410AD the Dorchester townscape had equal focus on sheep, grain, and cattle production, this transferred to a primary focus on sheep and grain production post-500AD. Whereas, the Winchester townscape had a primary focus on sheep, followed by grain, then cattle during Roman occupation. By 650AD, this primary focus remained on sheep, with a lesser intensity of grain and cattle production.

Last, it was noticed that the majority of Early Saxon and Early Medieval production sites within the Dorchester area were established prior to 410AD, with no agricultural sites established post-410AD. The opposite was the case in the Winchester area, where over one third of agricultural production sites were established post-410AD.

4.3.2 Define whether either town supported anything more than a subsistence economy post-450 AD.

To investigate this objective, the number of sites producing surplus, in either agricultural or industrial produce were exacted from the database using the query function, the results are displayed in Table 4.16. Relative percentages were calculated from the total number of sites with the potential to produce surplus: villas, industries, settlements and farmsteads.

Table 4.16: Number of sites per townscape producing a surplus post-450AD.

	Dorchester		**Winchester**	
	Total of sites producing surplus	Percentage of sites producing surplus (%)	Total of sites producing surplus	Percentage of sites producing surplus (%)
450AD+	14/21	67	26/61	43

Results show that both townscapes contained sites that were producing surplus resources in either industrial and agricultural produce after 450AD. Tables 4.12, 4.13, 4.14 and 4.15 support this conclusion. The Dorchester townscape had a higher proportion of sites producing surplus post-450AD.

There is some argument for the economy to gain momentum post-600AD (McKerracher 2018), and the data displayed in Table 4.17 for the Dorchester area would support this theory. Moreover, the results of this study suggest that the level of trade in the post-600AD Dorchester townscape is over double that of pre-450AD levels. However, this extreme result could be the consequence of a bias in the data mentioned previously, that Dorchester study area has a smaller sample, so more influence is given to sites who are producing surplus goods. The Winchester townscape maintained surplus production at a relatively consistent level after a post-Roman reduction. What is clear from both Table 4.17 and Figure 4.16 is that both townscapes supported more than subsistence economies post-450AD, Dorchester may have seen a greater increase in production during this time, but the study area sample size may be too small to give a reliable indication.

Table 4.17: Data for show trade variation post-600AD.

	Dorchester		**Winchester**	
	Total number of sites producing surplus	Relative Percentage (%)	Total number of sites producing surplus	Relative Percentage (%)
Pre-450AD	28/95	29	48/96	50
600+	13/17	76	21/50	42

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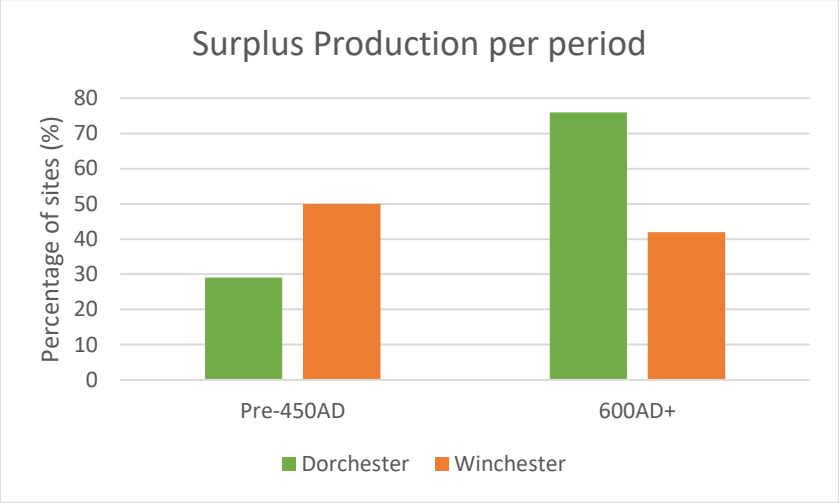


Figure 4.16: Bar graph to show trade level variation post-600AD.

4.3.3 Define any changes in settlement size and location.

For the purpose of this research, settlement is defined as an area of multiple dwellings and does not include individual estates such as villas. The area does not need to be associated to agriculture, industry or have a cemetery. The settlement also does not need to represent a town, rather nucleated rural settlements.

To begin investigating change in settlement, settlement density was plotted per phase, see Table 4.18 for results. Values are given as a proportion out of the total number of sites per phase, per townscape. This proportion was used to calculate density.

Table 4.18: Settlement Density

Period	**Dorchester**		**Winchester**	
	Number of Settlements/ total number of sites	Density (%)	Number of Settlements/ total number of sites	Density (%)
Roman	46/99	46	36/100	36
Roman Continuation	14/30	47	22/41	54
Post-Roman	1/12	8	24/61	39
Early Saxon	10/29	34	41/84	49
Early Medieval	10/26	38	38/74	51

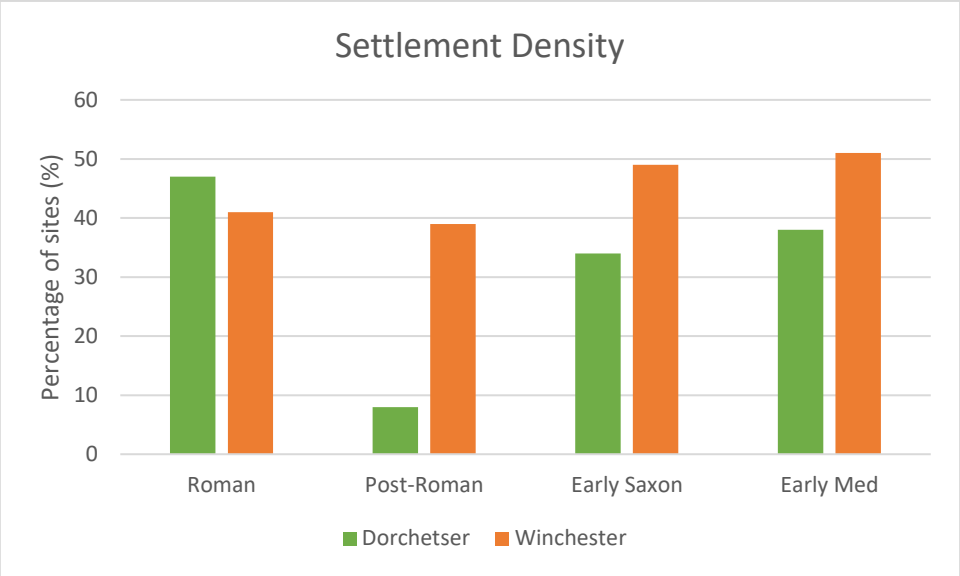


Figure 4.17: Settlement Density (Roman and Roman Continuation phases have been merged)

Figure 4.17 indicates that settlement density varied greatly between the two townscapes especially immediately after 410AD. The Dorchester townscape fluctuated significantly in density, having greatest occupation density pre-410AD. On the other hand, the Winchester townscape was most densely populated with settlements post-500AD. Here, the number of settlement sites established pre-410AD is relatively equal to the proportion of new sites established post 410AD, as with the agricultural sites within the Winchester townscape there is a level of consistency maintained. Again, the absence of sites established post-410AD is evident in the Dorchester townscape data. It would appear that where the Dorchester townscape had a production focus, the Winchester townscape had a settlement focus.

The number of Sunken Feature Buildings (SFBs) were investigated to support this density hypothesis. This research does not differentiate between SFBs and buildings with sunken floors described by Tipper (2004) as Grubenhauser; all designs of SFBs are included in this quantification. Results are displayed in Table 4.19 and in Figure 4.18.

Table 4.19: Sunken Feature Building quantification.

	Dorchester		Winchester	
	No. of sites with SFBs	Total no. of SFBs	No. of sites with SFBs	Total no. of SFBs
Roman	2	9	3	6
Roman Continuation	7	14	8	21
Post-Roman	0	0	12	51
Early Saxon	4	8	20	70
Early Medieval	4	8	17	67

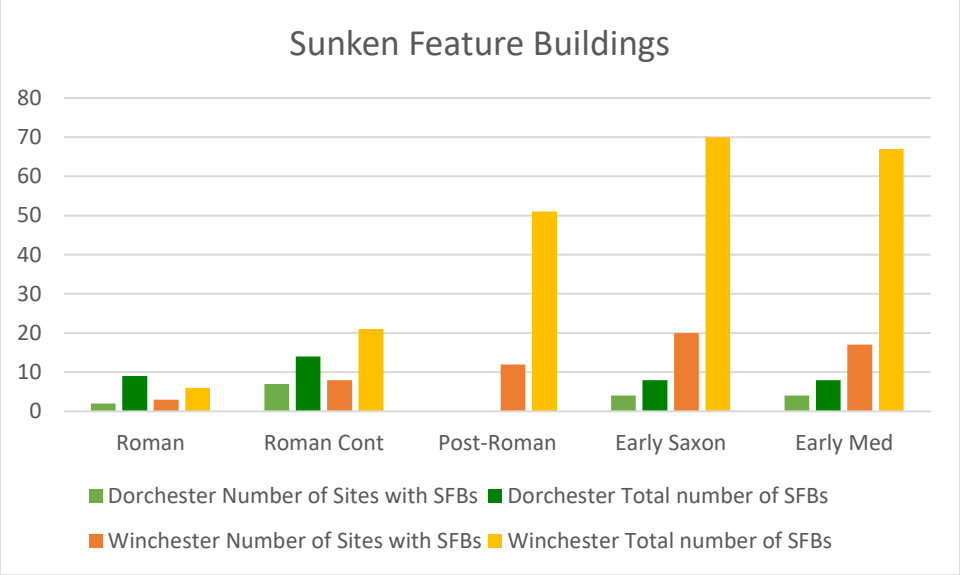


Figure 4.18: Quantification of Sunken Feature Buildings by phase and townscape

It is clear from Figure 4.18 that the number of SFBs present varied greatly between the two townscapes, being found in considerably greater numbers in the Winchester townscape. Interestingly, pre-410AD, the Dorchester townscape had a greater number of SFBs than the Winchester townscape, reflecting positive correlation with settlement density. However, it must be noted that this difference is only marginal and from a small sample size. In the Dorchester study area, no settlement sites established post-410AD exhibit SFBs – SFBs are only featured on sites established pre 410AD. In the Winchester study area, settlement sites established both pre and post 410AD feature SFBs. By 500AD the number of SFBs within the Winchester study area had increased significantly to 1067% the amount present during Roman occupation. This is compared to a 50% increase in SFBs in the Dorchester townscape.

The final element to assessing change in settlement size is cemetery data. For this assessment, Roman and Roman Continuation phases were merged to form a category of Late Roman cemeteries active until 450AD. This was due to the fact that some Late Roman cemeteries can be accurately and specifically dated to being active only a few decades post-410AD. This accurate dating is distorted when grouped into the 'Roman Continuation' category with a time span of over 300 years.

The number of cemeteries and individual counts from cemeteries were used to inform living population size, however, there are a number of problems associated to using the latter in such a task. There are four factors that act on assemblages of the dead reducing their size from the original population; the number of individuals being buried at the site, as opposed to cremated or being buried elsewhere, survival of the remains, the proportion discovered and the total number recovered (Waldron 2007). The latter two factors are particularly relevant to this project. In terms of proportion discovered, the values in Table 4.20 include both exact and estimated number of individuals depending on the excavation strategy. Sample size varies between excavations as well, effecting whether estimates or totals are given for cemetery populations. If estimated, an element of guesswork is present if cemetery extent is not known. Specific to this project, there is also the problem that data bias is present as the number of individuals within cemeteries cannot be converted into a relative percentage. Due to this, is it expected that the Winchester townscape will have higher values as more excavation work has taken place in the area and more cemeteries have been found. Last, in order to estimate a living population from a deceased population, biological standards should match as closely as possible, (Séguy and Buchet 2013), this is to say an individual count from a deviant or war grave cemetery will not give a true indication of the living population. The research has not distinguished between standard or deviant cemeteries - all have been included in the values in Table 4.20.

Despite these problems, by investigating the cemetery individual counts, general trends in population were indicated. Table 4.20 displays the data for the number of cemeteries, individual counts and the number of cemeteries associated with a settlement per phase.

Table 4.20: Cemetery data per phase

	Dorchester			Winchester		
	No. of cemeteries	No. of cemeteries associated to a settlement	No. of individuals	No. of cemeteries	No. of cemeteries associated to a settlement	No. of individuals
Late Roman	14	4	3480	19	7	1701
Post-Roman	8	0	128	37	6	2620
Early Saxon	13	5	267	39	8	2560
Early Medieval	13	5	267	39	9	2456

Again, the distinct shift between the townscapes can be seen. In the Dorchester townscape, within the Roman phase, there were a greater number of cemeteries and these cemeteries had higher individual counts compared with those of Winchester. Post-500AD this pattern is reversed. Individual counts were plotted in Figure 4.19, illuminating how abrupt this intensity shift is. It was also noted that the individual count is more consistent in the Winchester townscape, fluctuating only by 1000 individuals, whereas within the Dorchester study area, individuals within cemeteries fall by over 3000.

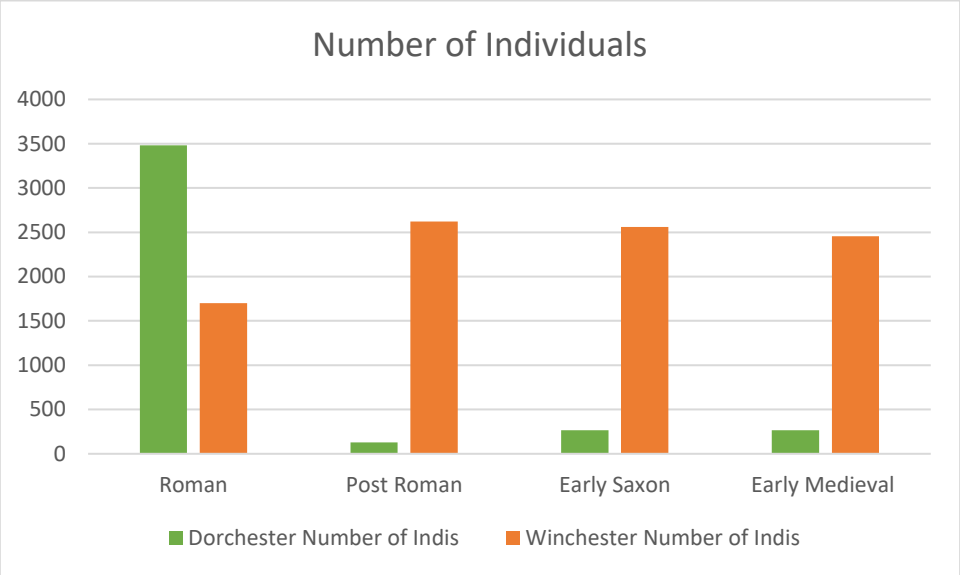
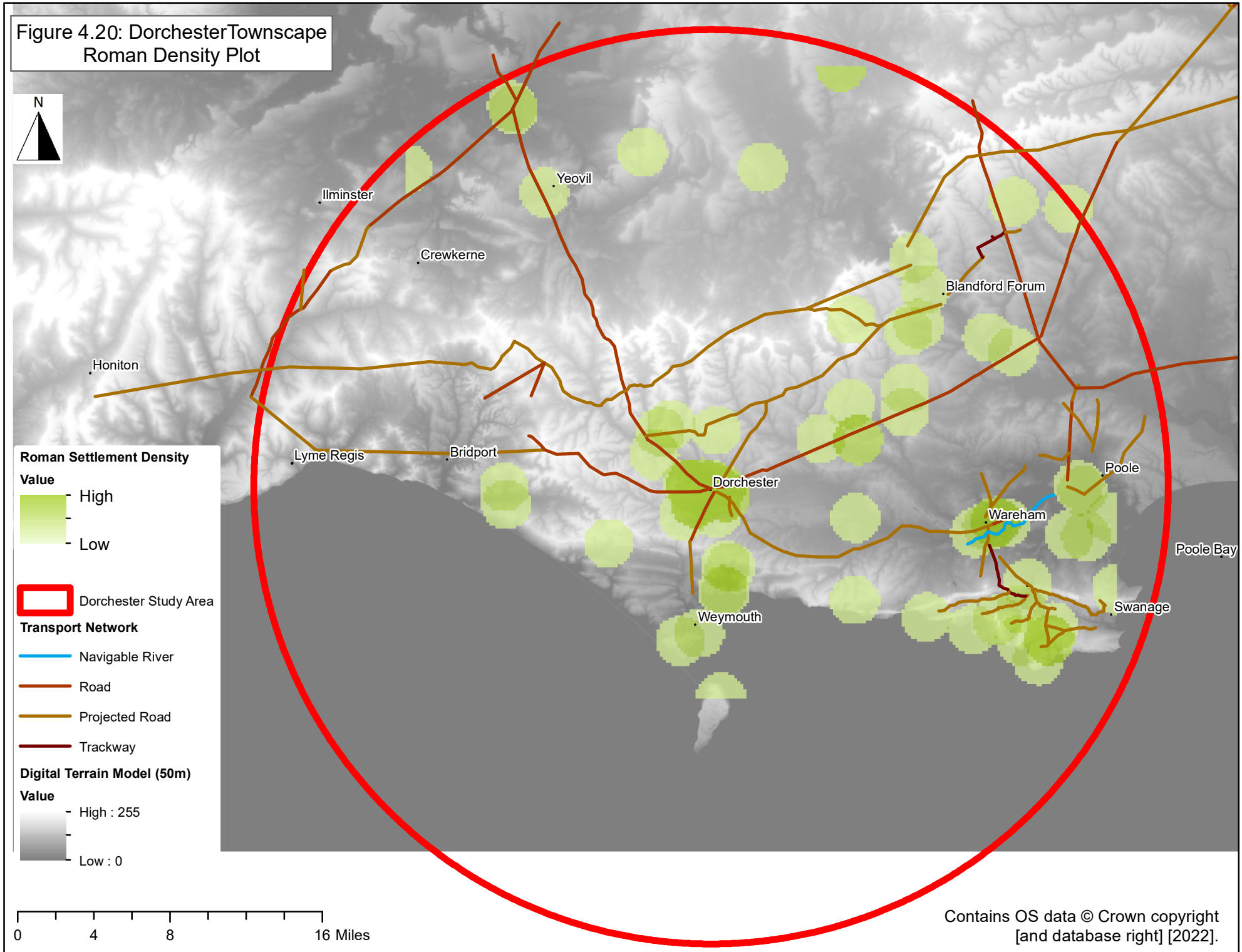


Figure 4.19: Chart to display variation between the number of individuals within cemeteries.

Last, change in settlement location was investigated through density plots. Both settlement and cemetery sites were used to inform the models. Plots were created for Roman and Early Medieval phases only as upon comparison these phases would indicate change most clearly. Figures 4.20 and 4.21 display the density plots of Roman activity in the Dorchester and Winchester townscapes, and Figures 4.22 and 4.23 display the plots for Early Medieval density. Upon review, Figures 4.20 and 4.21 clearly show that both townscapes have a central, single focus of settlement activity, this being the Roman towns of Winchester and Dorchester. By 650AD, Early Medieval settlement activity had become nucleated, especially so in the Winchester townscape, see Figures 4.22 and 4.23. Both the post-Roman towns of Hamwic (Southampton) and Wareham are visible.

Figure 4.20: DorchesterTownscape
Roman Density Plot



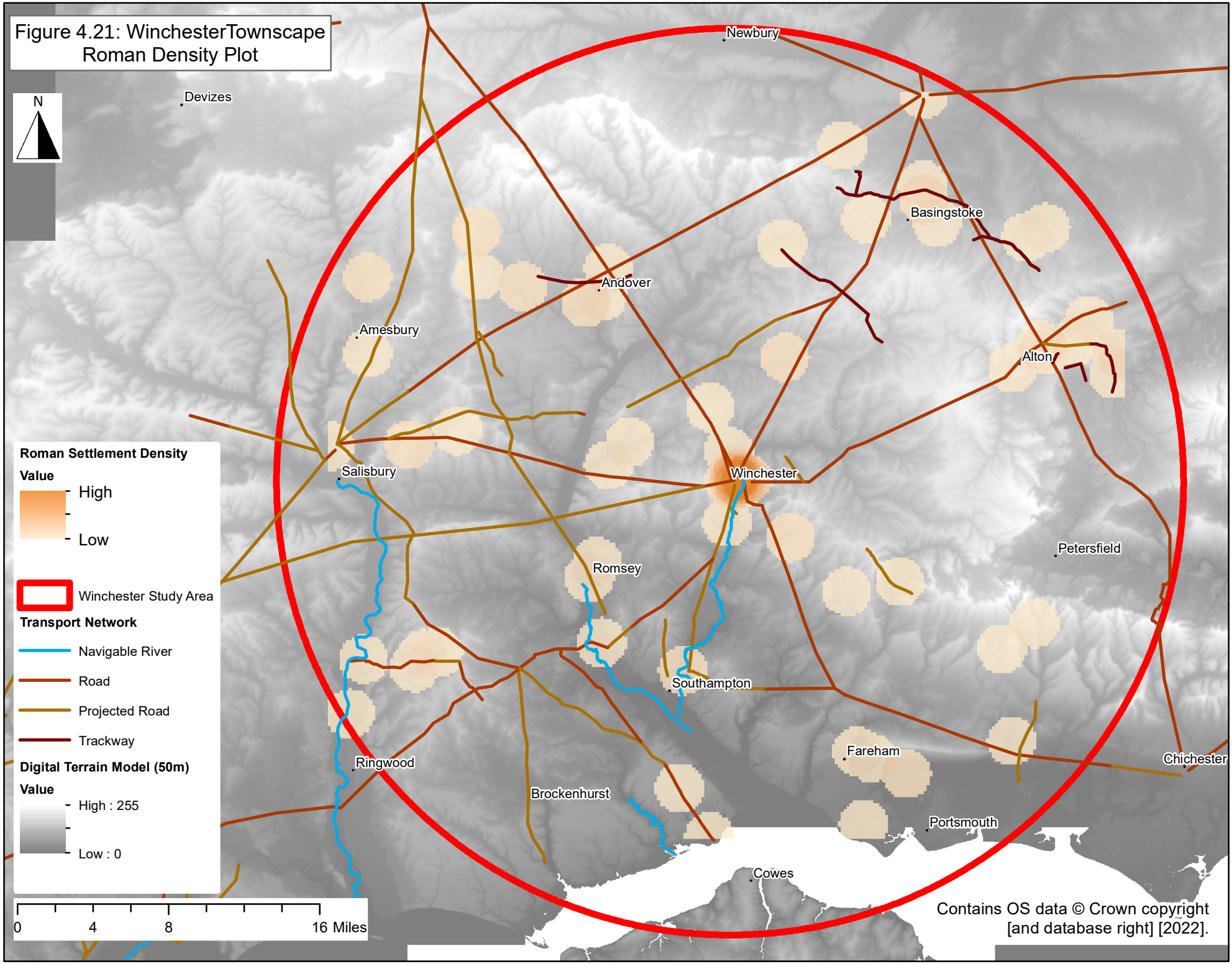
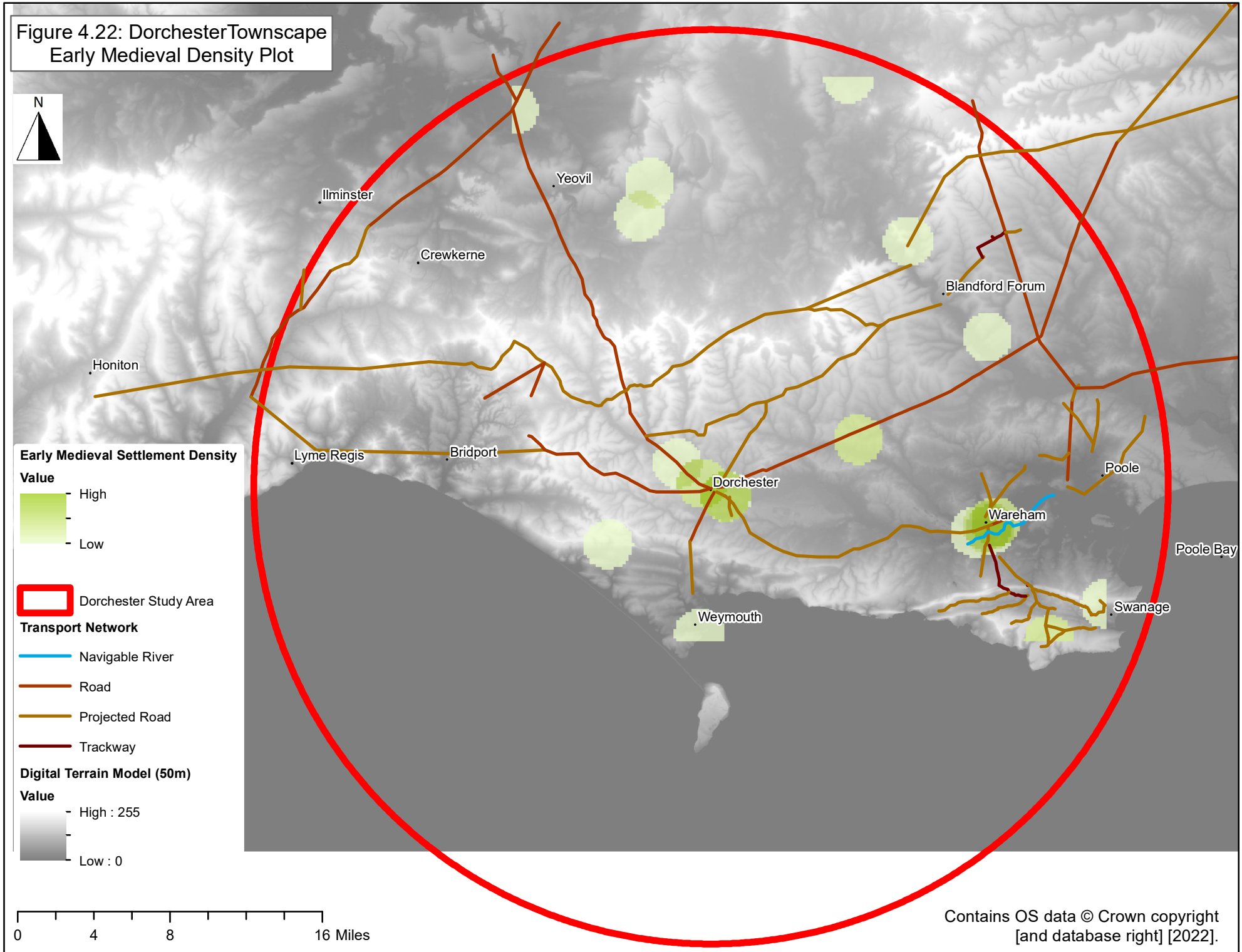


Figure 4.21: WinchesterTownscape
Roman Density Plot
N
Devizes
Newbury
Basingstoke
Andover
Amesbury
Alton
Salisbury
Winchester
Petersfield
Romsey
Southampton
Fareham
Chichester
Ringwood
Brockenhurst
Portsmouth
Cowes
Roman Settlement Density
Value
High
Low
Winchester Study Area
Transport Network
Navigable River
Road
Projected Road
Trackway
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
Contains OS data © Crown copyright
[and database right] [2022].

Figure 4.22: DorchesterTownscape
Early Medieval Density Plot



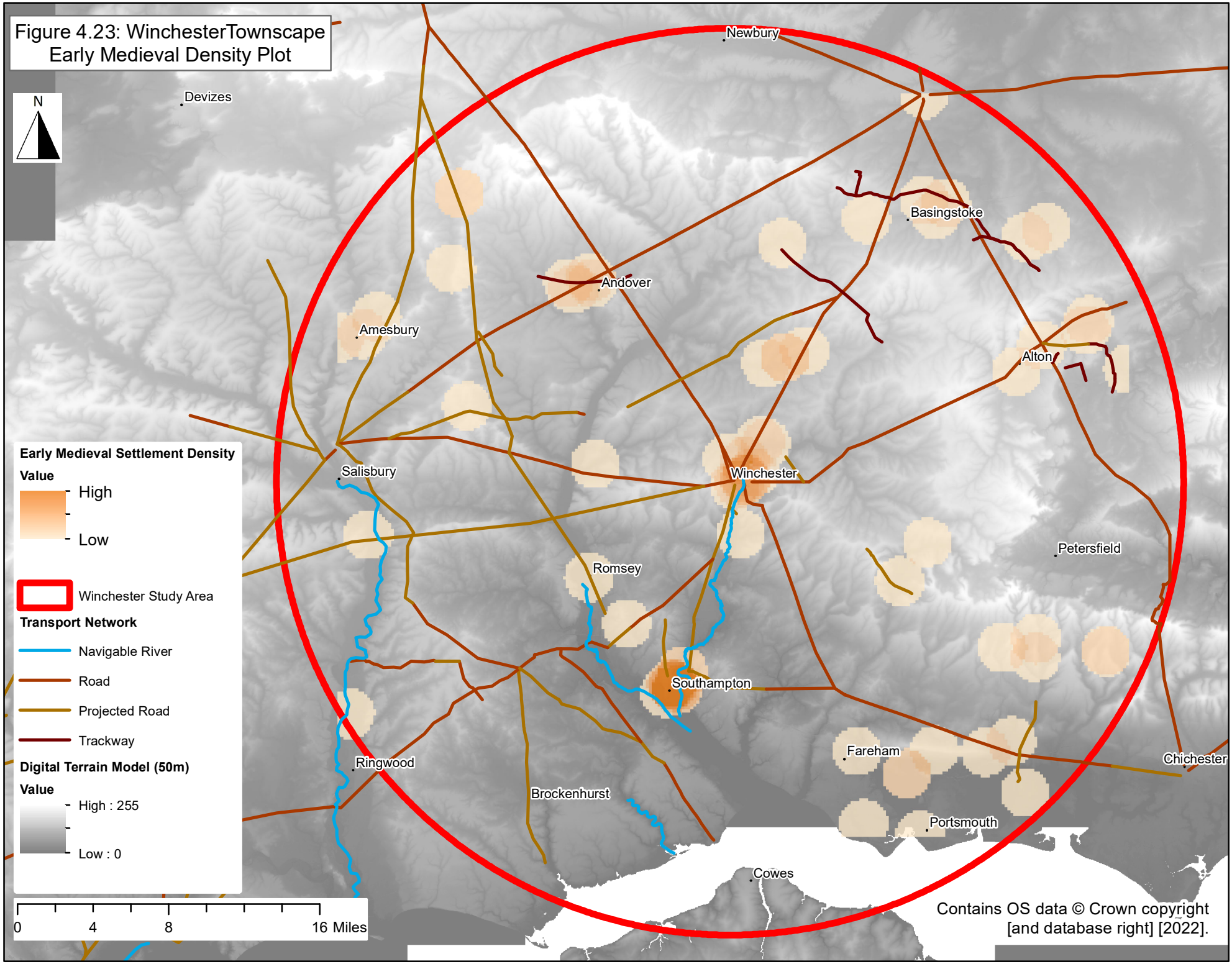


Figure 4.23: WinchesterTownscape
Early Medieval Density Plot
N
Devizes
Newbury
Basingstoke
Andover
Amesbury
Alton
Salisbury
Winchester
Petersfield
Romsey
Southampton
Fareham
Chichester
Ringwood
Brockenhurst
Portsmouth
Cowes
Early Medieval Settlement Density
Value
High
Low
Winchester Study Area
Transport Network
Navigable River
Road
Projected Road
Trackway
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
Contains OS data © Crown copyright
[and database right] [2022].

Topographic scatter plots show no obvious settlement pattern for either townscape in the Roman phase, see Figures 4.24 and 4.25 - settlement location remains mixed, very much like the pattern in Roman farming site location. It could be said however, that few settlement sites are located on land above 120m AOD.

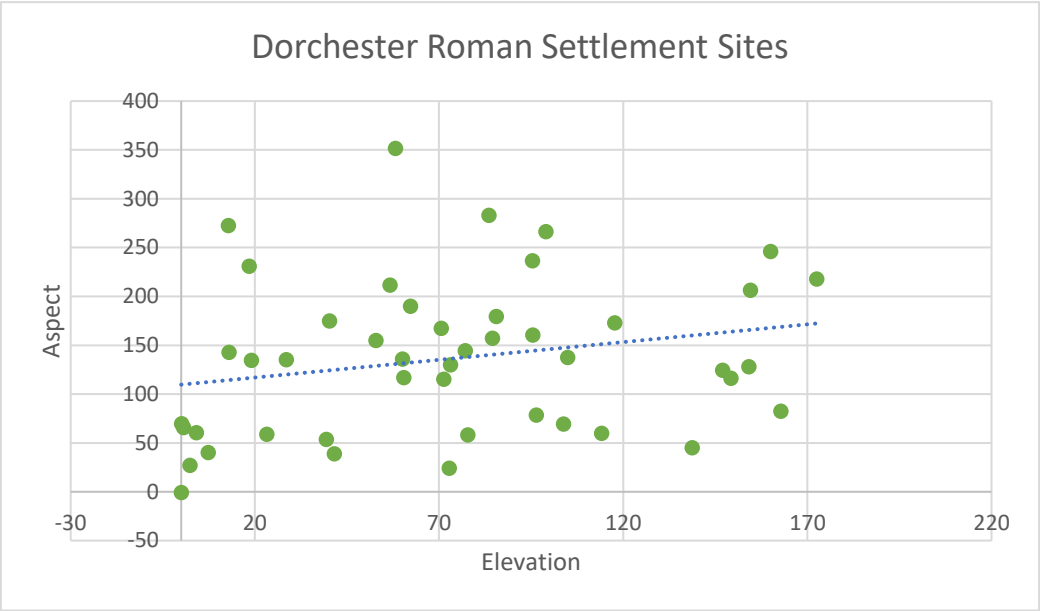


Figure 4.24: Scatterplot to show the relationship between elevation and aspect in Dorchester Roman settlement sites.

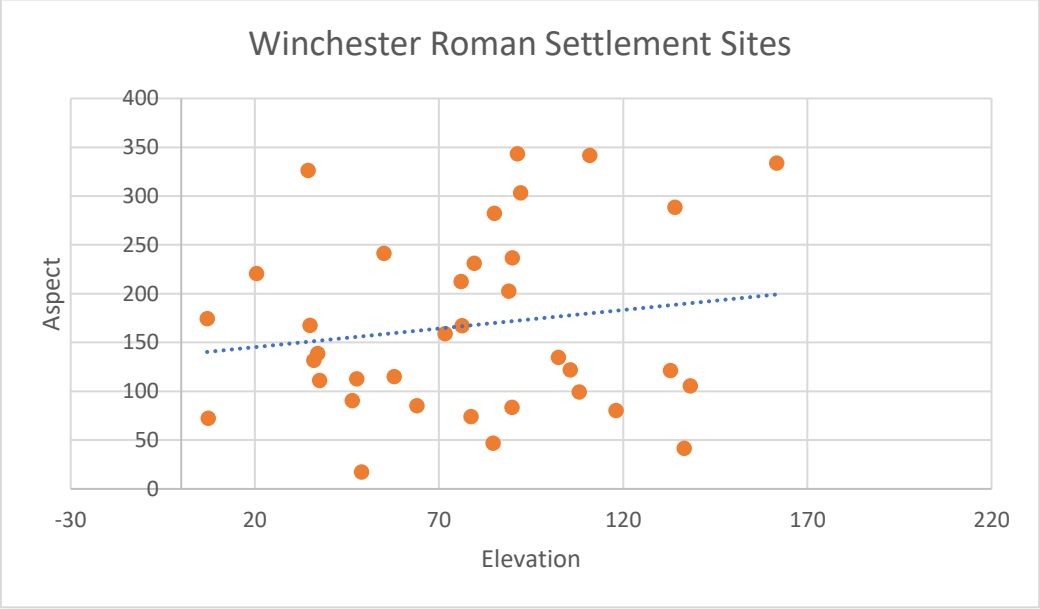


Figure 4.25: Scatterplot to show the relationship between elevation and aspect in Winchester Roman settlement sites.

There is a distinct change in location for Early Saxon settlements in the Dorchester area, see Figure 4.26. All known sites except one are on land facing north and east between 0-113 degrees in aspect. This contrasts with the Winchester townscape where, again, site

orientation is varied, but a large number of sites remain on south facing land between 113-247 degree in aspect, see Figure 4.27.

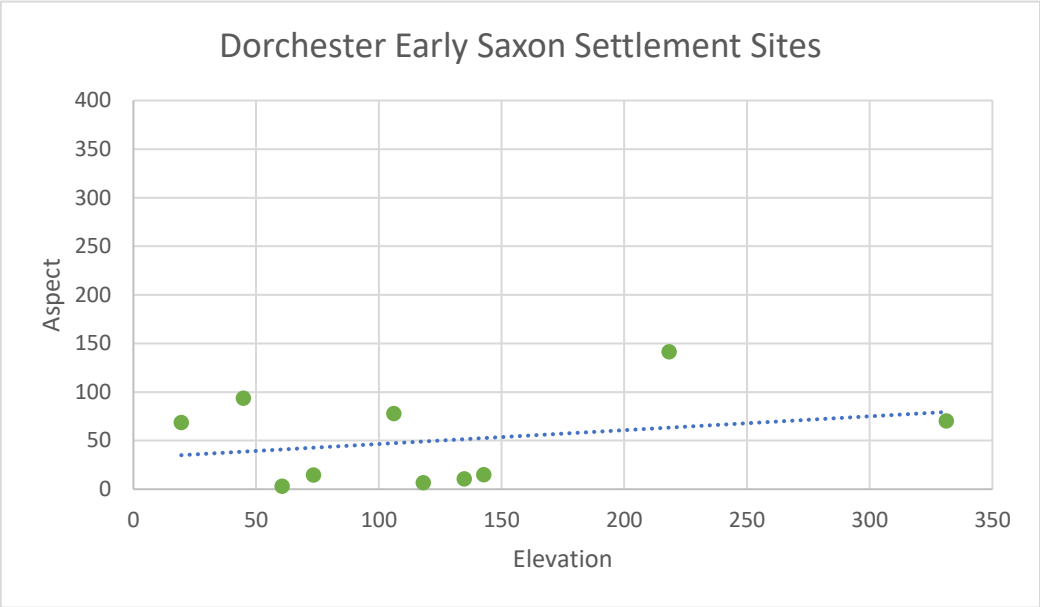


Figure 4.26: Scatterplot to show the relationship between elevation and aspect in Dorchester Early Saxon settlement sites.

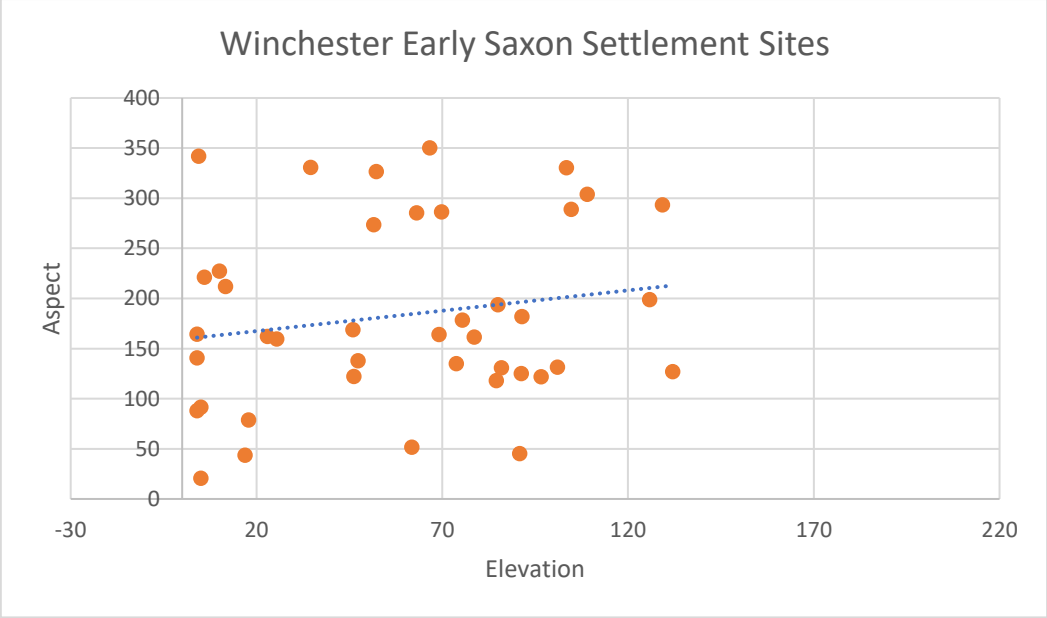


Figure 4.27: Scatterplot to show the relationship between elevation and aspect in Winchester Early Saxon settlement sites.

When reviewing the Early Medieval settlement pattern for the Dorchester townscape in Figure 4.28, the focus for settlement on east facing land continues, but two clusters in elevation can be seen, where site location falls between land below 20m AOD and between 70-120m AOD. This pattern matches that found in Early Medieval farming site location in the Dorchester townscape, seen in Figure 4.14. Therefore, specialised farming practices of sheep and grain production may have been influencing settlement location.

A similar pattern in elevation is seen in the Winchester townscape Early Medieval settlement location plot, Figure 4.29. The difference being that the Winchester settlement sites are located on south facing land as opposed to east facing land. This pattern is similar to the pattern identified in the Early Medieval farming site location in the Winchester townscape, see Figure 4.15, where the relationship is indicative of grain, sheep and cattle production. Variation in settlement location is still evident, leading to the conclusion that settlement location was being influenced by other factors as well as agricultural production centres.

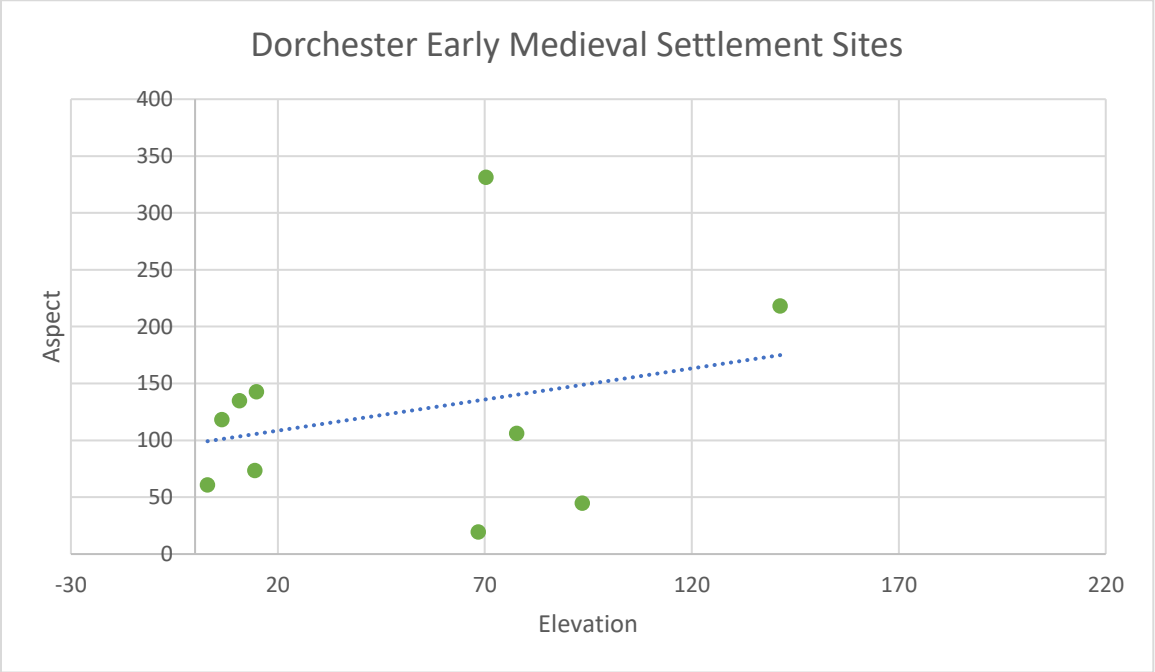


Figure 4.28: Scatterplot to show the relationship between elevation and aspect in Dorchester Early Medieval settlement sites.

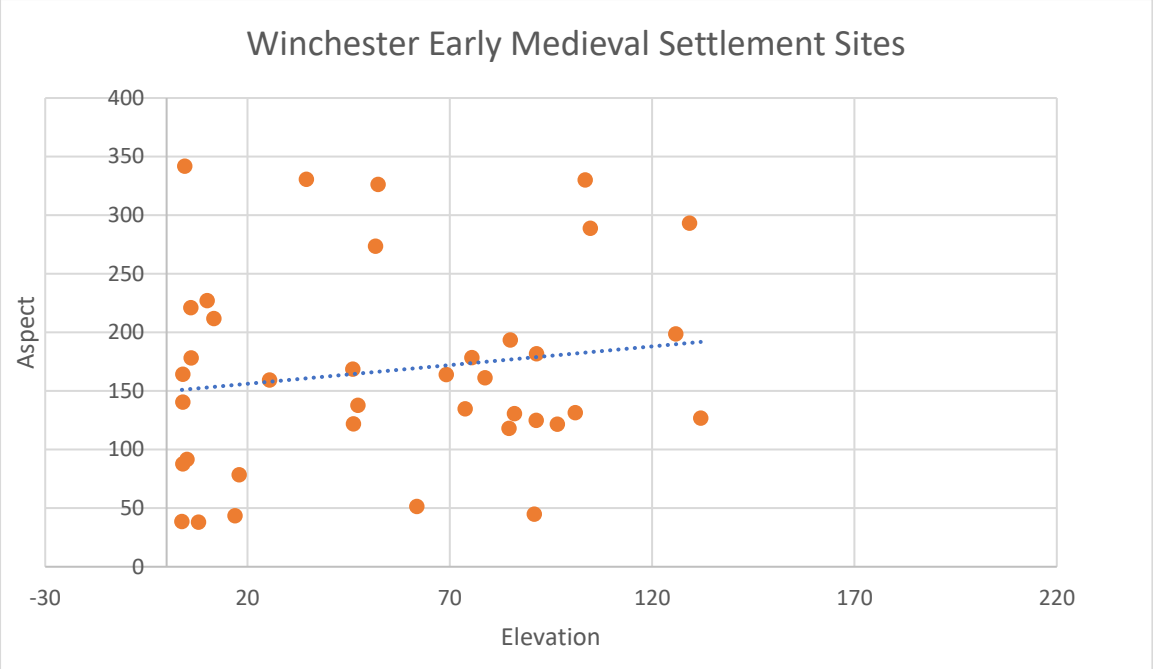


Figure 4.29: Scatterplot to show the relationship between elevation and aspect in Winchester Early Medieval settlement sites.

When reviewing settlement data on the whole, it is clear that settlement density changes from central administration centres to smaller nucleated settlements but with post-Roman urban centres developing in both townscapes. Settlement density decreases from a Roman peak in the Dorchester townscape to an Early Saxon peak in the Winchester area.

This shift could relate to population contribution from the new sites established post-410AD in the Winchester area. These new settlements could also contribute to the increased number of SFBs found in the Winchester area. In contrast, the majority of the post-500AD settlements in the Dorchester area were established during Roman occupation and it would appear that the sites relate to specialised agricultural sites indicated from topographic analysis. There is, however, a clear reduction in settlement size and number of settlements in the Dorchester townscape.

4.4.4 Define transport routes between towns and their associated support networks.

To extract data for this objective, transport models were built in ErsiArc GIS, which were analysed using buffers and queries in an attempt to identify relationships between production centres, import centres and transport networks.

Transport models were created for the Roman phase; Figures 4.30, 4.31, the Early Saxon phase; Figures 4.32 and 4.33 and the Early Medieval phase; Figures 4.34 and 4.35. These models display the transport network for each area, including roads, projected roads, navigable rivers, agricultural produce sites and agricultural import centres – 'towns' fall into this latter category. Models do not contain data on industrial product distribution as there were no industrial sites in the Winchester area post 420AD, thus there is a lack of data for review.

The production sites included in the models were either acknowledged as producing surplus for trade in their excavation reports or have evidence for producing agricultural products, but quantity is unknown. Sites where excavation reports state no surplus was being produced have not been included. Import sites were defined as such by explicit referral to the import of goods in the excavation report.

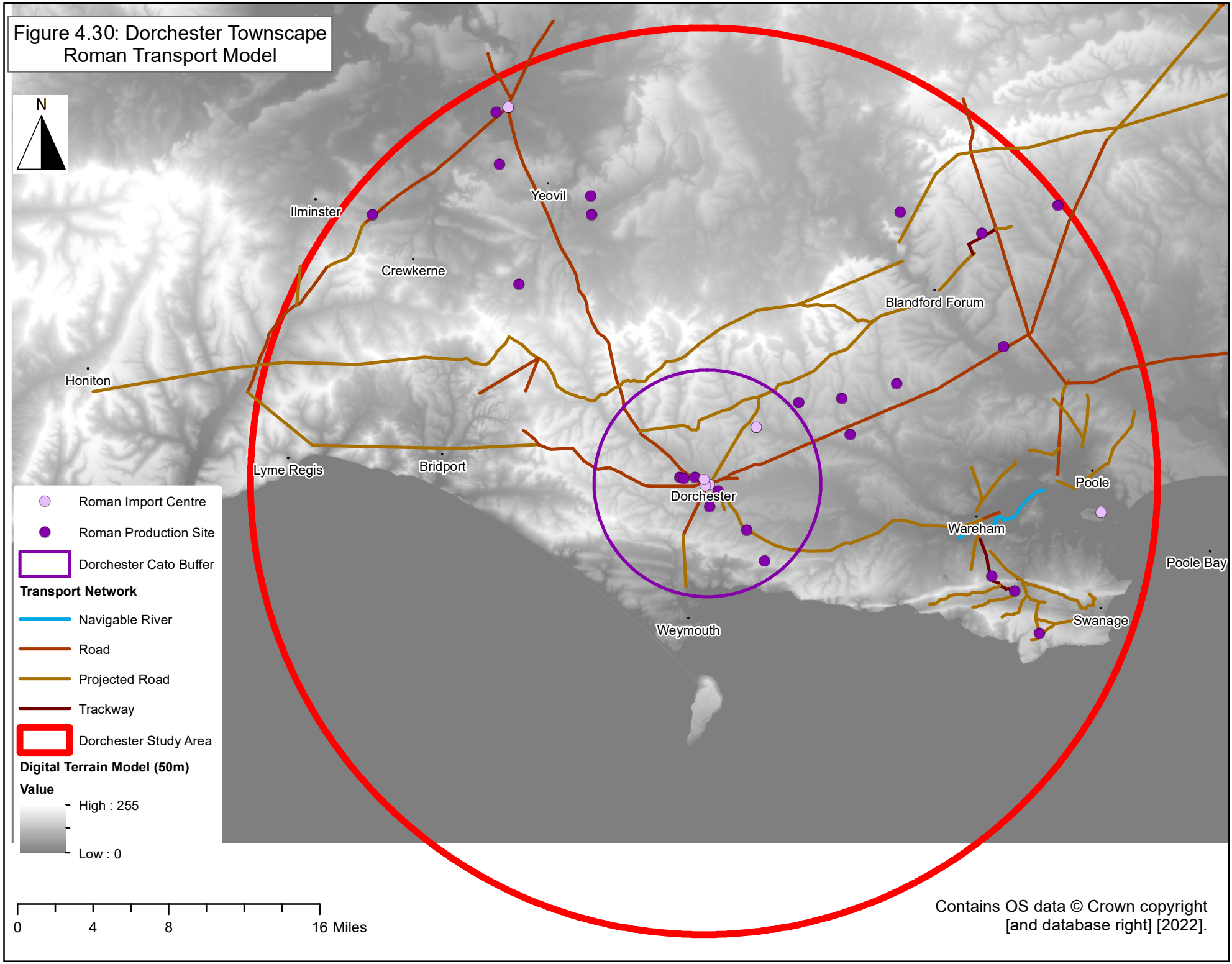


Figure 4.30: Dorchester Townscape
Roman Transport Model
N
Ilminster
Yeovil
Crewkerne
Blandford Forum
Honiton
Lyme Regis
Bridport
Dorchester
Poole
Wareham
Poole Bay
Weymouth
Swanage
Roman Import Centre
Roman Production Site
Dorchester Cato Buffer
Transport Network
Navigable River
Road
Projected Road
Trackway
Dorchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
Contains OS data © Crown copyright
[and database right] [2022].

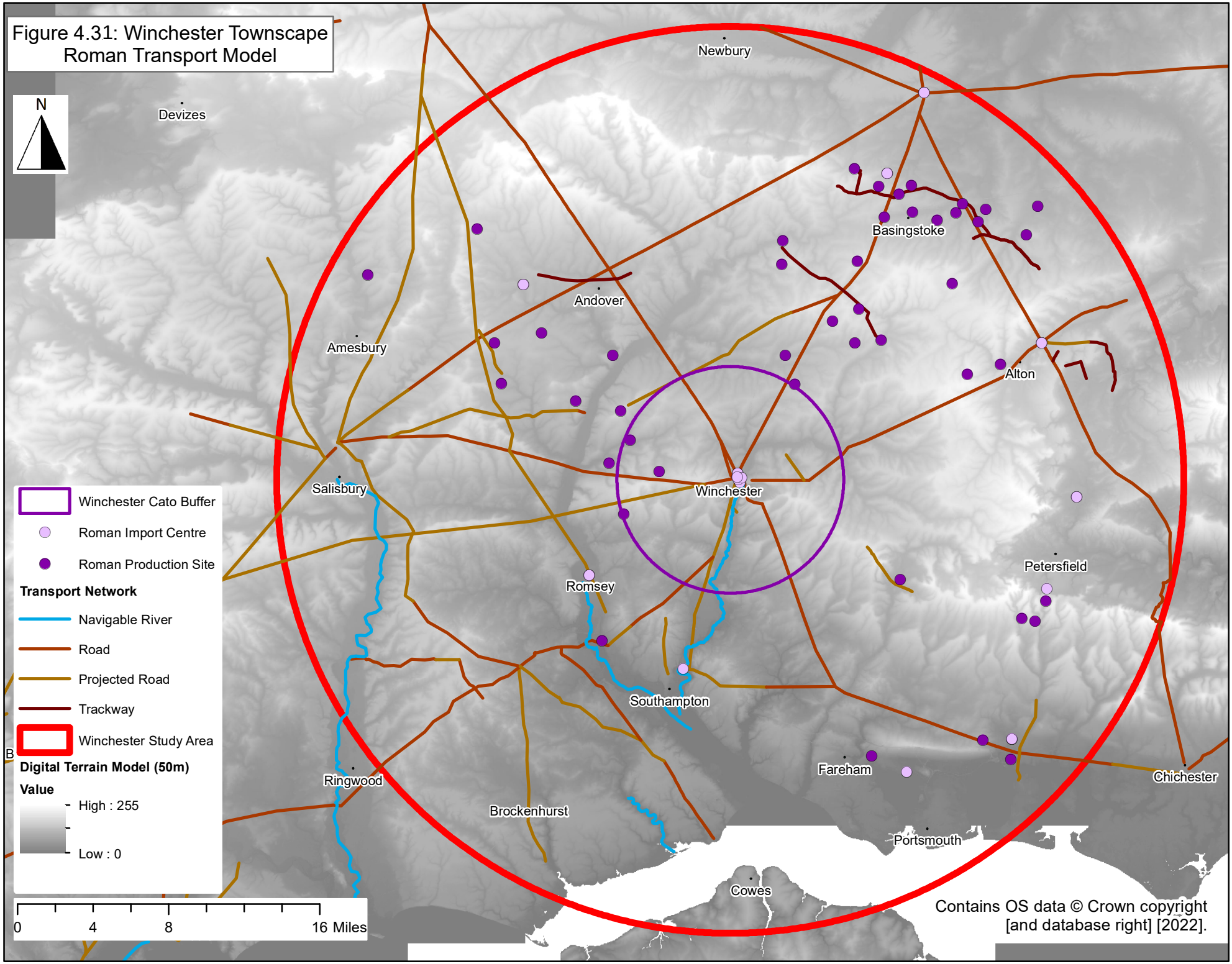


Figure 4.31: Winchester Townscape
Roman Transport Model
N
Newbury
Devizes
Basingstoke
Andover
Amesbury
Alton
Salisbury
Winchester
Petersfield
Romsey
Southampton
Fareham
Chichester
Ringwood
Brockenhurst
Portsmouth
Cowes
Winchester Cato Buffer
Roman Import Centre
Roman Production Site
Transport Network
Navigable River
Road
Projected Road
Trackway
Winchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
Contains OS data © Crown copyright
[and database right] [2022].

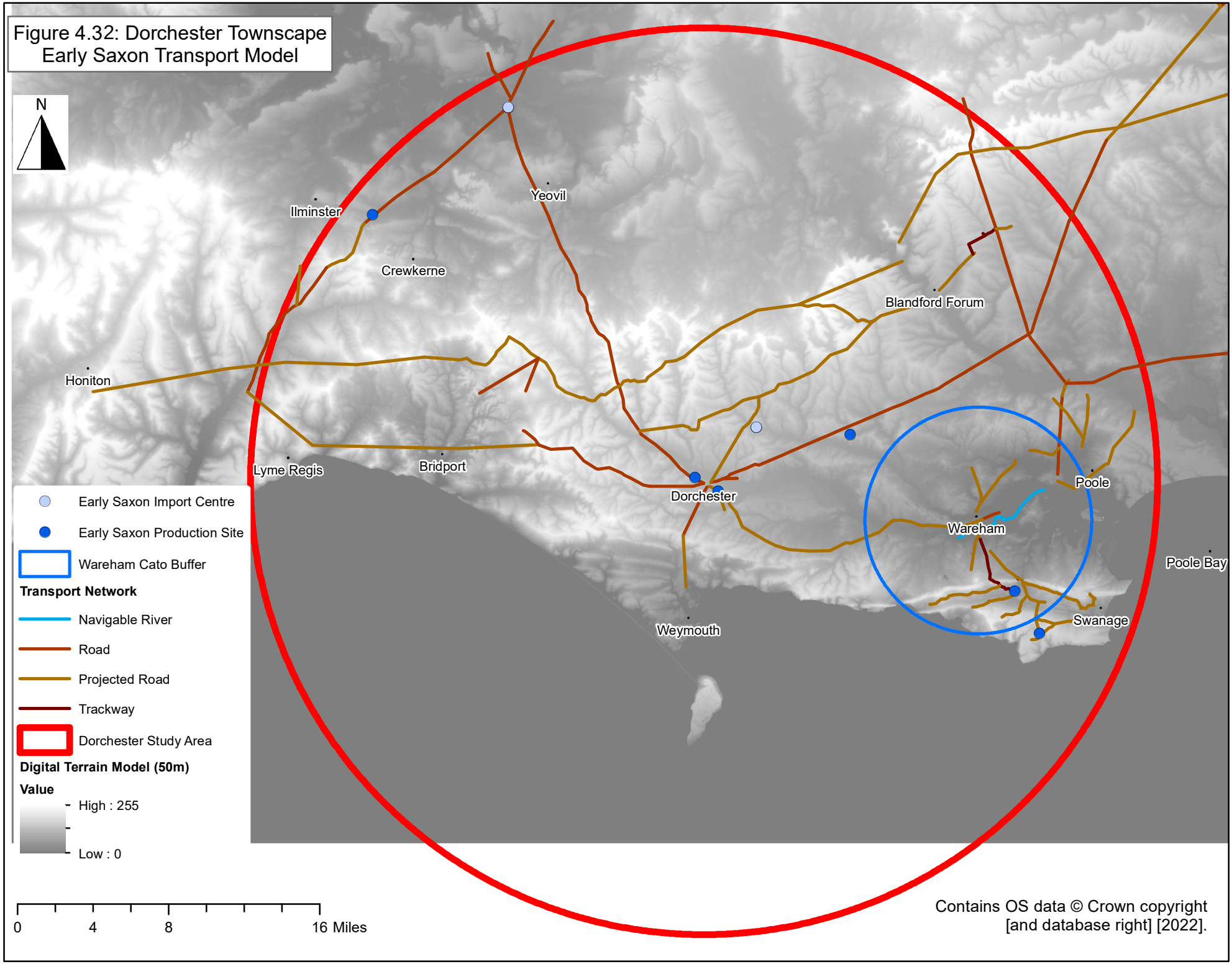


Figure 4.32: Dorchester Townscape
Early Saxon Transport Model
N
Ilminster
Yeovil
Crewkerne
Blandford Forum
Honiton
Lyme Regis
Bridport
Dorchester
Poole
Wareham
Poole Bay
Weymouth
Swanage
Early Saxon Import Centre
Early Saxon Production Site
Wareham Cato Buffer
Transport Network
Navigable River
Road
Projected Road
Trackway
Dorchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
Contains OS data © Crown copyright
[and database right] [2022].

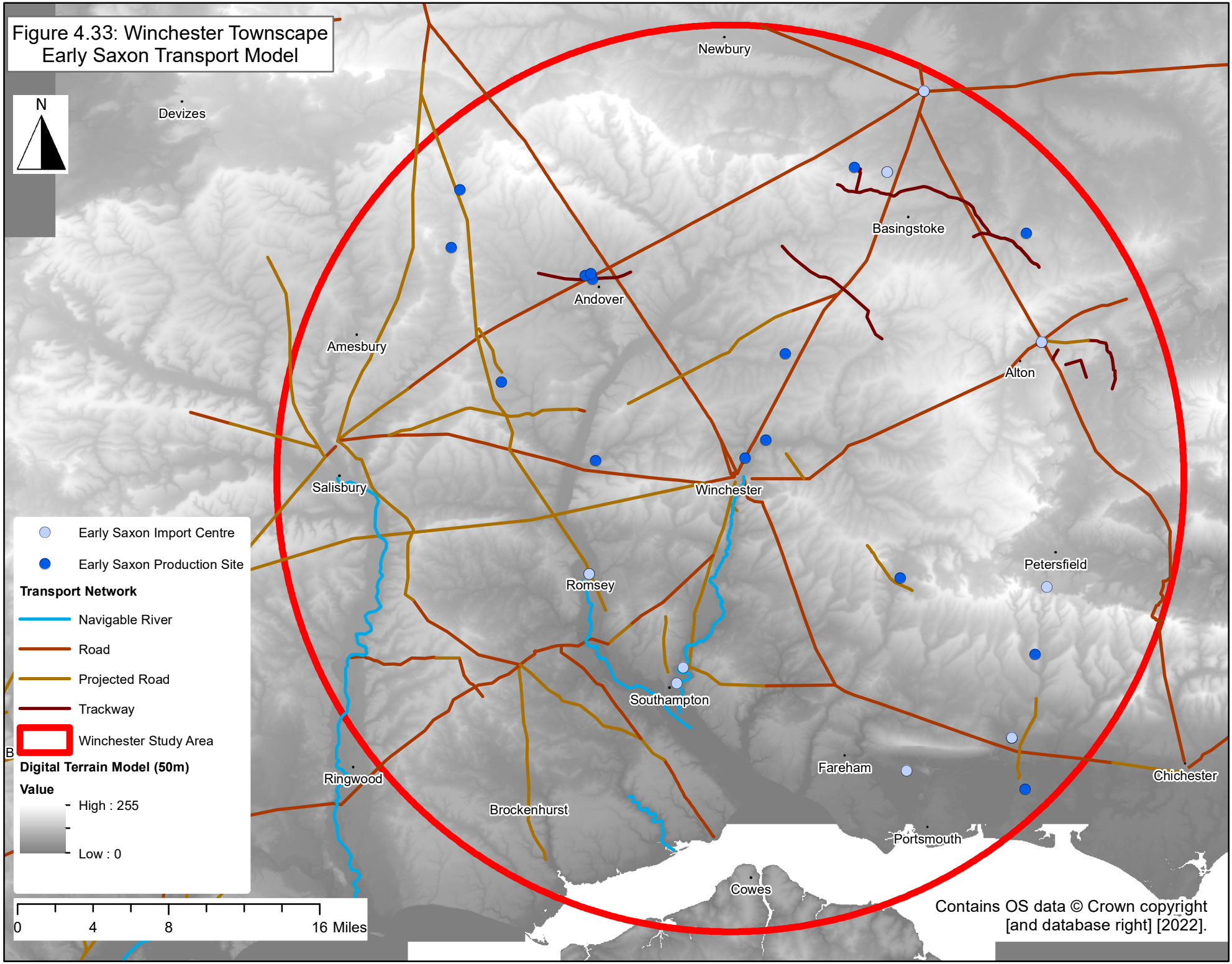
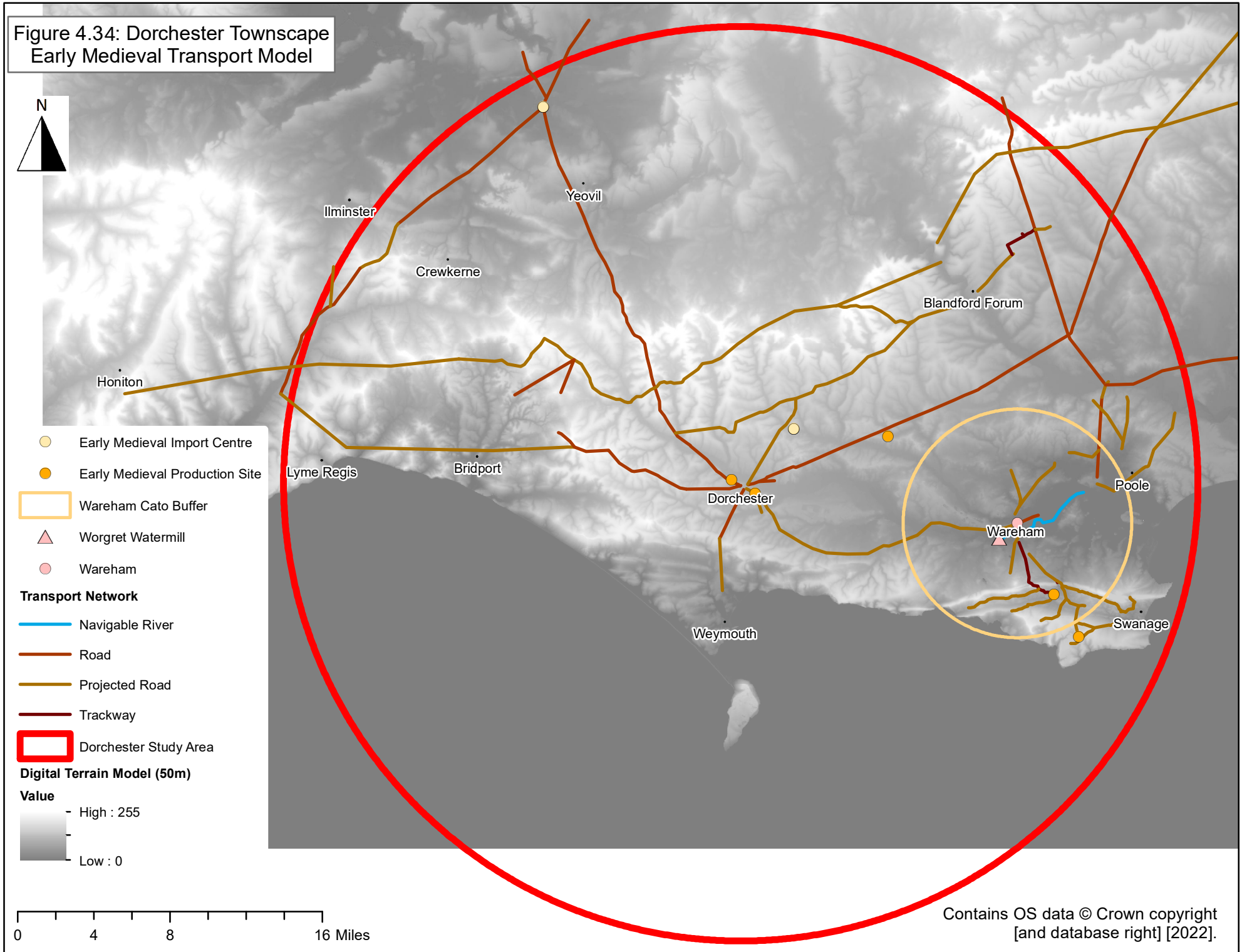


Figure 4.33: Winchester Townscape
Early Saxon Transport Model
N
Newbury
Devizes
Basingstoke
Andover
Amesbury
Alton
Salisbury
Winchester
Romsey
Petersfield
Southampton
Fareham
Chichester
Ringwood
Brockenhurst
Portsmouth
Cowes
Early Saxon Import Centre
Early Saxon Production Site
Transport Network
Navigable River
Road
Projected Road
Trackway
Winchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
Contains OS data © Crown copyright
[and database right] [2022].

Figure 4.34: Dorchester Townscape Early Medieval Transport Model



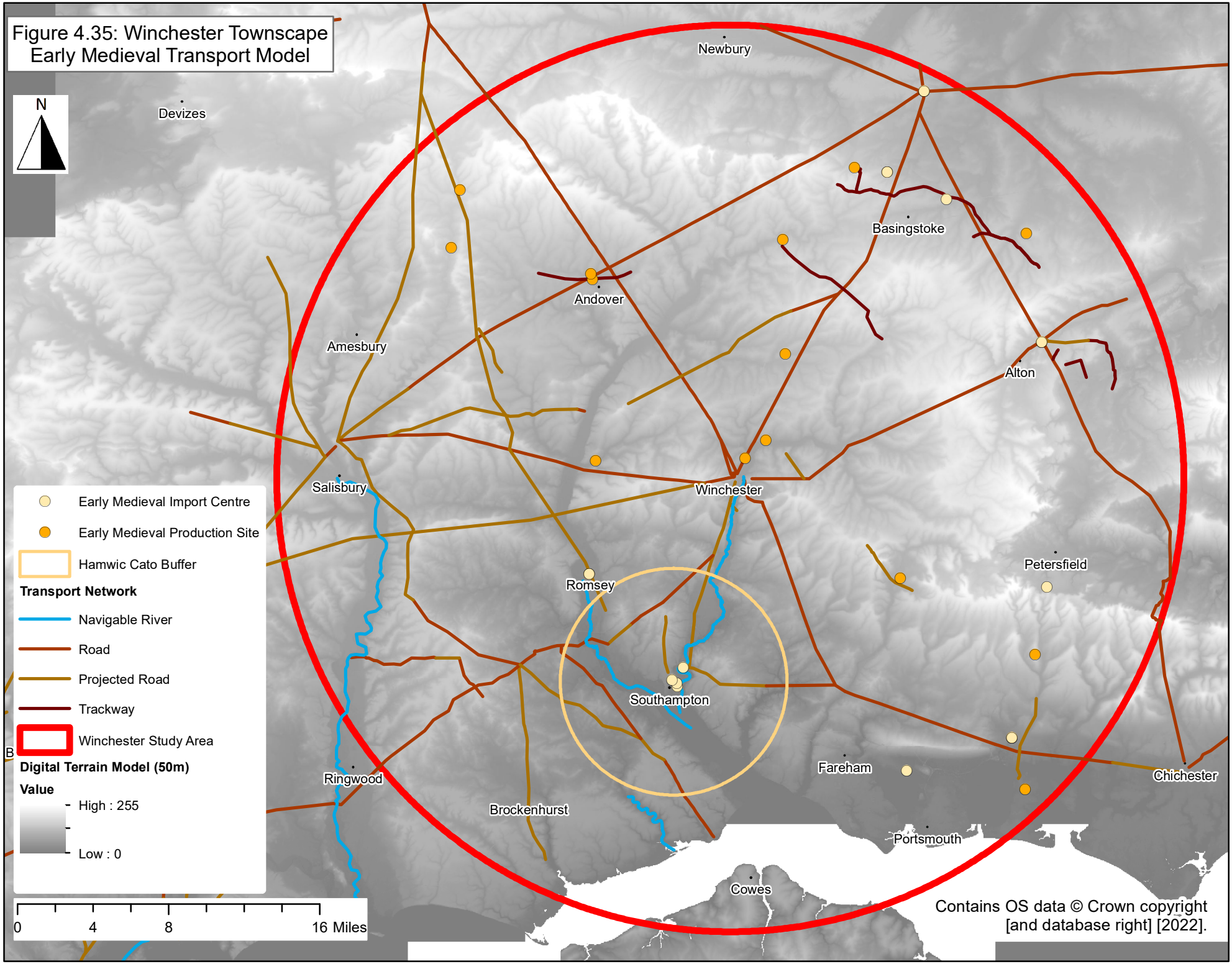


Figure 4.35: Winchester Townscape
Early Medieval Transport Model
N
Newbury
Devizes
Basingstoke
Andover
Amesbury
Alton
Salisbury
Winchester
Romsey
Petersfield
Southampton
Ringwood
Fareham
Chichester
Brockenhurst
Portsmouth
Cowes
Early Medieval Import Centre
Early Medieval Production Site
Hamwic Cato Buffer
Transport Network
Navigable River
Road
Projected Road
Trackway
Winchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
Contains OS data © Crown copyright
[and database right] [2022].

To analyse the relationship between transport networks, production sites and import sites, a 1-mile buffer was set around all roads, navigable rivers and coastal regions. (Navigable rivers were verified by evidence from Oksanen (2019). A locational query was set to quantify the number of sites that fell within the buffer. Table 4.21 displays the results – these values were then subdivided into transport network type, either road or navigable river/coast; these results being displayed in Tables 4.22 and 4.23. Values are given as relative percentages of the total number of agricultural sites per phase and study area. (Wareham and Worgret mill have been artificially added to this data as, although no excavation data exists to state that goods were being imported to these sites, Wareham is recognised as a Saxon market town (Ladle 1988) and Worgret, a watermill (Dorset HER 2023, Flatman and Herring 2018) - it can be assumed that these sites were importing agricultural surplus.)

Table 4.21: Table showing the percentage of sites within 1 mile of the transport network.

Sites within 1 mile of transport network				
	Dorchester		Winchester	
	Production	Import	Production	Import
Roman	73	100	76	87
Early Saxon	100	100	95	89
Early Medieval	100	100	95	92

Table 4.22: Table showing the percentage of sites within 1 mile of the navigable rivers and coast.

Sites within 1 mile of navigable rivers and coast				
	Dorchester		Winchester	
	Production	Import	Production	Import
Roman	4	17	11	53
Early Saxon	13	33	15	44
Early Medieval	14	50	16	50

Table 4.23: Table showing the percentage of sites within 1 mile of a road, projected road or trackway.

Sites within 1 mile of a road, projected road or trackway				
	Dorchester		Winchester	
	Production	Import	Production	Import
Roman	73	83	74	80
Early Saxon	100	100	95	78
Early Medieval	100	100	95	83

The values from Tables 4.21-23 have been visualised in Figures 4.36, 4.37 and 4.38. By reviewing Figure 4.36 it is clear to see that proximity to the transport network was of extreme importance for both production and import sites of both townscapes; this importance increased during the Early Saxon and Early Medieval phases. Furthermore, the data displayed in Figure 4.38, indicates that the likelihood of Roman-built roads remaining in use post-700AD was high, especially in Dorset, as 100% of Early Saxon and Early Medieval production and import sites were within 1 mile of a road. In the Winchester townscape, the majority of production sites are located near roads whereas import sites appear to be located in close proximity to the coast or navigable rivers, see, Figure 4.37. This is also true of the Dorchester townscape.

This data can be used to support several patterns identified in the transport models; Figures 4.30- 4.35. First, prior to 410AD, the import centres of Dorchester and Winchester were centralised within the townscapes, connected by well-established transport networks of roads and navigable rivers. After 500AD, the majority of both import centres and production sites were relocated to coastal regions or northwards towards the supply channels of central England; this pattern is seen in both townscapes and is especially evident by 650AD.

It might be possible to explain this change through reference to the transport network data. First, in reference to Figure 4.38, it can be seen that proximity to roads was maintained. It could be hypothesised that roads of the central supply channels were better maintained whereas more rural roads may have become unusable; thus, supply chains in these regions went out of use. Furthermore, referring to the data in Figure 4.37, an increased emphasis on import centres located near riverine and coastal locations is seen, this may be the result of an increased use of water powered mills as agricultural processing centres (Flatman and Herring 2018).

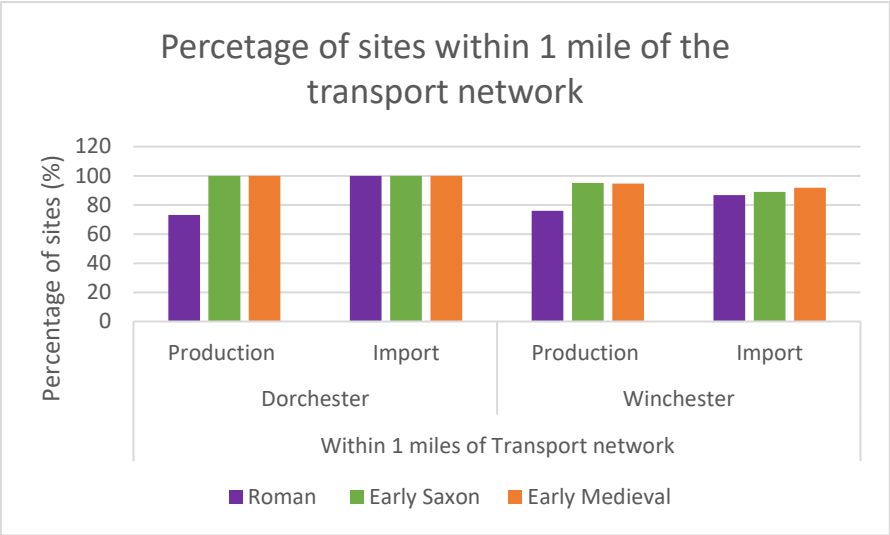


Figure 4.36: Percentage of sites within 1 mile of the transport networks

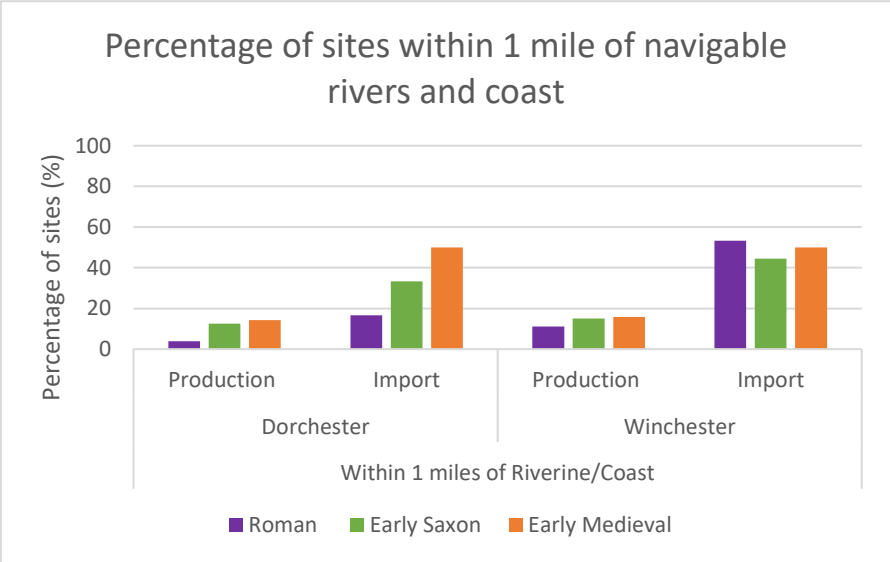


Figure 4.37: Percentage of sites within 1 mile of navigable rivers and coast.

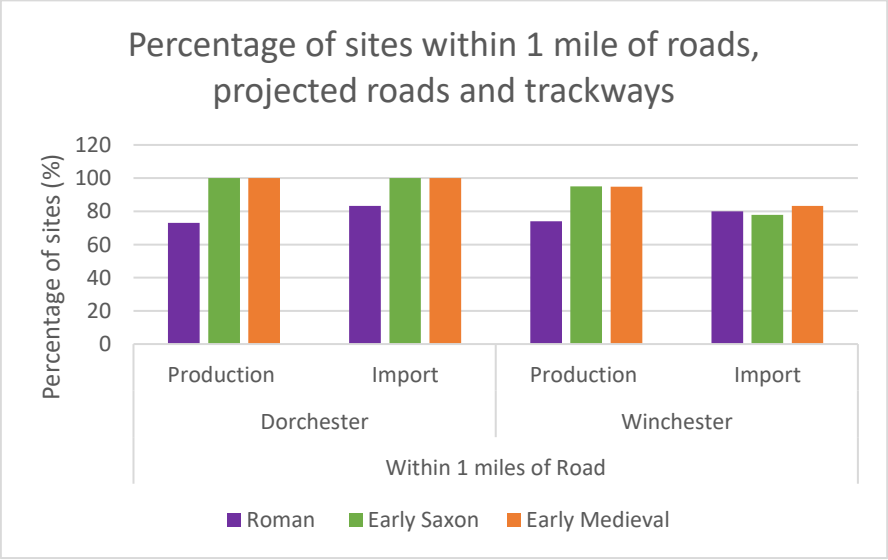


Figure 4.38: Percentage of sites within 1 mile of roads, projected roads and trackways.

When investigating supply chains for both the Roman towns of Winchester and Dorchester, and the post-Roman towns of Hamwic and Wareham, it would appear that production centres shifted away from towns, potentially to be in proximity to agricultural processing centres. To test this, town and production site proximity were analysed through use of the Cato Algorithm. This algorithm, discussed within the Methodology chapter, dictates that a cargo wagon pulled by oxen travels at a speed of 1.5 miles an hour, therefore the cart can travel 6 miles within half a day. In a logistical sense, this would give the farmer time to travel to the town and return home again within a day. Hence buffers was set at a 6 mile radius around each town. These buffers are seen in Figures 4.30, 4.31, 4.32, 4.34 and 4.35. The number of production sites that fell within the Cato Buffers were quantified and results are displayed in Table 4.24. Results are given as a value out of the total number of production sites of that period per townscape.

It can be inferred that supply chains of the towns were using roads rather than water to transport goods from the data in Figures 4.37 and 4.38.

Table 4.24: Number of agricultural production sites within 6 miles of import centres.

Known Towns		**Number of Production sites**
Roman Towns	Dorchester	8/26
	Winchester	3/54
Saxon Towns	Wareham	1/8
	Hamwic	0/19

The data from Table 4.24 would suggest that a limited number of production sites were located within 6 miles of the towns, and this number diminished over time. It is possible that production sites were located at a further distance from the towns; on the other hand, produce may have been taken to an alternative location such as a store or processing centre before being introduced to town centres.

Fortunately, it is also possible to test the second hypothesis above, as two grain processing centres are known to this database. Both centres are watermills, a Roman watermill at Fullerton Villa and a Saxon mill at Wareham. Watermills had the potential to be used for either grinding corn or for producing yarn, however, according to Flatman and Herring (2018) the majority of early mills were used for grinding corn.

Table 4.25: Number of grain production sites within 6 miles of grain processing centres.

Processing Centre	Number of grain production sites with 6 miles
Fullerton Mill	4/54
Worgret Mill	1/8

When compared to Table 4.24, Table 4.25 shows that the number of grain production sites within 6 miles of a grain processing centre are higher or equal to that of production sites within 6 miles of a town. This is significant because Fullerton Mill has a higher number of grain production sites within 6 miles than the town of Winchester has of all agricultural production sites. Worgret Mill has an equal number of grain production sites contributing towards its imports as Wareham does of all agricultural produce sites. In relative terms, this data suggests that production sites were predominately located within close proximity to processing centres rather than towns.

Upon review of the data relating to transport networks, it can be confirmed that both townscapes follow a similar pattern in that production sites were located in close proximity to roads for the transportation of goods. After 410AD, there is an indication that either rural roads deteriorated, and/or a focus on riverine/ coastal processing centres caused a shift in production sites being located towards central England, or the coast. There is also evidence for an increased dependence on water powered processing centres post-500AD. Production sites, both Roman and post-Roman, may have been orientated around these processing centres rather than the towns themselves.

4.3.5 Define whether differences in material culture are present between the two townscapes.

To collate data to answer this objective, the number of brooch types found per site were quantified per phase, per townscape. The results are given in Table 4.26 as exact values. The total number of sites per phase have also been recorded as these values were used to calculate the relative percentage of brooch types. The relative percentage values are displayed in Figure 4.39.

Table 4.26: Number of brooch types by phase and townscape.

	Dorchester					**Winchester**				
	Squared-Headed	Button	Cruciform	Quoit	Total no. of sites	Squared-Headed	Button	Cruciform	Quoit	Total no. of sites
Roman	0	0	0	0	99	0	0	0	0	100
Roman Cont.	0	0	1	0	30	1	2	1	2	41
Post-Roman	0	0	0	0	12	3	4	0	4	61
Early Saxon	0	0	1	0	29	4	6	1	6	84
Early Medieval	0	0	1	0	26	3	5	1	5	74

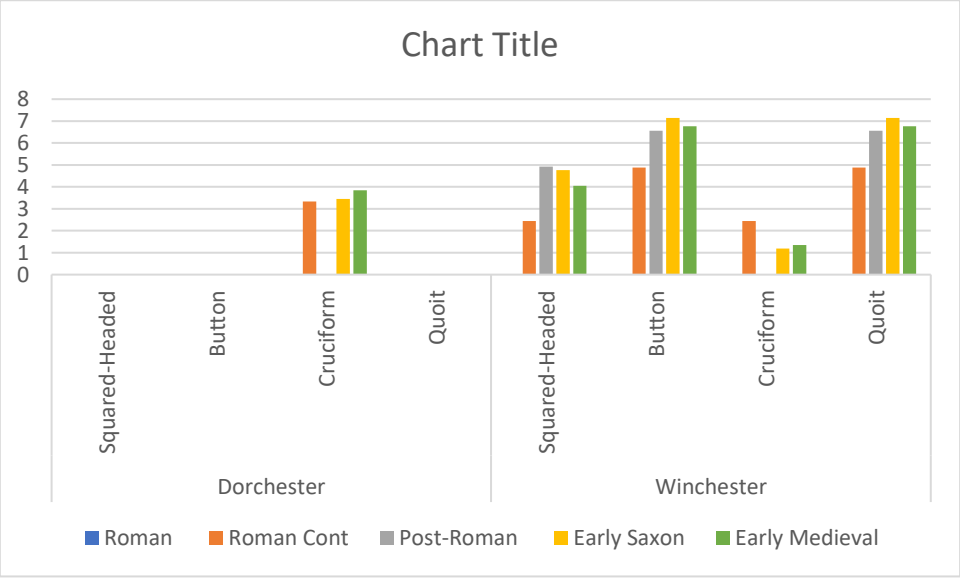


Figure 4.39: Percentage of sites that feature brooch types, by phase and townscape.

All four brooch types were exhibited in the Winchester townscape. Button, Quoit and Squared-Headed types were the most commonly found brooches in the Winchester area, the Cruciform type being considerably less prevalent; however this was the only brooch type of the four to be found in the Dorchester townscape. No brooch types were found on sites

which ceased in occupation before 410AD in either townscape, and neither were Cruciform brooches found on sites established post-410AD. The opposite can be said of the remaining brooch types where, in the Winchester townscape, these types appeared on sites established post-410AD. The Squared-headed brooch type is most commonly found on sites dating between 410-500AD in the post-Roman phase, suggesting that this type of brooch could be associated to the post-Roman population influx identified in section 4.3.3. Moreover, there could be an association between the population influx, Squared-Headed brooch type and Sunken Feature Building architecture. Button and Quoit brooch types see a peak in prevalence in the Early Saxon phases – this grouping includes sites established pre and post-410AD, suggesting these brooch types could be a development of an existing culture.

This project is also interested in quantifying religious variation as an aspect of material culture. Religious variation was identified through direct Christian symbolism as stated in excavation reports and through burial rite, in particular west-east aligned, unfurnished inhumations as opposed to burials on various alignments and cremations. Although Philpott (1991 226) contests that the unfurnished west-east burial rite represents Christian burial, Foster (2001 170), Ellis (2001), and Lucy (2000) and Rahtz (1977, 1978) agree it was a burial rite adopted by Christians and can reflect Christian influence in cemeteries. Quantified results are displayed in Tables 4.27 and 4.28. Values are given as direct quantities, Table 4.29 displaying the conversion to relative percentages. Relative percentages for sites with Christian symbology have been calculated from the total number of sites per phase for each townscape; relative percentages for west-east, unfurnished inhumation have been calculated from the total number of cemetery sites per phase in each townscape.

Table 4.27: Number of sites with direct Christian symbolism.

	Direct Christian Symbolism	
	Dorchester	Winchester
Roman	6/99	1/100
Roman Continuation	6/30	2/41
Post-Roman	4/12	10/61
Early Saxon	7/29	8/84
Early Medieval	7/26	12/74

Table 4.28: Number of cemetery sites with west-east aligned, unfurnished inhumations.

	Cemeteries containing west-east aligned, unfurnished graves	
	Dorchester	Winchester
Roman	4/8	6/14
Roman Continuation	5/12	8/13
Post-Roman	4/8	13/37
Early Saxon	8/14	13/39
Early Medieval	8/14	14/33

Table 4.29: Relative percentages of direct and indirect Christian influence.

	Direct and indirect Christian Influence			
	Dorchester		Winchester	
	Percentage of sites with Direct Christian Symbology	Percentage of cemeteries W-E aligned, unfurnished inhumation	Percentage of sites with Direct Christian Symbology	Percentage of cemeteries with W-E aligned, unfurnished inhumations
Roman	6	50	1	43
Roman Continuation	20	42	5	62
Post-Roman	33	50	16	35
Early Saxon	24	57	10	33
Early Medieval	27	57	16	42

A problem discovered in this phase of analysis is that there is some discrepancy between classification of grave goods. Items such as pots, food offerings and coins are evidently ritual deposits within graves; however, clothing fastenings, jewellery and hob nails may not be grave goods, rather items of necessity to respectfully place the body within the grave. This project does not address this issue, so has classed all objects within graves as grave goods – that being said there is a possibility that this has caused a distortion in the data and has resulted in the data representing only low status west-east aligned graves.

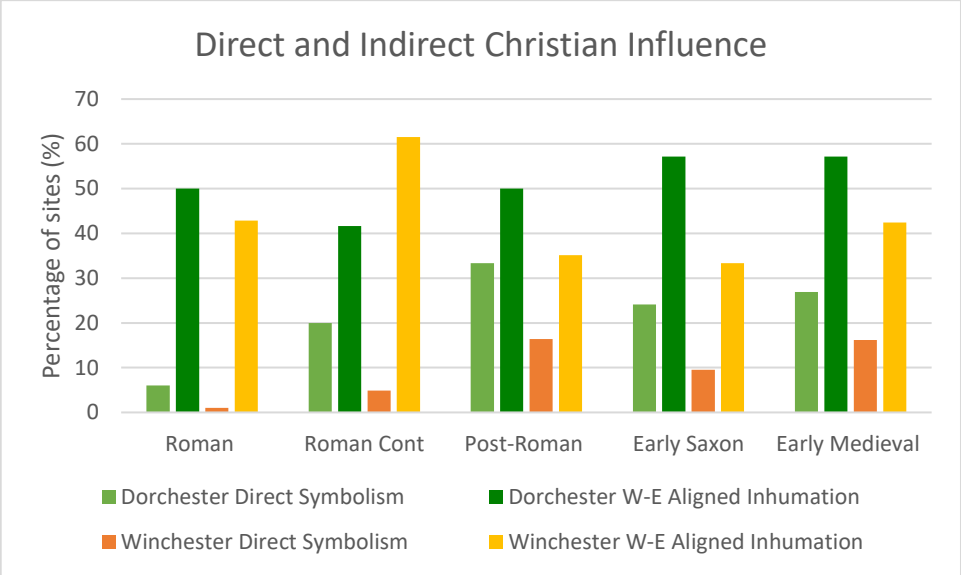


Figure 4.40: Direct and Indirect Christian Influence displayed by phase and Townscape area.

Figure 4.40 is a visual representation of Table 4.29, which makes clear the strong Christian influence in the Dorchester townscape. Both townscapes appear to have a peak in sites containing direct Christian symbology in the post-Roman phase, signifying that Christian influence increased after Roman administration collapse. When disseminated into Early Saxon and Early Medieval phases, this influence was at its most prevalent in the Early Medieval phase. This is the case for both the Dorchester and Winchester townscape.

This pattern of an Early Medieval Christian prevalence is also seen in the percentage of cemeteries containing west-east aligned, unfurnished inhumations in the Dorchester area. In the Winchester area, the proportion of Early Medieval cemeteries containing west-east, unfurnished inhumations is equal to that of Roman Winchester. It should be noted that the problem mentioned in section 4.3.3 is present here, where the Roman Continuation phase contains data from cemeteries active over a large date range. This has the potential to distort results, thus minimal significance can be attributed to the peak in Winchester Roman Continuation cemeteries containing west-east aligned, unfurnished graves.

However, the decline from Roman to Early Saxon phase cemeteries in Winchester containing west-east, unfurnished inhumations could be significant as individual counts from cemeteries at this time increased. This imbalance may signify that the influx of new post-Roman settlements in the Winchester townscape were not influenced by Christian type burial rites.

These patterns were tested against the quantities of religious buildings with Christian symbology. Table 4.30 contains the values of religious buildings with Christian symbology per phase and per townscape. The number of religious buildings with Christian symbology is given as a value out of the total number of sites per phase and townscape.

Table 4.30: Quantity of Religious Buildings and Christian Religious Buildings per townscape.

Religious Buildings				
	Dorchester		Winchester	
	Number of Religious Buildings/ total number of sites	Number of Religious Buildings with Christian symbology	Number of Religious Buildings/ total number of sites	Number of Religious Buildings with Christian symbology
Roman	3/99	1/3	1/100	0/1
Roman Continuation	5/30	2/5	3/41	1/3
Post-Roman	5/12	4/5	5/61	4/5
Early Saxon	7/29	6/7	6/84	5/6
Early Medieval	7/26	6/7	7/74	6/7

Table 4.31 gives the relative percentages of this data. Roman Continuation and Post-Roman phases have been removed: these periods span multiple centuries so cause a distortion when examining change at distinct periods in time.

Table 4.31: Relative percentages of Religious Buildings per phase and townscape.

Religious Buildings				
	Dorchester		Winchester	
	Percentage of sites with Religious Buildings	Percentage of Religious Buildings with Christian symbology	Percentage of sites with Religious Buildings	Percentage of Religious Buildings with Christian symbology
Roman	3	33	1	0
Early Saxon	24	86	7	83
Early Medieval	27	86	9	86

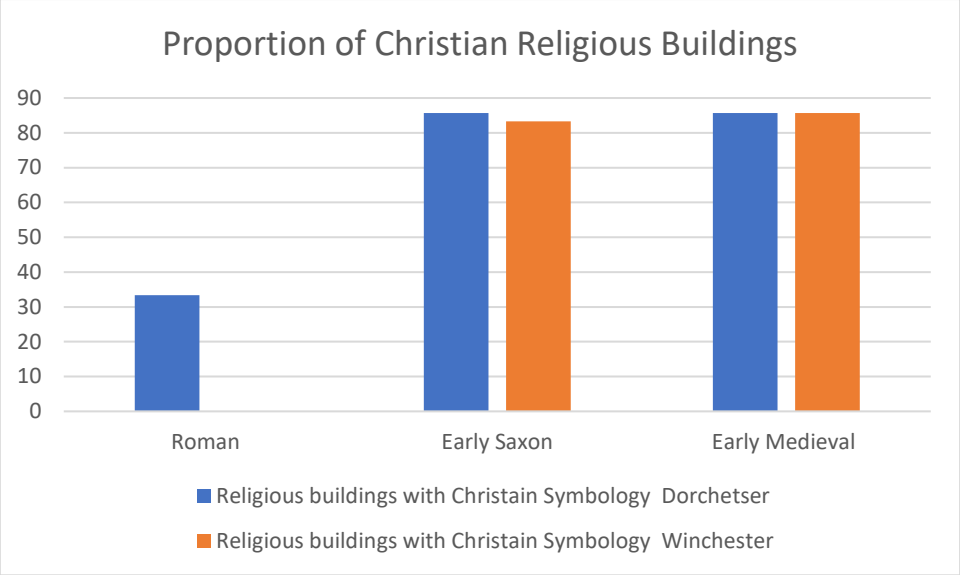


Figure 4.41: Proportion of Christian religious buildings.

Similarly to the data represented in Figure 4.40, Figure 4.41 confirms that both townscapes developed a strong Christian influence, Winchester more so, having no Christian religious buildings pre-410D but having six by the Early Medieval Phase. Dorchester had a more continuous Christian religious influence, which increased over time. There is the possibility that this development represents Christian centres taking over administrative control after Roman collapse.

Material culture was plotted on the townscape maps in an attempt to identify any hotspots of material culture. No such hotspots were identified within either townscape, see Figures 4.42 – 4.47. It may be worth noting that the Cruciform-type brooch site in the Dorchester townscape was located near to the international Saxon port of Wareham. This may signify the brooch was an import rather than a native cultural development. It was also observed that only Button and Quoit type brooches were found on sites which also had evidence of Christian symbolism.

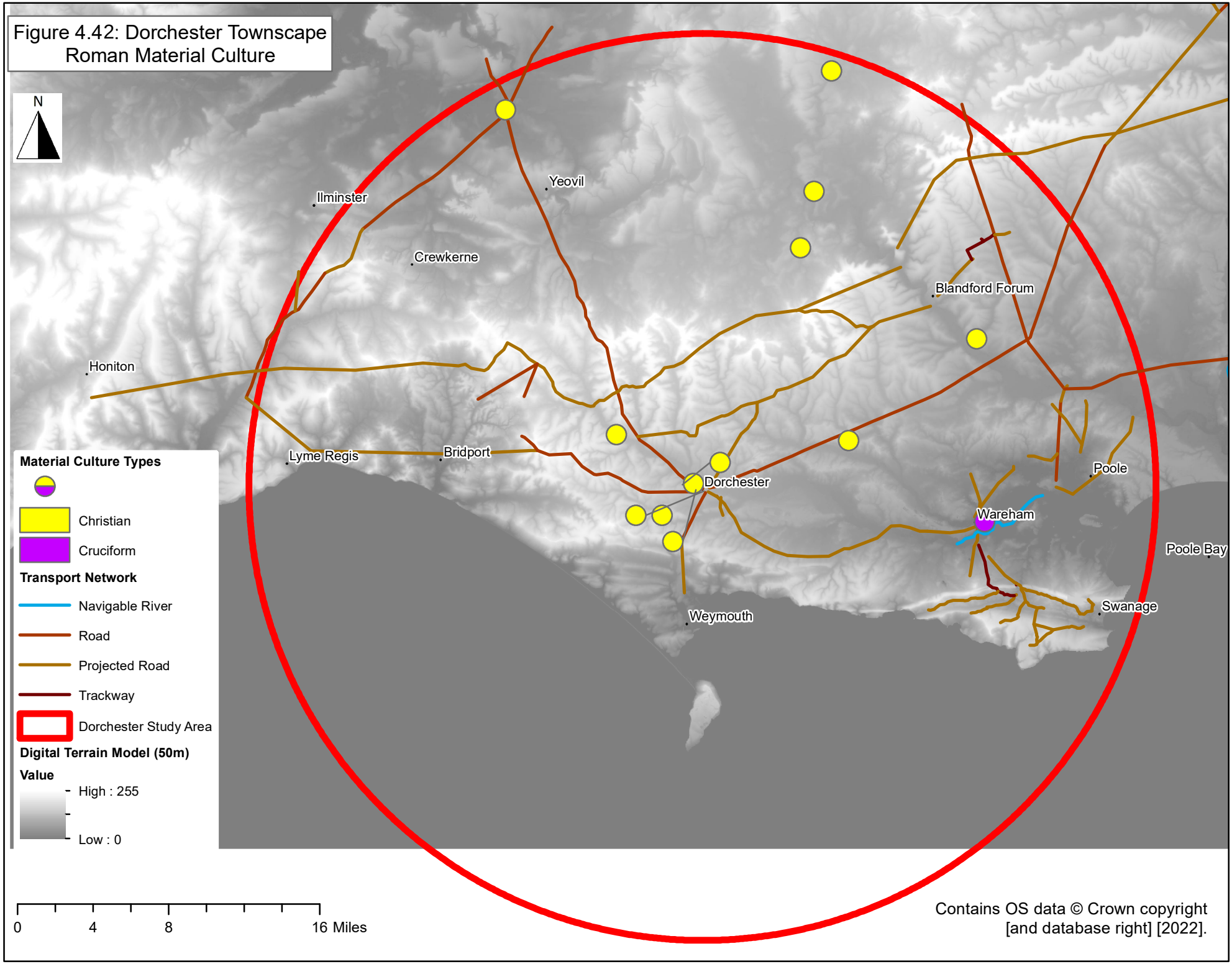


Figure 4.42: Dorchester Townscape
Roman Material Culture
N
Ilminster
Yeovil
Crewkerne
Blandford Forum
Honiton
Lyme Regis
Bridport
Dorchester
Poole
Wareham
Poole Bay
Weymouth
Swanage
Material Culture Types
Christian
Cruciform
Transport Network
Navigable River
Road
Projected Road
Trackway
Dorchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
Contains OS data © Crown copyright
[and database right] [2022].

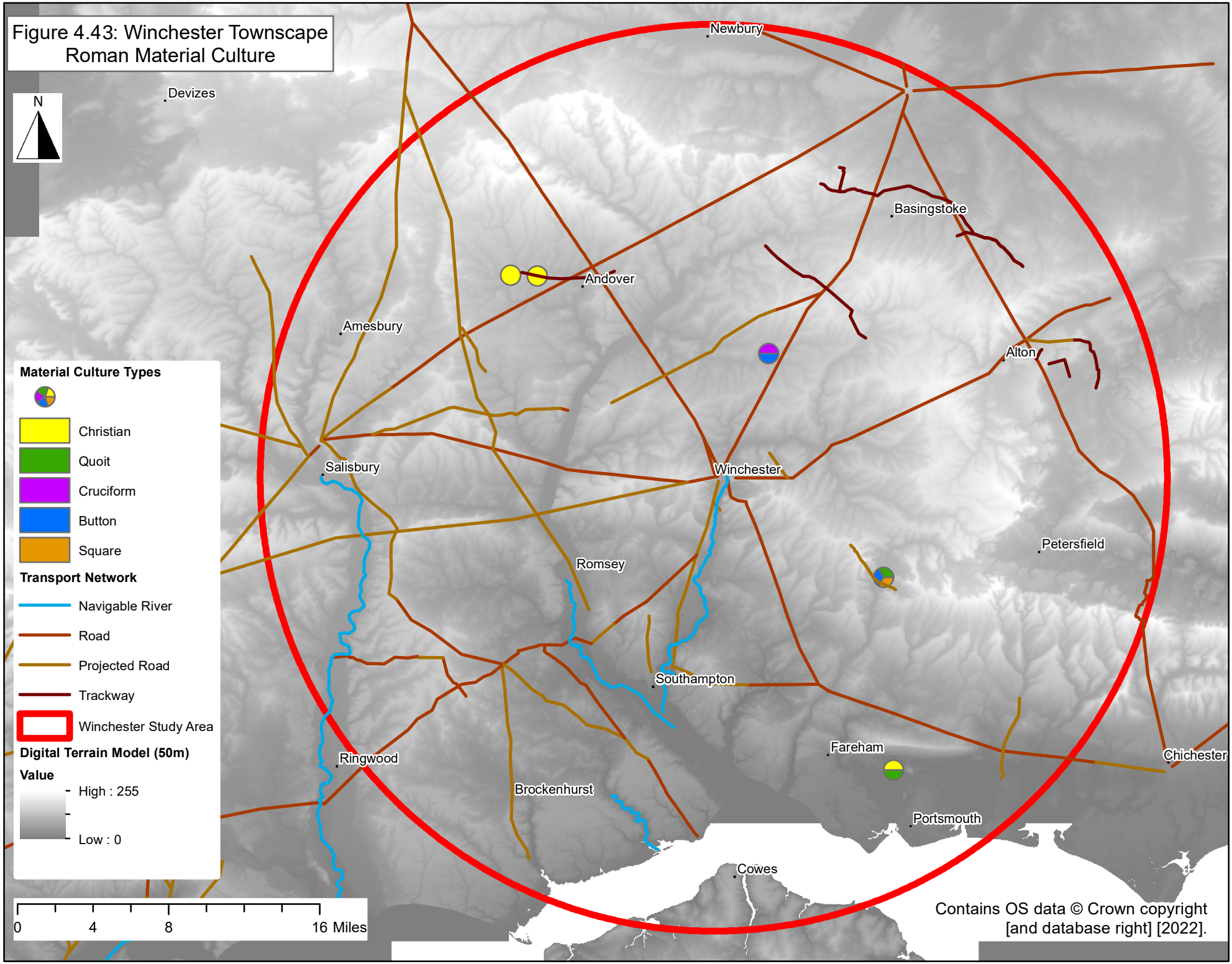


Figure 4.43: Winchester Townscape
Roman Material Culture
N
Devizes
Newbury
Basingstoke
Andover
Amesbury
Alton
Salisbury
Winchester
Petersfield
Romsey
Southampton
Fareham
Chichester
Ringwood
Brockenhurst
Portsmouth
Cowes
Material Culture Types
Christian
Quoit
Cruciform
Button
Square
Transport Network
Navigable River
Road
Projected Road
Trackway
Winchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
Contains OS data © Crown copyright
[and database right] [2022].

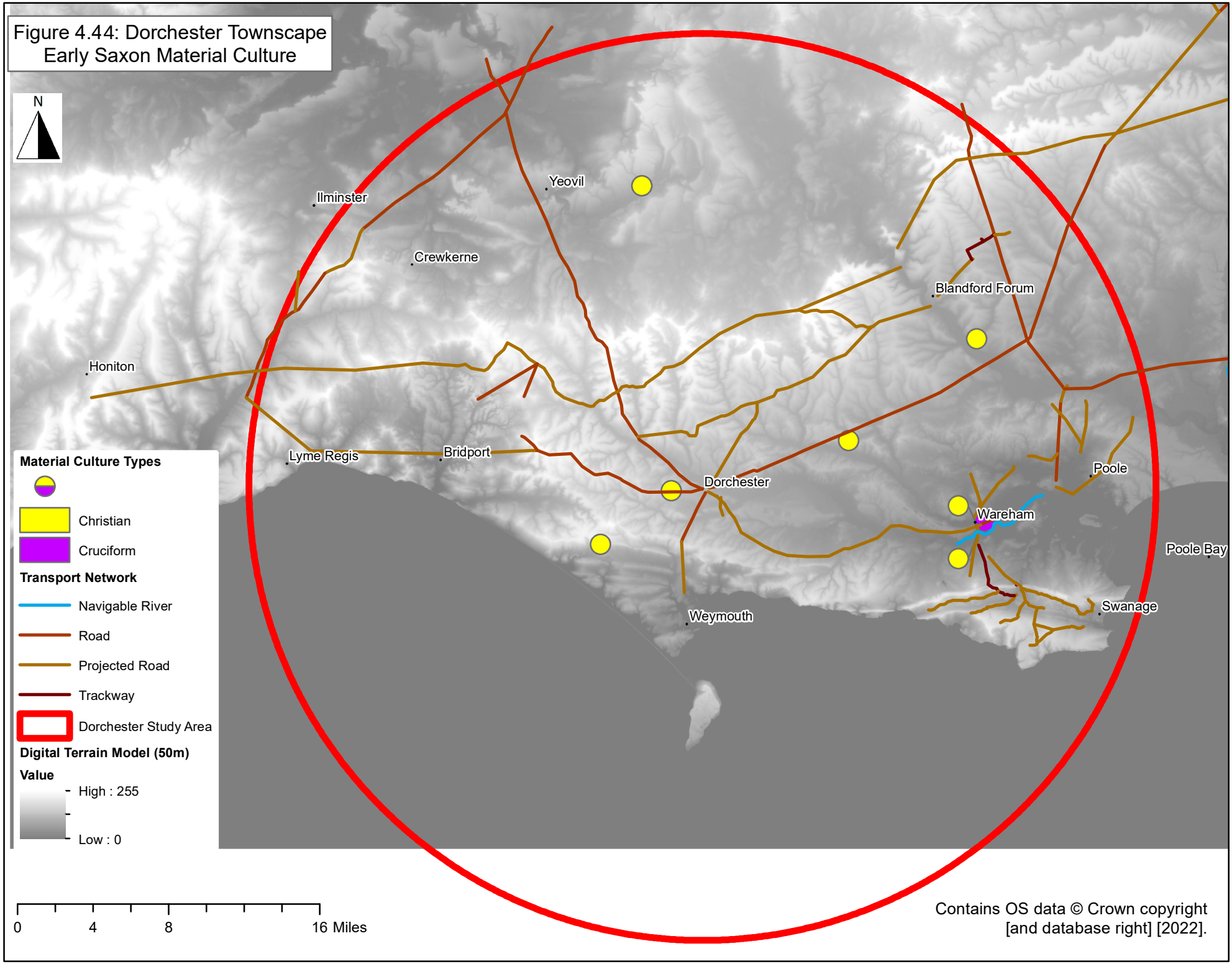


Figure 4.44: Dorchester Townscape
Early Saxon Material Culture
N
Ilminster
Yeovil
Crewkerne
Blandford Forum
Honiton
Lyme Regis
Bridport
Dorchester
Poole
Wareham
Poole Bay
Weymouth
Swanage
Material Culture Types
Christian
Cruciform
Transport Network
Navigable River
Road
Projected Road
Trackway
Dorchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
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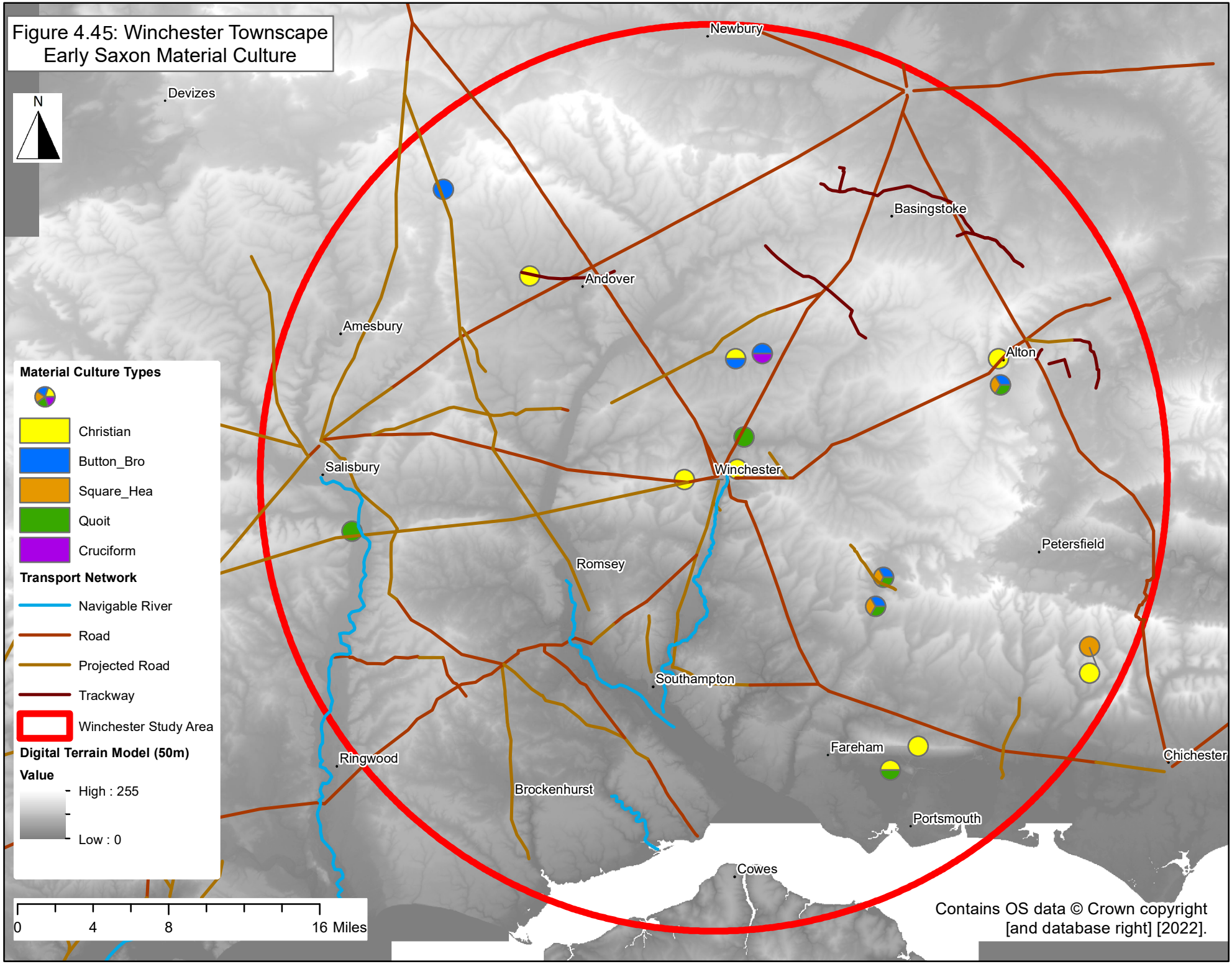
Figure 4.45: Winchester Townscape
Early Saxon Material Culture
N
Devizes
Newbury
Basingstoke
Andover
Amesbury
Alton
Salisbury
Winchester
Romsey
Petersfield
Southampton
Fareham
Chichester
Ringwood
Brockenhurst
Portsmouth
Cowes
Material Culture Types
Christian
Button_Bro
Square_Hea
Quoit
Cruciform
Transport Network
Navigable River
Road
Projected Road
Trackway
Winchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
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[and database right] [2022].

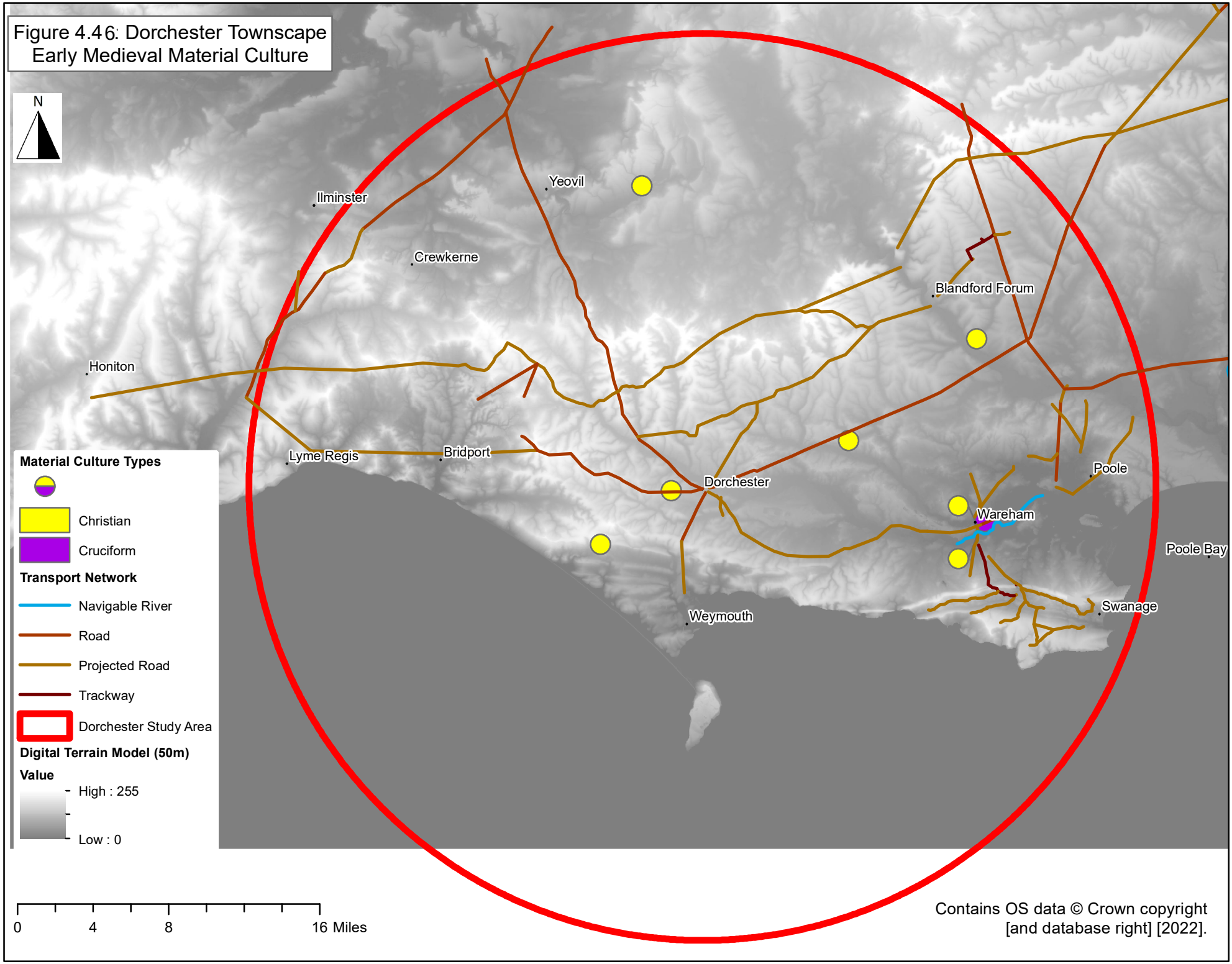
Figure 4.46: Dorchester Townscape
Early Medieval Material Culture
N
Ilminster
Yeovil
Crewkerne
Blandford Forum
Honiton
Lyme Regis
Bridport
Dorchester
Poole
Wareham
Poole Bay
Weymouth
Swanage
Material Culture Types
Christian
Cruciform
Transport Network
Navigable River
Road
Projected Road
Trackway
Dorchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
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16 Miles
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[and database right] [2022].

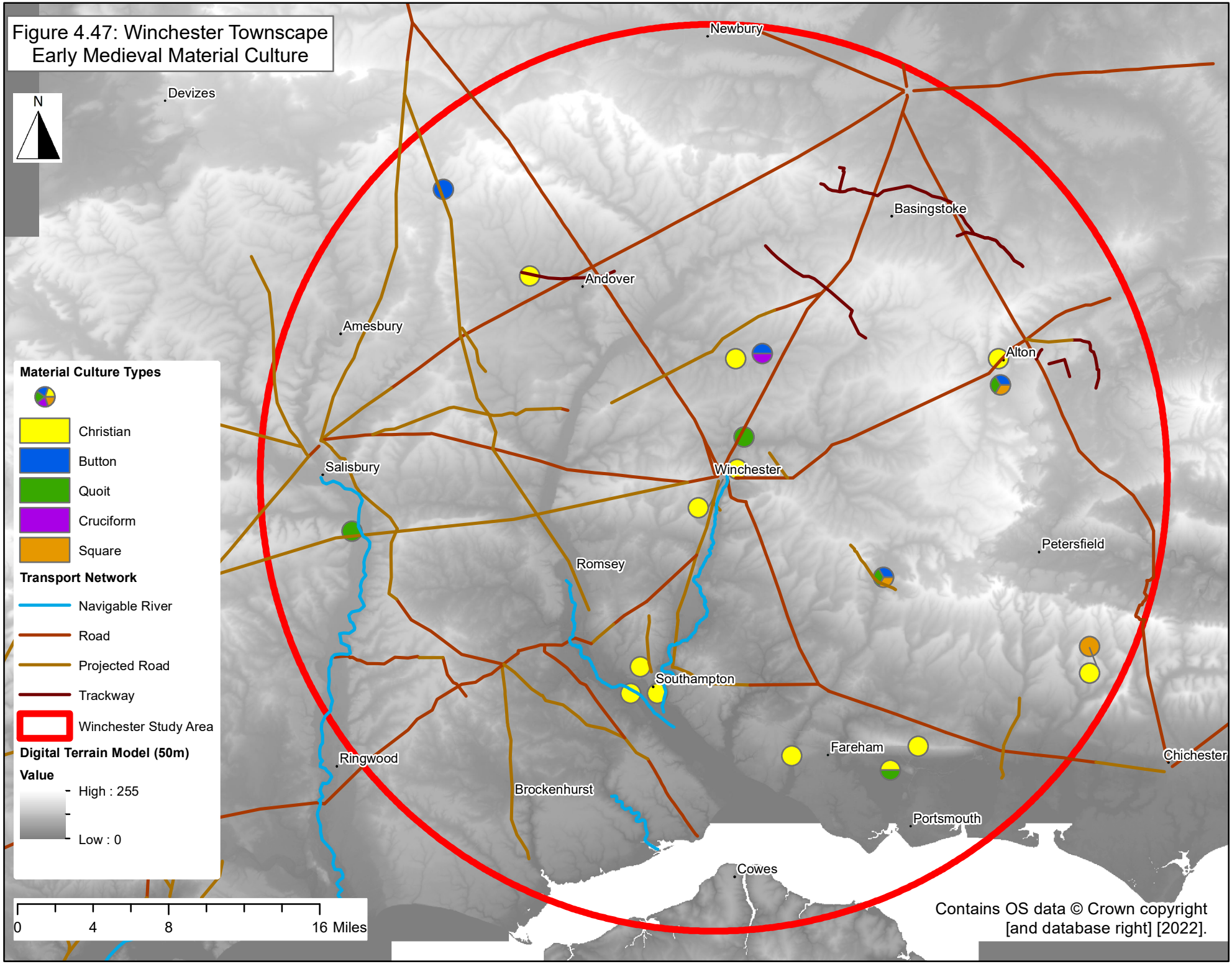
Figure 4.47: Winchester Townscape
Early Medieval Material Culture
N
Devizes
Newbury
Basingstoke
Andover
Amesbury
Alton
Salisbury
Winchester
Petersfield
Romsey
Southampton
Fareham
Chichester
Ringwood
Brockenhurst
Portsmouth
Cowes
Material Culture Types
Christian
Button
Quoit
Cruciform
Square
Transport Network
Navigable River
Road
Projected Road
Trackway
Winchester Study Area
Digital Terrain Model (50m)
Value
High : 255
Low : 0
0
4
8
16 Miles
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[and database right] [2022].

When reviewing all material culture and religious data, it can be said there are some differences represented between the townscapes. Within the Winchester townscape there is an influx of Square-Headed, Button and Quoit brooch types, SFB architecture and a decline in west-east, unfurnished burial post-410AD. The appearance of these phenomena would seem to have positive correlation with the peak of new settlements established post-410AD in the Winchester townscape. Within Dorchester, only the Cruciform brooch type is present – which may be an import, with few SFBs, and a Roman Christian influence is maintained through both direct and indirect symbology. Squared-headed brooches appeared in greater quantities on sites established between 410-500AD, whereas Button and Quoit brooches were associated to a number of sites established pre-410AD. In the Winchester area, Squared-Headed, Button and Quoit brooch types and SFB architecture are in decline by 650AD, when direct and indirect Christian influence, as well as Christian Religious Buildings increase. This pattern could indicate that these elements of material culture influence each other.

4.4 Analysis Summary

Overall, this analysis stage has been able to derive a large amount of relevant information from the GIS dataset and it can be confirmed that the functionality of Esri ArcGIS has been appropriate for the data revealing both topological and temporal patterns which otherwise may not have been identified. Although certain types of analysis were not compatible with this dataset such as Cluster analysis (Optimised Hot Spot analysis) as Esri ArcGIS required a minimum of 60 points per plot; other types of analysis such as queries, buffers, density plots and topographic data processing have successfully provided effective information.

Data has been successfully derived for all objectives, with a number of themes identified. In regard to changes in production centres, agricultural surplus production shifted from a Roman peak of sheep and grain production in the Winchester townscape, to an Early Saxon peak of sheep and grain production in the Dorchester townscape. This Early Saxon intensification in grain production saw production and trade exceed maximum productivity potential, but also exceed the proportion of sites that were producing grain in Roman Winchester. The Dorchester townscape also had a higher proportion of sites involved in trade for both agricultural and industrial ceramic production post-410AD. As to location, agricultural sites, especially those which were involved in intensive production, reflect topographic characteristic best suited to specific produce. This pattern is evident in Early Medieval Dorchester. No ‘new’ agricultural sites were established in the Dorchester townscape post-410AD, whereas one third of agricultural sites occupied post-410AD in the Winchester townscape were established after Roman occupation.

There is clear evidence that both townscapes were producing surplus agricultural produce for trade post-450AD. The Winchester townscape maintained an average of approximately 40% of agricultural sites producing surplus for trade, whereas the Dorchester townscape featured a post-600AD intensification in surplus produce.

Changes in settlement size and location include a shift from Romanised central urban towns to nucleated rural settlement, this is true for both townscapes. Both townscapes also saw Early Medieval urban centres appear in coastal regions. A radical shift in population density was also seen; the Dorchester townscape would appear to be densely populated with multiple settlements during the Roman period, however post-410AD, the population rapidly decreased. The opposite can be said of the Winchester townscape, where a sudden increase in the number of settlements and individuals within cemeteries is seen by 500AD, together with an extreme rise in the number of Sunken feature Buildings. By 650AD, settlements within both townscapes begin to reflect the topographic characteristics of agricultural sites.

Themes pertaining to access routes between towns and their associated support networks included a suggestion that production sites were located in close proximity to roads for the transportation of goods, this was true of both townscapes and more so post 500AD. After 410AD, there is an indication that rural roads deterioration, and a focus on riverine/ coastal processing centres caused a shift in production sites being located towards central England or the coast. Evidence was also brough to light to support a hypothesis for an increased dependence on water powered processing centres post-500AD. Production sites, both Roman and post-Roman, may have been orientated around these processing centres rather than the towns themselves.

Lastly, analysis of material culture has revealed that differences in culture are represented in the townscapes. Within the Winchester townscape the influx of Square-Headed, Button and Quoit brooch types, SFB architecture and decline in west-east, unfurnished burial post-410AD is remarkably different to the lack of brooch types and SFBs found in the Dorchester townscape where a Roman Christian influence is maintained through direct and indirect symbology. This phenomenon would seem to have a positive relationship with the peak of new settlements established post-410AD in the Winchester townscape and lack of new settlement in the Dorchester townscape. In the Winchester area, Squared-Headed, Button and Quoit brooch types, as well as SFB architecture are in decline by 650AD, when direct and indirect Christian influence, together with Christian Religious Buildings increase. This pattern provides further evidence that these elements of material culture; Squared-Headed brooch, Button brooch, Quoit brooch, Cruciform brooch, SFBs and Christian symbolism activity influence each other across all periods.

This information can now be used to form discussions in relation to the objectives of this project, supported by themes in current literature in an attempt to answer the aim of this research.

Discussion

5.0 Introduction.

This chapter builds on the results and trends identified in the Analysis chapter, interpretating the patterns found, and justifying them with reference to current literature. An important aspect of this research was that it would remain impartial to the main theoretical disputes in current literature, such as those put forward for economic collapse by Wacher, (1995, 1989), Faulkner (2001, 2016), Reece (1980), Fulford (1989), Liebeschuetz (2001), Lambshead (2022); and those put forward for a transitional economy from Roman to Christian administration centres such as Dark (2000, 2014), Gerrard (2014), Rogers (2011), Bell (2005), Cool (2014), Esmonde-Cleary (2001). It may be the case however, that evidence discussed in this chapter may lean towards supporting one or other of these main theories.

It was hoped that within the discussions below, reasons, if any, would become apparent to explain why Winchester became a city of major importance within Wessex whereas Dorchester became a rural outpost. As with the Analysis chapter, discussions in this chapter are set out by project objective; see Table 5.1 for chapter structure.

Table 5.1: Discussion Chapter Structure

5.1 Define any changes in production centres (location and/or activities).

Three main trends relating to production centres were identified in the data. First, a shift in product intensity was observed - during the Roman phases, the Winchester townscape had a greater proportion of sites producing agricultural produce, notability sheep and grain. Post-500AD this production intensity lessened in the Winchester area but increased in the Dorchester townscape – but with the focus remaining on grain and sheep production. Second, during the Early Saxon period, farm sites began to reflect topographical conditions best suited to specialised farming practices, especially so within the Dorchester townscape. Third, within the Dorchester townscape, the majority of post-500AD farming sites had been established prior to 410AD as opposed to the Winchester townscape, where approximately one third of farming sites were established post-410AD.

The main change identified in production centre activities was the shift in product intensity. Changes in produce intensity have been noted in literature, stating that during the late Roman period cattle formed the most important meat source (Maltby 2010 249) whereas by the 8th century this importance had shifted to sheep (McKerracher 2018). For grain, surplus production peaked prior to 410AD but continued into the early 6th century. Post-Roman cereal production remained at a low level until the 7th century. (McKerracher 2018). In summary the trend in literature is that pastoral dominance shifted from cattle to sheep and surplus grain production gradually decreased until 600AD.

The shift from cattle to sheep production is seen in the results of this investigation, more so in the Dorchester area than in the Winchester townscape. During the Roman phases, cattle and sheep production were equal in the Dorchester townscape but by 650AD, a larger proportion of sites were producing sheep than cattle. In the Winchester study area, the proportion of sites producing cattle increased over time, where the number of sheep production sites decreased but the proportion of sites producing sheep was always greater than that of those producing cattle. This pattern does not necessarily fit the trend described in literature, and shows an intensive reliance on sheep production during the Roman period. Roman agricultural production in the Winchester townscape was at a higher rate than that of the Dorchester townscape for all three produce types, but particularly for sheep and grain. Interestingly, both these products were in demand from the Roman authorities: grain for the *Annona* (corn tax) and wool for textiles, in particular the *Birrus Britannicus* (McCarthy 2013). This could be that Winchester was a major provider of such produce to the Roman Army – indeed Winchester is described as a well defended administration centre and supply base of grain and textile production (Biddle and Kjølbye-Biddle 2007). Furthermore, there is great speculation that the *Gynaeceum* (weaving factory owned by the state), listed in *Notitia Dignitatum* was located at Winchester (Clarke et al 1979 388, Booth et al 2010, Ottaway 2017 79, McCarthy 2013 111). The *Gynaeceum* at *Venta* is the only known state-owned *Gynaeceum* in Britain, (McCarthy 2013 111), so plausibly provided a large amount of clothing for the Northern-based legions. This being the case, the demand for wool in the Winchester area would have been large. When the Roman military and administration left Britain, the demand for wool would have lessened as with the demand for grain, see Figure 5.1.

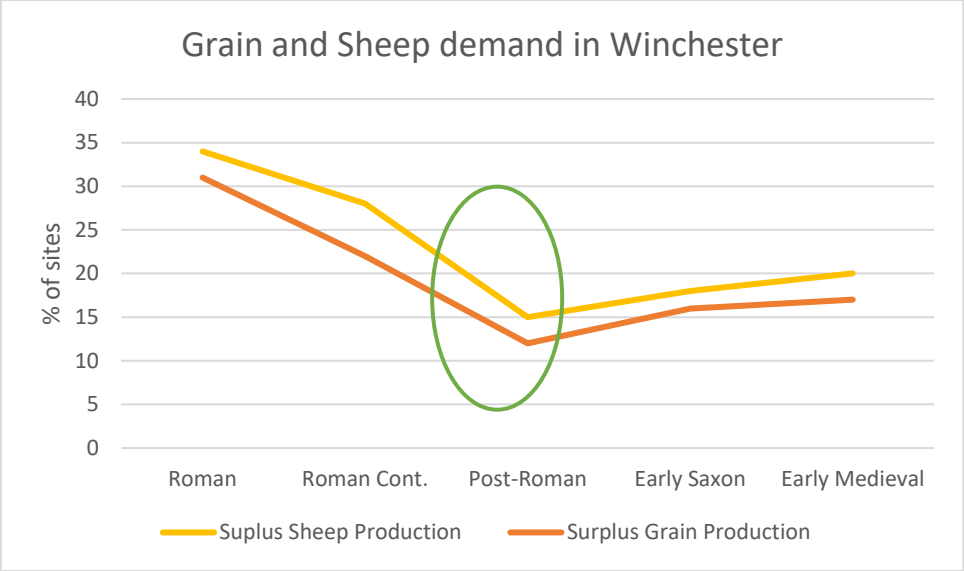


Figure 5.1: Grain and sheep demand in Winchester as indicated by production levels. Drop-off in production is highlighted.

In the Dorchester townscape an opposite pattern is seen by 500AD. The proportion of sites producing surplus sheep and grain increased. Figure 5.2 displays this shift.

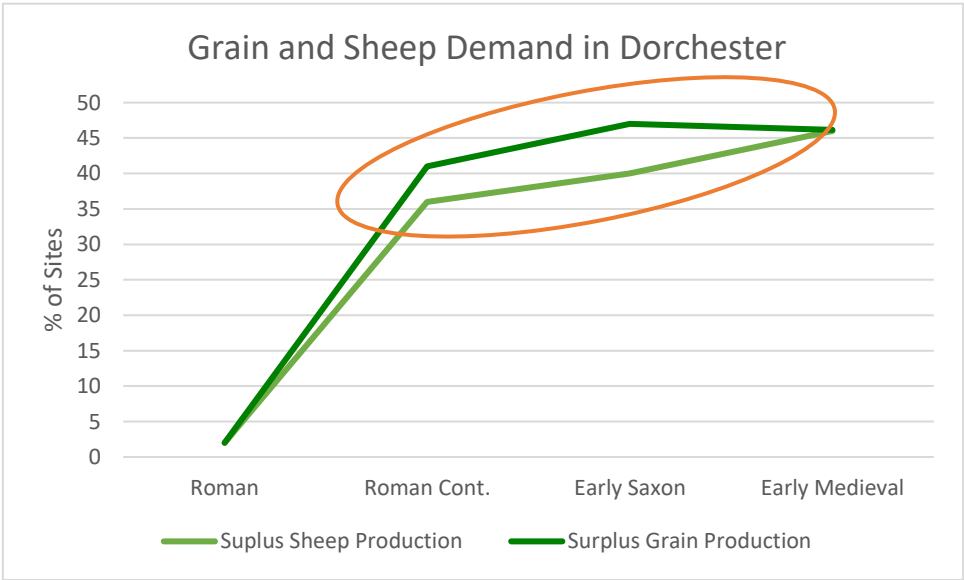


Figure 5.2: Grain and sheep demand in Dorchester as indicated by production levels. Increase in production is highlighted. The post-Roman phase has been removed as no sites fell into this category.

Comparison between Figures 5.1 and 5.2, would imply that the Dorchester townscape had less dependence on Romanised demand systems as production levels appear not to have been affected when Roman administration vacated Britain, indicated by the highlighted area in Figure 5.2. Woodward et al (1993) also observed a stable and long-established farming regime in the Dorchester area, derived from evidence at Greyhound Yard and Colliton Park excavations, where a late 4th century successful economy and urban redevelopment was apparent. Furthermore, by the 5th century, an increase in sheep, wheat, oats and barley was observed at the possible monastic site of Poundbury, together with corn dries and ovens, suggesting mass grain production (Sparey-Green 1987).

An explanation for this phenomenon is suggested by Moore and Ross (1990), where an absence of the coinage in Dorset in the last quarter of the 4th century may point to a system of bartering over tradable goods rather than a reliance on a monetary economy. Thus, when the monetary economy collapsed, trade within the Dorchester area was unaffected. Moreover, Ottoway (2017) goes so far as to say that coinage would have supported market economies around military sites and towns, but to a lesser extent rural areas. This is supported further by McCarthy (2013 61) who suggests that monetisation across the empire was uneven. Therefore, Winchester, being a centre of produce for the Roman military and administration, relied heavily on coinage, whereas the Dorchester townscape did not, hence the rural economy was able to withstand economic collapse.

A second explanation comes in the form of religious management and control. As seen in section 4.3.5, Dorchester had a continued Christian influence which began prior to 410AD and was maintained post-650AD. Where Roman administration collapsed, the Roman ecclesiastical system survived, potentially filling the vacuum of civil and economic control. This hypothesis is supported by a statement by Blair (1988) who suggests the growth of commercial activity was in response to the founding of religious houses, which acted as an economic catalyst. Lucy (2000) supports this further stating that Christianity was becoming more important as an economic force, with Dark (2000a) suggesting that Christianity opened society and economy to continental contacts. It is plausible, therefore, that the increased surplus production and trade within the Dorchester townscape was fuelled by ecclesiastical administration. This hypothesis would also correspond with direct evidence from Poundbury, described as a possible monastic centre mass producing grain, and with evidence from the Winchester townscape which showed that as Christian influence increased so did agricultural economy and surplus production for trade.

Furthermore, international trade, as mentioned by Dark (2000a), may be an explanation for the Dorchester townscape exceeding Roman levels of production for both grain and sheep surplus by 500AD; with McKerracher (2018, 49) suggesting that wool was a crucial resource that crossed the channel. In terms of seafaring trade, the Dorchester townscape had access to two ports; Radipole and Wareham, and a possible landing stage at Bowleaze Cove (Dorset HER 2023) as compared with the single port of Hamwic within the Winchester townscape. Thus, it is possible that the Dorchester townscape practiced coastal trade.

Both townscapes show a shift in production site location where sites begin to reflect topographic characteristics best suited to specific produce types. By 500AD, two main topographic patterns are seen in production centres in the Dorchester townscape. These patterns are reflective of grain and sheep production, see Figure 5.3. These clusters remain clear in the Early Medieval phase, see Figure 5.4.

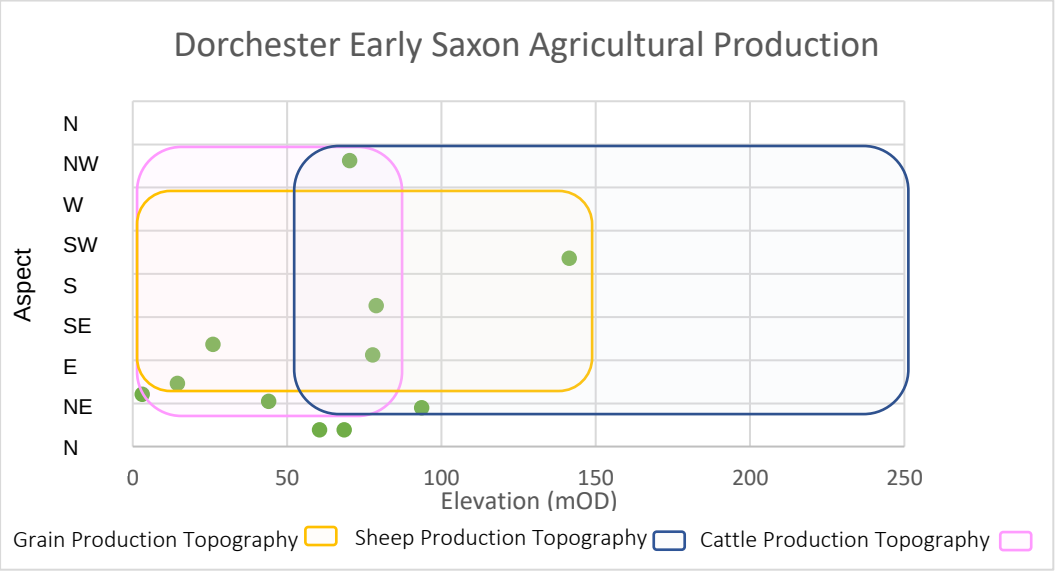


Figure 5.3: Dorchester Early Saxon Farming Sites.

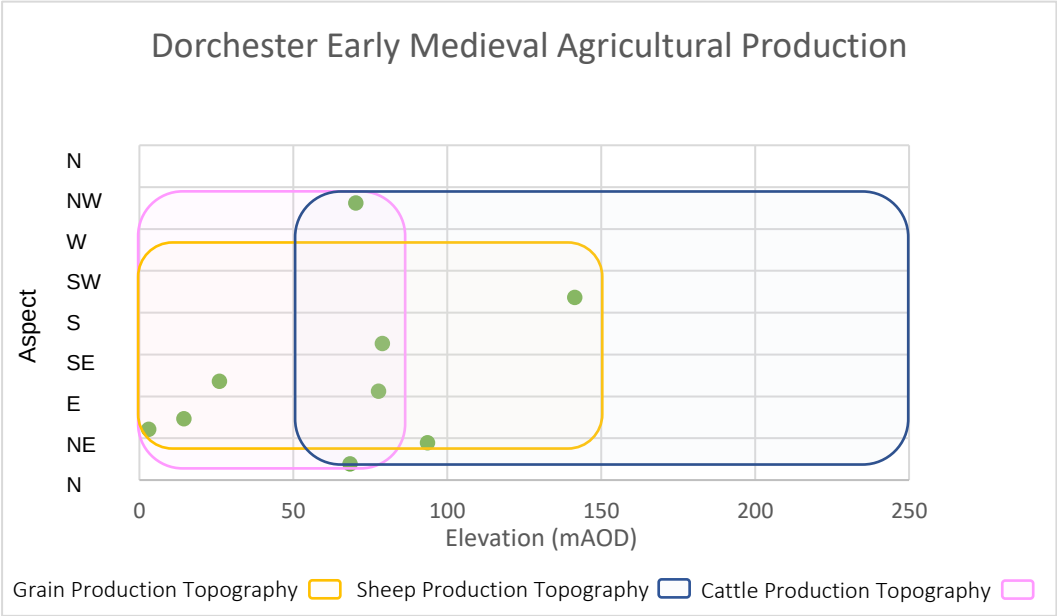


Figure 5.4: Dorchester Early Medieval Farming Sites

This observation of selecting sites by topographic characteristics was not seen in the Winchester townscape until 650AD, where a number of sites remained on varied topography but topographic patterns begin to appear, indicating a focus on sheep and grain farming, see Figure 5.5, which reflects productivity data above.

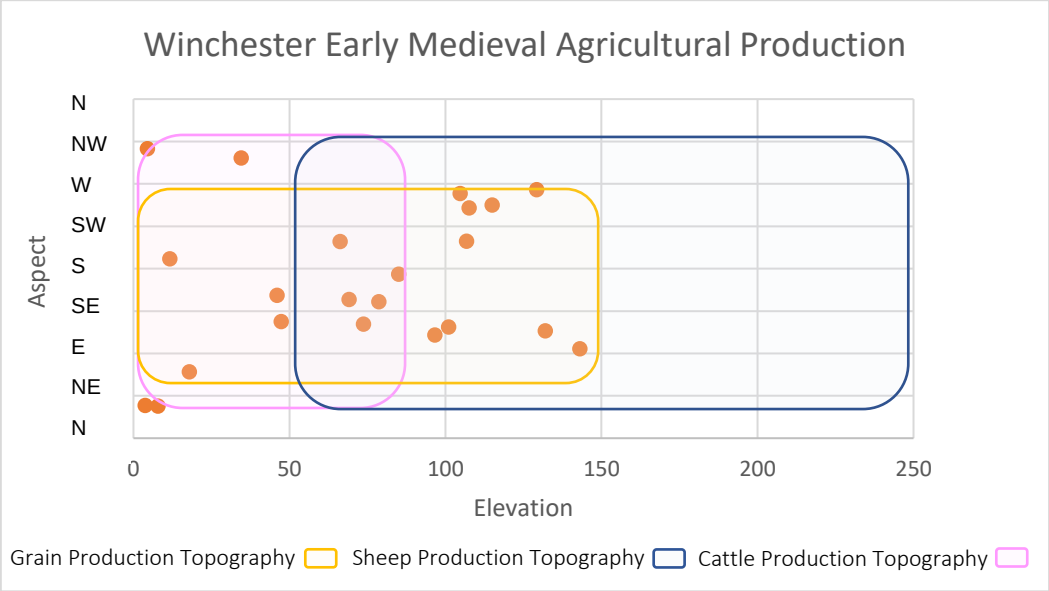


Figure 5.5: Winchester Early Medieval Farming sites.

This shift to production centre location based on topographic characteristics would reflect organised, specialised farming practices becoming established (Mckerracher 2018). This is a distinctive pattern of ecclesiastical estates, where relatively few settlements exist on a planned network, designed to harness the resources of the land (Ó Carragáin 2020) - this is seen in the plots of the Dorchester townscape. Additionally, the supposed establishment of specialised farming practices in Dorchester prior to establishment in Winchester would correspond with the religious shift across the townscapes.

The ceramic production centres of the Winchester townscape suffered the same fate as agriculture, with all ceasing to operate by 500AD. Whereas the Dorset based industries continued into the 7th century albeit at a reduced level. Pitman et al (2020) has suggested a relationship between industrial activity and agriculture, particularly pastoral production, evidence of which could also be reflected in this research. It is speculated that Black Burnished Ware pottery began life as salt containers (Gerrard 2004, Williams 1975), which would indeed be of use in the curing of meats. Interestingly, in the same project, Pitman et al (2020) identified Early Medieval salt production in Poole Harbour, which was recognised as a monastic industry with rent being paid in salt. This suggestion greatly supports the evidence discussed here that ecclesiastical institutions were becoming increasingly important in both economic output and organisational structures.

The findings here go some way to define change in production centre activities and location. Production centres in Roman Winchester were focused on sheep and grain production, supposedly grain for the *Annona* and wool for the *Gynaeceum.* From this, it can be hypothesised that the Winchester townscape had a primary role in imperial supply chains, with industries centring around production of wool to clothe the legions. It can be assumed that the town was dependent on a monetary economy. The Dorchester townscape did not have such an intensive Romanised economy – grain, sheep and cattle production were still practiced, and the *Annona* would have fuelled the economy but as such, a system of barter and/or exchange may have existed over the use of coinage. Thus, when the Roman administration system collapsed, the Dorchester area had a stable economy established that was relatively unaffected by the removal of the governing state whereas the economy in Winchester recessed. It is also plausible that where a strong Christian influence was established in the Dorchester townscape prior to 410AD, an ecclesiastical governance was in place to uphold and organise agricultural commerce and in fact increase trade nationally and/or internationally. This is seen in the continuation of Roman production centres, both industrial and agricultural, and the intensification of sheep and grain farming - these being maintained on land with specific topographic characteristics to suit specific produce type within the Dorchester area. Mass grain production evidence from the monastic site at Poundbury supports this further. Organised, specialised farming transferred to the Winchester townscape in co-ordination with an increase in Christianity.

5.2 Define whether either town supported anything more than a subsistence economy post-450AD.

Agricultural data shows that both the Winchester and Dorchester areas supported commercial activity as well as subsistence economies post-450AD - the Dorchester townscape having 67% of agricultural sites producing surplus, and the Winchester townscape having 43% of agricultural sites producing surplus. Additionally, there is some evidence that the Dorchester townscape featured a post-500AD intensification in surplus production.

When compared to evidence in the literature, especially that of there being a mass-production grain industry at Poundbury (Sparey-Green 1987), there is a strong suggestion that the Dorchester area was not only producing surplus for national level trade but international trade, specifically that of British wool via the continental ecclesiastical network (Dark 2000a, Lucy 2000, McKerracher 2018, 49).

In contrast, the majority of sites within the Winchester townscape were not producing surplus. Table 5.2 quantifies the number of Early Saxon and Early Medieval sites in the Winchester area by production level. The three production levels being: producing agricultural surplus, operating at subsistence level and those where no known production was taking place.

Table 5.2: Agricultural subsistence and surplus production in the Winchester townscape.

	No. of sites producing agricultural surplus	No. of self-sufficient sites	No. of sites with no known production
Early Saxon	8	18	27
Early Medieval	10	9	24

In both Early Saxon and Early Medieval phases, the number of sites where no agricultural production was recorded is high in comparison to those producing agricultural produce. There is the possibility that sampling technique and lack of survival in the archaeological record have affected excavation results at these sites, but there could also be the possibility that these sites were importing agricultural goods resulting in minimal domestic waste being present on site – such sites are discussed in more detail in sections 5.3 and 5.4. However, what is clear is that a number of sites within the Winchester area were indeed producing surplus for trade so therefore a form of commercial economy must have existed by 500AD.

Therefore, both the Winchester and Dorchester townscapes were producing surplus agriculture for trade and so both supported more than subsistence economies by 450AD.

5.3 Define any changes in settlement size and location.

Based on evidence from settlement density, SFBs and individual counts from cemeteries it was observed that settlement size decreased from a Roman peak in the Dorchester townscape and increased to an Early Saxon peak within the Winchester townscape. Settlement density shifted from Romanised central administration centres to nucleated settlements but with new post-Roman urban centres identified in both townscapes, being Wareham and Hamwic. These trends are discussed alongside current literature below.

It is widely acknowledged that populations of northern European settlers arrived in Britain and established communities during the 4th century and beyond. It would be very easy to assume that this is the reason behind the population increase in the Winchester townscape. However, this project tests this hypothesis against data from material culture before making this assumption. What is evident is that within the Winchester townscape, settlement density increased by over 10% from the Roman phase to 500AD. This phenomenon has also been acknowledged by Ottaway and Qualmann (2018) stating that in the early and middle Saxon periods, a number of small farming settlements were established around Winchester. This is compared to a decline in settlement density of 12% in the Dorchester townscape.

The number of individuals within cemeteries displayed the same pattern; within the Winchester area the number of individuals increased by 50%, compared to a 92% decrease in the Dorchester area. The collection of Saxon cemeteries around Winchester deemed it to be a focus point of activity (Biddle 1972 237). It can be concluded that population movement was certainly taking place.

Moreover, the incoming population to the Winchester area appear to have had a preference for a particular architectural style; the Sunken Feature Building. SFBs were not new to either townscape, or to the period. What is staggering, is the increase in their number post-410AD in the Winchester area. Seventy SFBs have been identified in association with Early Saxon settlements in Winchester, compared to just eight found in the Dorchester townscape, see Figure 5.6 for visual comparison. This stark contrast indicates a radical increase in settlement size within the Winchester area.

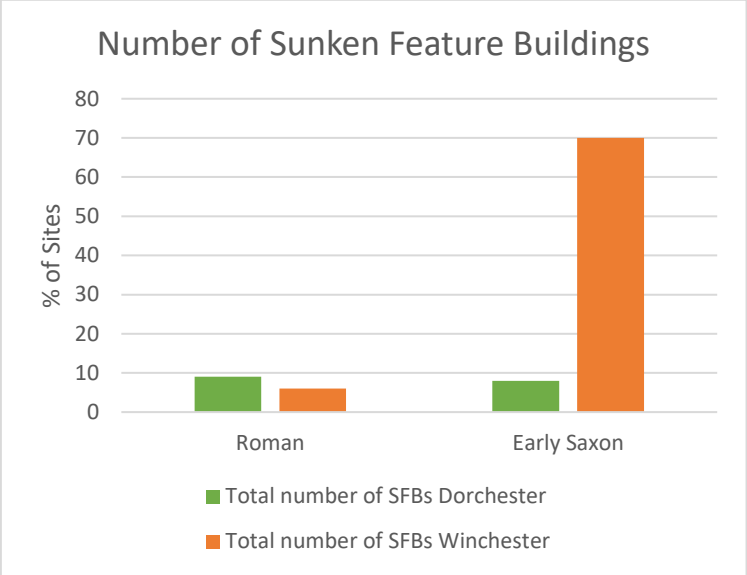


Figure 5.6: Number of SFBs during Roman and Early Saxon phases.

Previous research has identified a pattern of small rural settlements, characterised by the widespread adoption of Anglo-Saxon material culture, developed under the influence of a newly arrived or emergent political elite (Fasham & Whinney 1991, Hawkes & Grainger 2003 and McCulloch 1995). Although this project cannot comment on *'Anglo-Saxon culture*' being adopted, this statement would support the rapid adoption of the SFB style taking place in the Winchester area.

The population within the Winchester townscape expanded, but as discussed above, the number of sites producing agricultural surplus did not increase. Reasons for this could be that settlements were self-sufficient, or that agricultural produce was being imported due to sites having differing functions and status (Rackman 1994 86). In direct reference to the '*Saxon*' cereal assemblage at King's Somborne, Winchester, Rackman (1994) states the site was the focus of a Royal estate, inferring that the site specialised in cereal production to be exported elsewhere – presumably to an '*elite*' import site.

Such an import site is suggested at Cowdery's Down, (Millet and James 2014), where a minimal amount of domestic refuse was found in the way of animal bone and plant remains, which leads to the possibility that animal products and cereals were processed away from the site and imported in. Such sites would imply that a sophisticated supply and demand chain had been established in the Winchester townscape by the end of the 6th century. However, it should be noted that acidic soils in the Cowdery's Down area would affect archaeological preservation of remains.

Further evidence to support the establishment of a hierarchical supply and demand system is that of Hamwic. The town is said to have had its origins in the high status '*Royal'* villa of Hamtun (*Villa Regalis)* and was a commercial and industrial centre to supply the royal, ecclesiastical and private estates in the surrounding area (Biddle 1981). There are also observations from the early cemetery at Hamwic which indicate high status military individuals; such individuals have been interpreted as reeves of the king (Birbeck 2005 45).

Hamwic as a high-status import centre also fits with the suggestion that the wealth generated from commerce was taken elsewhere and did not remain in the town (Bourdillon 1988 190-1). The location of the '*Royal Court'* is unknown, however there is strong evidence for it to be located around Winchester (Birbeck 2005, Bourdillon 1988, York 1982).

Conversely, settlements in the Dorchester townscape did not see a population influx and in fact saw a population decline. As with production centres discussed above, the majority of settlement sites were established prior to 410AD and continued post-500AD. This would reflect the pattern of ecclesiastical land control discussed by Carragáin (2020) where relatively few settlements existed. In addition, Gildas and Procopius write of Britons fleeing Britain to France to escape an invading population (Thompson, 1980). The size of this migration is not known; however, it could have been a contributing factor to the decrease in settlements in the Dorchester townscape (Eagles 2018). What is interesting in regard to the population decrease in the Dorchester townscape, is that surplus agricultural trade increased. This would provide further evidence for external trade in the area.

No distinct settlement location pattern is seen in topography for either townscape during the Roman phase. In the Winchester townscape, settlement location follows no obvious pattern in terms of aspect and elevation characteristics throughout the Early Saxon and Early Medieval phases. Two possible clusters are evident; one below 20m AOD and one between 70-100m AOD, see Figure 5.7. It is possible that a number of settlements were associated with the production centres – the low elevation cluster could associate with the cattle and/or grain producing sites whereas the higher elevation cluster, sheep farming. The clusters may also be indicative of potential site status, for example elite sites located on hilltops to dominate the landscape, as was the way with numerous Roman villas (Derks and Roymans 2011). Alternately, higher-status sites may be located on land of high-productivity so as to control resources. Therefore, several factors may have had influence over topographic location of settlements.

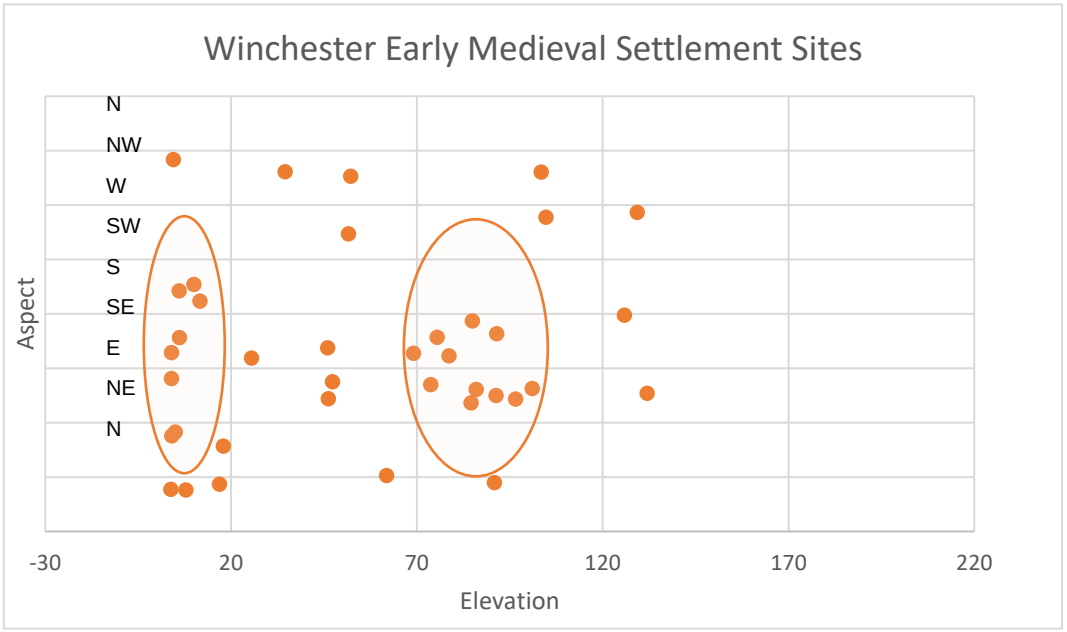


Figure 5.7: Topographic relationships between aspect and elevation in Early Medieval Settlement sites in the Winchester townscape.

In contrast, Roman settlement in the Dorchester townscape displayed no pattern in topographic characteristics. By the Early Saxon phase, all settlement sites, except one, were located on north-facing land. It may be possible that settlement sites were located in this way to avoid conflict with production centres utilising south facing land for production. As seen in Figure 5.8, most settlement sites are located outside land with topographic characteristics for agricultural production. Another possibility is that north and northeast facing land would have been relatively sheltered from weather systems travelling northeast from the Atlantic. However, the study of meteorological conditions in either study area was outside the scope of this project. Nevertheless, it is clear that a form of settlement organisation has taken place, where settlements exist on a planned network, indicative of land organisation by ecclesiastical institutions (Carragáin 2020). However, as indicated in Figure 5.9, by 650AD, settlement sites had been relocated into production centres, the majority of these production-centre-settlements being located on land with topographic characteristics suited to high levels of agricultural production. Only two subsistence settlements were in occupation, being located on north and northeast facing land which does not fit the topographic characteristics for maximised production. Again, the form of settlement organisation has remained in place potentially indicating intensification of monastic control in the area.

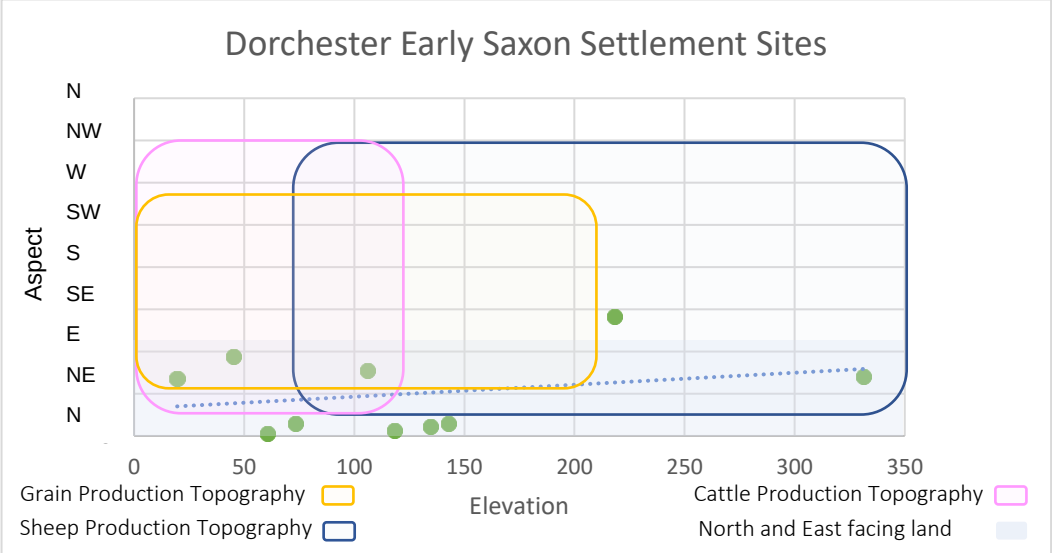


Figure 5.8: Early Saxon settlement topography.

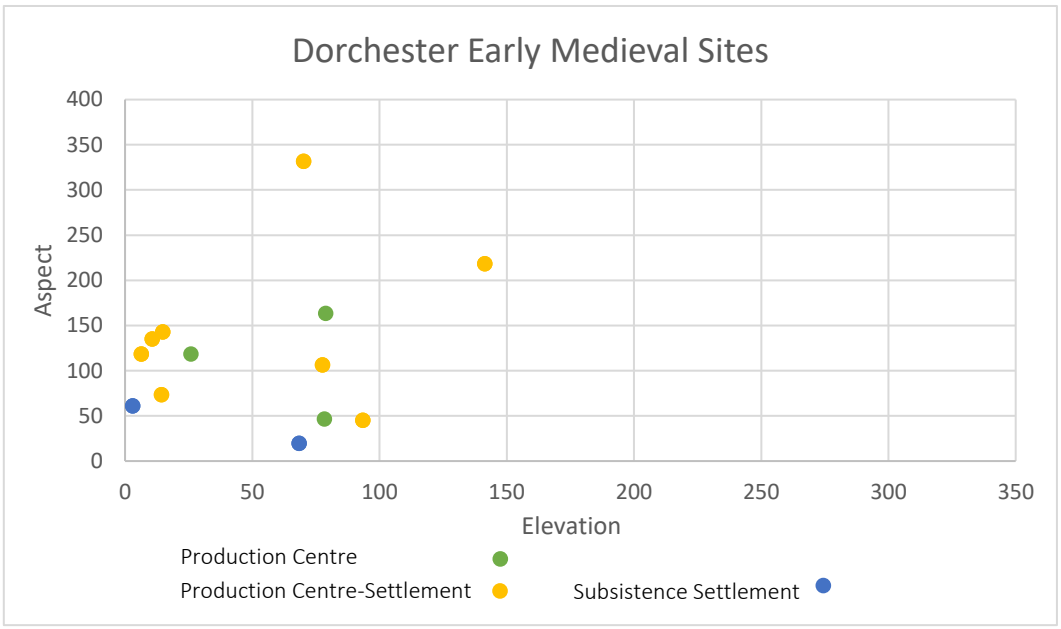


Figure 5.9: Early Medieval settlement and production centre topography

Overall, two distinct changes in settlement location and size are seen in the two townscapes. Where both townscapes witness a shift from centralised Roman settlement to smaller nucleated settlements, the number of nucleated settlements within the Dorchester townscape is significantly less than that of Winchester post-410AD; implying a population decrease. The migration out of Britain described by Gildas and Procopius (Thompson 1980) could have been a contributing factor to this. Although, population decreases, surplus agricultural production increases – presumably indicative of ecclesiastical land control (Carragáin 2020). On the other hand, settlement density and population appear to increase within the Winchester townscape post-410AD. This settlement increase caused the area to become a focal point of activity (Fasham & Whinney 1991, Hawkes & Grainger 2003, McCulloch 1995, Ottaway and Qualmann 2018). Settlement distribution within the Winchester townscape may be in relation to production sites, or it could be reflective of site status. Although settlement activity increased in Winchester, surplus production did not increase at the same rate and several sites were identified as producing no agricultural produce. This would indicate that the Winchester townscape featured settlements of varying status, operating within a complex supply and demand system.

5.4 Define transport routes between towns and their associated support networks.

Themes identified in the previous chapter include the observations that production sites were located in close proximity to roads; this was true of both townscapes. After 410AD, is it assumed rural roads deteriorated and an increased focus on riverine/ coastal processing centres is seen, with evidence suggesting that Roman and post-Roman production sites may have been orientated around processing centres rather than the towns themselves. These observations will be investigated alongside evidence from current literature below.

Spatial analysis has shown that production sites of both townscapes were located in close proximity to roads, presumably for the transportation of goods; this proximity became more pronounced post-500AD, especially in the Winchester area. This phenomenon must signify that the main Roman-built roads survived into the Early Medieval period as settlements and production centres continued in occupation within their vicinity whereas rural roads must have deteriorated as sites located near the latter ceased to be occupied. See Figure 5.10 for production centre location in relation to major roads. The survival of major Roman roads is noted by Eagles (2001) who states that the placement of three elite Saxon burials alongside Roman roads must indicate that not only were such roads still in use but also held ritualistic significance. Hindle (1993) supports this further stating that major Roman roads were still usable post-600AD - some becoming holloways or enclosure roads.

A second pattern was observed where production centres shifted north towards the central supply channels of England or south to coastal regions. This latter pattern is also seen by Eagles (2018). One explanation for the shift northwards could be a desire to be nearer the main road network of the extinct miliary-supply routes of Roman Britain: these being the Fosse Way, Ermine Street and Icknield Way. Prior to the Norman Conquest these roads became known as 'Royal Highways: '*Via Regia'*. Via Regia were defined as wide enough for 2 wagons to pass and for 16 knights armed to ride side by side (Pelteret 1985). It is highly likely that the maintenance of these roads allowed for the continuation of supply chains within their vicinity to continue. See Figure 5.10 for locations of the Fosse Way, and Icknield Way in proximity to the study areas.

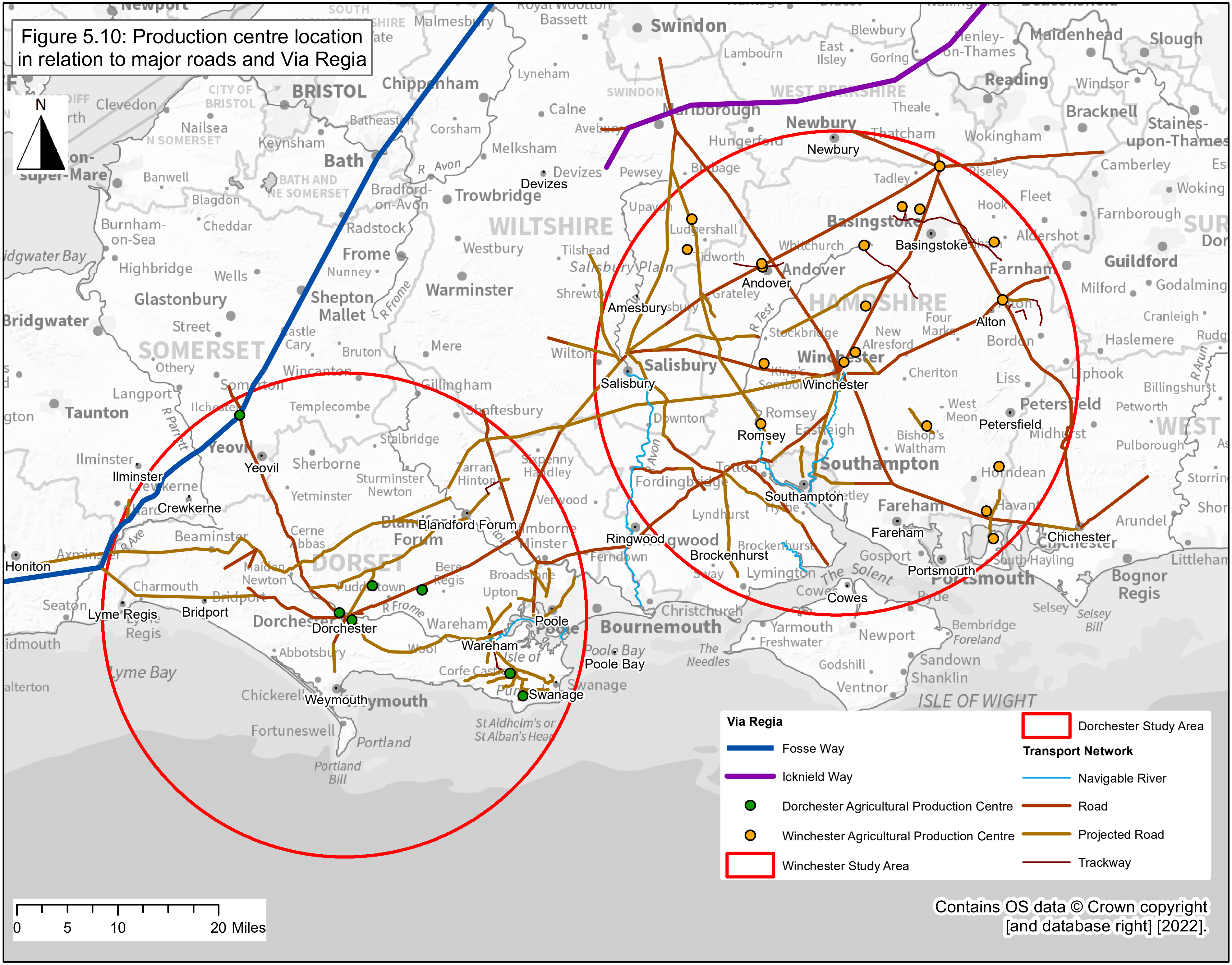


Figure 5.10: Production centre location in relation to major roads and Via Regia

Another observation was that a large proportion of import centres were located near a river or coastline, and production centres were not. This evidence contradicts the idea that cargo trade preferred riverine or coastal passage (Jones 1974 845).

The proportion of riverine and coastal import centres in the Winchester area is consistently significant across all periods, while the proportion of riverine or coastal import centres within the Dorchester townscape increases over time. Further investigation of this observation highlighted a relationship between the number of riverine/ coastal import centres and levels of agricultural produce, see Table 5.3.

Table 5.3: Proportion of sites producing agricultural surplus and proportion of riverine/coastal import centres. (Created from data taken from tables 4.8 and 4.23).

	Dorchester		**Winchester**	
	Sites producing agricultural surplus	Riverine/ coastal Import centres	Sites producing agricultural surplus	Riverine/ coastal Import centres
Roman	3	17	34	53
Early Saxon	47	33	20	44
Early Medieval	50	50	22	50

Figures 5.11 and 5.12 are visual representation of the data in Table 5.3, where the relationship between these two branches of the agricultural production industry are clear. Both townscapes show a positive relationship between the two variables. As one variable increases, so does the other, as one decreases, so does the other. This relationship supports the theory put forward previously in section 4.3.4, that riverine/ coastal import centres may be the result of an increase in the use of water powered mills as agricultural processing centres.

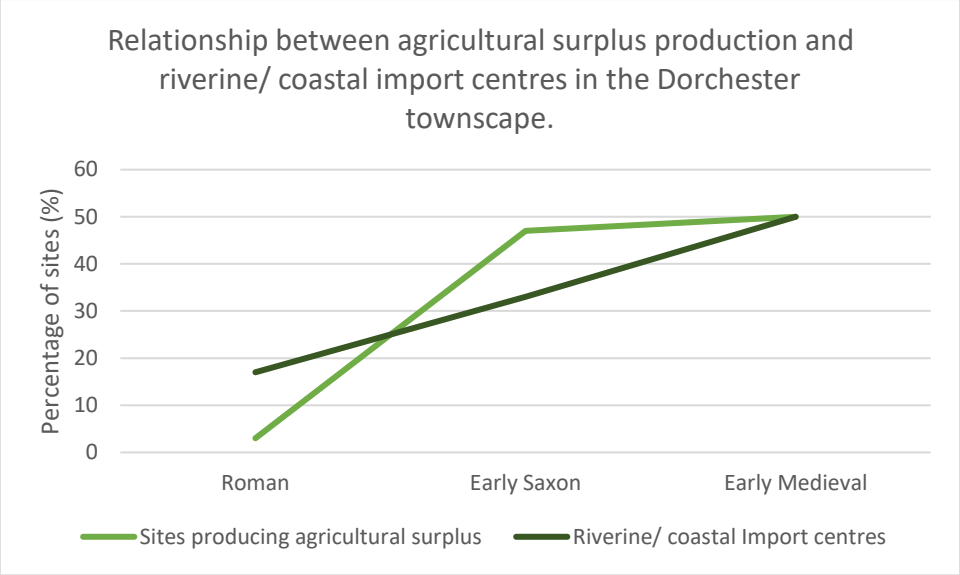


Figure 5.11: Line graph to show the relationship between agricultural production and riverine/ coastal import centres in the Dorchester townscape.

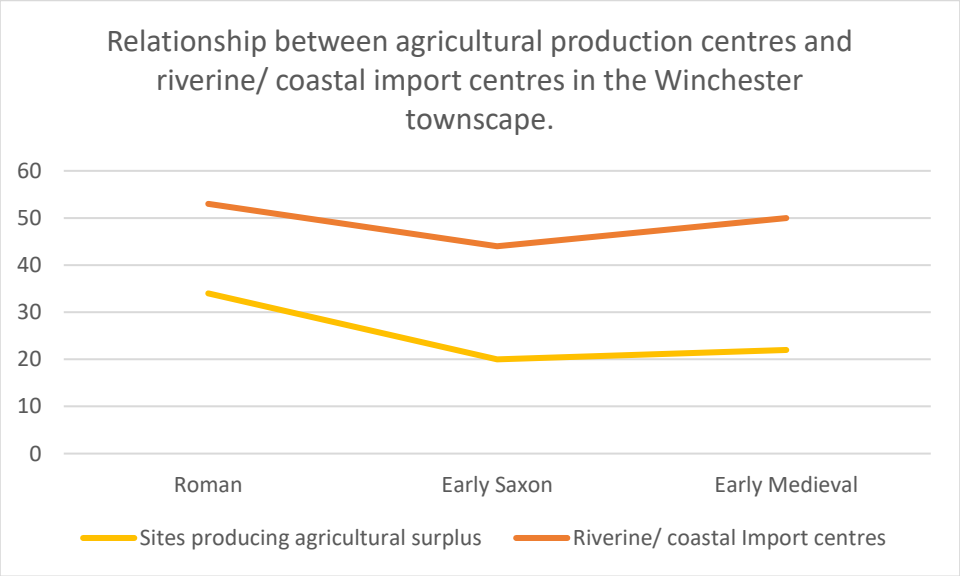
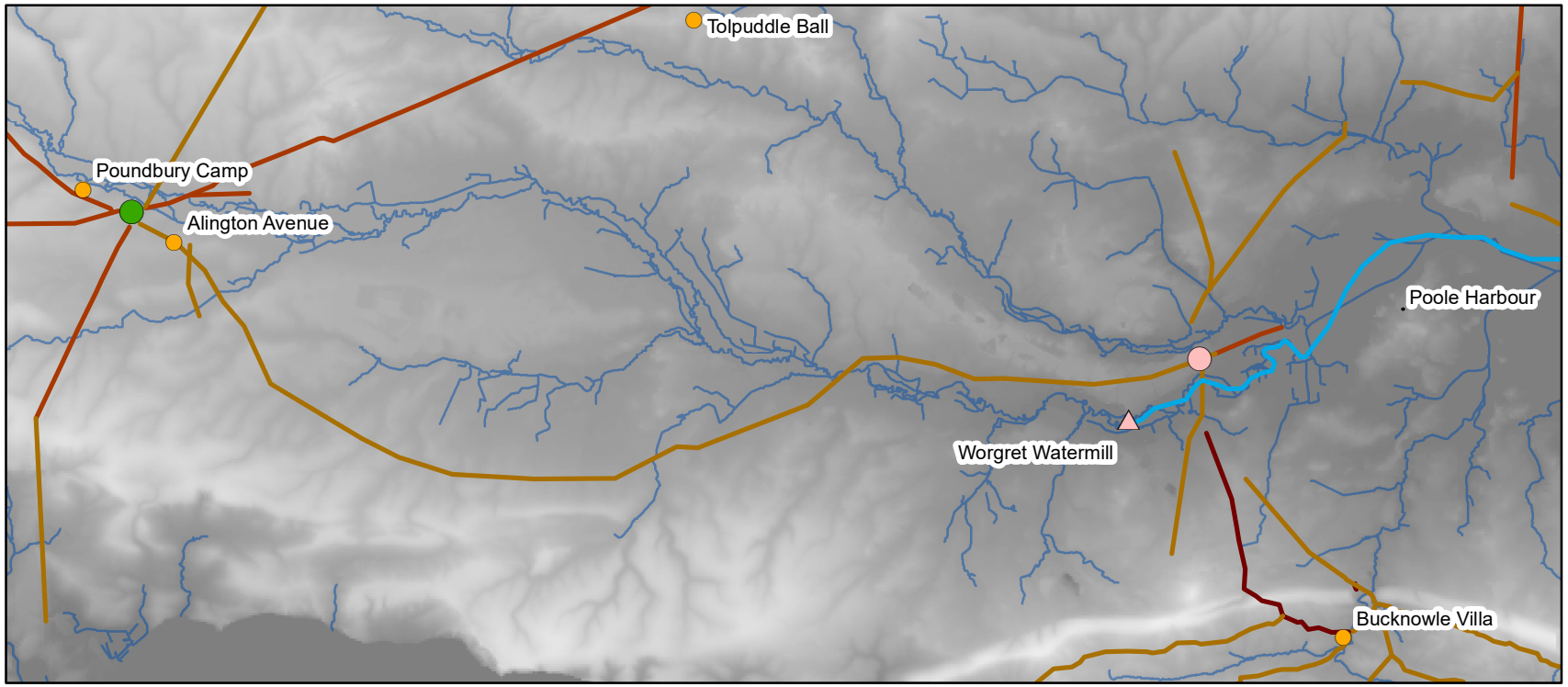


Figure 5.12: Line graph to show the relationship between agricultural production and riverine/ coastal import centres in the Winchester townscape.

Further to this, Biddle (1976 289) states that at least 14 watermills have been identified on the 2.2km stretch of the River Itchen in the vicinity of Winchester city by 1110AD and adds that although this does not signify that earlier mills were present it shows that river topography in this area, constructed by the Romans, was ideal for water milling. It is known however, that both Winchester and Droxford had at least one '*Saxon*' mill each, (Heritage Gateway 2023, Stoodley 2022, National Trust 2023b), and by 1066 Droxford supported three watermills (Powell-Smith 2022). Flatman and Herring (2018) go further and state that '*Anglo-Saxon*' watermills were often associated with high status sites, either royal centres or minsters, directly referencing Worgret mill at Wareham in association with the latter. Not only does this discussion support the hypothesis for the use of watermills in both Roman and

post-Roman Dorchester and Winchester, but supports the above suggestion made in section 5.3 that a site status system was in operation, fuelling a hierarchical and complex supply and demand chain.

Furthermore, evidence of a monastic agricultural production centre at Poundbury would support the idea that the area around Wareham was a religious agricultural processing estate. It is known that grain mass production was taking place at Poundbury, yet Sparey-Green (1987) explicitly states that flour making was not taking place on site. Moreover, the sites of Poundbury and Worgret mill are connected by an inferred Roman road. Although revised dating of Worgret mill associates one timber from the structure to post-664AD, it is agreed that the building was housing for a possible overshot mill wheel (Hinton 1992). Despite the 7th century date calibrated for one timber, other elements of the structure have been dated to 470-590AD. This may suggest there was an earlier structure on the site also making use of the suitable topography and river conditions for milling. This leads to the question; could grain have been transported via the Roman road from Poundbury to Worgret mill, then shipped as flour down the Frome river to Wareham, an international port (Ladle 1988, Dorset HER 2023)? See Figure 5.13 for map of supposed industry chain and supply route. If this flour industry was in existence, it would provide further support that religious houses were an economic catalyst of commercial activity opening society and economy to continental trade (Dark 2000a, Lucy 2000, and Blair 1988).



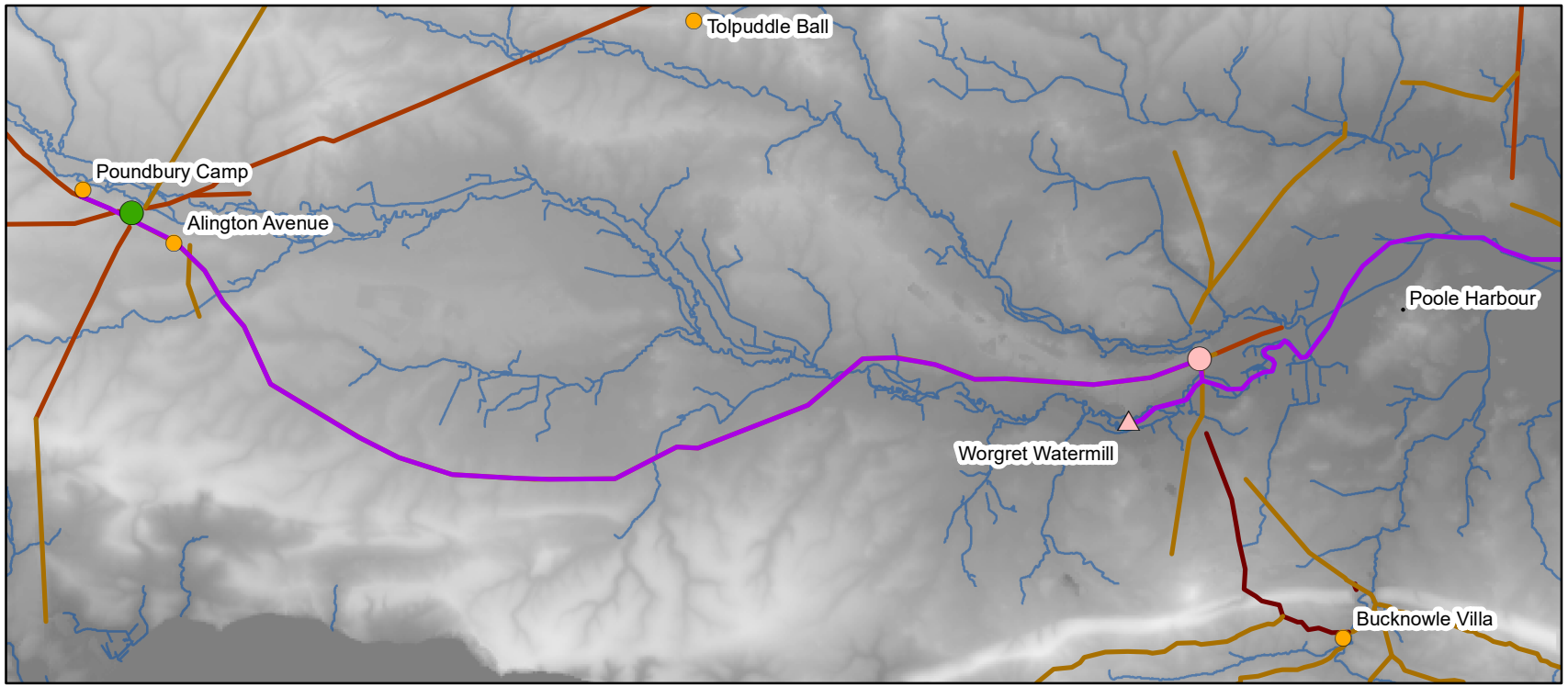


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Figure 5.13: Supposed Monastic Grain Industry and Supply Route. 650AD.

- Early Medieval Import Centre
- Early Medieval Production Site
- Wareham
- Worgret Watermill
- Dorchester
- Supply Route

Transport Network

- Navigable River
- Road
- Projected Road
- Trackway
- Water Course

Digital Terrain Model (50m)

Value

- High : 255
- Low : 0

0 0.5 1 2 Miles

In additional to this industry, the emporium of Hamwic is said to have hosted a '*monasterium'* - excavations also provided evidence for at least one, with a possible two further churches, (Morton 1992). This royal and religious centre is known to have supported a relatively large community, yet few farmsteads and production centres have been found within the vicinity to support a supply chain to the town (Bourdillon 1988, Morton 1992); project data (Table 4.24) similarly indicates a lack of production centres local to Hamwic. It is possible that such production centres have not survived in the archaeological record or that they remain undiscovered, however it is known that links existed between '*royal'* elite sites and the church (Biddle 1976 256, Ladle 1988). If such connections did exist, there is the possibility that the monastic grain industry at Wareham was exporting to the royal and religious community at Hamwic via coastal trade. Birbeck (2005) also believes that Hamwic held alliances with other farming communities located along the Channel. Blair (2005) supports this idea further by stating that radical reforms took place between social hierarchies and the control of resources, implying that social elites took control of production and distribution of agricultural surplus. Blair (2005) claims this reform took place at the end of the 6th century, however, production data from Poundbury (Sparey-Green 1987) and King's Somborne (Rackman 1994) would imply this reform had taken place by 500AD.

The above investigation has allowed access routes between towns and support networks to be defined but has also examined their post-Roman development. Roads associated to the military supply chain of Roman Britain such as the Fosse Way and Icknield Way were maintained post-410AD, becoming Royal Highways prior to the Norman Conquest. Where production centres were reliant on the Roman road system for the export of goods pre-410AD, rural roads are seen to have deteriorated after Roman administration ceased to maintain them, and so their associated supply chains deteriorated also. Production centres located in the vicinity of major Roman roads remained in occupation, with a number becoming focused around the Royal Highways. Exported agricultural goods, particularly that of grain, did not necessarily travel directly into markets, but rather to processing centres, namely water-powered mills. The produce, be it flour, or wool was then transported to distribution centres, which, potentially were under the control of social elites. In the case of Wareham, a flour production industry may have existed within a religious community, which then exported to high status and/or religious communities via overseas trade. Such industries support the hypothesis in section 5.3 that complex, hierarchical supply and demand supply chains were active post-410AD – the Dorchester townscape being made up of low status supply estate, the Winchester townscape being a higher status demand area.

5.5 Define whether differences in material culture are present between the two townscapes.

A number of differences in material culture were identified between the townscapes. An overwhelming difference in terms of brooch culture was that within the Winchester townscape all four brooch types were recovered, whereas only a single Cruciform brooch was discovered in the Dorchester area. Button and Quoit brooches appeared in greatest quantities within the Winchester sites followed by Squared-headed and Cruciform brooches. Furthermore, Squared-headed, Button and Quoit brooches appear to have a positive relationship with the increase of SFBs in the Winchester townscape. Direct Christian symbology increased in both townscapes post-410AD. It was also observed that there is a possible relationship between Squared-headed, Button and Quoit brooches, SFBs and both indirect Christian symbology and Christian religious buildings. These observations are discussed with reference to current themes in literature below.

There is a clear difference in brooch type representation between the two townscapes. Button, Quoit and Square-headed types are absent from the Dorchester townscape, but are well represented within the Winchester area. A possible explanation for this is that the brooches were symbols of high status, the Winchester townscape holding a larger number of high status sites within which elite individuals resided. It could also indicate that burial with brooches as grave goods was taking place within Winchester which, in turn, has led to a greater number of brooches being discovered rather than being lost. Evidence from the early cemetery at Hamwic would confirm elite individuals being present in the Winchester townscape (Birbeck 2005). Further to this, topographic data of brooch sites were plotted in scatter plot format to assess whether any relationship was present between brooch sites and elevation or aspect. It can be seen from Figure 5.14 that the majority of sites were located on land over 60m AOD. These sites included a mixture of cemetery and settlement sites. It could be concluded therefore, that supposedly 'high status' sites were located on high ground, potentially in order to dominate the surrounding landscape, as was the case with villas.

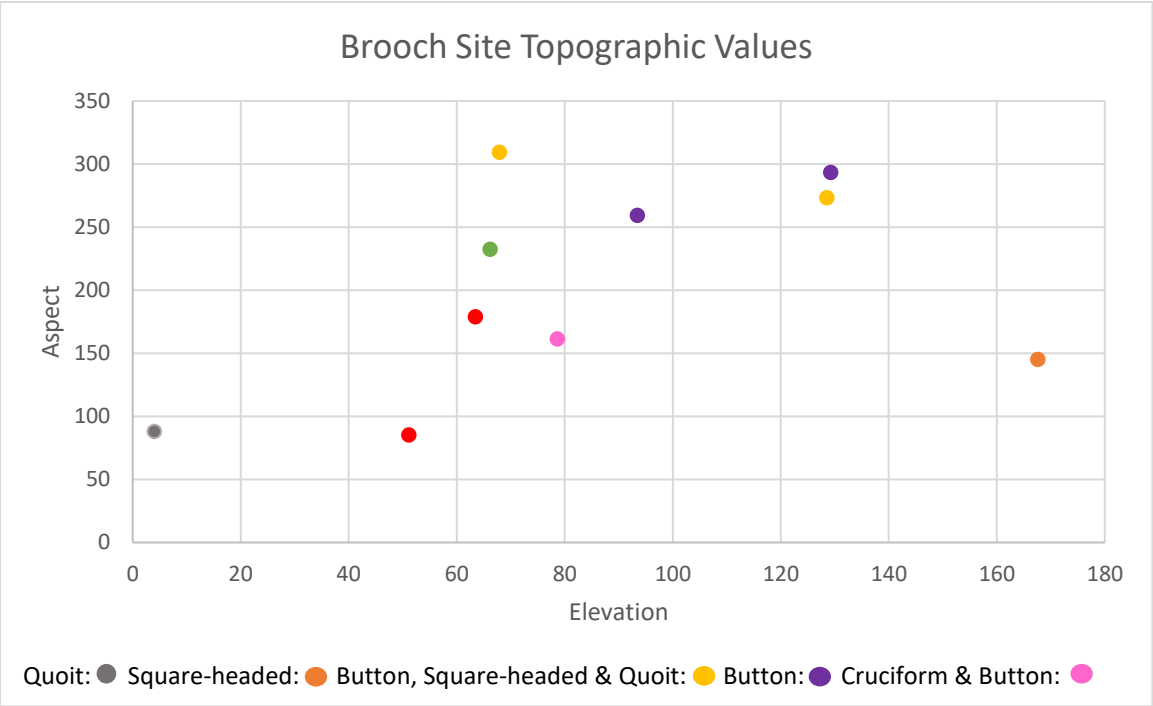

Figure 5.14: Winchester Brooch site topographic data.

The opposite is assumed of the Dorchester townscape, containing lower status sites where it was not customary to wear brooches nor to be buried with them. To understand this representation better, investigation was made into the origins of the brooch types.

Button brooches supposedly originated from southern England (Avent and Evison 2011, Suzuki 2009, Stedman and Stoodley 2000, and Welch 1985). The Quoit style, on the other hand, was directly associated to a Roman military heritage. Quoit style metalworking displays characteristics from both Romano-British and continental late Roman belt fitting with designs attributed to Roman militia status (Swift 2019). The Square-headed brooch style originated from Jutland, (Brugmann 1999,38, Leeds 1949), the Cruciform type also being Jutish in origin (Johnson 1998). Therefore, it can be said that the representation of brooch data in the Winchester townscape is the result of a mixture of cultures: Germanic, Romano-Military and Romano-British, the last being the majority.

There are a number of suggestions which may shine a light on how these cultures came to be represented in such close proximity but based on brooch evidence from Lankhills cemetery, it is believed that Winchester received a great number of settlers from the Danube Basin and that these individuals were sent to Winchester to work in the supposed *Gynaecum* (Clarke et al 1979). It should be noted that Winchester is just one of three supposed locations for the British *Gynaeceum*. Identified from a reference in the *Notitia Dignitatum*, the industry is known to be located at *Venta; Venta Belgarum* being Winchester, *Venta Icenorum*; Caistor-

by-Norwich and *Venta Silurum*; Caerwent Monmouth. Envisaged as a cottage industry, there is limited tangible evidence to make a solid conviction as to the true location (Wild 1967).

However, further evidence from Lankhills cemetery arguably indicates a non-local workforce (slaves?); and potentially the external work force explicitly for the *Gynaeceum* (Booth et al 2010). Furthermore, the military personnel represented at Lankhills is at a level unparalleled in other urban cemeteries in Low-land Britain and it has been suggested that these personnel were associated to the imperial administration of the *Gynaeceum* to oversee cloth manufacture and safeguard production (Booth et al 2010). This heightened late Roman military presence at Winchester could be associated with riots that were taking place along Roman frontier (Lamdshead 2022). These rebellions may have resulted in a similar military presence required in Winchester for the protection of the *Gynaeceum* (Clarke et al 1979, 389 and Booth et al 2010).

Thus, this theory would suggest that a work force from Germanic Europe was sent to work in the *Gynaeceum,* along with an increased number of Roman militaries deployed to protect it. After Roman administration collapse, the *Gynaeceum* supposedly ceased to operate but the work force and military personal would likely have remained in the area, integrating into a Romanised and/or military society. The evidence in the brooch data would very much support this theory.

On the other hand, it is possible that this mix of Romano-British, Germanic and Romano-military community came about from one of a number of organised militias protecting the south from sea raiders attacking the area in the mid to late 3rd century. Winchester was particularly at risk due to access to the city via the Itchen River (Cunliffe 1997). It is known that Romano-British officials drew up treaties with Germanic peoples with the promise of land in return for military service (Welch 1978, Gildas in Thomson 1979). Brooch evidence could signify that this was one such occasion. In addition, such a treaty would explain a population expansion in the area by 500AD. Further to support this theory, Winchester-centred communities at this time were known to have had Jutish origins (Cunliffe 1997).

It is also possible that both these situations took place; the *Gynaeceum* was fuelled by a Germanic work force, upon sea raids, the Romano-military presence in Winchester was intensified to protect the *Gynaeceum.* Militias of Germanic warriors were also commissioned and were promised land in return for military service. As a result, Germanic populations settled within the Winchester townscape, together with disbanded Romano-military personnel after the removal of Roman administration from Britain. Thus, the cultural mix of Jutish, Romano-British and Romano-Military was created. However, this suggestion of events is based on the limited evidence available at the time of writing - a total of 10 brooch sites, which is essentially too small to suggest any meaningful conclusions.

A similar provision must be made for the brooch evidence found in the Dorchester townscape; one brooch from a single site. It may be that the near complete lack of brooches in the Dorchester townscape may indicate a separate material culture in itself but there is also the distinct possibility that the lack of brooches is caused by very few excavations having

been carried out within the townscape. As a result, suggestions given here have very little meaning. The material culture of the Dorchester townscape is discussed in more detail below.

A further observation from the Winchester townscape brooch data is that the number of Sunken-Feature Buildings increase with the appearance of Square-headed, Button and Quoit Brooches. The architectural style of SFBs has been found throughout Europe since the Neolithic period so cannot be attributed solely to Germanic culture (Tipper 2004). This style of building was also present on settlements in both townscapes. However, the point of interest is the rapid increase in the number of SFBs found on sites in the Winchester area post -410AD, (see Figure 5.6) - this number increases by 1067% by 500AD but only increases by 50% in the Dorchester townscape. Such evidence may indicate a rapid increase in the size of settlements in the Winchester area. However, due to the scarcity of data available and the ambiguity of SFB definitions, it would be unwise to associate this increase of settlement size to an external population influx. All that can be suggested is that there might be a relationship between the increase of Sunken-Feature Buildings, Square-Headed, Button and Quoit Brooches which may indicate a movement of people and the adoption of a certain architectural style. Whether this is the result of an external population influx or movement of people out of the town into the countryside, or indeed a mixture of both, it is impossible to say.

A religious trend was also noted; the increase in direct Christian symbology in both townscapes post-410AD. Christianity was made an accepted religion of the Empire in 313AD; with British Bishops being recorded at the Council of Arles in 314AD (Robinson 2001) - an indication of how established Christianity in Britain was at this time. However, Christianity was only set as the official religion of the Roman Empire in 380AD by Emperor Theodosius I (Kershaw 2013). This set the precedence of a Christian religious institution described by Brown (1996) as an interconnected model of culture and religion in Western Europe controlled by the Pope and central church in Rome. However, as Brown (1996) states, this was a system that not only controlled religion but influenced culture, law and international trade, claimed by Lucy (2000) as an economic force. Blair (1988) goes on to highlight the fact that Minsters were often built within Roman towns, close to or even within Roman forums almost as a revival of the concept of Roman civil systems. This link between 'Roman' Christianity and the Roman administration system cannot be denied. It is possible therefore, that the increase in direct Christian symbology throughout all periods represents a continuation of a system of Romanised civil control in the form of a religion which filled the Imperial power vacuum left when Roman administration collapsed.

Furthermore, quantitative data for some of the elements of material culture investigated by this research potentially shows an interactive relationship of change. It was noticed that a reaction may exist between Square-headed, Button and Quoit brooches and Sunken-feature buildings on the one hand, with indirect Christian symbology and Christian religious buildings on the other. Figure 5.15 illustrates this reaction. At the most general level, there would appear to be negative relationship between Square-headed, Button, Quoit brooches, Sunken-

feature buildings and Christian symbology of all types. Where the former group is found, the latter is lessened, where the latter increases, the former are reduced; this is particularly seen in the Winchester data in Figure 5.15. Specifically, as the quantities of Square-headed, Button and Quoit brooches and Sunken-feature buildings increase, indirect Christian symbology in the form of W-E, unfurnished burial reduces. Then as the numbers of Square-headed, Button and Quoit brooches and Sunken-Feature buildings decrease, the numbers of W-E, unfurnished burials and Christian religious buildings increase. For both townscapes as the number of W-E, unfurnished burials increase, the quantity of direct Christian symbolism and the proportion of Christian religious buildings increase also. Additionally, it was noticed that the latter three variables have a positive relationship with surplus agricultural produce and organised production site locations as discussed above in section 5.1.

Within the Winchester townscape, there is the possibility that these relationships reflect the increase of Germanic settlers who were known to be pagan (Blair 2005) so therefore not burying their dead in W-E, unfurnished graves, nor building Christian religious buildings. The settlers supposedly bought their own material culture in the form of Square-Headed brooches, potentially using brooches as gifts between elites (Welch 1978) - a further explanation for the higher levels of brooches in the Winchester area. As the population increased in the Winchester area, the need for buildings increased also, hence the increase in SFBs. Around the year 600AD, Christian conversion of Germanic elites began taking place (Welch 2005), which could be associated with the rise in Christian religious buildings, followed by an increase in W-E aligned, unfurnished graves as conversion spread through the top-down society. Such a conversion would have led to a reduced number of brooches being deposited in graves as grave goods, and so reducing the number of brooches in the archaeological record. A move towards a more classical, and/ or ecclesiastical European form of architecture may have led to a reduction of SFBs. Again, the difficulties in interpreting religious activity must be remembered here. W-E aligned graves were not solely used by the Christian faith, some pagan practices also buried their dead in W-E aligned graves. Unfurnished graves may not necessarily have been unfurnished, merely that no grave goods were found at the time of excavation. As mentioned previously, there is no explicit definition of a grave good, be it a clothing fixture, ornamental jewellery, ritual offering or indeed coffin furniture. Due to this there is discrepancy between excavation reports. Consequently, interpretations made here have limited meaning.

The Dorchester data in Figure 5.15, sees no increase in Square-headed, Button and Quoit brooches, nor a reduction in W-E aligned, unfurnished burials. As a result, this data could imply that very few Germanic people settled in the Dorchester townscape, matching an observation made by Cunliffe (1997) who describes the area of Dorset as a Romano-British stronghold, with the late arrival of '*Saxons'* progressing down from the Avon valley rather than the coast. Despite the correlation in observations between this project and that made by Cunliffe (1997), the sample size from the Dorchester townscape limits the meaningfulness of the suggestion.

Further to this, despite a lack of Germanic influence, Romano-British brooch types such as Button and Quoit brooches would still be expected to be seen; this however is not the case. Available sample size could be an influencing factor behind this observation, but it is possible that this phenomenon could imply that a large amount of the Dorchester townscape was occupied by a low status population where brooches were not customarily worn. With such limited evidence, further interpretation can only be suggested in loose terms but there may be evidence to link the low status community to that of a monastic culture who sought to abstain from personal property (Foot 2006), a community that did not possess brooches nor include them in burials. If this was the case, it leads to the possibility that an area of the Dorchester townscape formed an early monastic estate, worked either by a low status population or the monks themselves. This suggestion is supported by Gerrard (2013) who states the weakening of the Roman state allowed provincial elites to control economic systems from the 5th century. In the case of Dorchester, it's possible that the church became such provincial elites. Further to this, the single Jutish brooch found near Wareham could signify a relationship between this area and the Jutish connections such as those in the Winchester area as it is known that monastic communities retained close links with aristocratic Germanic society, Foot (2006). This theory would also support the idea put forward in section 5.3, of a political and/ or economic agreement between the two townscapes resulting in trade of agricultural surplus.

Although allowances must be made for the difficulties in interpreting religion and for the relatively small sample size, the data in Figure 5.15 would indicate that direct Christian influence continued to increase over time in both townscapes. Ultimately, this could be an indication that it was a Christian governance whose influence gained momentum to not only hold power over religion, but over economy, social structure and law. This is seen in the Christian conversion of the *'Saxon'* elites in the Winchester area by 650AD, (Biddle and Kjølbye-Biddle 2007, Stoodley and Stedman 2001), the building of the Old Minster in Winchester supposedly in 648AD, (Biddle and Kjølbye-Biddle 2007, 189), and the move of the Bishopric from Dorchester on Thames to Winchester in the latter half of the 7th century (Benham 1884). This formal recognition of Winchester by the ecclesiastic institution indicates that the city was of significance and required Christian authority in the form of the church to help impose a powerbase in the emerging kingdom of Wessex.

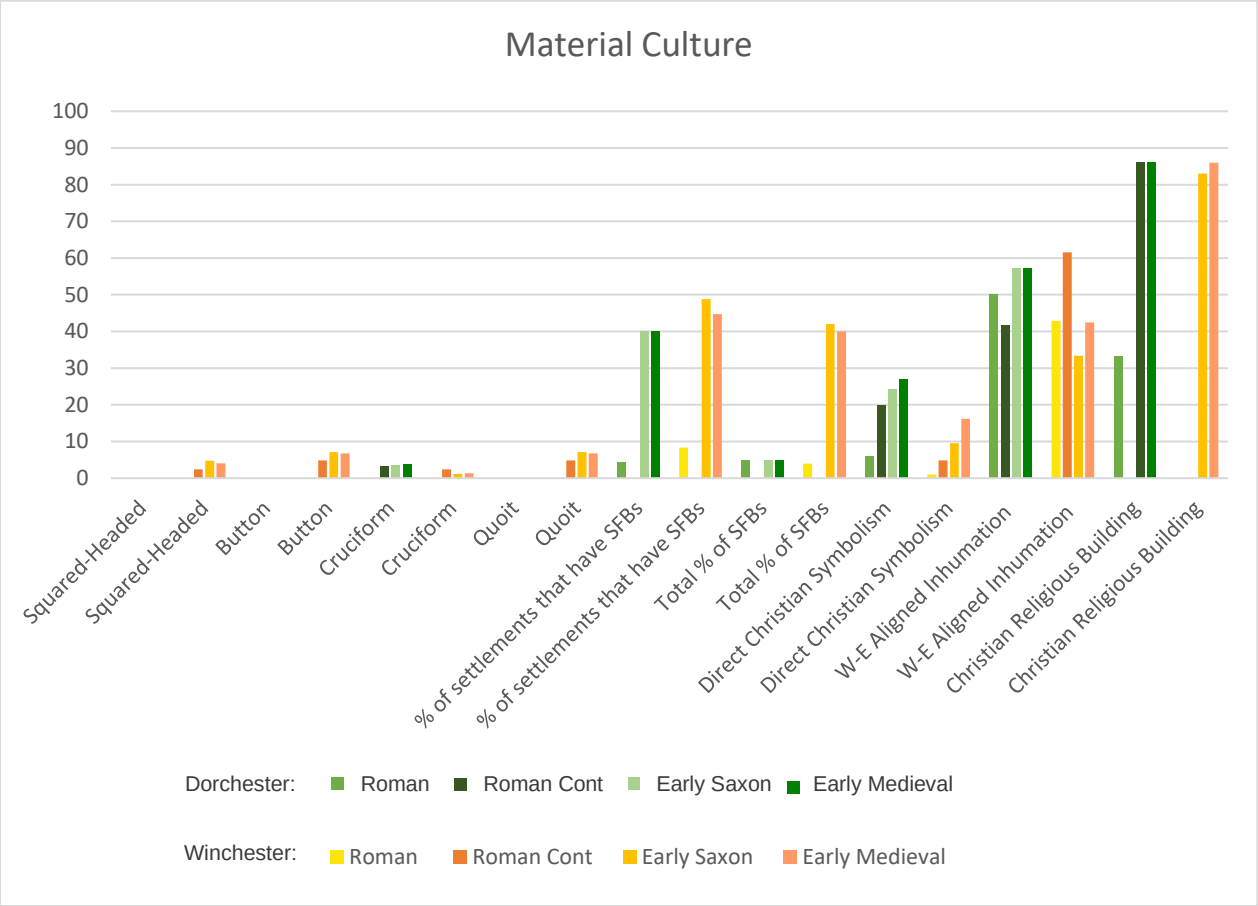

Figure 5.15: Material culture within the Dorchester and Winchester townscape.

In summary, major differences in material culture have been identified between the two townscapes. Brooch types within the Winchester area represent a mixture of cultures including Jutish, Roman-military and British (Avent and Evison 2011, Suzuki 2009, Stedman and Stoodley, 2000, Welch 1985, Swift 2019, Brugman 1999, Leeds 1949 and Johnson 1998), the latter being the majority representation. Suggestions for such a mix of cultures coming together is through the operation, protection then disbandment of the supposed Roman *Gynaeceum* (Clarke et al 1979, Booth et al 2010). It is then plausible to assume that there was a movement of peoples to settlements outside the city of Winchester increasing their number and size. It is by no means certain due to the limited sample size and partial understanding of the period, but it is conceivable that these peoples were made up of *Gynaeceum* workers, militia bands and townsfolk forced to relocate due to the collapse of the Roman administration system. It could also be assumed from the brooch data that a form of hierarchical social system existed post-410AD. The Winchester area was known to contain '*elite*' communities, and thus a larger number of brooches are represented, as opposed to a

lack of brooch representation in the Dorchester area which could represent a low-status population where brooch wearing was not customary. When this data is reviewed alongside religious data, evidence for a religious community is seen in the Dorchester area (Foot 2006, Sparey-Green 2016). A small amount of evidence also exists for the Dorchester townscape to be in contact with a Jutish community via the representation of a Cruciform brooch found near Wareham.

Both townscapes display an increasing representation of direct Christian influence implying a continuation of Romanised civic control in the form of the ecclesiastical system. Direct Christian symbology increases in both areas from 410AD suggesting that despite Germanic settlers and/or elites dwelling within the Winchester area, influence from ecclesiastic institutions continued to gain momentum. This could be related to the continued British and Roman-military presence in the townscape, contrary to popular theories that Germanic, pagan setters overran British communities – it may have been these British communities which allowed the Ecclesiastical system to keep a foothold in the Winchester townscape.

Ultimately this collection of material culture representation suggests three trends. First, an increase of Jutish pagan settlers in the Winchester area, although British and Romano-military influence was still a majority. Second, there was a continuation of low-status and/or monastic culture in the Dorchester townscape. This monastic community was in contact with a Jutish community. Last, that the underlying Romanised ecclesiastical system held influence in both townscapes and ultimately the Christian conversion of '*Saxon*' peoples is seen to have taken place in the Winchester area by 650AD. Despite these conclusions, the scarcity of evidence and the difficulties associated with interpreting religion through the archaeological record, limit the meaningfulness of the suggestions made here.

5.6 Discussion Summary

Information to update the understanding of urban development during the period 300-700AD has been successfully derived and interpreted in relation to all objectives, with themes justified by current literature.

Agricultural production evidence has shown that Early Saxon sheep production in both Dorchester and Winchester matches the trend put forward by McKerracher (2018) and Maltby (2010), whereas the intensive sheep and grain production in Roman Winchester does not. However, evidence of the Roman agricultural industry of Winchester supports suggestions made by Biddle and Kjølbye-Biddle (2007), that Winchester was a major provider of the *Annona* and textiles to the Roman Army, supposedly hosting the state-owned *Gynaeceum* (Clarke et al 1979 388, Ottaway 2017 79, McCarthy 2013 111). As such, Winchester presumably operated a monetary economy, which, upon Roman administration collapse, recessed and is clearly seen in agricultural and industrial data in this research. It can be assumed that the Dorchester townscape held less dependence on Romanised demand systems as agricultural and industrial production levels appear not to have been affected when Roman administration vacated. It can be assumed that Dorchester operated a stable, non-monetary-based farming economy which continued despite the economic collapse felt in other parts of Britain (Woodward et al 1993, Moore and Ross 1990, McCarthy 2013 61), with Sparey-Green (1987) going so far as to state evidence for a 5th century mass grain production industry at Poundbury.

Success of the agricultural industry in Dorchester could also be related to a supposed continued Roman ecclesiastical influence, which became known as a force of economic growth and commercial activity both nationally and internationally, (Blair 1988, Lucy 2000 and Dark 2000a). Further to this, as direct Christian influence increases in the Winchester townscape so does surplus agricultural production. Ecclesiastical influence can also be seen in the change to organised and specialised farming practices with topographic data reflecting a pattern of monastic estate management (Carragáin 2020). This influence being seen in Winchester by 650AD.

Lastly, the trend identified by Pitman et al (2020) for a relationship between industrial production and agriculture is seen within the Dorchester townscape, particularly post-500AD. Where agricultural surplus production intensifies, ceramic industries continue - whereas the opposite is the case within the Winchester townscape.

Agricultural data from the Dorchester townscape would also go some way to support the statement that the area supported commercial activity rather than a subsistence economy by 450AD. Evidence from this project shows both an intensification in grain and sheep production in the area, with further evidence from Poundbury for a monastic mass-grain production industry, potentially with flour being ground at an earlier structure at Worgret Mill. Furthermore, intensification in sheep production could be linked to cross-channel British wool trade (McKerracher 2018, 49). Therefore, there is a strong argument that the Dorchester area was not only producing surplus for national level trade but international trade, via the continental ecclesiastical network (Dark 2000a, Lucy 2000).

Agricultural production and material culture data within the Winchester townscape would indicate that a complex system of hierarchical supply and demand operated within the townscape – potentially with high-status sites located on higher ground. Evidence from this research shows that a majority of sites around Winchester were not producing surplus, but also were not producing subsistence levels of produce. This would imply, together with evidence from Birbeck (2005) and Bourdillon (1988 190-1), that resources were being imported into the townscape via the port of Hamwic and that the area may have hosted a middle and high status demand system.

The main changes in settlement include a shift from central Romanised town centres to nucleated settlements, although both townscapes show evidence for the emergence of new coastal port-towns - Hamwic and Wareham. The Winchester townscape saw an increase in the number of settlements, but also an increase in the number of SFBs, inferring the size of the settlements increased also. This increase of small rural settlements around Winchester caused the area to become hierarchical and a focal point of activity (Ottaway and Qualmann 2018, Fasham & Whinney 1991, Hawkes & Grainger 2003 and McCulloch 1995, Biddle 1972), with elite sites suggested at Cowdery's Down and Hamwic,- King's Somborne being a production centre for a '*Royal*' estate (Rackman 1994).

On the other hand, the Dorchester townscape saw a reduction in inferred population, and also in the number of settlements, with few new settlements established post-410AD. One suggestion for this is the population migration of British peoples to France (Gildas in Thompson, 1980) Alternatively, the settlement pattern in Dorchester reflects that of ecclesiastical land control discussed by Carragáin (2020) where relatively few settlements exist. This indeed would reflect the hypothesis put forward above that the Dorchester area was part of an ecclesiastical controlled estate.

In terms of access routes, three main themes appeared. First, the phenomenon that the main Roman-built roads did survive into the Early Medieval period, some becoming '*Royal Highways*', with settlements and production centres continuing in occupation within their vicinity whereas sites located near rural roads ceased to be occupied. Both Eagles (2001) and Hindle (1993) have made the same observation. A second pattern was observed in the shift of import centres to riverine and coastal locations which may be the result of an increase in the use of water-powered mills as agricultural processing centres. Biddle (1976 289) highlighting that the topography of the river Itchen was ideal for water milling, with two known '*Saxon'* mills in the area (Heritage Gateway 2023, Stoodley 2022, National Trust 2023b), and one known mill in the Dorchester townscape at Worgret (Flatman and Herring 2018, Heritage Gateway 2023). '*Anglo-Saxon'* watermills often being associated with high status sites, either royal centres or minsters (Flatman and Herring 2018), this being further evidence of a hierarchical society post-410AD. From this review of access routes, evidence was bought to light of potential trade links between the post-Roman 'towns' of Hamwic and Wareham. It is known that links existed between '*royal*' elite sites and the church (Biddle 1976 256, Ladle 1988), with Birbeck (2005) stating that Hamwic had a bipartite alliance with other farming communities located along the Channel. It is also known that Hamwic supported a relatively large community, but few associated production centres have been

found (Bourdillon 1988, Morton 1992). Therefore, combined with evidence from this project, there are grounds for the suggestion that the agricultural surplus being produced in the Dorchester townscape, particularly that of grain, was being processed at a specialised processing site, potentially an earlier milling structure at Worgret mill, transported to the port of Wareham, where it was conveyed by sea to Hamwic. This provides further support for the existence of a complex supply and demand system between the elite sites of Winchester and the ecclesiastical sites of Dorchester.

Finally, evidence from material culture further supports differences being present between the communities of the Winchester and Dorchester townscapes. Brooch data supports the theory that the Winchester townscape supported hierarchical societies controlled by high status individuals, (Birbeck 2005), whereas the Dorchester data represents a community where it was not customary to wear brooches, interpreted as low status and/ or monastic (Foot 2006, Sparey-Green, 2016). Brooch type analysis also confirms that the Winchester townscape community was made up of Germanic (Jutish), Romano-military and British cultures, the latter being in the majority. An explanation, based on theories by Clarke et al (1979) and Booth et al (2010) is that the supposed *Gynaeceum* was fuelled by a Germanic and/ or slave work force. Germanic militias were employed for protection of the area and promised land in return for military services. Romano-British military personnel were already present in the city. Thus, the cultural mix of Jutish, Romano-British and Romano-military was created. This collapse of industry within Winchester is also assumed to have led to the increase in SFBs and the establishment of new rural settlements in the townscape.

However, it is clear from material culture that a continuation of direct Christian influence was present in both townscapes, signifying that despite the collapse of Roman administration and the influx of Germanic pagan communities, Romanised ecclesiastical control remained active. The underlying influence of the Romanised ecclesiastical system ultimately leading to the Christian conversion of '*Saxon*' peoples which is seen to have taken place in the Winchester area by 650AD.

Conclusions

6.0 Introduction

This chapter brings together the findings of this research in accordance with the objectives and with the view of attempting to answer the overall aim of this project. The impact of the new knowledge created by this project, together with the limitations faced, will be reviewed and suggestions for further research will be made.

6.1: Summary of Findings

The aim of this research has been to attempt to explain why Winchester became a major city of importance by 700AD whereas Dorchester remained in relative obscurity. In order to answer this question, the six objectives set out at the beginning of this research have been met, creating new information and a better understanding of the economy, social structure, religion and community of the areas, and importantly how they physically interact and connect via the transport networks.

Roman economy of Winchester was focused on sheep and grain production, supposedly grain for the *Annona* and wool for the *Gynaeceum* with the town becoming a well defended administration centre and supply base of grain and textile production, based on a monetary economy. The Dorchester townscape did not have such an intensive Romanised economy; *Annona* would still have fuelled the economy but as such, a system of barter and/or exchange may have existed over the use of coinage. Thus, when the Roman administration system collapsed, the Dorchester area had a sustainable economy established that was relatively unaffected by the removal of the governing state whereas the economy in Winchester recessed. There is also some evidence that areas of land within the Dorchester townscape were under control of an ecclesiastical estate and, by the 5th century, this land was exploited as part of a monastic agricultural industry.

It is clear that both townscapes supported more than subsistence economies post-450AD. The Dorchester area especially so with strong evidence for a monastic grain industry exporting nationally, if not internationally, and sheep production potentially fuelling an international wool trade. It is likely that both of these industries were controlled by ecclesiastical estates. There is also evidence for Hamwic, located within the Winchester area, to be an import centre for external agricultural produce which would then be distributed within the townscape's hierarchical supply and demand system.

Both townscapes saw a shift from central Romanised towns to nucleated rural settlements with the exception of two post-Roman coastal commercial centres developing; Hamwic and Wareham. Evidence from this project and from literature would imply that by 500AD, the

population of the Winchester area had risen, and with it, the emergence of political elites. This hierarchical community led to the organisation of the complex supply and demand system between settlements in the area, with a focus on Hamwic as an import centre. Settlement site location in Winchester may show evidence of organised distribution in terms of status with elite sites being located on high ground, supposedly to dominate the surrounding landscape, as with villas. On the other hand, the Dorchester area saw settlement decline which could have been the result of a mass migration of Britons to France as mentioned by Gildas or indeed caused by an increase in monastic control of the area, evidence of which is also seen through topographical organisation of settlements.

In terms of transport networks, a continued dependence on roads for the transportation of surplus from production centres was observed. Rural production centres fell fowl of rural road deterioration, whereas production centres located near major roads, especially *Via Regia* continued in occupation. Another observation was that of the number of import sites located near riverine or coastal regions reflecting levels of agricultural production. This relationship led to the suggestion that the use of watermills in agricultural processing may have intensified post 500AD within both townscapes. '*Saxon'* mills have been identified in both Winchester and Dorchester townscapes, with some sources stating watermills were associated with high-status sites, either royal or ecclesiastical, with the distribution of produce also being controlled by elite sites. This is yet additional evidence for hierarchical commercial industries taking place in both townscapes. Further to this, evidence has come to light to suggest an interconnected monastic industry between the grain production site at Poundbury, the watermill at Worgret and the port at Wareham. This industry also has potential for exporting to the royal and ecclesiastical import centre at Hamwic.

Evidence from the limited brooch data would suggest the hypothesis that the Winchester townscape held communities of high status, whereas a low status population dwelt within the Dorchester townscape, or indeed a community were brooch wearing was not customary. Such a community may have been monastic, which would infer that some areas in the Dorchester townscape were worked as a monastic estate. However, due to the limited amount of evidence, this interpretation has limited grounding. Whereas in Winchester, the community was made up of Jutish, Romano-Military and Romano-British of varying status, the latter, however, being the majority. The single Jutish brooch found near Wareham is an additional indication that contact existed between the two townscapes.

An explanation for such a community of mixed origin within the Winchester townscape comes from combining the supposed Germanic workers employed to work at the *Gynaeceum,* Germanic militia hired to protect the area from sea raiders, Romano-military personal to ensure the safe running of the *Gynaeceum*, and Romano-British peoples employed in other industrial aspects of Winchester and the associated wool trade. All the above communities, except Germanic militia, who may have been promised land in exchange for military service, were displaced upon collapse of Roman administration; thus it can be assumed it was this population, not solely a migratory one, that led to new settlements being established in the Winchester area. Further to this, the arrival of a pagan Germanic community is seen through investigation of religious data; however, a system of Romanised

civil control in the form of the Christian ecclesiastical institution is maintained and increases in influence in both townscapes from the Roman period to post-650AD. Ultimately this continued ecclesiastical influence leads to the Christian conversion of the Early Medieval top-down society in the Winchester area which is seen to have taken place by 650AD.

It can be said, therefore, that although at the beginning of this project Dorchester and Winchester were believed to be similar economic centres, equal in size, population and industry, this research would suggest that this was not the case. Winchester being an important administration centre, which hosted the Imperial *Gynaeceum* and other supporting industries, and was based on a monetary economy. Dorchester, on the other hand, supported a less industrial economy, potentially based on barter rather than coinage, where the ecclesiastical institution already held influence. This rural economy was able to withstand Roman administration collapse to an extent, with the ecclesiastical institution supposedly filling the vacuum of control, and thus leading to the agricultural economies of the Dorchester area gaining momentum post-410AD. The population decline of the Dorchester area remains unexplainable. There is the possibility that analysis of cemetery data within the research has led to inaccuracies in projecting the living population. However, suggestions for population movement include migration to France.

The Winchester economy, however, imploded and with it displaced the communities employed by the Imperial industries as well as seeing new settlers arrive from Jutland. The combination of this mass population upheaval and economic collapse could almost be described as a social revolution leading to the emergence of political elites who ultimately took control of resources, generating a hierarchical society.

What this research has made clear is that these two towns functioned under very different Roman economies, one imperial, the other rural, taking opposite trajectories post-410AD. The Dorchester area fell under ecclesiastical control, increasing in trade and decreasing in population. The Winchester area, underwent a social revolution of political elites, privatised wealth, population expansion and hierarchical economy. Any combination of these factors could have influenced the reason why Winchester developed as a centre of importance by the 8th century.

6.2 Limitations

Although this research has been able to collate, analyse and create new knowledge on the urban development of the period 300-700AD, there are a number of limitations this project has faced. The main problem encountered was the limited sample sizes. Material from post-Roman phases is notoriously difficult to identify in the archaeological record. For this reason, the investigation for both townscapes suffered from very small amounts of data available for interpretation post-410AD, this is particularly evident in the categories Post-Roman and Continued Roman. This is especially true for the Dorchester townscape where a number of sample sizes, namely the post-Roman categories were too small to produce any meaningful conclusions. Throughout all periods, brooch data and Christian symbology were areas where

evidence was also particularly scarce. Due to the small sample sizes throughout this project, the meaningfulness of the conclusions drawn here must remain sceptical.

A number of limitations were also identified within the methodology of this project. The many problems associated with using cemetery populations to infer living populations, as discussed in section 4.4.3, may have caused limitations in the meaningfulness of the data created by this phase of analysis. It could be suggested that only results from settlement density and Sunken Feature Building quantification should be used to understand change in settlement size. An alternative to the use of individual counts within cemeteries could be to use only the number of cemeteries present, but with this quantification, parameters would be put in place to identify variation in cemetery size, sample size and longevity of use. Due to these limitations, the conclusions drawn here can only be an indication of events and occurrences that took place over the period 300-700AD.

Other than gaining a better understanding of post-Roman urban development, this project also sought to test the capabilities of using a GIS as a tool within archaeological research to catalogue, query, extract, and display data. This project utilised the GIS software, EsriArc GIS, which has not only proved to be an instrument with which to gather and store data, but also to spatially analyse, dissect and present data. However, a problem observed during the use of ErsiArc GIS as a geodatabase, is the loss of inter-site phasing. This became most apparent on sites of extensive occupation and ultimately lead to discrepancies in the data as variables that pertained to a single period could not be isolated within that period but were misrepresented as present for the duration of occupation. To avoid this problem in future, geodatabases could be set up for each period of investigation where stratigraphic-specific data is entered per site per phase. This method would result in single sites having multiple entries within the databases but would lead to more accurate and truthful representation of site data.

6.3 Scope for further study

This project has also highlighted areas where additional research could advance the understanding of the period further. To aid additional research, the database created by this project is available via ArcGIS Online under the name TCammegh_MRes_Database_2023. However, this project has an absence of data pertaining to the population movement out of Dorchester post 410AD – further research into this migration would greatly aid understanding of it. Second, a wider investigation into Christian representation in the Dorchester area could indicate the size of the ecclesiastical estate that was in operation during the 6th and 7th centuries. This information would then aid understanding of the size and advancement of the ecclesiastical industry during this time. Unfortunately, these areas of research are dependent on the discovery of further post-Roman sites within the Dorchester area, which, due to the nature of the land coverage being more arable than urban, discoveries via development -led archaeology will be limited. There is a chance however, that topographic patterns of settlement and agriculture identified in this project, could contribute to locating these important post-Roman sites.

Furthermore, while the results of this research have created new and meaningful knowledge that contributes towards the understanding of post-Roman Dorchester and Winchester, it would be interesting to investigate whether the economic, settlement and material culture patterns seen in this research are reflected elsewhere in the towns of southern Britain or whether each town had a unique pattern of post-Roman collapse and development. The additional study areas could include other civitas and Roman towns such as Chichester and Exeter, the Roman town of Bath and potentially the supposedly unromanised area of Dumnonia to investigate post-Roman development where Roman urbanisation had not been a significant influence.

Overall, this research has clearly demonstrated the effectiveness of taking an objective and holistic view that combines multiple strands of archaeological evidence within a landscape model to successfully explore the urban development of the townscapes through time. As a result, this research project has delivered new knowledge and understanding of the transitional post-Roman period within the areas of Winchester and Dorchester.

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Appendix I

FID	Id	Site_name	Date_From	Date_To	Type	No_of_SFBs	Produce	Imports	Commerce	Comm_Type	Cemetery	No_of_Indi	Religious_Indicators	Personal_Object	Reference
##	0	33 High Street	50	1150	Settlement	0			U/K		No	0			Hampshire HER (2022)
##	0	45 Romsey Road	330	402	Cemetery	0		New_Forest_Ware	No		Yes	500	W-E_Unfurnished, N-S_Unfurnished, W-E_Furnished		Ottaway et al (2012)
36	0	Abbots Barton	500	850	Settlement	6	Cattle, Sheep, Wool, Cloth	New_Forest_Ware	Yes	Agricultural	No	0			Powell (2015)
##	0	Abbots Wood	60	420	Industry	0	Alice_Holt_Ware	Grain	Yes	Industrial	No	0			Graham (2000)
1	0	Abbots Worthy	450	800	Settlement	5	Sheep, Wool, Lamb, Beef, Cloth, Grain		Yes	Agricultural	U/K	0			Fasham and Whinney (1991) Holmes (2017)
##	0	Albert Road	375	425	Cemetery	0			No		Yes	9	E-W_Furnished, E-W_Unfurnished		Dorset HER (2023)
##	0	Alice Holt Kilns	60	420	Settlement	0	Alice_Holt_Ware		Yes	Industrial	No	0			Lyne and Jefferies (1979)
27	0	Alington Avenue	100	700	Settlement	2	Leather, Wool, Grain, Shale, Beef, Lamb,	Black_Burnished_Ware, New_Forest_Ware, Oysters, Purbeck_Stone, Shale, Pork, SEDOWW	Yes	Agricultural, Industrial	Yes	55	N-S, W-E_Unfurnished, W-E_Furnsished, N-S_Unfurnished, N-S_Furnished, Cremation		Davies et al (2002), Gerrard (2010)
##	0	Allington, Wilts	275	400	Villa	0			U/K		No	0			Wiltshire and Swindon HER (2023c)
97	0	Amberwood Inclosure	260	400	Settlement	0	New_Forest_Ware		Yes	Industrial	No	0			Fulford (1973) Sumner (1927), Davies et al (1998)
##	0	Ampress Camp	410	620	Settlement	0			U/K		No	0			Powell (2018)
68	0	Andwell	300	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Apple Down I	475	700	Cemetery	0			No		Yes	259		Square_Headed_brooch	Tremlett and Paine (2023), Heritage Gateway (2023)
##	0	Apple Down II	600	750	Cemetery	0			No		Yes	13		Christian_symbology	Tremlett and Paine (2023), Heritage Gateway (2023)
52	0	Appleshaw	0	375	Villa	0			U/K		U/K	0		Christian_symbology	Cunliffe (2008)
91	0	Ashley	100	375	Settlement	0	Beef, Lamb, Pork, Wool, Cattle, Sheep,	Black_Burnished_Ware	Yes	Agricultural	No	0			Neal (1980)
##	0	Badbury Rings mound	300	425	Religious_Buildi	0		Purbeck_Stone, New_Forest_Ware	No		No	0			Heritage Gateway (2023), National Trust (2023a), Dorset HER (2023)
##	0	Bagwood	50	350	Settlement	0	Sheep, Pig, Cattle, Lamb, Pork, Beef	Shale, New_Forest_Ware	Yes	Industrial	No	0			Toms (1964, 1966, 1965, 1967)
74	0	Balchester/ Woodgarston	100	1086	Villa	0	Grain, Sheep	Purbeck_Stone	Yes	Agricultural	No	0			Applebuam et al (1953)
42	0	Balksbury	43	425	Settlement	0	Grain	Purbeck_Stone, New_Forest_Ware, Alice_Holt_Wares	No		Yes	5	E-W_Furnished, W-E_Unfurnished		Wainwright and Davies (1995)
58	0	Barrow Clump	286	625	Settlement	0	Cattle	New_Forest_Ware,	Yes	Industrial	Yes	59	W-E_Furnished, W-E_Unfurnished, N-S_Furnished		Andrews (2013)
##	0	Barrow Hill Farm	270	380	Settlement	0			No		No	0			Dorset HER (2023)
##	0	Barton Farm	350	400	Cemetery	0			No		Yes	26	W-E_Unfurnished, N-S_Unfurnished, N-S_Furnished, W-E_Furnished		Pre-Construct Archaeology (Pers. comms)
92	0	Batten Hanger	268	450	Villa	0	Leather	Alice_Holt_Ware	Yes	Industrial	No	0			Kenny (2016)
30	0	Bentley Green Farm	400	650	Settlement	3			No		No	0			Ford (1997)
16	0	Bestwall	250	670	Settlement	1	Grain, Black_Burnished_Ware, Sheep, Cattle, SEDOWW, Wool	Shale	Yes	Industrial	Yes	8	S-N_Furnished, E-W_Unfurnished, E-W_Furnished, Cremation	Cruciform_brooch	Ladle (2004, 2012) Gerrard (2010), Ladle (1995)
##	0	Bevis' Grave Long Barrow	595	1020	Cemetery	0			No		Yes	80	E-W_Furnished, N-S_Furnished		Hampshire HER (2022)
##	0	Binsted	50	400	Villa	0			U/K		No	0			Hampshire HER (2022)
##	0	Blandford St. Mary	290	340	Settlement	0			U/K		U/K	0			Dorset HER (2023)
##	0	Blashenwell	50	300	Settlement	0	Shale	New_Forest_Ware, Shale	Yes	Industrial	No	0			Farrar (1956a, 1968, 1970)
##	0	Bloswood Lane	250	350	Industry	0			No		No	0			AOC (1999)
##	0	Boat House Clump	100	300	Industry	0	Salt	Black_Burnished_Ware	Yes	Industrial	No	0			Jarvis (1986)
##	0	Boscombe Down Collective	275	410	Cemetery	0		New_Forest_Ware	No		Yes	283	N-S_Furnished, N-S_Unfurnished, W-E_Furnished, W-E_Unfurnished, Cremation		Wessex Archaeology (pers comms)
##	0	Bowleaze Cove	200	350	Settlement	0		New_Forest_Ware, Black_Burnished_Ware	U/K		No	0			Putnam (1970), Farrer (1949)
##	0	Bradford Abbas	175	375	Villa	0	Grain	Shale	U/K		No	0			Dorset HER (2023)
##	0	Bradford Down, Pamphill	200	350	Villa	0		New_Forest_Ware	U/K		No	0			Field (1970), Dorset HER (2023)
##	0	Bradford Peverell	600	700	Cemetery	0			No		Yes	13	W-E_Furnished, E-W_Unfurnished, W-E_Unfurnished		Hawthorne (1981), Keen (1980 1980a)
##	0	Bramdean	50	350	Villa	0			U/K		No	0			Perry (1968), Perry (1986)
##	0	Brenscombe Farm	200	400	Villa	0	Shale, Grain, Wool	Shale, Purbeck_Stone	Yes	Industrial	U/K	0			Heritage Gateway (2023), Farrer (1962, 1964, 1968),
##	0	Broadmayne	250	350	Farmstead	0	Grain		U/K		No	0			Woodward (1980) Young (1974)
##	0	Broomhill Bridge	50	350	Settlement	0			U/K		No	0			Dorset HER (2023)
##	0	Broughton	100	400	Villa	0			U/K		No	0			Cunliffe (2008), Hampshire HER (2022)
##	0	Brownsea Island	250	325	Settlement	0	Leather, Shale, Salt	Cattle, Sheep, Shale, Black_Burnished_Ware, New_Forest_Ware	Yes	Industrial	No	0			Jarvis (1993)
##	0	Bryanston School	150	350	Settlement	0			U/K		U/K	0			Dorset HER (2023)
##	0	Bucknowle Villa	200	650	Villa	0	Shale, Grain, Cloth, Sheep, Wool, Cattle, Beef	Shale, Black_Burnished_Ware, New_Forest_Ware, SEDOWW	Yes	Industrial	No	0			Giller (2018), Collins and Field (1980) Field (1981) Keen (1980), Light and Ellis (2009), Gerrard (2010)
##	0	Bulford	660	780	Cemetery	0			No		Yes	150	W-E_Furnished, N-S_Furnished		Wessex Archaeology (2023a)
##	0	Buriton	65	700	Villa	0		Grain, Black_Burnished_Ware, Alice_Holt_Ware, New_Forest_Ware	Yes		No	0			Hampshire HER (2022), Brisay (1992)
##	0	Burleston Down	100	410	Settlement	0			U/K		No	0			Hearne and Birbeck (1999)
##	0	Cams Hill	45	500	Settlement	3	Grain, Cattle, Beef	New_Forest_Wares	U/K		No	0			Eddisford (2009)
##	0	Castle Copse	175	425	Villa	0			U/K		No	0			Heritage Gateway (2023)
##	0	Chalton Down	120	350	Farmstead	0	Sheep, Lamb, Pig, Pork	New_Forest_Ware	U/K		U/K	0			Dicks (2007)
##	0	Chalton Down	1	410	Settlement	0	Grain, Sheep, Lamb, Pig, Pork		U/K		U/K	0			Cunliffe (1973)
##	0	Chalton Peak	550	650	Cemetery	0			No		Yes	2	S-N_Furnished		Hampshire HER (2022)
##	0	Chantry Fields	641	680	Settlement	0	Grain, Sheep, Cattle	New_Forest_Ware, Black_Burnished_Ware	No		No	0			Heaton (1993)
63	0	Charlton Andover	450	550	Cemetery	0			No		Yes	0			
##	0	Charlton Higher Down	100	375	Settlement	0			U/K		No	0			Dorset HER (2023)
64	0	Charlton Plantation	450	700	Cemetery	0			No		Yes	42	W-E_Furnished, W-E_Unfurnished, N-S_Furnished, N-S_Unfurnished, S-N_Furnished, S-N_Unfurnished, Cremation	Quoit_brooch	Davies (1985)
##	0	Charminster	250	380	Villa	0		New_Forest_Ware	U/K		No	0			Heritage Gateway (2023), Ladle (2022)
##	0	Chessels	200	400	Villa	0			U/K		U/K	0			Historic England (2023c)

##	0	Chettle Down	200	350	Settlement	0		New_Forest_Ware	U/K		No	0			Dorset HER (2023)
83	0	Choseley Farm	75	700	Farmstead	4	Grain, Dairy, Lamb, Wool, Beef	Alice_Holt_Ware, New_Forest_Ware, Black_Burnished_Ware, Shale	Yes	Agricultural	Yes	17	Cremation, N-S_Unfurnished, N-S_Furnished		Applebuam et al (1953) Morris (1986), Hampshire HER (2022), Cotswold Archaeology (2022)
31	0	Church Down	500	800	Settlement	4	Lamb, Wool, Pork, Grain		U/K		No	0			Addyman and Leigh (1972), Hampshire HER (2022)
##	0	Church Knowle	250	350	Settlement	0	Shale		Yes	Industrial	No	0			Dorset HER (2023)
##	0	Church of St Michael and All Angels	300	1066	Religious_Buildi	0			No		U/K	0		Christian_symbology	Hampshire HER (2022)
##	0	Church of St Peter	700	1300	Religious_Buildi	0			No		U/K	0		Christian_symbology	Hampshire HER (2022)
##	0	Church of St. Lawrence	450	1066	Religious_Buildi	0			No		U/K	0		Christian_symbology	Hampshire HER (2022)
##	0	Churchhill Way West	410	600	Settlement	1	Grain		U/K		No	0			Hampshire HER (2022)
##	0	Clanfield	350	400	Cemetery	0			No		Yes	6	S-N_Furnished		Wessex Archaeology (2007)
##	0	Clanville	275	400	Villa	0			U/K		No	0			Hampshire HER (2022) Heritage Gateway (2023)
17	0	Clausentum	70	800	Settlement	0	Leather, Pork	Cattle, Sheep, New_Forest_Ware	Yes	Port, Industrial	Yes	50	W-E_Unfurnished, W-E_Furnished		Cotton and Gathercole (1958) Birbeck (2005)
66	0	College Wood	100	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
32	0	Collingbourne Ducis	450	903	Settlement	10	Grain, Wool, Cloth, Beef, Lamb, Dairy, Pork	Wool, Black_Burnished_Ware, New_Forest_Ware, Alice_Holt_Ware	U/K		Yes	119	W-E_Furnished, N-S_Furnished, Cremation	Button_brooch	Diwiddy and Stoodley (2016) Pine (2001), Stoodley and Schuster (2009)
##	0	Compact Farm Football Field	50	700	Settlement	0	Grain, Shale, Wool, Beef, Lamb, Pork	Shale, Purbeck_Stone, Black_Burnished_Ware, New_Forest_Ware, Purbeck_Stone, SEDOWW	Yes	Industrial, Agricultural	Yes	26	W-E_Unfurnished, W-E_Furnished		Graham et al (2002), Ladle (2018)
##	0	Corhampton Down	50	409	Settlement	2			U/K		U/K	0			Hampshire HER (2022)
33	0	Cowdery's Down	500	700	Settlement	2			U/K		U/K	0			Millett and James (2014)
95	0	Crock Hill	260	400	Industry	0	New_Forest_Ware		Yes	Industrial	No	0			Fulford (1973) Sumner (1927)
54	0	Crookhorn Villa	275	375	Farmstead	0	Sheep, Pig, Lamb, Pork, Grain,	New_Forest_Ware, Black_Burnished_Ware	Yes	Agricultural, Industrial	No	0			Dicks (2007), Soffe et al (1989)
##	0	Crystal Hollow	100	300	Settlement	3			U/K		No	0			Davies et al (1998)
11	0	Dewlish Villa	200	425	Villa	0	Grain, Beef, Lamb, Pork	SEDOWW, Purbeck_Stone	Yes	Agricultural	No	0			Hewitt et al (2021)
##	0	Dinnington	100	600	Villa	0	Grain, Cattle, Beef, Leather		Yes	Agricultural, Industrial	No	0			King (2015)
40	0	Dorchester SE	75	400	Settlement	0	Cloth, Leather, Sheep, Lamb, Pig, Pork	Grain, Purbeck_Stone, Shale, Black_Burnished_Ware, New_Forest_Ware, Sheep, Cattle, Pig, SEDOWW	Yes	Industrial	No	0			Woodward et al (1993), Durham and Fulford (2014) Adam et al (2019), Wessex Archaeology (2011), Sparey Green (1981),Batchelor(1981), Keen(1980,1980a),
13	0	Dorchester SW	75	425	Settlement	1	Pig, Sheep, Beef, Pork, Lamb, Dairy	Shale, Grain, SEDOWW, Black_Burnished_Ware, Cattle, Sheep	Yes	Industrial	No	0		Christian_symbology	Bradley and Thomas (1982), Viner (1970), O'Conner and Startin (1971), Putnam et al (1970), Trevarthen (2008)
3	0	Dorchetser NW	50	425	Settlement	0	Shale, Leather, Cloth, Beef	Grain, Leather, Shale, Black_Burnished_Ware, New_Forest_Ware, Purbeck_Stone, Wool, Cattle, Sheep, SEDOWW	Yes	Industrial	No	0			Putnam (2007), Durham and Fulford (2014), Smith (1988a), Aitken and Aitken (1982)
##	0	Droxford	450	600	Cemetery	0			No		Yes	43	S-N_Furnished, W-E_Unfurnished, W-E_Furnished,E-W_Furnished	Button_Brooch, Square_Headed_Brooch, Quoit_Brooch	Aldsworth (1979)
10	0	Druce Farm	60	650	Villa	0	Grain, Beef, Lamb, Pork, Wool, Cloth, Sheep, Cattle, Pig	Purbeck_Stone, Shale, Black_Burnished_Ware, New_Forest_Ware, Cattle, Pig, Sheep, Wool	Yes	Agricultural, Industrial	No	0			Ladle (2015), Ladle (2022)
75	0	Dummer Breach	100	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
46	0	Dunkirt Barn	200	400	Villa	0	Lamb, Dairy, Grain, Wool, Pork	Black_Burnished_Ware, New_Forest_Ware, Alice_Holt_Ware, Purbeck_Stone	Yes	Agricultural	No	0	Hexagonal_Building		Cunliffe (2008) Cunlife and Poole (2008a)
##	0	Dymore	270	337	Settlement	0			U/K		No	0			Dorset HER (2023)
##	0	East Cliff	50	350	Cemetery	0			No		Yes	200	N-S_Furnished, N-S_Unfurnished		Dorset HER (2023)
##	0	East Corker	100	400	Villa	0			U/K		U/K	0			Somerset HER (2020a)
##	0	East Creech Villa	100	400	Villa	0	Shale, Grain	Shale,	U/K		No	0			Calkin (1949)
##	0	East End	120	370	Industry	0	Black_Burnished_Ware		Yes		No	0			Farrer (1969)
##	0	East Holme	300	350	Industry	0	Black_Burnished_Ware		Yes	Industrial	No	0			Dorset HER (2023)
##	0	East Winterslow	50	300	Settlement	0			U/K		U/K	0			Wiltshire and Swindon HER (2023b)
##	0	Eyeworth, Church Green	1	400	Settlement	0	New_Forest_Ware		Yes	Industrial	No	0			Hampshire HER (2022)
##	0	Farlington Marshes	40	410	Industry	0	Salt	New_Forest_Ware	Yes	Industrial	No	0			Allen and Gardiner (2000)
90	0	Fernhill Farm	50	400	Villa	0	Cattle, Sheep, Pig	New_Forest_Ware	Yes	Agricultural	No	0			Rogers and Walker (1985)
12	0	Fifehead Neville	100	383	Villa	0		Shale	U/K		No	0		Christian_symbology	Levin (1970), Heritage Gateway (2023)
##	0	Finkley Manor Farm	90	380	Farmstead	0			U/K		No	0			Cunliffe (2008), Hampshire HER (2022)
##	0	Fitzworth Point	0	375	Settlement	0	Black_Burnished_Ware, Salt	Shale, Black_Burnished_Ware	Yes	Industrial	No	0			Calkin (1949)
39	0	Fordington Bottom	50	400	Settlement	8	Grain, Lamb	Black_Burnished_Ware, New_Forset_Ware, SEDOWW	Yes	Agricultural	No	0			Smith et al (1997), Gerrard (2010)
##	0	Fordington Hill	150	350	Cemetery	0		New_Forest_Ware, Black_Burnished_Ware, Purbeck_Stone	No		Yes	24	N-S_Furnished, E-W_Unfurnished, Cremation		RCHME (1970b), O'Connor and Startin (1972), Startin (1982)
7	0	Frampton	250	350	Villa	0		Shale	U/K		No	0		Christian_symbology	Putnam (2007), Heritage Gateway (2023) Russell (2023)
##	0	Frithend	250	350	Settlement	0			U/K	Industrial	No	0			Hampshire HER (2022)
47	0	Fullerton	250	450	Villa	0	Beef, Grain, Dairy, Lamb, Wool, Pork	Black_Burnished_Ware, New_Forest_Ware, Alice_Holt_Ware, Shale,	Yes	Agricultural, Industrial	No	0			Cunliffe (2008), Cunliffe and Poole (2008a), Hampshire HER (2022)
##	0	Fyfield	250	410	Farmstead	0			U/K		No	0			Heritage Gateway (2023)
##	0	Gallows Gore	50	370	Settlement	0	Shale	Purbeck_Stone, Salt	U/K		U/K	0			Calkin (1947) Farrer (1962a)
##	0	Gillingham	75	400	Settlement	0		New_Forest_Ware, Black_Burnished_Ware, Shale	No		Yes	127	E-W_Furnished, E-W_Unfurnished	Christian_symbology	Moore and Ross (1990)
##	0	Goch Way	450	700	Settlement	3	Grain, Wool, Cloth, Beef, Lamb, Pork		U/K		No	0			Wright (2004)
48	0	Grateley	43	378	Villa	0	Beef, Grain, Lamb, Wool, Pork, Sheep, Cattle	Black_Burnished_Ware, New_Forest_Ware, Alice_Holt_Ware	Yes	Agricultural	No	0			Cunliffe (2008), Cunliffe and Poole (2008e)
##	0	Great Bournes	300	350	Villa	0	Wool, Cloth	Shale	U/K		Yes	8	Furnished		Dorset HER (2023)
##	0	Green Island	250	350	Settlement	0		Shale, New_Forest_Ware	U/K		No	0			Dorset HER (2023)
##	0	Grimstone Down	300	400	Settlement	0		New_Forest_Ware	U/K		U/K	0			Heritage Gateway (2023), Bailey (1972)
##	0	Groom's Farm	350	400	Industry	0	Alice_Holt_Ware		Yes	Industrial	No	0			Cooke and Powell (2014)
##	0	Gussage Hill	100	350	Settlement	0	Cattle, Sheep, Pig	New_Forest_Ware	U/K		No	0			Dorset HER (2023)

##	0	Halls Farm Close	600	800	Cemetery	0			No		Yes	17	N-S_Unfurnished, N-S_Furnished		Hampshire HER (2022)
6	0	Halstock Villa	130	375	Villa	0	Cattle, Beef, Sheep, Lamb, Dairy, Wool, Pork,	Black_Burnished_Ware, New_Forest_Ware, Shale	Yes	Agricultural	No	0			Lucas (1980, 1981, 1993) Large (1970)
##	0	Ham	410	1020	Settlement	0			U/K		U/K	0			Cooke and Powell (2012)
59	0	Hambledon Hill	600	700	Cemetery	0			No		Yes	11	W-E_Furnished, W-E_Unfurnished		Mercer and Healy (2008)
##	0	Hamwic - Central	700	900	Settlement	0			U/K		Yes	10	W-E_Unfurnished	Christian_symbology	Morton (1992)
##	0	Hamwic - Six Dials	700	900	Settlement	0	Leather, Cloth, Beef, Lamb, Pork,	Wool, Sheep, Cattle, Pig, Grain	Yes	Industrial	Yes	19	W-E_Unfurnished	Christian_symbology	Andrews (1997), Morton (1992)
##	0	Hamwic - South	700	1000	Settlement	0	Leather, Beef, Wool, Cloth	Cattle	Yes	Industrial	Yes	81	W-E_Unfurnished	Christian_symbology	Morton (1992), Morton (1992)
18	0	Hamwic - St Mary's	650	850	Settlement	1	Cloth, Leather	Cattle, Wool, Sheep, Grain	Yes	Industrial	Yes	44	W-E_Furnished, S-N_Furnished, Cremation		Birbeck (2005), Morton (1992)
##	0	Hamworthy	50	350	Industry	0	Salt	Black_Burnished_Ware	Yes	Industrial	No	0			Coles and Pine (2009)
##	0	Hamworthy II	45	400	Settlement	0	Salt	New_Forest_Ware	Yes	Industrial	No	0			Jarvis (1994)
62	0	Harnham Hill	450	550	Cemetery	0			No		Yes	64	Furnished		Eagles (2001), Akerman (1854)
##	0	Havant	50	1066	Settlement	0	Cattle, Sheep, Pig, Pork, Beef, Lamb, Wool, Cloth, Leather, Salt	New_Forest_Ware, Cattle, Lamb, Beef, Pig, Pork, Sheep, Wool, Cloth, Leather	Yes	Agricultural, Industrial	No	0			Pile (2005)
##	0	Headley	300	400	Villa	0			U/K		No	0			Hampshire HER (2022)
##	0	Hemsworth	250	400	Villa	0		Shale	U/K		No	0			Ladle (2022), Heritage Gateway (2022)
25	0	Henly's Garage	500	700	Settlement	0	Wool, Cloth	Wool	Yes	Industrial	No	0			Rees et al (2008) Biddle (1975)
76	0	Herriard	100	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Herringstone Dairy House	250	350	Settlement	0	Grain	New_Forest_Ware	U/K		No	0			Dorset HER (2023)
##	0	High Street, Fordington	250	350	Cemetery	0		New_Forest_Ware	No		Yes	50	N-S_Furnished		Dorset HER (2023)
##	0	Hinton St George	200	400	Villa	0			U/K		U/K	0			Somerset HER (2016)
8	0	Hinton St. Mary	250	400	Religious_Buildi	0			U/K		U/K	0		Christian_symbology	Putnam (2007), Historic England (2023b)
45	0	Holbury	270	350	Settlement	0		New_Forest_Ware, Alice_Holt_Ware	No		No	0			Collings (2014)
##	0	Holes Bay	50	350	Settlement	0		Shale,	Yes	Industrial	No	0			Dorset HER (2023)
##	0	Homtun	681	1066	Farmstead	0			U/K		No	0			Hampshire HER (2022)
50	0	Houghton Down	43	400	Villa	2	Beef, Grain, Lamb, Pork	Black_Burnished_Ware, New_Forest_Ware, Alice_Holt_Ware	Yes	Agricultural	U/K	0			Cunliffe (2008), Cunliffe and Poole (2008c)
##	0	Huckles Brook	450	550	Settlement	1			U/K		No	0			Davies and Graham (1984)
##	0	Hyde Street	350	410	Cemetery	0			No		Yes	60	W-E_Unfurnished, W-E_Furnished, Cremation		Ottaway (2017)
##	0	Ibsley	275	800	Settlement	1			U/K		No	0			Hampshire HER (2022)
##	0	Ilchester Mead	150	500	Villa	0	Grain, Wool	Black_Burnished_Ware	U/K		No	0			Heritage Gateway (2023)
##	0	Ilchester/ Lindinis	100	1066	Settlement	0	Beef, Sheep, Pork,	Grain, Cattle, Sheep, Pig, Black_Burnished_Ware, New_Forest_Ware	Yes	Agricultural, Industrial	U/K	0			Leach (1994), Haslam (2013)
##	0	Isington	600	800	Settlement	0			U/K		No	0			Hampshire HER (2022)
96	0	Island Thorns	260	400	Settlement	1			U/K		No	0			Sumner (1927)
26	0	Itchen Abbas	450	500	Cemetery	0			No		Yes	112	N-S_Funished, W-E_Unfurnished		Hawkes and Grainger (2003), Heritage Gateway (2023)
##	0	Itchen Abbas Villa	250	400	Villa	0			U/K		No	0			Heritage Gatway (2023)
5	0	Iwerne Minster Villa	50	360	Villa	0	Grain, Cattle, Beef	Shale, New_Forset_Ware	U/K		No	0			Heritage Gateway (2023), Keen (1981)
14	0	Jordan Hill Temple	69	423	Religious_Buildi	0		Black_Burnished_Ware, New_Forest_Ware, Shale	No		Yes	80	N-S_Furnished		Lewis (1965) Putnam (2007) Tanner (1967), Dorset HER (2023)
##	0	Joyler's Mill	100	400	Villa	0			U/K		U/K	0			Gathercole (2003)
##	0	Kimmeridge	100	300	Settlement	0	Wool, Salt	Shale	U/K		U/K	0			Calkin (1947a), Frend (1949)
##	0	Kimpton Down	43	409	Settlement	0			U/K		U/K	0			Wiltshire and Swindon HER (2023)
##	0	King's Somborne Primary School	550	1000	Settlement	1	Grain		Yes	Agricultural	U/K	0			Rackham (1994), Scott (1991), Pine and Preston (2004)
##	0	Kingston Plantation	0	350	Farmstead	0		Shale, Purbeck_stone	U/K		No	0			Farrar (1956)
##	0	Lady St Mary's	600	800	Religious_Buildi	0			No		Yes	5		Christian_symbology	Hearne and Birbeck (1999), Hinton and Hodges (1980)
##	0	Langstone Village	50	450	Villa	0	Sheep, Pig, Lamb, Pork	New_Forest_Ware	U/K		No	0			Allen and Gardiner (2000), Gilkes (1998)
2	0	Lankhills	303	388	Cemetery	0			No		Yes	451	N-S_Furnished, W-E_Furnished, W-E_Unfurnished,		Booth et al (2010)
##	0	Lenthay	100	400	Villa	0			U/K		U/K	0			Heritage Gateway (2023)
##	0	Lepe	100	300	Settlement	0		Black_Burnished_Ware, New_Forest_Ware, Purbeck_Stone	U/K		U/K	0			Russel (2012)
##	0	Leucomagus/ East Anton	75	410	Settlement	0			Yes	Agricultural, Industrial	U/K	0			Hampshire HER (2022)
##	0	Linwood	250	350	Industry	0	New_Forest_Ware		Yes	Industrial	No	0			Hampshire HER (2022)
##	0	Lippen Wood	200	400	Villa	0		New_Forest_Ware, Oyster	U/K		U/K	0			Moray Williams (1906)
##	0	Liss	50	430	Villa	0	Sheep, Pig, Grain	Alice_Holt_Ware, New_Forest_Ware, Beef, Black_Burnished_Ware	Yes	Agricultural	No	0			Liss Archaeology Group (2016)
##	0	Little Down	290	370	Settlement	0			U/K		No	0			Dorset HER (2023)
##	0	Little Keep	300	400	Cemetery	0			No		Yes	29	W-E_Furnished, W-E_Unfurnished, E-W_Furnished, E-W_Unfurnished, N-S_Unfurnished, S-N_Unfurnished		McKinley and Egging Dinwiddy (2009)
##	0	Little Somborne	50	350	Settlement	0	Grain, Cattle, Beef, Lamb, Sheep, Wool		U/K		No	0			Neal (1980)
81	0	Lodge Farm	175	400	Villa	0	Grain, Sheep, Wool	Purbeck_Stone, Shale	Yes	Agricultural	No	0			Applebuam et al (1953) Liddell (1931)
##	0	Lomer	250	337	Religious_Buildi	0			No		No	0			Whaley (2021a)
##	0	Lopen	300	400	Villa	0			U/K		U/K	0			Hertiage Gateway (2023)
##	0	Lower Pennington	450	725	Settlement	0			U/K		U/K	0			Moore et al (2008)
57	0	Ludgershall	300	400	Settlement	0	Cattle, Sheep		U/K		Yes	14	N-S_Furnished, N-S_Unfurnished, W-E_Unfurnished, W-E_Unfurnished		Wessex Archaeology (2018), Wright (2011)
##	0	Lufton	200	400	Villa	0	Beef, Lamb, Pork, Wool	New_Forest_Ware, Shale, Black_Burnished_Ware	U/K		No	0			Hayward (1953), Hayward (1972), Somerset HER (2021)
##	0	Maddison Street	430	800	Settlement	0			Yes	Industrial	No	0			Oxey (1988) Smith (1984)
29	0	Maiden Castle Road	300	450	Settlement	2		Black_Burnished_Ware, New_Forest_Ware, SEDOWW	No		Yes	23	W-E_Furnished, S-N_Furnished, E-W_Furnished, N-S_Furnished, W-E_Unfurnished, S-N_Unfurnished		Smith et al (1997), Gerrard (2010)
15	0	Maiden Castle Temple	367	500	Religious_Buildi	0			No		Yes	6	E-W_Unfurnished, E-W_Furnished	Christian_symbology	Lewis (1965), Sharples (1991)
##	0	Manor Farm	250	700	Villa	1	Grain, Lamb, Wool, Beef, Dairy	Shale, Black_Burnished_Ware, Alice_Holt_Wares, New_Forest_Wares, Beef, Lamb, Purbeck_Stone	Yes	Agricultural	No	0			Teague (2005)
##	0	Manor Farm Minster	650	1024	Religious_Buildi	0			No		Yes	8	W-E_Unfurnished	Christian_symbology	Valentin (2003)

##	0	Manydown	50	800	Settlement	5			U/K		No	0			Porter et al (2022)
67	0	Mapledurwell	100	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Meadowlands	300	650	Villa	0		New_Forest_Ware	U/K		No	0			Hampshire HER (2022)
##	0	Metherhills	250	400	Industry	0	Shale		Yes	Industrial	No	0			Dorset HER (2023)
85	0	Micheldever Wood	60	400	Villa	0	Grain, Sheep	New_Forest_Ware	Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Milborne St.Andrew	0	375	Settlement	0	Cattle, Sheep, Pig	New_Forest_Ware	U/K		No	0			Pleydell-Railston (1931)
##	0	Moigne Court	250	350	Villa	0			U/K		No	0			Dorset HER (2023)
##	0	Mount pleasant	430	650	Cemetery	0			No		Yes	96	W-E_Furnished, W-E_Unfurnished, S-N_Furnished, N-S_Furnished, N-S_Unfurnished, E-W_,Cremation	Square_Headed_Brooch, Button_Brooch, Quoit_Brooch	Evison (1988), Hampshire HER (2022)
##	0	Muckleford	43	409	Settlement	0			U/K		No	0			Dorset HER (2023)
##	0	Myncen Farm	175	750	Villa	0		Purbeck_Stone	U/K		No	0			Dorset HER (2023), Sparey-Green (2007)
34	0	Neatham	259	1066	Settlement	2	Grain, Beef, Lamb, Alice_Holt_Ware, Pork	Cattle, Sheep, Alice_Holt_Ware, New_Forest_Ware, Black_Burnished_Ware	Yes	Agricultural, Industrial	No	0			Powell (2014), Millet and Graham (1986)
##	0	Neatham (South)	150	375	Settlement	0			U/K		No	0			Hampshire HER (2022)
##	0	New Copse	100	325	Villa	0		New_Forest_Ware, Black_Burnished_Ware	U/K		No	0			King (2020)
##	0	New Rugby Football Ground	200	410	Settlement	1			U/K		No	0			Smith (1988b)
##	0	Newberry Terrace	200	900	Settlement	0			U/K		No	0			Oliver (1923)
84	0	Newtown	100	400	Villa	0	Grain, Sheep	New_Forest_Ware	Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Newtown, Alton	250	400	Settlement	0			U/K		No	0			Hampshire HER (2022)
93	0	Norden	70	400	Settlement	0	Purbeck_Stone, Shale	Black_Burnished_Ware	Yes	Industrial	No	0			Sunter (1970) Sunter (1986)
##	0	North Binness Island	50	410	Industry	0	Salt	New_Forest_Ware	Yes	Industrial	No	0			Allen and Gardiner (2000)
##	0	North Down	320	450	Villa	12	Grain	Shale, Purbeck_Stone, SEDOWW, New_Forest_Ware, Black_Burnished_Ware	U/K		Yes	6	E-W_Furnished, N-S_Furnished		Russell et al (2015), Russell et al (2017), Russell et al (2018)
89	0	North Hayling	570	900	Settlement	0	Salt, Beef, Lamb, Prok, Grain		Yes	Agricultural	No	0			King and Soffe (2013)
88	0	North Hayling Temple	50	900	Religious_Buildi	0			No		No	0			King and Soffe (2013), Hautenville Cope (1914)
35	0	Northbrook	160	800	Settlement	2	Leather, Beef, Lamb, Cattle, Sheep	New_Forest_Ware,	U/K		Yes	0		Cruciform_Brooch, Button_Brooch	Johnson (1998)
##	0	Northover House	300	400	Cemetery	0			No		Yes	1500	W-E_Unfurnished	Christian_symbology	Historic England (2023d)
##	0	Oakridge	50	475	Settlement	0	Beef, Lamb, Leather	Alice_Holt_Ware	Yes	Industrial	Yes	20			Oliver (1992)
##	0	Oakridge II	550	950	Settlement	0			U/K		U/K	0			Oliver (1992)
##	0	Odiham	43	800	Settlement	0			U/K		No	0			Hampshire HER (2022)
69	0	Old Basing	300	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Old Dairy	600	750	Cemetery	0			No		Yes	6	N-S_Furnished, S-N_Furnished		Harding and Stoodley (2017)
37	0	Old Down Farm	450	650	Settlement	6	Cattle, Sheep, Beef, Lamb		U/K		No	0			Davies (1980)
##	0	Old Minster	650	1100	Religious_Buildi	0			No		Yes	650		Christian_symbology	Biddle (1970)
##	0	Olds Garage	250	410	Cemetery	0			No		Yes	5	E-W_Unfurnished, W-E_Unfurnished	Christian_symbology	Dorset HER (2023)
##	0	Onna	60	380	Settlement	0	Grain	New_Forest_Ware	U/K		U/K	0			Heritage Gateway (2023)
##	0	Orman's Arbour	275	375	Cemetery	0			No		Yes	60	N-S, W-E		Ottaway (2017)
44	0	Osborne Farm	270	330	Settlement	0	Alice_Holt_Wares		Yes	Industrial	No	0			Anelay and Timby (2014)
##	0	Overton	0	1400	Settlement	1	Wool, Cloth, Cattle, Sheep, Pig, Dairy, Beef, Lamb, Pork	Alice_Holt_Ware, New_Forest_Ware	Yes	Industrial	No	0			Hampshire HER (2022), Taylor (2012)
##	0	Ower	175	625	Industry	0	Black_Burnished_Ware, Salt, Shale, Pork, Beef, Lamb	New_Forest_Ware, Shale	Yes	Industrial	No	0			Woodward (1987a) Farrer (1962c), Jarvis (1986)
##	0	Owslebury	0	400	Settlement	0			U/K		Yes	0			
##	0	Oxclose, Swyre	50	400	Settlement	0		New_Forest_Ware	U/K		U/K	0			Bailey (1969)
##	0	Oxlease	200	400	Settlement	0			U/K		No	0			Ellis and Sommerville (2018)
##	0	Park Farm	450	650	Cemetery	0			No		Yes	12	Furnished		Smith (2022)
78	0	Park Prewell	100	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
61	0	Petersfinger	450	550	Cemetery	0			No		Yes	63	W-E_Furnished, W-E_Unfurnished, N-S_Furnished, N-S_Unfurnished		Eagles (2001)
##	0	Pinford Lane	150	400	Farmstead	0		New_Forest_Ware	U/K		No	0			Farrar (1956a)
##	0	Pin's Knoll	25	350	Farmstead	0			U/K		U/K	0			Bailey (1964, 1968),
94	0	Pitts Wood	260	400	Industry	0	New_Forest_Ware		Yes	Industrial	No	0			Fulford (1973) Sumner (1927)
##	0	Plaisters Lane	50	350	Settlement	0		Shale, Purbeck_Stone, Black_Burnished_Ware, New_Forest_Ware	U/K		U/K	0			Dorset HER (2023)
##	0	Popley	50	350	Settlement	0			U/K		No	0			Hampshire HER (2022)
19	0	Porchester	260	900	Settlement	4	Leather, Wool	Cattle, Sheep, Shale, Grain, Black_Burnished_Ware, New_Forest_Ware	Yes	Industrial	Yes	21	W-E_Unfurnished	Christian_symbology, Quoit_brooch	Cunliffe (1975, 1976) Cunliffe and Baker (2011)
##	0	Portesham	250	350	Settlement	0		Black_Burnished_Ware	U/K		No	0			Dorset HER (2023)
##	0	Portesmuoan	501	1066	Settlement	0			U/K		No	0			Hampshire HER (2022)
##	0	Portsdown	650	725	Cemetery	0			No		Yes	30	W-E_Unfurnished, W-E_Furnished	Christian_symbology	Corney et al (1967)
##	0	Portway East	475	550	Cemetery	0			No		Yes	71	S-N_Furnished, S-N_Unfurnished, Cremation		Stoodley (2006)
##	0	Portway West	625	750	Cemetery	0			No		Yes	100	S-N_Unfurnished, S-N_Furnished		Stoodley (2006)
24	0	Poundbury Camp	50	700	Settlement	4	Grain, Lamb, Pork, Wool, Cloth	Black_Burnished_Ware, New_Forest_Ware, Shale, SEDOWW	Yes	Agricultural	Yes	1380	W-E_Furnished, W-E_Unfurnished, N-S_Unfurnished, N-S_Furnished, S-N_Unfurnished, S-N_Furnished	Christian_symbology	Sparey-Green (1987), Farwell and Molleson (1993), Gerrard (2010)
41	0	Poundbury Farm	75	450	Settlement	3	Grain, Dairy, Lamb, Wool, Beef, Leather, Pork, Wool	Shale, Black_Burnished_Ware, New_Forest_Ware, SEDOWW	Yes	Agricultural	Yes	39	N-S_Unfurnished. N-S_Furnished, S-N_Unfurnished, S-N_Furnished, W-E_Unfurnished, W-E_Furnished, E-W_Unfurnished, E-W_Furnished, Cremation	Christian_symbology	Dinwiddy and Bradley (2011) Egging Dinwiddy (2019)
##	0	Poveys Farm	150	350	Settlement	0		New_Forest_Ware	U/K		No	0			Hampshire HER (2022)
##	0	Povington	100	400	Industry	0	Shale		Yes	Industrial	No	0			Sunter (1987)
##	0	Poxwell	50	350	Farmstead	0	Grain	Black_Burnished_Ware, New_Forest_Ware	U/K	Industrial	No	0			Hurst and Wacher (1987)
##	0	Preston	250	400	Villa	0		New_Forest_Ware, Shale	U/K		No	0			Ladle (2022) Historic England (2023e)
86	0	Preston Candover	100	400	Villa	0	Grain, Sheep	Purbeck_Stone	Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Puncknoll	250	400	Religious_Buildi	0		New_Forest_Ware	No		U/K	0			Bailey (1967, 1969a, 1986)
##	0	Radipole	300	380	Villa	0			U/K		No	0			Dorset HER (2023)
##	0	Redbridge Abbey	686	700	Religious_Buildi	0			No		No	0			Hampshire HER (2022) Heritage Gateway (2023)

##	0	Redcliff	80	425	Industry	0	Black_Burnished_Ware,	Shale	Yes	Industrial	No	0			Woodward (1987a), Farrar (1980, 1981,1983), Keen (1978, 1980a), Lyne (2002)
##	0	Reynolds Hanger	300	400	Villa	0			U/K		No	0			Hampshire HER (2022)
38	0	Riverdene	600	800	Settlement	11	Pork, Wool, Cloth	Alice_Holt_Ware,	Yes	Industrial	U/K	0			Hall-Torrance and Weaver (2003)
##	0	Roche Court Down	500	650	Cemetery	0			No		Yes	17		E-W_Furnished	Stone (1930)
##	0	Romsey	0	1066	Settlement	0	Wool, Cloth, Leahter, Lamb, Beef, Pork, Grain, Pig, Sheep	Cattle,	U/K		No	0			Powell (2011), Hampshire HER (2022)
##	0	Rope Lake Head	50	400	Industry	0	Shale, Salt	Beef, Lamb, Shale, Black_Burnished_Ware	Yes	Industrial	No	0			Woodward (1987b), Jarvis (1986)
##	0	Rowner	43	750	Settlement	0			U/K	Industrial	No	0			Hampshire HER (2022), Foundations Archaeology (2011)
##	0	Rownhams	410	900	Settlement	0			U/K		U/K	0			Brown (2017)
73	0	Ruckstall	100	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Ructstalls Hill	45	400	Settlement	0	Grain, Cattle, Lamb	Alice_Holt_Ware	U/K		No	0			Oliver and Applin (1979)
87	0	Sapley Farm	175	400	Farmstead	0	Grain, Sheep	Oysters, Alice_Holt_Ware, Purbeck_Stone	Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Seavington	200	300	Villa	0			U/K		No	0			Somerset HER (2020)
##	0	Shallows Farm	500	600	Cemetery	0			No		Yes	13	Furnished		Hampshire HER (2022)
21	0	Shavards Farm	50	850	Villa	100	Beef, Lamb, Pork, Grain,	New_Forest_Ware,	U/K		Yes	21	N-S_Furnsihed, W-E_Furnished, W-E_Unfurnished, Hexagonal Building	Quoit_Brooch, Button_Brooch, Square_Headed_Brooch	Stedman and Stoodley (2000, 2001) Payne (2015), Huges (1986)
##	0	Sherborne Abbey	650	750	Religious_Buildi	0			U/K		Yes	9		Christian_symbology	Dorset HER (2023)
72	0	Sherborne Road	100	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Shillingstone	250	400	Villa	0			U/K		No	0			Corney and Robinson (2007)
77	0	Shothanger Farm	100	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Silchester	125	700	Settlement	0	Beef, Sheep, Lamb, Wool, Pig, Pork, Grain	Alice_Holt_Ware, New_Forest_Ware, Black_Burnished_Ware, Shale, Cattle, Sheep, Pig, Grain	Yes	Agricultural, Industrial	No	0			Fulford et al (2006)
##	0	Silchester Church	450	700	Religious_Buildi	0			U/K		No	0			Fulford et al (2006)
99	0	Sloden East	260	400	Industry	0	New_Forest_Ware		Yes	Industrial	No	0			Fulford (1973) Sumner (1927)
98	0	Sloden West	260	400	Industry	0	New_Forest_Ware		Yes	Industrial	No	0			Fulford (1973) Sumner (1927)
##	0	Snell's Corner	650	700	Cemetery	0			No		Yes	33	S-N_Furnished		Wessex Archaeology (2007)
55	0	Sorviodunum	50	400	Settlement	0			Yes	Agricultural, Industrial	No	0			Ellis (2001)
##	0	South Tidworth	650	750	Cemetery	0			No		Yes	55	N-S_Furnished, E-W_Furnished		Wessex Archaeology (2023)
##	0	South Winchester Park & Ride	43	350	Settlement	0	Wool, Cloth		U/K		No	0			
82	0	Southwood	100	375	Villa	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
0	0	Sparsholt Villa	150	350	Villa	0	Cattle, Dairy, Wool,		Yes	Agricultural	No	0			Johnson (2014)
##	0	St Aldhelm's Chaple	275	1200	Religious_Buildi	0			No		No	0			Giller (2018)
##	0	St Aldhelm's Head	0	350	Settlement	0	Shale		Yes	Industrial	No	0			Dorset HER (2023)
28	0	St George's Road	200	600	Farmstead	0	Grain, Sheep, Cattle		No		No	0			Smith et al (1997)
##	0	St Giles's Hill	450	600	Cemetery	0			No		Yes	10	Furnished		Ottaway (2017)
##	0	St Martin's Close	350	425	Cemetery	0			U/K		Yes	52	W-E_Unfurnished, W-E_Furnished,		Ottaway (2017)
##	0	St Martin's Close	500	700	Settlement	0			U/K		No	0			Ottaway (2017)
71	0	Stanchester	200	375	Villa	0	Grain, Sheep	New_Forest_Ware, Purbeck_Stone, Alice_Holt_Ware	Yes	Agricultural	No	0			Applebuam et al (1953) Hertiage Gateway (2022)
##	0	Stanchester, Stoke Sub Hamdon	100	400	Villa	0		New_Forest_Ware, Shale	U/K		U/K	0			Walter (1920)
##	0	Stoodham	50	400	Settlement	0			U/K		U/K	0			Gathercole (2003)
##	0	Stratton Park	500	700	Settlement	0			U/K		No	0			Hampshire HER (2022)
##	0	Structure F1036	500	725	Religious_Buildi	0			U/K		U/K	0			Sparey-Green (2004) Dorset HER (2023)
##	0	Sturthill	50	400	Settlement	0			U/K		No	0			Bailey (1969)
51	0	Suddern Farm	43	525	Farmstead	1	Grain, Lamb, Wool		U/K		U/K	0			Cunliffe (2008)
##	0	Sutton Poyntz	300	400	Settlement	0		New_Forest_Ware, Black_Burnished_Ware	U/K		U/K	0			Rawlings (2007), Lancley (1993)
##	0	Swineham	50	400	Settlement	0			Yes	Industrial	No	0			Dorset HER (2023)
65	0	Tarrant Crawford	300	2022	Religious_Buildi	0			No		Yes	0		Christian_symbology	Bell (2005) Bryant (2000)
9	0	Tarrant Hinton	43	400	Villa	0	Dairy, Grain, Lamb, Wool	Black_Burnished_Ware, Fish, Shale, Purbeck_Stone, New_Forest_Ware	U/K		No	0			Graham (2006), Giles (1980)
##	0	The Warren, Ham Hill	80	350	Villa	0		New_Forest_Ware	U/K		No	0			Walter (1907), Somerset HER (2019a, 2019b)
##	0	Thornford	200	370	Villa	0	Sheep, Cattle,		U/K		U/K	0			Heritage Gateway (2023), Leach (1966)
49	0	Thruxton	150	450	Villa	0	Grain, Beef, Lamb, Wool, Sheep, Cattle	Grain, Black_Burnished_Ware, New_Forest_Ware, Alice_Holt_Ware	Yes	Agricultural	Yes	0			Cunliffe (2008), Cunliffe and Poole (2008d)
##	0	Thruxton	350	450	Religious_Buildi	0			U/K		Yes	6			Cunliffe and Poole (2008d)
##	0	Tidworth	450	950	Farmstead	0	Cattle, Beef, Sheep, Pig, Lamb, Pork		U/K		No	0			Godden et al (2002)
##	0	Tolpuddle Ball	0	700	Settlement	1	Grain, , Beef, Lamb, Leather, Wool	Black_Burnished_Ware, Shale,	Yes	Agricultural	Yes	50	W-E_Unfurnished	Christian_symbology	Hearne and Birbeck (1999)
##	0	Trumpet Major	450	700	Cemetery	0			No		Yes	5	S-N_Unfurnished, S-N_Furnished		Sparey Green (1984)
##	0	Twyford Down	250	350	Farmstead	0			U/K		No	0			Hampshire HER (2022)
##	0	Twyford School	500	750	Cemetery	0			No		Yes	23	W-E_Unfurnished, W-E_Furnished, E-W_Furnished, S-N_Furnished		Egging Dinwiddy (2011)
##	0	Twyford Villa	0	425	Villa	0			U/K		U/K	0			Egging Dinwiddy (2011)
##	0	Upton Country Park	200	350	Industry	0	Salt	Black_Burnished_Ware	Yes	Industrial	No	0			Anderson and Watkins (1995)
##	0	Uwell Farm	600	700	Cemetery	0			No		Yes	57	W-E_Furnished, W-E_Unfurnished		Heritage Gateway (2023), Cox (1988)
4	0	Vindocladia/ Shapwick	175	410	Settlement	0	Beef, Cattle	Black_Burnished_Ware, New_Forest_Ware	Yes		No	0			Papworth (1997, 2014), National Trust (2023), Heritage Gateway (2023)
##	0	Wareham	50	876	Settlement	0		New_Forest_Ware, Black_Burnished_Ware, Shale, Purbeck_Stone	Yes	Industrial	No	0			Farrar (1956), Hinton and Hodges (1980)
##	0	Wareham Priory	675	876	Religious_Buildi	0			U/K		No	0		Christian_symbology	Dorset HER (2023)
##	0	Watcombe Bottom	200	350	Settlement	0		New_Forest_Ware	U/K		No	0			Dorset HER (2023)
##	0	Watergore	100	400	Villa	0			U/K		U/K	0			Gathercole (2003)
##	0	West Binsted	250	350	Settlement	0			U/K		No	0			Hampshire HER (2022)
##	0	West Hayling	50	410	Industry	0	Salt	New_Forest_Ware	Yes	Industrial	No	0			Allen and Gardiner (2000)
##	0	West Lulworth	50	350	Settlement	0			U/K		No	0			Dorset HER (2023)
##	0	West Meon	600	700	Cemetery	0			No		Yes	49	N-S_Furnished		Historic England (2023f)
##	0	Westhill Wood	50	350	Settlement	0	Shale		Yes	Industrial	No	0			Dorset HER (2023)
##	0	Westlands	300	425	Settlement	0			U/K		U/K	0			Leech (1985)
##	0	Weston Colley	450	650	Cemetery	0			No		Yes	13	N-S_Unfurnished, N-S_Furnished, W-E_Furnished, E-W_Furnished, Cremation	Button_Brooch, Christian_symbology	Hampshire HER (2022)

##	0	Weyhill Road, Aldi	700	1200	Cemetery	0			No		Yes	124	S-N_Unfurnished, S-N_furnished, W-E_Unfurnished, W-E_Furnished, N-S_Unfurnished, N-S_Furnished,		Clutterbuck (2017)
##	0	Whitchurch	450	600	Settlement	1	Wool, Cloth		U/K		No	0			Hampshire HER (2022)
##	0	Whitcombe	200	350	Farmstead	0		New_Forest_Ware	U/K		No	0			Aitken (1965, 1991), Farrer (1965),
##	0	Whithill Quarry	560	680	Cemetery	0			U/K		Yes	20	S-N_Unfurnished, S-N_Furnished		Dorset HER (2023)
79	0	Will Hall	100	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
20	0	Winchester	40	0	Settlement	0	Leather, Cloth	Beef, Lamb, Fish, Wool	Yes	Industrial	No	0			Maltby (2010)
23	0	Winchester Eastern Suburb	250	700	Settlement	0			U/K		Yes	118	W-E_, Furnished, W-E_Unfurnished, N-S_Furnished, N-S_Unfurnished		Rees et al (2008), Ottaway (2017)
##	0	Winchester Forum	75	500	Settlement	0			U/K		No	0			Biddle (1970)
##	0	Winchester NE	50	375	Settlement	0	Wool, Cloth	Grain	U/K		U/K	0			Ottaway (2017)
22	0	Winchester Northern Suburb	200	450	Settlement	0	Beef, Lamb, Pork, Cattle, Pig, Sheep, Cloth	Wool, Grain, New_Forest_Ware, Cattle, Pig, Sheep	Yes	Agricultural	Yes	99	W-E_Unfurnished, W-E_furnished, N-S_Unfurnished, N-S_Furnished		Rees et al (2008), Birbeck and Moore (2004), Ottaway (2017)
##	0	Winchester NW	75	375	Settlement	0	Beef, Lamb, Pork	Cattle, Sheep, Pig, Beef, Lamb, Pork	Yes	Agricultural	No	0			Ottaway (2017)
##	0	Winchester SE	50	400	Settlement	0	Wool, Cloth	Grain	U/K		No	0			Ottaway (2017)
##	0	Winchester Southern Suburb	250	325	Cemetery	0			No		Yes	20	Cremation, W-E		Ottaway (2017)
43	0	Winchester Street	310	410	Cemetery	0		New_Forest_Ware	Yes	Industrial	Yes	9	N-S_Furnished, N-S_Unfurnished		Jennings (2000)
##	0	Winchester SW	80	325	Settlement	0			U/K		No	0			Ottaway (2017)
##	0	Winchester Western Suburb	70	350	Settlement	0			U/K		Yes	55	Inhumation, Cremation		Ottaway (2017)
##	0	Winnall Housing Estate	200	350	Settlement	0			U/K		Yes	5			Ottaway (2017)
##	0	Winnall I	450	600	Cemetery	0			No		Yes	5	Furnished		Ottaway (2017) Meaney and Chadwick Hawkes (1970)
##	0	Winnall II	650	700	Cemetery	0			No		Yes	45	W-E_Unfurnished, W-E_Furnished	Christian_symbology	Ottaway (2017) Meaney and Chadwick Hawkes (1970)
##	0	Winterborne Houghton	50	400	Settlement	0			U/K		U/K	0			RCHME (1970a)
56	0	Winterbourne	300	400	Settlement	0		New_Forest_Ware	No		Yes	50	E-W_Furnished, W-E_Furnished, S-N_Furnished, N-S_Furnished, Cremation		Sabben-Clark (1963)
60	0	Winterbourne Gunner	450	550	Settlement	0			No		Yes	10			Eagles (2001), Smith (2022)
##	0	Witchampton	250	380	Religious_Buildi	0		Purbeck_Stone	No		No	0			Dorset HER (2023)
80	0	Wivelrod	100	400	Villa	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Wolver Brow	150	410	Villa	0	Grain	Alice_Holt_Ware, New_Forest_Ware, Black_Burnished_Ware	Yes	Agricultural	No	0			Brisay and Brisay (1989)
##	0	Woodcuts	50	360	Farmstead	0	Grain, Shale, Wool, Beef, Pork, Lamb	New_Forest_Ware, Shale,	Yes	Agricultural, Industrial	Yes	30			Historic England (2023a), Heritage Gateway (2023)
##	0	Woodhouse Hill	50	400	Settlement	0	Cattle, Sheep, Lamb, Beef, Pork, Grain	SEDOWW	No		No	0			Frend (1965), Gerrard (2010)
53	0	Woolbury	43	378	Farmstead	1	Cattle, Sheep, Pig, Pork	Black_Burnished_Ware, New_Forest_Ware	U/K		No	0			Cunliffe (2008), Cunliffe and Poole (2000)
##	0	Worbarrow Bay	50	350	Settlement	0	Shale, Wool, Cloth, Salt	Purbeck_Stone, Shale	Yes	Industrial	No	0			Frend (1949), Farrer (1968)
##	0	Worgret	75	700	Settlement	0	Black_Burnished_Ware, Shale	Shale, New_Forest_Ware, Shale, Leather, SEDOWW	Yes	Industrial	No	0			Hearne and Smith (1992), Hinton (1993), Gerrard (2010)
##	0	Worgret Watermill	664	1065	Industry	0			Yes	Industrial	No	0			Dorset HER (2023)
70	0	Worthing Road	300	400	Farmstead	0	Grain, Sheep		Yes	Agricultural	No	0			Applebuam et al (1953)
##	0	Worthy Down	300	400	Settlement	0			U/K		No	0			Hampshire HER (2022)
##	0	Worthy Park	450	650	Cemetery	0			No		Yes	140	N-S_Furnished, N-S_Unfurnished, W-E_Furnished, W-E_Unfurnished, Cremations	Quoit_Brooch	Hawkes and Grainger (2003)
##	0	Wyck	275	350	Villa	0		New_Forest_Ware	U/K		No	0			Hampshire HER (2022)
##	0	Wyke Regis	250	350	Settlement	0			U/K		No	0			Dorset HER (2023)
##	0	Wynford Eagle	100	400	Villa	0			U/K		No	0			Ladle (2022), Heritage Gateway (2022)
##	0	Yeovil Golf Club	160	385	Villa	0			U/K		No	0			Dorset HER (2023)